

UNIVERSITY OF CALIFORNIA

# Bulletin

## **General Catalogue**

**DEPARTMENTS AT**

**LOS ANGELES**

**Fall and Spring Semesters**

**1953-1954**

**AUGUST 1, 1953**

**PRICE, TWENTY-FIVE CENTS**

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## GENERAL INFORMATION

Letters of inquiry concerning the University of California, Los Angeles, should be addressed to the *Registrar, University of California, 405 Hilgard Avenue, Los Angeles 24, California.*

Letters of inquiry concerning the University in general should be addressed to the *Registrar, University of California, Berkeley 4, California.*

For the list of bulletins of information concerning the several colleges and departments, see page 3 of the cover of this bulletin.

In writing for information please mention the college, department, or study in which you are chiefly interested.



The registered cable address of the University of California, Los Angeles, is UCLA.



*All announcements herein are subject to revision. Changes in the list of Officers of Administration and Instruction may be made subsequent to the date of publication, August 1, 1953.*

# GENERAL CATALOGUE

LOS ANGELES

# General Catalogue

DEPARTMENTS AT LOS ANGELES

*Fall and Spring Semesters*

1953-1954

AUGUST 1, 1953

UNIVERSITY OF CALIFORNIA  
LOS ANGELES



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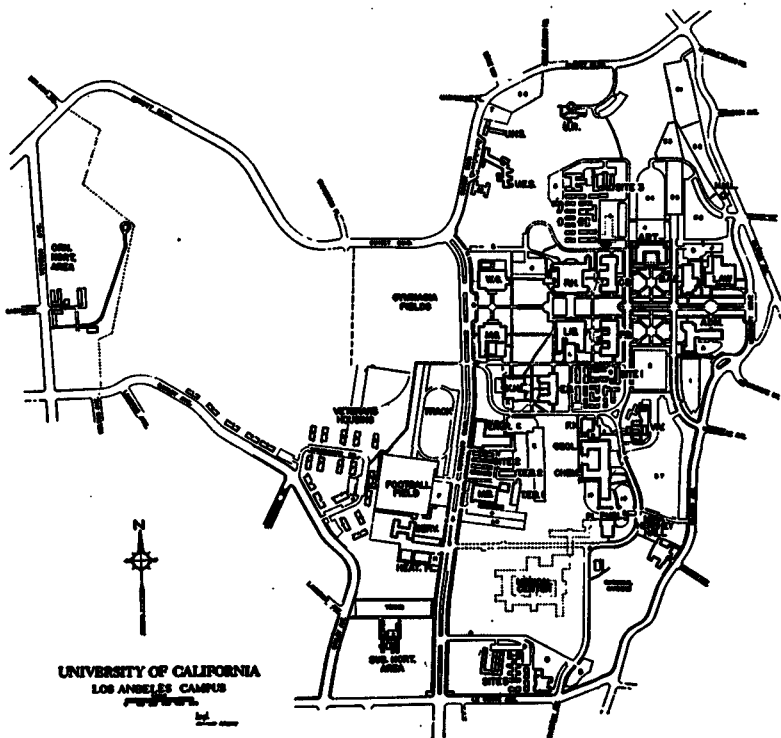
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## UNIVERSITY BUILDINGS

Adm	Administration Building	MB	Mechanics Building
Art	Art Building	MG	Men's Gymnasium
BAE	Business Administration- Economics Building	PB	Physics-Biology Building
CB	Chemistry Building (Old)	Pl Phsl	Plant Physiology Building
Chem	Chemistry Building (New)	RH	Josiah Royce Hall
EB	Education Building	TEB 1	} Temporary Engineering Buildings
Engr	Engineering Building	TEB 2	
FH	Shepherd Ivory Franz Hall	UES	University Elementary School
Geol	Geology Building	UNS	University Nursery School
HML	Home Management Laboratory	Viv	Vivarium
KH	Kerckhoff Hall	WG	Women's Gymnasium
Law	Law Building	5D, 5F	Temporary Medical School
Lib	Library	5A, 5B,	} University Extension
		5C	

# CALENDAR, 1953-1954

## 1953

## FALL SEMESTER

July 15, Wednesday	Applications for admission to graduate standing in the fall semester, with complete credentials, must be filed on or before this date.
*Aug. 15, Saturday	Applications for admission to undergraduate standing in the fall semester, with complete credentials, must be filed on or before this date.
Aug. 26, Wednesday	Last day to file applications for readmission by students returning after an absence.
Sept. 7, Monday Sept. 12, Saturday	} Counseling of students.
Sept. 9, Wednesday	} Examination in Subject A. Examination in English for foreign students.
Sept. 14, Monday	Fall semester begins.
Sept. 14, Monday Sept. 16, Wednesday	} Registration of all students who did not register by mail. For details, see <i>Registration Circular</i> and official bulletin boards.
Sept. 18, Friday	Special examination in Subject A.
Sept. 21, Monday	Instruction begins.
Sept. 29, Tuesday	Last day to file registration books or to change study lists <i>without fee</i> .
Oct. 1, Thursday	Last day to file applications for foreign language screening tests to be given October 17.
Oct. 6, Tuesday	Last day to file applications for advancement to candidacy for the master's degree to be conferred in January, 1954.
Oct. 6, Tuesday	Last day to add courses to study lists.
Oct. 6, Tuesday	Last day to file registration book without penalty of lapse in status as a student in the University.
Oct. 17, Saturday	Foreign language screening tests.
Oct. 24, Saturday	Last day to file <i>without fee</i> notice of candidacy for the bachelor's degree to be conferred in January, 1954.
Oct. 26, Monday 8:00 p.m.	} Last day to drop courses from study lists without penalty of grade F (failure).
Nov. 14, Saturday	End of mid-term period.
Nov. 26, Thursday	Thanksgiving Day—a holiday.
Nov. 27, Friday	Last day to file in final form with the committee in charge theses for the doctor's degree to be conferred in January, 1954.
Dec. 12, Friday	Last day to file notice of candidacy for the bachelor's degree to be conferred in January, 1954.
Dec. 21, Monday Jan. 2, Saturday	} Christmas recess.

## 1954

Jan. 4, Monday	Classes resume.
Jan. 4, Monday	Last day to file in final form with the committee in charge theses for the master's degree to be conferred in January, 1954.
Jan. 16, Saturday	Instruction ends.
Jan. 18, Monday Jan. 28, Thursday	} Final examinations, fall semester.
Jan. 28, Thursday	Fall semester ends.

\* May 2, Saturday, qualifying examinations for admission to the College of Engineering in the fall semester, 1953.

# CALENDAR, 1953-1954

1953

SPRING SEMESTER†

\*Dec. 15, Tuesday

Applications for admission to graduate standing in the spring semester, with complete credentials, must be filed on or before this date.

1954

Jan. 15, Friday

Applications for admission to undergraduate standing in the spring semester, with complete credentials, must be filed on or before this date.

Jan. 20, Wednesday

Last day to file applications for readmission by students returning after an absence.

Feb. 1, Monday

Last day to file applications for undergraduate scholarships (resident students) for the academic year 1954-1955.

Feb. 1, Monday

Feb. 5, Friday

} Counseling of students.

Feb. 8, Wednesday

{ Examination in Subject A.

{ Examination in English for foreign students.

Feb. 8, Monday

Spring semester begins.

Feb. 9, Tuesday

Feb. 10, Wednesday

} Registration of all students who did not register by mail. For details, see *Registration Circular* and official bulletin boards.

Feb. 12, Friday

Special examination in Subject A.

Feb. 15, Monday

Instruction begins.

Feb. 18, Thursday

Last day to file applications for foreign language screening tests to be given March 6.

Feb. 20, Saturday

Last day to file applications for fellowships and graduate scholarships tenable at Los Angeles for 1954-1955.

Feb. 22, Monday

Washington's Birthday—a holiday.

Feb. 23, Tuesday

Last day to file registration books or to change study lists *without fee*.

Mar. 1, Monday

Last day to file applications for advancement to candidacy for the master's degree to be conferred in June or in August, 1954.

Mar. 1, Monday

Last day to file applications for undergraduate scholarships (entering students), or for Alumni Association scholarships for the academic year 1954-1955.

Mar. 2, Tuesday

Last day to add courses to study lists.

Mar. 2, Tuesday

Last day to file registration book without penalty of lapse in status as a student in the University.

Mar. 6, Saturday

Foreign language screening tests.

Mar. 22, Monday  
8:00 p.m.

} Last day to drop courses from study lists without penalty of grade F (failure).

Mar. 27, Saturday

Last day to file *without fee* notice of candidacy for the bachelor's degree to be conferred in June, 1954.

April 10, Saturday

End of mid-term period.

April 16, Friday

Last day to file in final form with the committee in charge theses for the doctor's degree to be conferred in June, 1954.

April 26, Monday

} Spring recess.

May 1, Saturday

Last day to file with the committee in charge theses for the master's degree to be conferred in June, 1954.

May 10, Monday

Last day to file notice of candidacy for the bachelor's degree to be conferred in June, 1954.

May 15, Saturday

Memorial Day—a holiday.

May 31, Monday

Last day to file with the Dean of the Graduate Division completed copies of theses for the master's degree to be conferred in June, 1954.

June 7, Monday

June 5, Saturday

Instruction ends.

June 7, Monday

June 17, Thursday

} Final examinations, spring semester.

June 17, Thursday

Spring semester ends.

\* December 4, 1953, Saturday, qualifying examinations for admission to the College of Engineering in the spring semester, 1954.

† In the School of Law, spring semester classes will run from February 8, Monday, to May 29, Saturday, and final examinations will be held from June 1, Tuesday, to June 17, Thursday.

# THE REGENTS OF THE UNIVERSITY

## REGENTS EX OFFICIO

- †His Excellency, EARL WARREN, B.L., J.D.  
Governor of California and President  
of the Regents  
Sacramento 14
- †GOODWIN J. KNIGHT, A.B.  
Lieutenant-Governor of California  
State bldg, Los Angeles 12
- JAMES SILLIMAN  
Speaker of the Assembly  
246 Hawthorne st, Salinas
- †ROY E. SIMPSON, M.A., Litt.D.  
State Superintendent of Public In-  
struction  
531 Library and Courts bldg,  
Sacramento 14
- †ARTHUR J. MCFADDEN, B.S., LL.B.  
President of the State Board of Agri-  
culture  
902 River lane, Santa Ana
- †WILLIAM G. MEROGHANT  
President of the Mechanics' Institute  
804 Mechanics' Institute bldg,  
San Francisco 4
- †WARREN H. CROWELL, A.B.  
President of the Alumni Association of  
the University of California  
650 S Spring st, Los Angeles 14
- †ROBERT GORDON SPROUL, B.S., LL.D.,  
Litt.D.  
President of the University  
203 Administration bldg, Los Angeles  
24  
250 Administration bldg, Berkeley 4

## APPOINTED REGENTS

The term of the appointed Regents is sixteen years, and terms expire March 1 of the years indicated in parentheses. The names are arranged in the order of original accession to the Board.

- †EDWARD AUGUSTUS DICKSON, B.L.  
(1958)  
425 S Windsor blvd, Los Angeles 5
- †JOHN FRANCIS NEYLAN, LL.D. (1960)  
1 Montgomery st, San Francisco 4
- †FRED MOYNE JORDAN, A.B. (1964)  
555 S Flower st, Los Angeles 17
- †EDWIN W. PAULEY, B.S. (1954)  
717 N Highland av, Los Angeles 38
- †BRODIE E. AHLFORT, A.B. (1956)  
5657 Wilshire blvd, Los Angeles 36
- †EDWARD H. HELLMER, A.B. (1958)  
600 Market st, San Francisco 4
- †VICTOR R. HANSEN, LL.B. (1962)  
Superior Court, Courthouse,  
Los Angeles 12
- †EARL J. FENSTON, A.B. (1964)  
504 Helm bldg, Fresno 1
- †CHESTER W. NIMITZ, B.S., LL.D. (1956)  
728 Santa Barbara rd, Berkeley 7
- †CORNELIUS HAGGERTY (1966)  
995 Market st, Room 810,  
San Francisco 3
- †JESSE H. STEINHART, A.B., LL.B.  
(1962)  
111 Sutter st, San Francisco 4
- †DONALD H. MOLAUGHLIN, B.S., Ph.D.  
(1966)  
100 Bush st, San Francisco 4
- †GUS OLSON, B.S. (1960)  
Clarksburg
- †GERALD H. HAGAR, A.B., J.D. (1964)  
Central Bank bldg, Oakland 12
- †HOWARD O. NAFFIGER, B.S., M.S., M.D.  
(1968)  
University of California Medical Center,  
San Francisco 22
- †EDWARD W. CARTER, A.B. (1968)  
401 S Broadway, Los Angeles 13

## OFFICERS OF THE REGENTS

- †His Excellency, Earl Warren, B.L., J.D.  
Governor of California  
President  
Sacramento 14
- †Edward A. Dickson, B.L.  
Chairman  
425 S Windsor blvd, Los Angeles 5
- †Robert M. Underhill, B.S.  
Secretary and Treasurer  
240 Administration bldg, Berkeley 4
- †James H. Corley, B.S., Vice-President—  
Business Affairs  
222 Administration bldg, Berkeley 4
- †Olaf Lundberg, C.P.A.  
Controller  
401 Administration bldg, Berkeley 4
- †Jno. U. Calkins, Jr., B.L., J.D., Attorney  
910 Crocker bldg, San Francisco 4
- †Ashley H. Conard, B.L., J.D.  
Associate Attorney for the Regents and  
Attorney in Residence Matters  
910 Crocker bldg, San Francisco 4
- †George D. Mallory, A.B.  
Assistant Treasurer and Assistant  
Secretary  
240 Administration bldg, Berkeley 4
- †George E. Stevens  
Assistant Controller  
404 Administration bldg, Berkeley 4
- George F. Taylor, B.S.  
Assistant Secretary  
204 Administration bldg, Los Angeles  
24
- Marjorie J. Woolman  
Assistant Secretary  
240 Administration bldg, Berkeley 4

† Married.



# THE UNIVERSITY OF CALIFORNIA

NOTE.—General information about instruction at Berkeley may be obtained by addressing the Registrar, University of California, Berkeley 4; for information about instruction at Los Angeles, address the Office of Admissions, University of California, Los Angeles 24; for information about instruction at Santa Barbara College, address the Registrar, University of California, Santa Barbara College, Santa Barbara; for information about instruction at Davis, address the Registrar, University of California, Davis; for information about instruction at Riverside, address the Registrar, University of California, Riverside; information concerning the schools and colleges in San Francisco may be obtained by addressing the deans in charge. University publications available to inquirers are listed on page 3 of the cover of this bulletin.

## ADMINISTRATIVE STAFF OF THE UNIVERSITY

### *President of the University:*

Robert G. Sproul  
250 Administration bldg, Berkeley 4  
208 Administration bldg, Los Angeles 24

### *Chancellor at Los Angeles:*

Raymond B. Allen  
202 Administration bldg, Los Angeles 24

### *Chancellor at Berkeley:*

Clark Kerr  
3835 Dwinelle Hall, Berkeley 4

### *Vice-President and Provost of the University, Emeritus:*

Monroe E. Deutsch

### *Vice-President of the University and Dean of the College of Agriculture, Emeritus:*

Claude B. Hutchison

### *Vice-President—Agricultural Sciences:*

Harry R. Wellman  
101 Giannini Hall, Berkeley 4

### *Vice-President—Business Affairs:*

James H. Corley  
222 Administration bldg, Berkeley 4  
204 Administration bldg, Los Angeles 24

### *Vice-President—University Extension:*

Baldwin M. Woods  
University Extension, Berkeley 4  
Building 5A, Los Angeles 24

### *Provost of Santa Barbara College:*

J. Harold Williams  
110 Administration bldg, Santa Barbara

### *Provost of the Riverside Campus:*

Gordon S. Watkins  
107 Administration bldg, Riverside

### *Provost of the Davis Campus:*

Stanley B. Freeborn  
208 Library-Administration bldg, Davis

### *Secretary and Treasurer of the Regents:*

Robert M. Underhill  
240 Administration bldg, Berkeley 4  
George F. Taylor, *Assistant Secretary*  
204 Administration bldg, Los Angeles 24  
George D. Mallory, *Assistant Treasurer and Assistant Secretary*

Miss Marjorie J. Woolman, *Assistant Secretary*

240 Administration bldg, Berkeley 4

### *Attorney for the Regents:*

Jno. U. Calkins, Jr.  
Ashley H. Conard, *Associate Attorney for the Regents and Attorney in Residence Matters*  
910 Crocker bldg, San Francisco 4

### *Controller:*

Olof Lundberg  
401 Administration bldg, Berkeley 4

### *Budget Officer:*

Ellis J. Groff  
239C Administration bldg, Berkeley 4

### *Assistant to the President:*

George A. Pettitt  
225 Administration bldg, Berkeley 4

### *Director of Admissions:*

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127 Administration bldg, Berkeley 4  
100 Administration bldg, Los Angeles 24  
Edgar L. Lazier, *Associate Director*  
Miss Elizabeth M. Roberts, *Assistant Director*  
100 Administration bldg, Los Angeles 24

### *Registrars and Recorder:*

LOS ANGELES  
William O. Pomeroy, *Registrar*  
Mrs. Carmelita Stanley, *Assistant Registrar*  
137 Administration bldg, Los Angeles 24

### BERKELEY

Thomas B. Steel, *Registrar*  
Miss Virginia F. Green, *Assistant Registrar*  
Hobart M. Lovett, *Assistant Registrar*  
John T. Peterson, *Assistant Registrar*  
128 Administration bldg, Berkeley 4

### DAVIS

Howard B. Shonts, *Registrar*  
Miss J. Olare McGee, *Assistant Registrar*  
138 Library-Administration bldg, Davis

### RIVERSIDE

Clinton C. Gilliam, *Registrar*  
Director's Residence, Riverside

## SAN FRANCISCO

Mrs. M. Helen Chryst, *Recorder*  
104 Dental bldg, San Francisco 22  
Arthur M. Sammis, *Registrar*  
Hastings College of the Law  
198 McAllister st, San Francisco 2

## SANTA BARBARA

Paul W. Wright, *Registrar*  
105 Administration bldg, Santa Barbara

## Deans of the Graduate Division:

*Southern Section:*

Vern O. Knudsen  
Gustave O. Arlt, *Associate Dean*  
Leo P. Delsasso, *Assistant Dean*  
120 Administration bldg, Los Angeles 24

*Northern Section:*

William R. Dennes  
James M. Oline, *Associate Dean*  
Francis A. Jenkins, *Associate Dean*  
Morris A. Stewart, *Associate Dean*  
102 Administration bldg, Berkeley 4  
Fred N. Briggs, *Assistant Dean*  
201 Library-Administration bldg, Davis

## Deans of Students:

## LOS ANGELES

Milton E. Hahn  
Byron H. Atkinson, *Assistant Dean*  
Nola-Stark Rogers, *Assistant Dean*  
275 Administration bldg, Los Angeles 24  
Paul C. Hannum, *Housing Supervisor*  
169 Administration bldg, Los Angeles 24

## BERKELEY

Hurford E. Stone  
Miss Alice G. Hoyt, *Associate Dean of Women*

Chaffee E. Hall, Jr., *Associate Dean*  
Clinton C. Conrad, *Assistant Dean*  
Alexander S. Levens, *Assistant Dean*  
Miss Anna S. Espenschade, *Acting Assistant Dean of Students*  
Mrs. Catharine DeMotte Quire, *Assistant Dean of Women*

Mrs. Marguerite M. Van Derwerker, *Counselor for Group Activities*  
Mrs. Ruth N. Donnelly, *Housing Supervisor*  
201 Administration bldg, Berkeley 4

## DAVIS

Lysle D. Leach  
Mrs. Susan C. Regan, *Counselor for Women*  
121 Library-Administration bldg, Davis

## SAN FRANCISCO

Herbert G. Johnstone  
107 Dental bldg, San Francisco 22

## SANTA BARBARA

Lyle G. Reynolds, *Dean of Men*  
109 Administration bldg, Santa Barbara  
Helen E. Sweet, *Dean of Women*  
104A Administration bldg, Santa Barbara

## Deans of the College of Agriculture:

## LOS ANGELES

Robert W. Hodgson  
146 Physics-Biology bldg, Los Angeles 24

## BERKELEY

Knowles A. Ryerson  
101 Giannini Hall, Berkeley 4

## DAVIS

Fred N. Briggs  
201 Library-Administration bldg, Davis

## Dean of the College of Applied Arts:

David F. Jackey  
247 Administration bldg, Los Angeles 24  
John C. Snidecor, *Divisional Dean of Applied Arts*  
107 Administration bldg, Santa Barbara

## Dean of the College of Chemistry:

Kenneth S. Pitzer  
Donald S. Noyce, *Assistant Dean*  
110 Gilman Hall, Berkeley 4

## Dean of the College of Dentistry:

Willard C. Fleming  
Wendell L. Wylie, *Assistant Dean*  
728 Clinic bldg, San Francisco 22

## Deans of the Colleges of Engineering:

Llewellyn M. K. Boelter  
Wesley L. Orr, *Assistant Dean*  
8066 Engineering bldg, Los Angeles 24  
Morrough P. O'Brien  
Everett D. Howe, *Associate Dean*  
Paul E. DeGarmo, *Assistant Dean*  
James L. Meriam, *Assistant Dean*  
218 Engineering bldg, Berkeley 4

## Dean of Hastings College of the Law:

David E. Snodgrass  
Edward A. Hogan, Jr., *Vice-Dean*  
198 McAllister at, San Francisco 2

## Deans of the Colleges of Letters and Science:

## LOS ANGELES

Paul A. Dodd  
J. W. Robson, *Associate Dean*  
William G. Young, *Divisional Dean of Physical Sciences*  
Franklin P. Rolfe, *Divisional Dean of the Humanities*  
Roy M. Dorcus, *Divisional Dean of Life Sciences*  
J. A. C. Grant, *Divisional Dean of Social Sciences*  
289 Administration bldg, Los Angeles 24

## BERKELEY

Alva R. Davis  
\*Edward R. Strong, *Associate Dean*  
Charles Aikin, *Assistant Dean*  
Arthur E. Hutson, *Assistant Dean*  
Gerald E. Marsh, *Assistant Dean*  
Lesley E. Simpson, *Assistant Dean*  
Lee H. Swinford, *Assistant Dean*  
210 Administration bldg, Berkeley 4

## DAVIS

Herbert A. Young  
212 Library-Administration bldg, Davis

## RIVERSIDE

Robert A. Nisbet  
Director's Residence, Riverside

\* Absent on leave.

## Administrative Staff

3 C

- SANTA BARBARA**  
Elmer R. Noble, *Divisional Dean of Liberal Arts*  
106 Administration bldg, Santa Barbara
- Dean of the College of Pharmacy:*  
Troy C. Daniels  
John J. Eiler, *Assistant Dean*  
202 Pharmacy bldg, San Francisco 22
- Dean of the School of Architecture:*  
William W. Wurster  
1 Architecture bldg, Berkeley 4
- Deans of the Schools of Business Administration:*  
Neil H. Jacoby  
G. W. Robbins, *Associate Dean (Student Affairs)*  
250 Business Administration-Economics bldg, Los Angeles 24  
Ewald T. Grether  
Roy W. Jastram, *Associate Dean*  
118 South Hall, Berkeley 4
- Dean of the School of Criminology:*  
Orlando W. Wilson  
218 Building T-2, Berkeley 4
- Deans of the Schools of Education:*  
Edwin A. Lee  
‡ Clarence Fielstra, *Assistant Dean*  
281 Education bldg, Los Angeles 24  
William A. Brownell  
207 Haviland Hall, Berkeley 4
- Dean of the School of Forestry:*  
Frederick S. Baker  
248 Forestry bldg, Berkeley 4
- Deans of the Schools of Law:*  
L. Dale Coffman  
168 Law bldg, Los Angeles 24  
William L. Prosser  
William N. Keeler, *Assistant Dean*  
225 Law bldg, Berkeley 4
- Dean of the School of Librarianship:*  
J. Periam Danton  
425 Library, Berkeley 4
- Deans of the Schools of Medicine:*  
Stafford L. Warren  
Joel J. Pressman, *Assistant Dean*  
5D Temporary Medical School bldg, Los Angeles 24  
Francis S. Smyth  
John B. Lagen, *Associate Dean*  
145 Clinic bldg, San Francisco 22
- Deans of the Schools of Nursing:*  
**LOS ANGELES**  
Miss Lulu K. Wolf  
124 Building 8P, Los Angeles 24  
**BERKELEY-SAN FRANCISCO**  
Miss Margaret A. Tracy  
Miss Pearl Castile, *Assistant Dean*  
8574 Life Sciences bldg, Berkeley 4  
509 Clinic bldg, San Francisco 22
- Dean of the School of Optometry:*  
Kenneth B. Stoddard  
214 Optometry bldg, Berkeley 4
- Dean of the School of Public Health:*  
Charles E. Smith  
216 Building T-4, Berkeley 4
- Deans of the Schools of Social Welfare:*  
Donald S. Howard  
1 Building 1A, Los Angeles 24  
Milton Chernin  
222 Building T-1, Berkeley 4
- Dean of the School of Veterinary Medicine:*  
George H. Hart  
1018 Veterinary Science bldg, Davis
- Director of Relations with Schools:*  
Hiram W. Edwards  
Miss Grace V. Bird, *Associate Director*  
Owen Guinn Smith, *Assistant Director*  
119 Administration bldg, Berkeley 4  
Vern W. Robinson, *Associate Director*  
Bonham Campbell, *Assistant Director*  
188 Administration bldg, Los Angeles 24  
J. Price Gittinger, *Assistant Director*  
208 Library-Administration bldg, Davis  
Upton S. Palmer, *Assistant Director*  
109 Building B, Santa Barbara
- University Extension:*  
Baldwin M. Woods, *Vice-President—University Extension and Director of University Extension*  
Building 5A, Los Angeles 24  
University Extension, Berkeley 4  
**LOS ANGELES**  
Paul H. Sheats, *Associate Director*  
Abbott Kaplan, *Assistant Director*  
George M. Jamieson, Jr., *Business Manager*  
Building 5A, Los Angeles 24  
**BERKELEY**  
Thomas N. Barrows, *Associate Director*  
Richard J. Miller, *Assistant Director*  
Henry O. Waring, *Business Manager*  
University Extension, Berkeley 4
- SANTA BARBARA**  
Emanuel E. Ericson, *Assistant Director*  
906 Santa Barbara st, Santa Barbara
- Director of the George Williams Hooper Foundation (for Medical Research):*  
Karl F. Meyer  
307 Hooper Foundation, San Francisco
- Director of the Lick Observatory:*  
O. Donald Shane  
Lick Observatory, Mount Hamilton
- Director of the Scripps Institution of Oceanography:*  
Roger R. Revelle  
Scripps Institution of Oceanography, La Jolla
- Director of the Agricultural Experiment Station:*  
Paul F. Sharp  
Knowles A. Ryerson, *Assistant Director*  
108 Giannini Hall, Berkeley 4  
Robert W. Hodgson, *Assistant Director*  
146 Physics-Biology bldg, Los Angeles 24  
Fred N. Briggs, *Assistant Director*  
201 Library-Administration bldg, Davis  
Alfred M. Boyce, *Assistant Director*  
108 Administration bldg, Riverside

‡ On sabbatical leave in residence.

**Director of the Citrus Experiment Station:**

Alfred M. Boyce  
108 Administration bldg, Riverside

**Director of Agricultural Extension:**

\*J. Earl Coker  
Wayne F. Weeks, *Acting Director*  
140 Giannini Hall, Berkeley 4

**Director of the California School of Fine Arts:**

Ernest K. Mundt  
800 Chestnut st, San Francisco 11

**Director of the Los Alamos Scientific Laboratory:**

Norris E. Bradbury  
Los Alamos, New Mexico

**Librarians:****LOS ANGELES**

Lawrence C. Powell  
Andrew H. Horn, *Associate Librarian*  
Gordon E. Williams, *Assistant Librarian*  
184 Library, Los Angeles 24

**BERKELEY**

Donald Coney  
Marion A. Milczewski, *Assistant Librarian*  
Melvin J. Voigt, *Assistant Librarian*  
Miss Jean H. McFarland, *Assistant Librarian*  
245 Library Annex, Berkeley 4

**DAVIS**

J. Richard Blanchard  
281 Library-Administration bldg, Davis

**LA JOLLA**

W. Roy Holleman  
Scripps Institution of Oceanography, La Jolla

**MOUNT HAMILTON**

Stanislavs Vasilevskis  
Lick Observatory, Mount Hamilton

**RIVERSIDE**

Edwin T. Coman, Jr.  
College of Letters and Science Library  
Director's Residence, Riverside

Miss Margaret S. Buvens  
Citrus Experiment Station Library  
110 Administration bldg, Riverside

**SAN FRANCISCO**

John B. deC. M. Saunders  
104 Medical School bldg, San Francisco

**SANTA BARBARA**

Donald C. Davidson  
200D Administration bldg, Santa Barbara

**Business Office:**

James H. Corley, *Vice-President—Business Affairs*  
204 Administration bldg, Los Angeles 24  
222 Administration bldg, Berkeley 4

**LOS ANGELES**

George F. Taylor, *Business Manager*  
204 Administration bldg, Los Angeles 24

**BERKELEY**

William J. Norton, *Business Manager*  
3413 Dwinelle Hall, Berkeley 4

**DAVIS**

Ira F. Smith, *Business Manager*  
101 Library-Administration bldg, Davis

**LA JOLLA**

John C. Kirby, *Business Manager*  
Scripps Institution of Oceanography, La Jolla

**RIVERSIDE**

W. D. Drew, *Business Manager*  
104 Administration bldg, Riverside

**SAN FRANCISCO**

William B. Hall, *Administrator, University Hospital*  
105 University Hospital, San Francisco 22

Harold H. Hixson, *Assistant Administrator and Business Manager*  
George Henry Vogt, *Assistant Administrator, University Hospital, and Assistant Business Manager*  
102 University Hospital, San Francisco 22

**SANTA BARBARA**

J. A. D. Muncy, *Business Manager*  
Santa Barbara College, Santa Barbara

**LOS ANGELES (School of Medicine)**

Kenneth M. Eastman, *Administrator*  
Russell B. Williams, *Assistant Administrator*  
5D Temporary Medical School bldg, Los Angeles 24

**Office of the Controller:**

Olof Lundberg, *Controller*  
401 Administration bldg, Berkeley 4  
George E. Stevens, *Assistant Controller*  
404 Administration bldg, Berkeley 4

**LOS ANGELES**

Robert A. Rogers, *Accounting Officer*  
319 Administration bldg, Los Angeles 24

**BERKELEY**

Edwin C. Linsley, *Accounting Officer*  
2270 Telegraph av, Berkeley 4  
O. P. Webb, *Accounting Officer*  
Radiation Laboratory, Berkeley 4

**DAVIS**

Mahlon F. Cook, *Accounting Officer*  
109 Library-Administration bldg, Davis

**LA JOLLA**

Phillip M. Douglas, *Accounting Officer*  
Scripps Institution of Oceanography, La Jolla

**RIVERSIDE**

John H. Clark, *Accounting Officer*  
108 Administration bldg, Riverside

**SAN FRANCISCO**

Stanley C. Bateman, *Accounting Officer*  
1 Medical School bldg, San Francisco 22

\* Absent on leave.

# Administrative Staff

5 C

## SANTA BARBARA

Lawrence N. Jacobs, *Accounting Officer*  
Building C, Santa Barbara

## LOS ALAMOS

A. Dwight Richardson, *Accounting Officer*  
Los Alamos Scientific Laboratory  
Los Alamos, New Mexico  
Max W. Robinson, *Accounting Officer*  
Atomic Energy Commission Contracts  
Division  
645 S Mariposa av, Los Angeles

### Chief Purchasing Agent:

Lewis G. Baker  
F. S. Harter, *Purchasing Agent*  
318 Administration bldg, Berkeley 4  
David L. Wilt, *Purchasing Agent*  
48 Administration bldg, Los Angeles 24  
James D. Hahn, *Purchasing Agent*  
201 Laundry-Storehouse bldg, San Francisco 22

### Manager of Insurance and Retirement

*Systems:*  
Roy C. Floss  
David T. McKibben, *Assistant Manager*  
317 Administration bldg, Berkeley 4

### Nonacademic Personnel Office:

Boynnton S. Kaiser, *Chief Personnel Officer*  
Miss Barbara L. Brattin, *Personnel Officer*  
323 Administration bldg, Berkeley 4  
Miss Mildred L. Foreman, *Personnel Officer*  
191 Administration bldg, Los Angeles 24  
Charles Strawn, *Personnel Officer*  
115 Library-Administration bldg, Davis  
Mrs. Ruth Handley, *Personnel Officer*  
Scripps Institution of Oceanography, La Jolla  
Lewis B. Perry, *Personnel Officer*  
52 Hospital bldg, San Francisco 22  
Miss Velma Morrell, *Personnel Officer*  
125 Quad, Santa Barbara

### Offices of Public Information:

Andrew J. Hamilton, *Manager*  
189 Administration bldg, Los Angeles 24  
Maynard T. Morris, *Manager*  
101 Administration bldg, Berkeley 4  
Ralph D. Smith, *Manager*  
101 Faculty Club, Davis  
Howard S. Cook, Jr., *Manager*  
211 Administration bldg, Riverside  
George Oborn, *Manager*  
104 South Hall, Santa Barbara  
David M. Stearns, *Technical Information Adviser*  
Los Alamos Scientific Laboratory  
Los Alamos, New Mexico

### Offices of Publications:

William F. Calkins, *Manager of Agricultural Publications*  
22 Giannini Hall, Berkeley 4  
101 Faculty Club, Davis

Edward G. Berenson, *Manager of Official Publications*  
1 Administration bldg, Berkeley 4  
Thomas A. Manar, *Manager of Oceanographic Publications*  
Scripps Institution of Oceanography, La Jolla

### Office of Radio Administration:

Hale Sparks, *Manager*  
189 Administration bldg, Los Angeles 24

### University Press:

August Frugé, *Manager, Publishing Department*  
William J. Young, *Manager, Printing Department*  
University Press, Berkeley 4

### Manager of the Bureau of School and College Placement:

Lloyd D. Bernard  
207 Administration bldg, Berkeley 4  
123 Education bldg, Los Angeles 24  
Aubrey L. Berry, *Assistant Manager, Office of Teacher Placement*  
123 Education bldg, Los Angeles 24

### Bureau of Occupations:

Miss Mildred L. Foreman, *Placement Office Manager*  
162 Administration bldg, Los Angeles 24  
Miss Vera L. Christie, *Placement Office Manager*  
South Hall Annex, Berkeley 4  
Burton King, *Placement Office Manager*  
8 Recreation Hall, Davis

### Counseling Centers:

Mrs. Dorothy M. Clendenen, *Manager*  
291 Administration bldg, Los Angeles 24  
Mrs. Barbara A. Kirk, *Manager*  
Building C, Berkeley 4

### University Physicians:

LOS ANGELES  
Donald S. MacKinnon, *Director, Student Health Service*  
Gertrude T. Huberty, *Assistant Director*  
Building 8T, Los Angeles 24

## BERKELEY

William G. Donald  
Mrs. Margaret Zeff, *Assistant University Physician*  
Ernest V. Cowell Memorial Hospital,  
Berkeley 4

## DAVIS

J. Homer Woolsey, *Director and Surgeon, Student Health Service*  
Student Health Center, Davis

## SAN FRANCISCO

Miss Elenore J. Erickson, *Director, Student Health Service*  
120 Medical School bldg, San Francisco 22

## SANTA BARBARA

W. Wilfred T. Robbins, Jr., *Director, Student Health Service*  
Austin W. Bennett, *Acting Director*  
105 Building A, Santa Barbara

♡ On military leave.

*Director of Hospitals and Infirmaries:*

Richard J. Stull  
107 Hospital bldg, San Francisco 22

*Grounds and Buildings:*

Laurence H. Sweeney, *Principal Superintendent*

106 Service bldg, Los Angeles 24

John W. Aljets, *Principal Superintendent*  
Grounds and Buildings, Berkeley 4

L. Terry Suber, Jr., *Senior Superintendent*

106 Library-Administration bldg, Davis

Raymond Haworth, *Superintendent*  
Scripps Institution of Oceanography, La Jolla

Henning J. Noren, *Superintendent*  
Lick Observatory, Mount Hamilton

Henry U. Meyer, *Senior Maintenance Man*

Shop bldg, Riverside

William H. Dufton, *Principal Superintendent*

1 Grounds and Buildings, San Francisco 22

William F. Madden, *Senior Superintendent*

1 Quad Area, Santa Barbara

*Foreign Student Advisers:*

Clifford H. Prator

287 Administration bldg, Los Angeles 24

Allen C. Blaisdell  
International House, Berkeley 4

J. Price Gittinger

206 Library-Administration bldg, Davis

**VETERANS AFFAIRS**

Myron E. Krueger, *Chairman, Administrative Committee on Veterans Education*

247 Forestry bldg, Berkeley 4

Donald P. LaBoskey, *Supervisor of Special Services*

88 Administration bldg, Los Angeles 24

James G. Siller, *Vice-Chairman, Administrative Committee on Veterans Education, and Supervisor of Special Services*

2227 Union st, Berkeley 4

Lyle G. Reynolds, *Dean of Men*

109 Administration bldg, Santa Barbara

Herbert G. Johnstone, *Dean of Students*  
107 Dental bldg, San Francisco 22

J. Price Gittinger, *Director of Special Services*

206 Library-Administration bldg, Davis

Mrs. Sarabel C. Danowski, *Administrative Assistant*

University Extension, Los Angeles 24

Mrs. Edythe Hutchins Taylor, *Senior Administrative Assistant*

University Extension, Berkeley 4

Caleb A. Lewis, *Senior Extension Representative, University Extension*

1015 Seventh av, San Diego 1

Mrs. Mildred Stauffer, *Extension Representative, University Extension*

906 Santa Barbara st, Santa Barbara

# THE UNIVERSITY OF CALIFORNIA

FOUNDED 1868

THE UNIVERSITY OF CALIFORNIA is composed of academic colleges, professional schools, divisions, departments of instruction, museums, libraries, research institutes, bureaus and foundations, and the University of California Press, situated on eight different campuses throughout the State, namely: Berkeley, Los Angeles, San Francisco, Davis, Riverside, Mount Hamilton, La Jolla, and Santa Barbara. A list of the divisions on each campus follows:

## I. AT BERKELEY

The Colleges of

Letters and Science

Agriculture (including the Department of Agriculture, the Agricultural Experiment Station, and the Agricultural Extension Service)

Chemistry

Engineering

Pharmacy (first year of the B.S. curriculum)

The Schools of

Architecture

Business Administration

Criminology

Education

Forestry

Law

Librarianship

Medicine (first year)

Nursing (in part)

Optometry

Public Health (in part)

Social Welfare

The Graduate Division (Northern Section)

University Extension (offering instruction wherever classes can be formed, or anywhere in California by correspondence, and providing lectures, recitals, moving pictures, and other material for visual instruction)

The California Museum of Vertebrate Zoölogy

The Museum of Paleontology

The Anthropological Museum

The Heller Committee for Research in Social Economics

The Institute of Child Welfare

The Institute of East Asiatic Studies

The Institute of Engineering Research

The Institute of Experimental Biology

The Institute of Geophysics (in part)

The Institute of Industrial Relations (in part)

The Institute of Slavic Studies

The Institute of Transportation and Traffic Engineering

The Bureau of Business and Economic Research

The Bureau of International Relations

The Bureau of Public Administration

The William H. Crocker Radiation Laboratory

The University Art Gallery

The University of California Press

The University Library

**II. AT LOS ANGELES**

- The Colleges of  
 Letters and Science  
 Engineering  
 Applied Arts  
 Agriculture (including courses of instruction and the Agricultural Experiment Station's activities in Los Angeles)  
 Pharmacy (in part)
- The Schools of  
 Business Administration  
 Education  
 Law  
 Medicine  
 Nursing  
 Public Health (in part)  
 Social Welfare
- The Graduate Division (Southern Section)  
 The Bureau of Governmental Research  
 The Institute of Geophysics (in part)  
 The Institute of Industrial Relations (in part)  
 The Institute of Slavic Studies (in part)  
 The Institute of Transportation and Traffic Engineering (in part)  
 Bureau of Business and Economic Research (in part)  
 The University Library  
 The Senator William Andrews Clark Memorial Library  
 The Los Angeles Medical Department (graduate instruction only)

**III. AT SAN FRANCISCO**

- School of Medicine (second, third, and fourth years, including the University Hospital and Langley Porter Clinic)  
 School of Nursing (in part)  
 School of Public Health (in part)  
 The George William Hooper Foundation (for medical research)  
 College of Dentistry  
 College of Pharmacy  
 California School of Fine Arts  
 Hastings College of the Law

**IV. AT DAVIS**

- The College of Agriculture, including the University Farm, the School of Veterinary Medicine, and certain divisions of the Department of Agriculture and of the Agricultural Experiment Station.  
 The College of Letters and Science.

**V. AT RIVERSIDE**

- The College of Agriculture, including the Citrus Experiment Station.  
 The College of Letters and Science.

**VI. AT MOUNT HAMILTON**

- The Lick Astronomical Department (Lick Observatory).

**VII. AT LA JOLLA**

- The Scripps Institution of Oceanography.

**VIII. AT SANTA BARBARA**

- Santa Barbara College.

**ELSEWHERE**

In addition to the principal divisions named above, the University maintains several field stations of the Agricultural Experiment Station in various parts of the State.



**ADMINISTRATION**

The Regents of the University of California, by authority vested in them by the State constitution, created an academic administrative body called the Academic Senate. The Senate, subject to the approval of the Regents, determines the conditions for admission, for certificates, and for degrees. It authorizes and supervises all courses of instruction in the academic and professional colleges and schools. It recommends to the Regents all candidates for degrees in course and has general supervision of the discipline of students. The dean or director of a school, college, or other division of the University is entrusted with the duty of assisting the President in the administration of the University, with special reference to the welfare of the particular school, college, or other division concerned, and of the students therein.

# UNIVERSITY OF CALIFORNIA, LOS ANGELES

## HISTORY AND DEVELOPMENT

IN MARCH, 1881, the legislature of California created the Los Angeles State Normal School. Five acres of ground were donated at the corner of Fifth Street and Grand Avenue—the present site of the Los Angeles City Library. Instruction was begun in August, 1882, with a faculty of three teachers and an enrollment of sixty-one students.

Following a legislative appropriation in 1911, a new site of twenty-five acres on North Vermont Avenue was obtained for the Normal School. The School was moved into its new quarters in September, 1914, where it existed until the summer of 1919.

Through legislative action made effective by the Governor's signature on July 24, 1919, the grounds, buildings, and records of the Los Angeles State Normal School were transferred to The Regents of the University of California. In September of that year, university instruction was begun under the name Southern Branch of the University of California. The educational facilities were expanded to include the freshman and sophomore years in Letters and Science beginning with September, 1919; the third and fourth years with September, 1923 and 1924, respectively. In 1922 the teacher-training courses were organized as a Teachers College.

On February 1, 1927, the name of the institution was changed to UNIVERSITY OF CALIFORNIA AT LOS ANGELES.

The University now occupies a new physical plant upon a campus of three hundred eighty-four acres which was bought and presented to the University by the cities of Santa Monica, Venice, Beverly Hills, and Los Angeles. The removal to the new site from North Vermont Avenue took place in August, 1929, and instruction in all departments was begun in the new buildings on September 23, 1929.

By action of the Regents, work in the College of Agriculture was established at Los Angeles in November, 1930. The College of Business Administration was established in June, 1935, with instruction beginning in September, 1936; the College of Applied Arts and the School of Education were established July 1, 1939.

On August 8, 1933, graduate study at the University of California, Los Angeles, leading to the degrees of Master of Arts and Master of Science, and to the Certificate of Completion for the general secondary and junior college teaching credentials was authorized by the Regents. Beginning in September, 1936, candidates were accepted for the Ph.D. degree. In September, 1941, candidates for the degree of Doctor of Education were accepted.

Since that date there have been established a College of Engineering, and Schools of Law, Medicine, Nursing, Public Health, and Social Welfare.

## SITE OF THE CAMPUS—CLIMATE

The Los Angeles campus of the University of California is situated on the lower south slope of the Santa Monica Mountains which overlook Hollywood and the western part of Los Angeles; the Pacific Ocean, visible from the grounds, is five miles distant in a direct line. The warmest month of the year is August, with a mean temperature of about 68°; the coolest is January, with a mean temperature of 49°; the annual rainfall, which falls mostly between December and March, is about 15 inches. Proximity to the ocean insures an even temperature without extremes; the daily range of variation is about fifteen degrees.

The University campus is within the corporate limits of the city of Los Angeles, west of Beverly Hills. It extends along the south side of Sunset Boulevard from Hilgard Avenue to Veteran Avenue, and is bounded on the south by LeConte and Gayley avenues; automobiles should turn south from Sunset Boulevard at Hilgard Avenue, or north from Wilshire Boulevard at Westwood Boulevard.

The campus may be reached by bus as follows: from *Los Angeles* business district (Seventh and Olive streets), Pacific Electric Co. bus line, via Wilshire Boulevard, and Pacific Electric Co. Beverly-Sunset boulevards University bus line. From *Los Angeles*, western terminus of Pico car line, Bay Cities Transit Co. bus, via Pico and Westwood boulevards. From *Hollywood* (North Vermont Avenue and Hollywood Boulevard), Pacific Electric Co. bus, via Hollywood and Sunset boulevards. From *Santa Monica*, Pacific Electric Co. bus, via Wilshire Boulevard, and Bay Cities Transit Co. bus via Santa Monica Boulevard.

Students coming to Los Angeles by rail may ordinarily obtain tickets and check baggage to West Los Angeles without additional cost if done at the time the railroad ticket is purchased. The cost of carfare and baggage transfer from Los Angeles is thereby considerably reduced.

### SURVEY OF CURRICULA

Instruction at the University of California, Los Angeles, is offered in (a) the College of Letters and Science, with curricula leading to the degree of Associate in Arts, Bachelor of Arts, and Bachelor of Science, curricula of the earlier years of the College of Dentistry and of the School of Medicine; (b) the School of Business Administration, with curricula leading to the degree of Bachelor of Science; (c) the College of Applied Arts, with curricula leading to the degrees of Associate in Arts, Bachelor of Arts, and Bachelor of Science, curricula of the earlier years of the School of Nursing, of the School of Optometry, and of the School of Public Health; (d) the College of Engineering, with curricula leading to the degree of Bachelor of Science; (e) the College of Agriculture, with curricula leading to the degree of Bachelor of Science; (f) the School of Public Health, with curricula leading to the degree of Bachelor of Science; (g) the School of Nursing, with curricula leading to the degree of Bachelor of Science; (h) the School of Law, with a curriculum leading to the degree of Bachelor of Laws; and (i) the School of Medicine with a curriculum leading to the degree of Doctor of Medicine. Students electing certain curricula in the College of Agriculture may register at Los Angeles for the first two years and then transfer to Berkeley or Davis to complete the requirements for the degree. The School of Education at Los Angeles supervises curricula leading to the Certificate of Completion for the various elementary and secondary teaching credentials, and for the administrative credential. Graduate study, leading to the degrees of Master of Science, Master of Arts, Master of Business Administration, and Master of Social Welfare, and to the degrees of Doctor of Philosophy and Doctor of Education, also is available at the University of California, Los Angeles.

### THE UNIVERSITY LIBRARY

The Library of the University of California, Los Angeles, contains approximately 900,000 accessioned volumes and regularly receives about 13,000 periodicals and newspapers.

Undergraduate students will find most of the books they need in the Reserve Book Room or in the open stack Undergraduate Library. Honor students, with registration cards properly stamped by the Registrar's Office, are admitted to the stacks. All graduate students have access to the book stacks on presentation of registration cards. Books, except for bound periodicals, are loaned for a three-week period. Assigned seats are available to a limited number of

graduate students in the Graduate Reading Room; application should be made to the librarian in charge of the Room. The Graduate Reading Room has special facilities for the use of microfilm and typewriters.

Branch libraries in art, medicine, engineering, biology, chemistry, physics, geology, English, meteorology, agriculture, industrial relations, and theater arts are housed in the quarters of their respective departments, as are collections in the Bureau of Governmental Research, and the Institute for Numerical Analysis.

The Library Department of Special Collections provides a special music library of over 10,000 scores, collections of maps, manuscripts, and archives, and a general photographic service for the use of students and faculty.

Supplementing the University Library is the Law Library and the William Andrews Clark Memorial Library\* of over 50,000 books, pamphlets, and manuscripts, featuring English culture of the 17th, 18th, and 19th centuries, and the history of Montana. Materials in this library do not circulate and admission is by card only, application for which should be made to the University Librarian. Leaflets descriptive of the Clark Library are available.

### UNIVERSITY EXTENSION

University Extension offers facilities to men and women who seek some form of higher education, but are prevented from taking up residence at the University.† An increasing number of Extension courses are offered to those who have been to college and who desire to advance themselves professionally. The University of California, therefore, provides, through University Extension, educational opportunities to adults living in all parts of the State. Of special interest are courses offered to professional people in the fields of medicine, dentistry, engineering, law, business administration, and industrial relations. Veterans may use the educational benefits available to them under the Federal and State laws to enroll in University Extension courses.

The work is carried on in five ways:

(1) **Class Instruction.** Classes are organized in cities and towns wherever a sufficient number of people can be secured who wish to study a subject. Instruction is offered in art, business administration, economics, education, engineering, geography, history, languages, law, literature, mathematics, music, political science, psychology, real estate, science, speech, and many other subjects. Opportunity is offered through the Class Department for applicants for admission to the University to remove entrance deficiencies by a program of Extension courses approved in advance by the Director of Admissions.

(2) **Correspondence Instruction.** Courses are given by mail in art, astronomy, composition and literature, drawing, economics, education, engineering, history, the languages, mathematics, music, philosophy, physics, political science, psychology, and other subjects. Courses may begin at any time.

(3) **Lectures, singly or in series,** are provided for any committee, club, organization, or community in the State that will make the necessary arrangements.

(4) Through its Department of Visual Instruction, University Extension maintains a library of 16 millimeter educational motion pictures which are available for loan to schools, industries, organizations, and the general public. Educational and documentary films produced under the supervision of the Department of Theater Arts are available for purchase through the Film Sales Department.

\* This library is not on the University campus but is situated at 2205 West Adams Boulevard (Telephone RE 8-5925). It may be reached by Los Angeles Transit Lines, via Wilshire Boulevard and Western Avenue to West Adams Boulevard, or by the "11" bus of the Los Angeles Transit Lines. The library is open Mondays through Saturdays from 8:00 A.M. to 5:00 P.M.

† For information concerning admission to the University through residence courses in University Extension, see page 18 C.

(5) Conferences, workshops, and institutes, for periods ranging from two days to several weeks, provide intensive familiarization courses for interested groups, under the leadership of experts in theory and practice.

Persons desiring to take advantage of the facilities offered by any one of these departments may receive detailed information on request. Address University Extension, University of California, Los Angeles 24, or 813 South Hill Street, Los Angeles 14, or University of California, Berkeley 4.

# ADMISSION TO THE UNIVERSITY

## STUDENT STATUS

THE STUDENTS who are admitted to the University of California, Los Angeles, fall into two groups: undergraduates, and graduate students.

The undergraduates fall again into two groups: the regular students, and the special students.

The regular students are persons who have met all the requirements for admission to the University as set forth below. Regular students normally are pursuing, within the University, programs of study that comply with the established rules and regulations and lead to the degrees of Associate in Arts, Bachelor of Arts, or Bachelor of Science. An irregular program must be approved by the dean of the student's college.

The special students are those persons twenty-one years of age or over who have not had the opportunity to fulfill the requirements laid down for the admission of regular students. Each student in this group is admitted only after special consideration. (See page 22 C).

Graduate students are of two designations: those in regular graduate status, and those in unclassified graduate status. Regular graduate students are graduates of this University or of other institutions with equivalent requirements for graduation, who are carrying on advanced (graduate) work for higher degrees or teaching credentials. Unclassified graduates are those who have received a recognized degree and who wish to undertake work leading to another bachelor's degree, or to complete preparation necessary for acceptance in regular graduate status; students so designated may take undergraduate courses only. Detailed information concerning admission to each student status is given on the following pages.

## ADMISSION IN UNDERGRADUATE STATUS

An applicant who wishes to enter the University must fulfill the general requirements for admission, as set forth below. Application blanks may be obtained from the Office of Admissions, 100 Administration Building, University of California, Los Angeles 24. The application should be filed during the semester preceding that for which the applicant wishes to register and must be filed not later than August 15 for the fall semester, or January 15 for the spring semester. Every applicant for admission is required to pay a fee of \$5 when the first application is filed.\* Remittance by bank draft or money order should be made payable to The Regents of the University of California.

A satisfactory certificate of vaccination must be presented by each accepted applicant at the time he appears for the required physical examination before registration. A suitable form will be provided by the Office of Admissions. The Regents of the University permit no exceptions to this requirement, except deferment for a short period because of illness. Requests for such deferment should be made to the Student Health Service.

The University of California bases its entrance requirements on two principles: first, that the best guarantee of success in the University is high quality of scholarship in previous work, and second, that the study of certain specified subjects will give to the student both good preparation for the work of the University and reasonable freedom of choice of a major field of study after his entrance. These principles apply to admission in either freshman or advanced standing.

\* Veterans who expect to enroll under the provisions of Public Law 846 or 16 are not required to remit this fee at the time of application; if the applicant is accepted and registers in the University, the fee will be paid by the government. However, the fee must be paid by veterans who expect to enroll under the provisions of Public Law 550 (Korean G.I. Bill).

## ADMISSION IN FRESHMAN STANDING

## Berkeley, Los Angeles, Davis Campuses

An applicant who has attended a junior college, four-year college, university, extension division of college level, or any comparable institution is subject to regulations governing admission in advanced standing (see page 18 C). Such college attendance may not be disregarded, whether or not any courses were completed.

## Admission on the Basis of the High School Record

The applicant must file with the Admissions Office a regular application, on or before the last date for the receipt of applications for the semester desired (see above), and must have the secondary schools he has attended send to the Admissions Office complete transcripts of record of all studies undertaken in such schools. The transcripts must show that the applicant has been graduated from an accredited high school.\* The Admissions Office will then evaluate the high school record, and the applicant will be eligible for admission if he qualifies under any one of the following methods: (There are additional requirements for out-of-state students, for applicants to the College of Engineering, the School of Business Administration, and to the School of Nursing. See page 20 C.)

1. Complete the high school courses listed under (a) to (f) below with marks that demonstrate ability to do university work with good prospect of success. Courses in the (a) to (f) list taken in the ninth grade need show passing marks only; courses in the (a) to (f) list taken in the tenth, eleventh, and twelfth grades must be passed with marks that will make an average of grade B. Courses in which a grade of D is received may not be counted either in reckoning the required scholarship or in satisfaction of the subject requirements. An A grade in one course will balance a C grade in another. Only courses used to meet the subject requirements are considered. Grades are considered on a semester basis, except from schools that give only year marks.

The courses that must be completed under this plan of admission are listed as follows:

- (a) History ..... 1 unit.—This requirement must be satisfied by one unit of United States history or one unit of United States history and civics.
- (b) English ..... 3 units.—These may consist of any six semesters that give preparation in written and oral expression and in the reading and study of literature. Reading and study of contemporary literature may be included. The requirement in English must be satisfied by credit designated "English."
- (c) Mathematics ..... 2 units.—These must consist of two semesters of elementary or advanced algebra; and two semesters of plane geometry, or solid geometry and trigonometry.

\* An accredited high school in California is one that has been officially designated by the Board of Regents of the University as a school from which students will be admitted to the University without examination on the basis of the record of subjects completed and scholarship attained. The list of accredited schools is published by the University annually in the month of June or July. Accreditation by the University refers to the college preparatory function of the high school and implies no judgment regarding the other educational functions of the school. For information concerning the accrediting of schools, principals may communicate with the Director of Relations with Schools, Berkeley or Los Angeles. For schools outside California, regional or other accrediting agencies are consulted; the University makes the final decision regarding acceptability.

If the high school from which the applicant graduated is not accredited, the Office of Admissions will, upon request, instruct the student regarding the procedure he should follow.

(d) Science (with laboratory) . . . 1 unit. —This may consist of a year course in one field of science, namely, biology, botany, chemistry, physics, physical science, physiology, or zoology. The science selected must be an advanced (eleventh or twelfth grade) laboratory science, and the two semesters must be in the same subject field.

(e) Foreign language . . . . . 2 units.—These must be in one language.

(f) Advanced course chosen from one of the following:

- 1 (or 2) units.—1. Mathematics, a total of 1 unit (second-year algebra,  $\frac{1}{2}$  or 1 unit; solid geometry,  $\frac{1}{2}$  unit; trigonometry,  $\frac{1}{2}$  unit);
2. Foreign language, either 1 additional unit in the same foreign language offered under (e), or 2 units of a different foreign language;
3. One unit of either chemistry or physics, with laboratory, in addition to the science offered under (d) above.

2. Achieve a scholarship rank in the highest tenth of his graduating class, with a substantial academic preparation, although he need not complete the exact pattern of subjects (a) to (f) listed above.

3. Complete not less than 12 high school units of grade A or B in the work of the tenth, eleventh and twelfth years; and not more than two subject deficiencies in the required list (a) through (f), above.

4. Complete not less than 12 high school units with no grade lower than C in work taken in the tenth, eleventh, and twelfth years; and not less than 6 high school units of grade A or B selected from the following 10 units of academic subjects:

Third- and fourth-year English.

Third- and fourth-year mathematics.

Third- and fourth-year laboratory science.

Third- and fourth-year foreign language.

Third- and fourth-year history.

In addition to the foregoing methods, the Board of Admissions authorizes, from time to time, experimental programs to test the validity of suggested procedures. Information about these programs is communicated promptly to school authorities by the Office of Relations with Schools. The following Agricultural Experimental Plan (applicable September, 1952, through September, 1958) is currently in effect:

Applicants for admission to the College of Agriculture will be admitted on a program in which two years of science and/or mathematics additional to those used in satisfaction of the (c), (d) and (f) requirements of Plan I, or two years credit in high school agriculture or home economics, may be substituted for the foreign language requirement. Under this plan A grades received in agriculture or home economics may not be used to balance C grades in other required subjects. A student admitted under this plan must realize that if, after registration in the College of Agriculture, he wishes to transfer to another college of the University, he must meet the admission requirements of that college.

The Director of Admissions is charged by the Board with the authority and responsibility for waiving minor deficiencies when justification is evident in the form of unusual academic recommendations or transcripts.

### Responsibility of High School Authorities

The responsibility for the granting of certificates to high school students lies with the high school authorities, and students naturally will be guided by their respective principals in making their preparation for entrance to the University.



Upon the high school authorities rests also the responsibility for determining the scope and content of courses preparatory to admission to the University and for certifying each course to the University.

### **Preparation for University Curricula**

In addition to those subjects required for admission to the University (outlined, beginning on page 15 C), certain preparatory subjects are recommended for each University curriculum which, if included in the high school program, will give the student a more adequate background for his chosen field of study. In some cases, lack of a recommended high school course will delay graduation from the University. Details of these recommendations will be found in the circular, **PREREQUISITE AND RECOMMENDED SUBJECTS**, which may be obtained from the Director of Relations with Schools, University of California, Los Angeles 24.

### **Admission by Examination†**

The University of California does not itself offer entrance examinations, but accepts on all campuses the results of examinations given by the Educational Testing Service for the College Entrance Examination Board. Information about dates and places of examination may be secured from the Educational Testing Service, P. O. Box 592, Princeton, New Jersey, or P. O. Box 9896, Los Feliz Station, Los Angeles 27, California. Definite arrangements to take the tests must be made with the Board at least four weeks previous to the date of the tests. If the applicant has completed all of the subjects in the (a) to (f) list with grades of C or better, but is deficient in the scholarship average, he may clear his admission requirements by a satisfactory score on the Scholastic Aptitude Test and on three achievement tests in subject fields. If the (a) to (f) list of subjects has not been completed with grades of C or better, the applicant should consult the Admissions Office in regard to the tests he must take. If the high school from which the applicant graduated was unaccredited, he may offer an approved pattern of examinations, and he should consult the Admissions Office regarding the tests he should take.

### **Removal of High School Admission Deficiencies**

Deficiencies in high school scholarship or subject requirements must be removed by examination (see above) or additional studies before admission is approved.

The applicant whose only deficiency arises from not having studied a required subject may remove the deficiency by a satisfactory grade in a course acceptable for that purpose, and by maintaining a satisfactory scholarship average in other studies pursued in the meantime.

The applicant whose deficiency is caused by low scholarship, or by a combination of low scholarship and incomplete subject preparation, may remove his deficiencies as follows:

1. By college courses of appropriate content and amount completed with satisfactory scholarship in junior colleges,\* or state colleges of California, or in other approved colleges. (See note below on approved Extension courses outside the University of California.) The applicant must include in the units presented courses acceptable for removing his subject shortages, and present either:

- (a) Fifteen units or more of transfer courses with a grade-point average of at least 1.5, or
- (b) Thirty units or more of transfer courses with a grade-point average of at least 1.3, or

\* After a student has earned 70 units acceptable toward a degree, from any source whatever, no further unit credit will be granted for courses completed at a junior college.

† Admission by examination, except in the case of mature persons, is not open to those who have not graduated from high school.

- (e) Without necessarily including courses to remove his subject shortages, 60 units or more of transfer courses which include all the published requirements for junior standing in a college or school of the University, with an average grade of at least C.

2. By college courses in one of the three following divisions of the University of California:

- (a) *University Extension*: University Extension offers both class and correspondence courses. At Berkeley and at Los Angeles special programs of class courses are offered for students attempting to remove admission deficiencies. Only students with 5 units or less of scholarship deficiencies in their high school records are eligible for the special programs. Other courses, class or correspondence, are not restricted, but the applicant should have all courses he undertakes approved in advance by the Office of Admissions to insure that they will be acceptable. To make up deficiencies in scholarship, grades received in this program must be definitely above the grade C average, and must serve, not merely as specific make-up deficiencies, but also as a demonstration of ability to do college work successfully.

- (b) *Combination Program of the College of Agriculture at Davis*.—For high school graduates with not more than three subject deficiencies, among which algebra or geometry may not be included, a Combination Program is offered at the College of Agriculture of the University of California at Davis. Students cannot remove entrance deficiencies in the Two-Year Curricula (nondegree course). See PROSPECTUS OF THE COLLEGE OF AGRICULTURE.

- (c) *Summer Session*: For students with only one or two deficiencies, a six-week summer session or an eight-week summer session of the University of California or of an approved university, college, or junior college may be used to make up shortages, providing the record is received in time for clearance. Summer session programs should be approved in advance by the Office of Admissions.

3. By postgraduate courses in an accredited high school, if the deficiency is due to omission of subject matter but not if the deficiency is due to poor scholarship.

4. By College Entrance Examination Board Examination (see previous section under Admission by Examination).

5. As an alternative to making up high school subject deficiencies, an applicant from a California junior college or state college may be admitted on the basis of a record showing completion of at least 60 units of college-level work of at least C average, in which must be included all of the subjects required for junior standing in a school or college of the University.

#### ADMISSION IN ADVANCED STANDING

##### Berkeley, Los Angeles, Davis Campuses

An applicant for admission to the University in advanced standing must present evidence that:

- (1) He has satisfied, through either high school or college courses, the subjects required for admission of high school graduates in freshman standing;
- (2) Advanced work, in institutions of college level, has met the minimum scholarship standard required of transferring students (namely, an average of grade C or higher in all college courses undertaken, including at least a C average in the last institution attended), and

- (3) That he is entitled to return as a student in good standing to the last college attended.

The college scholarship average needed by an applicant whose high school scholarship average is below the required standard is described under the section, Removal of Admission Deficiencies, above.

The student should bear in mind, however, that after he has earned 70 units acceptable on a degree (except credit allowed for military service and training), no further unit credit will be granted for courses completed at a junior college. Courses for which credit is, for this reason, not granted may be used to satisfy admission requirements or to satisfy lower division subject requirements of a college or school of the University, but this situation obviously should be avoided if possible.

As an integral part of the system of public education of California, the University of California accepts at full value approved transfer courses completed with satisfactory grades in the public junior colleges of the State; students who intend to complete their advanced studies at the University will frequently find it to their advantage to complete the first two years of their college course in one of the many excellent California public junior colleges.

College credit for appropriate courses completed in fully accredited institutions of collegiate grade is acceptable at full value by the University of California. However, no applicant may receive transfer credit in excess of an average of 18 units per semester.\* In all cases, final authority regarding the granting of advanced standing credit rests with the Board of Admissions and Relations with Schools and each college or school of the University determines what advanced standing allowed may actually be used to satisfy requirements for the degree.

An applicant may not disregard his college record and apply for admission in freshman standing; he is subject without exception to the regulations governing admission in advanced standing. He should ask the registrars of all preparatory schools and colleges he has attended to forward complete official transcripts direct to the Office of Admissions. A statement of honorable dismissal from the last college attended must also be sent.

*Extension courses at other institutions.* Extension courses taken through some institution other than the University of California may not be acceptable. The decision as to their acceptability rests with the Office of Admissions. It is wise to have such a program approved in advance by the Office of Admissions, if the intention is to apply such courses toward a degree at the University of California.

*Subject A: English composition.* Credit for Subject A (English Composition) is given upon certificate to those students who enter the University with credentials showing the completion elsewhere of the required training in composition or with a satisfactory score in the College Entrance Examination Board Achievement Test in English Composition. Of all other students, an examination by this University, at Los Angeles or at other centers of instruction, is required (see further statement, page 28 C). The Subject A requirement need not be satisfied prior to admission.

*Surplus matriculation credit.* There is no provision for advanced standing in the University on the basis of surplus high school credit.

*Credit for experience.* No University credit is given for experience, even though the work may have been closely related to University courses. No University credit is given for teaching experience. Students presenting evidence of successful teaching experience may substitute approved courses in education for part or all of the regular requirements in supervised teaching upon the recommendation of the Director of Training.

\* Transfer credit from a summer session is similarly restricted in proportion to the length of the session.

### **Removal of Scholarship Deficiencies by Applicants from Other Colleges**

Applicants otherwise eligible who seek to transfer from other institutions of collegiate rank but whose college records fail to show a satisfactory scholarship average may be admitted only when the deficiency has been removed by additional work completed with grades sufficiently high to offset the shortage of grade points. This may be accomplished by work in other approved higher institutions, in Summer Sessions, or in University Extension, except in the Admission Program. (Attendance in the Admissions Program is limited to those whose scholarship warrants it.)

### **Special Requirements for Engineering, Business Administration, and Nursing**

*Engineering.* An engineering qualifying examination must be taken by all applicants for admission to the College of Engineering at either the freshman or junior level. The lower division test is primarily an aptitude test, but presumes that the student has had the required subjects in high school, particularly those in mathematics through trigonometry, physics or chemistry, mechanical drawing, and English. No preparation beyond successful completion of the high school courses is required. The upper division examination is based on the subject matter of the preengineering and engineering courses given in the first two years and presumes the completion of mathematics through integral calculus, general college chemistry, general college physics, descriptive geometry, English, and engineering drawing.

Out-of-state applicants are permitted to use the engineering examination both for the engineering requirement and for the nonresident examination requirement.

*Business Administration.* To be admitted to the School of Business Administration, students must have attained junior standing, and at least a C average in one of the colleges of the University of California, or the equivalent elsewhere. Applicants must file both the regular application for admission to the University and the application for acceptance by the School of Business Administration before August 15 for the fall semester and before January 15 for the spring semester.

*Nursing.* Graduate nurses wishing to enter the curriculum in nursing on the Los Angeles campus at the junior level must make application before June 1 for the fall semester or January 15 for the spring semester.

There are no special requirements for students wishing to enter the pre-nursing curriculum.

### **Limitation of Enrollment of Out-of-State Applicants**

It has been necessary to place some limitation on the enrollment of non-residents of California and only those of exceptional promise will be eligible for admission. In addition to the normal admission requirements (see sections on Admission on the Basis of High School Records and Admission in Advanced Standing), the following special regulations apply to nonresident applicants.

*Lower Division:* Applicants directly from high school or with less than 60 semester units of acceptable college credits may be admitted to the freshman or sophomore class if they meet the following out-of-state scholarship requirement and present a satisfactory score on one of the scholastic aptitude tests.

**1. Out-of-State Scholarship Requirement :**

**A. High School :**

2.3 average in the subjects required for admission, if taken in secondary schools accredited by a state University or a regional association.

2.5 average in the subjects required for admission, if taken in secondary schools accredited by other agencies.

**B. Advanced Standing :**

A scholarship record of not less than 1.7 is required on any college work undertaken if the applicant is in advanced standing (has done college work) but presents less than 60 semester units of acceptable college credits (1 unit of A counts 3 grade points, 1 unit B counts 2 grade points, 1 unit C counts 1 grade point, D and F no grade points). An applicant who has completed less than 15 quarter or 12 semester units of college work must, in addition, meet the minimum high school scholarship as stated above.

**2. Out-of-State Examination :** A properly certified record of standing must be presented on one of the following examinations :

**A. College Entrance Examination Board Scholastic Aptitude Test :**

Arrangements to take the C.E.E.B. test must be made through the Educational Testing Service, Box 592, Princeton, New Jersey, or Box 9896, Los Feliz Station, Los Angeles 27, California.

**B. American Council on Education Psychological Examination, College Level :**

Arrangements to take the college level ACE Examination may be made either through the applicant's own school or through the Office of Admissions of the University of California. In contacting the Office of Admissions, please submit the name and address of a responsible school official who has agreed to administer the examination. Please do not attempt to make arrangements to take the examination through the University until your formal Application for Admission to the University is on file.

**Upper Division :** Applicants who present 60 or more semester units of acceptable college credits, according to the evaluation by the Office of Admissions, are classified as juniors and seniors. Junior and senior applicants who have satisfied the high school scholarship (page 15 C) requirement must present a college scholarship average of at least 1.0. If the high school-scholarship average has not been satisfied the applicant must present a college scholarship average of at least 1.3 unless he meets the requirement for upper division standing in a college or school of the University. In addition, junior and senior applicants from areas outside California must submit a satisfactory score on the College Transfer Test. This examination is administered by the Educational Testing Service, Box 592, Princeton, New Jersey, or Box 9896, Los Feliz Station, Los Angeles 27, California.

**Admission of Returning Members of the Armed Forces**

Some exceptions in the subject requirements for admission will be made for men and women who were for at least one year members of the armed forces of the United States, during or since World War II. Such exceptions will apply, however, only when the scholarship record is high enough to indicate probable success in the University. Veterans whose scholastic records are good, whose high school subject deficiencies total not more than three units, are encouraged to make application, even though they may not have all of the usual requirements. Such a veteran with a good scholarship record but with a limited number of subject deficiencies, may, if he is over 21 years of age, be classified

as a special student until deficiencies are removed, or until all the requirements for junior standing in the college of his choice have been completed.

Veterans who apply and are not eligible for admission to either regular or special status will, upon request, be given programs of work in University Extension or in junior college designed to prepare them for University work.

### ADMISSION OF SPECIAL STUDENTS

Special students are students of mature years who have not had the opportunity to complete a satisfactory high school program, but who, by reason of special attainments, may be prepared to undertake certain courses in the University. The conditions for the admission of each applicant under this classification are assigned by the Associate Director of Admissions. Ordinarily, a personal interview is required before final action can be taken.

Regulations regarding admission of veterans to special status are given above.

*A nonveteran applicant will be admitted to special status only if he has a definite and restricted objective and if the Associate Director of Admissions and the department or departments concerned are satisfied that he can profitably undertake the courses he desires. Admission of a nonveteran to special status is rarely granted for more than one semester and is never granted for the purpose of making up deficiencies for admission to regular status.* Such deficiencies must be made up as provided for in the section entitled Removal of Admission Deficiencies, page 20 C. *Students are not admitted to special status for the sole purpose of taking elementary courses in art or in a foreign language.* A nonveteran special student cannot be a candidate for a degree. He may, however, attain the status of regular student by satisfying all the matriculation requirements for admission to the University as provided above.

Transcripts of record from all schools attended beyond the eighth grade must be submitted. An applicant for special status may be required to take an aptitude test and the examination in Subject A. The Office of Admissions will supply, upon request, the forms of application for admission and for transcripts of high school record.

No person under the age of 21 years will be admitted as a special student, but the mere attainment of any given age is not in itself a qualification for admission.

A nonveteran applicant will not be admitted directly from high school to the status of special student. Graduates of high schools are expected to qualify for admission in accordance with the usual rules; students in regular status, if not candidates for degrees, may, with the approval of the proper study-list officer, pursue elective or limited programs.

The University has no "special courses"; all courses are organized for regular students. A special student may be admitted to those regular courses for which, in the judgment of the instructor, he has satisfactory preparation. *A special student will seldom be able to undertake the work of the engineering and professional colleges or schools until he has completed the prerequisite subjects.*

### ADMISSION FROM SCHOOLS AND COLLEGES IN FOREIGN COUNTRIES

The credentials of an applicant for admission from a foreign country, either in undergraduate or graduate standing, are evaluated in accordance with the general regulations governing admission.\* An application and official certificates and detailed transcripts of record should be submitted to the Office of Admissions several months in advance of the opening of the semester in which

\* See section on Limitation of Enrollment of Out-of-State Applicants, page 20 C.

the applicant hopes to gain admittance. This will allow time for exchange of necessary correspondence relative to entrance and, if the applicant is admitted, will be of assistance to him in obtaining the necessary passport visa.

An applicant from a foreign country whose education has been conducted in a language other than English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in this University. This regulation applies to both undergraduate and graduate foreign students. An applicant's knowledge of English is tested by an oral and written examination given by the University of California. The admission of an applicant who fails to pass this examination will be deferred until such time as he has gained the required proficiency in English.

*Language credit for a foreign student.* College credit for the mother tongue of a foreigner and for its literature is given only for courses taken in native institutions of college level, or for upper division or graduate courses actually taken in the University of California, or in another English-speaking institution of approved standing.

*College of Engineering.* Any applicant for admission to the College of Engineering who wishes to satisfy the entrance examination requirement before coming to this country, should take the verbal and mathematical sections of the Scholastic Aptitude Test and the Pre-Engineering Science Comprehension Test of the College Entrance Examination Board.

*Special advisers* have been appointed by the President of the University to assist foreign students in all matters pertaining to their attendance at the University. Every student from another country is urged, upon his arrival at the University, to consult the Foreign Student Adviser, Administration Building.

### ADMISSION IN GRADUATE STANDING

As indicated on page 14 C, graduate students may be admitted as regular graduates or as unclassified graduates.

Applications for admission to regular graduate status will be received from graduates of recognized colleges and universities who propose to work for the degree of Master of Arts, Master of Science, Master of Education, Master of Business Administration, Master of Public Administration, or Master of Social Welfare, for the degree of Doctor of Education, or for the degree of Doctor of Philosophy, for the Certificate in Social Welfare or for the certificates of completion leading to the general secondary or junior college teaching credentials, and the supervision and administration credentials. Completed applications with supporting documents must be in the hands of the Dean of the Graduate Division not later than July 15, 1953, for the fall semester, and not later than December 15, 1953, for the spring semester. Corresponding days will be set for subsequent semesters. Because of the time required to process an application and to prepare the registration forms, applications and/or transcripts received after the deadline date will be considered only as time permits, and in the order received.

The basis of admission to regular graduate status is the promise of success in the work to be undertaken, evidenced largely by the previous college record. In general the minimum requirement is an undergraduate scholarship record equivalent to a 1.5 grade-point average (half way between grades of C and B) at the University of California, Los Angeles, in all courses taken in the junior and senior years and in all junior and senior courses in the applicant's proposed major. Notification of acceptance or rejection is sent to each applicant as soon as possible after the receipt of his application. *Applicants are warned not to make definite arrangements for attending the University on the assumption that they will be accepted for admission, until they have received notification of acceptance.*

An applicant who fails to qualify for regular graduate status may, at the discretion of the Dean of the Graduate Division, be admitted as an *unclassified* graduate student. Unclassified graduate status is considered to be temporary or transitory in character, and will be granted only when the record of the applicant gives promise that his unclassified status can be terminated within a reasonable period of time, either through qualification for regular graduate status or through completion of the objectives stated in his application.

Application is to be made upon the form provided by the Dean of the Graduate Division, and must be accompanied by the application fee (see below); transcripts of previous work must be submitted in accordance with the instructions on the application form.

An application fee of \$5\* is required of every student applying for admission to graduate status, even though he may have been in previous attendance at the University in other than graduate status.

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\* Veterans who expect to enroll under the provisions of Public Law 846 (G. I. Bill of Rights) or Public Law 16 are not required to remit this fee with their applications; if the applicant is accepted and registers in the University, the fee will be paid by the government. However, the fee must be paid by veterans who expect to enroll under the provisions of Public Law 550 (Korean G.I. Bill).



## **GENERAL REGULATIONS**

**CERTAIN GENERAL REGULATIONS** govern residence and study in the academic departments. These regulations, unless otherwise stated, concern both graduate and undergraduate students.

### **REGISTRATION**

Each student registers in the University of California, Los Angeles, at times appointed for this purpose, at the beginning of each semester. Registration covers the following steps: (1) filling out address card, paying fees, and receiving in exchange a card showing that the applicant has been enrolled in the University; (2) enrolling in courses according to instructions which will be posted on the University bulletin boards. All old students, except reentrants, will have an opportunity to register by mail.

### **Admission and Registration**

The student or prospective student should consult the University calendar and acquaint himself with the dates upon which students should register and begin their work at the opening of the sessions.

Prospective students are warned of the necessity of making early application in order that their credentials may be processed in time to permit registration within the scheduled period. New undergraduate students must file applications for admission not later than August 15 for the fall semester and not later than January 15 for the spring semester. For new graduate students, these dates are July 15 and December 15, respectively. Students planning to return after an absence must file applications for readmission not later than August 26 for the fall semester and not later than January 20 for the spring semester.

### **PHYSICAL EXAMINATION**

All new students (graduate and undergraduate, including transfer students from other campuses of the University) must appear at the Student Health Service and pass a physical examination to the end that the health of the University community, as well as that of the individual student, may be safeguarded. This examination must be taken prior to registration.

All reentrant students and all old undergraduates entering graduate status for the first time are required to report to the Student Health Service for clearance of health record and recheck of certain items in the physical examination.

Before coming to the University, every student is urged to have his own physician examine him for fitness to carry on University work, and to have all defects capable of being remedied, such as dental cavities, defective hearing, or defective eyesight, corrected. This will prevent possible loss of time from studies. Prior to registration in the University, prospective students who have had a diagnosis of active tuberculosis will be required to submit evidence that their disease has become inactive.

### **STUDENT HEALTH SERVICE**

The purpose of the Student Health Service is to conserve the time of students for their classwork and studies, by preventing and treating acute illnesses.

Each registered student at Los Angeles may, at need, have such consultations and medical care on the campus as the Student Health Service is staffed and equipped to provide, from the time of payment of his registration fee to the last day of the current semester; except that a student who registers by mail

may not claim such privileges until the day officially announced as the opening day of the semester.

The Health Service at Los Angeles is as yet unable to provide hospitalization, dental care, or fitting of glasses. It also does not take responsibility for certain chronic physical defects or illnesses present at the time of entrance to the University as, for example, hernias, chronic bone and joint diseases or deformities, chronic gastrointestinal disorders, uterine fibroids, chronically infected tonsils, tuberculosis, syphilis, malignant diseases, etc.

### **MILITARY SCIENCE, NAVAL SCIENCE, AIR SCIENCE, AND PHYSICAL EDUCATION**

Upon admission, every undergraduate student in the lower division, man or woman, must, unless officially notified of exemption, report immediately to the proper officer for enrollment in physical education,\* in accordance with the directions in the REGISTRATION CIRCULAR or the announcements which may be posted on the bulletin boards. Every able-bodied male undergraduate in the lower division, who is under twenty-four years of age at the time of admission and who is a citizen of the United States, unless officially notified of exemption, must report immediately for enrollment in military, naval, or air science. The student must list the courses in military, naval, or air science and physical education upon his study card with other University courses. Upon petition a student more than twenty-four years of age at the time of admission will be excused from military science and physical education.

Information concerning the requirements in military science and physical education, including a statement of the grounds upon which a student may be excused from this work, may be obtained from the Registrar.

The student is referred to the announcements of the departments of Military Science, Naval Science, Air Science, and Physical Education in the ANNOUNCEMENT OF COURSES AND CURRICULA.

#### **Naval Reserve Officers' Training Corps**

By action of the Secretary of the Navy and of the Regents of the University of California in June, 1938, provision was made for the establishment of a unit of the Naval Reserve Officers' Training Corps on the Los Angeles campus of the University.

The primary object of the Naval Reserve Officers' Training Corps is to provide at civil institutions systematic instruction and training which will qualify selected students of such institutions for appointment as officers in the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve. The Naval Reserve Officers' Training Corps is expected to train junior officers for the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve.

Initial enrollment is restricted to able-bodied male students who are citizens of the United States, unmarried, and between the ages of fourteen and twenty-one years. Students must pass the same physical examination as is required of all candidates for admission to the Naval Academy.

The N.R.O.T.C. program normally covers eight consecutive semesters.

Courses in seamanship, communications, ordnance and fire control, advanced fire control, navigation, advanced seamanship, engineering (steam and Diesel), and damage control are given to those students seeking Naval commissions. Courses in military history and principles, small unit tactics and amphibious landings are given during the last four semesters to those students seeking Marine Corps commissions.

\* The University requirements in physical education referred to in this section cover Physical Education 1 (Men) and 26 (Women), 3-unit courses which are required of students in each semester of the freshman and sophomore years, irrespective of the total number of units of credit received in these courses.

Students are enrolled in the Naval Reserve Officers' Training Corps under three categories. These categories are listed below together with the method of selection:

**Regular N.R.O.T.C.**—Students selected after successfully completing a nation-wide Navy college aptitude test. Quotas are set by the Navy Department. The competitive examinations are given at least six months prior to the beginning of the college year in which they will enter.

**Contract N.R.O.T.C.**—Students selected by the Professor of Naval Science after a personal interview. Quotas are set by the Navy Department.

**Naval Science N.R.O.T.C.**—Selected students who have not entered into a contract with the Navy and are pursuing Naval Science courses for college credit only.

### **Army Reserve Officers' Training Corps**

In accordance with section 40, National Defense Act of 1920, and with the concurrence of the Regents of the University, a unit of the Senior Division Reserve Officers' Training Corps was established on the Los Angeles campus of the University in February, 1921.

The purposes of the Army R.O.T.C. are to qualify male students as leaders in peace and war, to acquaint them with the military factors of our national life to the end that they may more intelligently perform their duties as future leaders of their communities, and to qualify selected students as Regular and Reserve Officers of the Army of the United States.

The courses in military science are those prescribed by the Department of the Army and are standard in all R.O.T.C. college units. Specialized courses are offered at the University of California, Los Angeles, in either Infantry or Quartermaster, with additional opportunities provided for the attainment of commissions in other arms and services.

### **Air Force Reserve Officers' Training Corps**

In accordance with the provisions of the National Defense Act of 1920, as amended by the Act of 1940, and the National Security Act of 1947, and with the concurrence of the Regents of the University of California, a unit of the Air Force Reserve Officers' Training Corps was established on the Los Angeles campus of the University in September, 1947.

The purpose of the Air Force R.O.T.C. program is to develop the student's character, personality and leadership and to provide him with a professional education requisite for appointment as a commissioned officer in the Air Force Reserve.

The courses are prescribed by the Department of the Air Force and are standard for all A.F.R.O.T.C. units. Enrollment priorities are given to students who are physically qualified and desire to apply for flight duties upon being commissioned and to students majoring in engineering or basic sciences.

### **R.O.T.C. DRAFT DEFERMENT\***

Students of good academic standing, potentially qualified to be commissioned officers, formally enrolled in the Air Force R.O.T.C., Naval R.O.T.C., or Army R.O.T.C. may be deferred from induction into the service under the Universal Military Training and Service Act, Public Law 51, 82d Congress, June 19, 1951, until after completion or termination of the course. This deferment is an agreement, signed by the student, to accept a commission, if tendered, to serve on active duty for a period of two years after receipt of such commission, subject to call by competent authority; and to remain a member of regular or reserve components until the eighth anniversary of the receipt of his commission.

\* Students securing R.O.T.C. draft deferments need not request deferment through the Office of Special Services described on page 42 C of this bulletin.

### SUBJECT A: ENGLISH COMPOSITION

With the exceptions noted below, every undergraduate entrant must, at the time of his first registration in the University, take an examination, known as the *Examination in Subject A*, designed to test his ability to write English without gross errors in spelling, grammar, sentence structure, or punctuation.

The examination in Subject A is given at the opening of each semester. (See the *Registration Circular*, to be obtained from the Registrar.) A second examination for persons who do not appear at the announced time is given a few days after the first examination in each semester; for this examination a fee of \$1 is charged.

The results of the first examination will be made known not later than the day preceding the date set for the filing of the study lists for the current semester. Papers submitted in the examination are rated as either "passed" or "not passed." A student who is not present at the examination in Subject A which he is required to take will be treated as one who has failed.

Every student who does not pass in the examination in Subject A must, immediately after his failure, enroll in a course of instruction, three hours weekly for one semester, known as the *Course in Subject A*, without unit credit toward graduation. Should any student fail in the course in Subject A he will be required to repeat the course in the next succeeding semester of his residence in the University.

A student who maintains in the course in Subject A a grade of A is permitted, on recommendation of the Committee on Subject A, to withdraw from the course at a date determined by that committee, and is given credit for Subject A.

Every student who is required to take the course in Subject A is charged a fee and the charge will be repeated each time he takes the course. This fee must be paid before the study list is filed.

No student will be granted the degree of Associate in Arts or a bachelor's degree until he has satisfied the requirement of Subject A.

In respect to grading, conditions, and failure, the course in Subject A is governed by the same rules as other University courses.

A student who has received a satisfactory rating in the College Entrance Examination Board examination in English composition will receive credit for Subject A. A student who has passed an examination in Subject A given by the University at Berkeley or given under the jurisdiction of the University at various centers in the State annually in May or June will receive credit for Subject A.

A student who, at any time, has failed in the University examination in Subject A does not have the privilege of taking a second examination until he has completed the course in Subject A.

A student who enters the University of California, Los Angeles, with credentials showing the completion elsewhere with a grade not lower than C, of one or more college courses in English composition (with or without unit credit) is exempt from the requirement in Subject A.

Students from other countries whose native language is not English should take the special examination in English for foreign students rather than the Subject A examination. Those who pass this special examination will be credited as having met the Subject A requirement, as will students who subsequently complete English 33B, the advanced course in English for foreign students.

### AMERICAN HISTORY AND INSTITUTIONS

Candidates for a bachelor's degree must satisfy the "Requirement in American History and Institutions" by demonstrating a knowledge of American history and of the principles of American institutions under the federal and state constitutions. This requirement may be satisfied in any one of four ways.

1. By passing two optional examinations (one in American History and one in American Institutions) which the Committee on American History and Institutions offers for the purpose of satisfying the requirement. (Normally the examinations are offered once each semester. No unit credit is given for the examinations.)

2. By satisfactorily completing in the University any two courses for a minimum total credit of four units, from the following list:

Economics 13; History 7A, 7B, 8A, 8B, 101, 171, 172, 173, 174, 175, 176, 177, 178, 179, 181; Political Science 1, 101, 103, 113, 125, 141, 142, 145, 146, 166, 167A, 167B, 171, 186; X7AB (Department of Correspondence Instruction, Berkeley 4, California).

Equivalent courses completed in the University Extension or in Summer Sessions may be used to fulfill the requirement. Equivalent courses taken at other collegiate institutions and accepted by the Board of Admissions may be used to fulfill the requirement.

3. By a combination of 1 and 2, above.

4. By presentation of a certificate of satisfaction of the present California requirement as administered in another collegiate institution within the State.

Candidates for a teaching credential, but not for a degree, need take only the optional examination (in American Institutions) or one of the courses in political science listed above. They may also satisfy the requirement by completion of a two-unit course on the principles and provisions of the Constitution of the United States at any other college (including colleges outside of California) whose undergraduate credits are accepted by the State Board of Education.

Further information regarding the requirement and the optional examinations may be obtained from the Committee on American History and Institutions. For room number and office hours, see official announcements on campus bulletin boards.

## DEGREES AND TEACHING CREDENTIALS

Detailed statements of requirements for the degree of Associate in Arts and for bachelor's degrees issued by the University will be found in this bulletin or in the ANNOUNCEMENT OF COURSES AND CURRICULA, DEPARTMENTS AT LOS ANGELES, under headings of the several colleges and departments; for the master's degrees and the doctor's degrees, see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The requirements for certificates of completion leading to teaching credentials are to be found in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

*Degree residence.*† Every candidate for a bachelor's degree is required to have been enrolled in that college of the University in which the degree is to be taken during his two final semesters of residence; the last 24 units must be done while so enrolled. It is permissible to offer two six-week summer sessions or one eight-week summer session attended in previous years as equivalent to one semester; but the student must complete in resident instruction at least one regular semester of his senior year. The regulation applies both to students entering this University from another institution and to students transferring from one college to another within the University.

Candidates for the degree of Associate in Arts must have been registered in the University for the two final semesters of residence, and in the college in which the degree is taken for the final semester.

All graduates receiving bachelor's degrees in any one calendar year—January 1 to December 31—are considered as belonging to the "class" of that year.

† Special provisions governing residence of degree candidates in the College of Engineering are described in the requirements of that college. See under College of Engineering in the ANNOUNCEMENT OF COURSES AND CURRICULA.

### CHANGE OF COLLEGE OR MAJOR

A student may be transferred from one college (major or department) of the University to another upon the approval of the dean or other responsible officer or committee of the college (or department) to which admission is sought. A form of petition for transfer is supplied by the Registrar.

No student is permitted to transfer from one major department to another after the opening of the last semester of his senior year.

### HONORS

Honor students include those who receive honorable mention with the degree of Associate in Arts in the College of Letters and Science, in the College of Applied Arts, in the College of Business Administration, or upon attaining junior standing in the College of Agriculture. Honors are granted also with the bachelor's degrees. For regulations concerning honors see the sections explanatory of the curricula of the various colleges in the ANNOUNCEMENT OF COURSES AND CURRICULA.

### CREDIT AND SCHOLARSHIP

In both the University and the high school the student is credited, in respect to the amount of work accomplished, in terms of units; and in respect to quality of scholarship, in terms of grades. In a further, more exact determination of the student's scholarship, the University assigns a numerical value in points to each scholarship grade. These points are called grade points and are more fully described below.

High school credit, when it is offered in application for admission to the University, is reckoned in matriculation units; one matriculation unit represents one year's work in a given subject in the high school.

High school credit, when it is offered in satisfaction of high school graduation requirements, is measured in standard secondary units; that is, the credit granted for the study of a subject throughout the school year of from thirty-six to forty weeks is stated in terms of the standard secondary unit. Each unit represents approximately one-quarter of a full year's work in high school; in other words, four standard secondary units represent one full year's work in high school.

*Relation between high school matriculation units and University units.* One year's work in the high school is considered to be equivalent to one University semester's work of college level; that is, a student who desires to make up any high school subject deficiency by offering work of college level can in one University semester earn credit equivalent to the credit of one year's work in high school.

In the University, a unit of credit represents one hour weekly of the student's time for the duration of one semester in lecture or recitation, with the time necessary for preparation, or a longer time in laboratory or other exercises for which outside preparation is not required. It is expected that most students will spend two hours in preparation for one hour a week of lecture or recitation. Each University unit credit is thus understood to represent at least three hours of the student's time, and the credit value of a course is reckoned in units on that basis.

### STUDY-LIST LIMITS\*

Concurrent enrollment in resident courses and in extension courses is permitted only when the entire program of the student has received the approval of the proper dean or study-list officer and has been filed with the Registrar before the work is undertaken.

\* The course in Subject A, which does not give units of credit toward the degree, nevertheless displaces 2 units from a student's allowable program.

A student on scholastic probation, except in the College of Engineering, is limited to a program of 12 units each semester, to which may be added the required  $\frac{1}{2}$ -unit course in physical education.

For students in good academic standing, undergraduate study lists may be presented as follows:

College of Agriculture: 12 to 18 units per semester, plus  $\frac{1}{2}$  unit of physical education.

College of Applied Arts: 12 to 18 units per semester except for students in their first semester of residence and students who failed to make a C average the previous semester, in which cases the maximum is 16. Upon attaining at least a B average in a total program of 12 or more units, a student may petition to enroll in as many as 20 units. In all cases  $\frac{1}{2}$  unit of physical education may be added to the stated maximum.

School of Business Administration: 12 to 18 units per semester, plus  $\frac{1}{2}$  unit of physical education if required.

College of Engineering: Within the limits prescribed in each individual case by the dean or his representative.

College of Letters and Science: 12 to 16 units for students in the first semester of the freshman year. All other students may add  $\frac{1}{2}$  unit of physical education. After one's first semester, he may petition to enroll in as many as 20 units if in the preceding semester he attained at least a B average in a total program of 12 or more units.

School of Nursing: Programs must be approved by a member of the Study-Lists Committee of the School.

School of Public Health: 12 to 18 units.

With the exception of the  $\frac{1}{2}$  unit of physical education allowed in certain cases, as indicated above, all courses in Military Science and Physical Education and all repeated courses are to be counted in study-list limits.

A special student ordinarily will have his study list specified at the time of his admission; it is limited to 16 units.

Regulations concerning study-list limits for graduate students will be found in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

### GRADES OF SCHOLARSHIP; GRADE POINTS

In the University, the result of the student's work in each course (graduate and undergraduate) is reported to the Registrar in one of six scholarship grades, four of which are passing, as follows: A, excellent; B, good; C, fair; D, barely passed; E and F, not passed. The designations "passed" and "not passed" may be used in reporting upon the results of certain courses taken by honor students in the College of Letters and Science.

Grade E indicates a record below passing, but one which may be raised to a passing grade without repetition of the course by passing a further examination or by performing other tasks required by the instructor. Grade F denotes a record so poor that it may be raised to a passing grade only by repeating the course.

The term "incomplete" is not used in reporting the work of students. The instructor is required, for every student, to assign a definite grade based upon the work actually accomplished, irrespective of the circumstances which may have contributed to the results achieved.

Course reports filed by instructors at the end of each semester are final, not provisional.

Grade points are assigned to the respective scholarship grades as follows: for each unit of credit, the scholarship grade A is assigned 3 points; B, 2 points; C, 1 point; D, E, and F, no points.

In order to qualify for the degree of Associate in Arts, or for any bachelor's

degree at Los Angeles,\* the student must have obtained at least as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California.† A similar regulation is in effect in the colleges on the Berkeley campus.

### MINIMUM SCHOLARSHIP REQUIREMENTS

The following provisions apply to all undergraduate students at Los Angeles except students in the College of Engineering:

A. *Probation.* A student shall be placed on probation

(1) If at the close of his first semester his record shows a total deficiency of six or more grade points; or

(2) If at the close of any subsequent semester, his grade-point average is less than 1.0 (a C average), computed on the total of all courses undertaken in this University for which he has received a final report.

B. *Dismissal.* A student shall be subject to dismissal from the University

(1) If in any semester he fails to pass with a grade of C or higher courses totaling at least 4 units; or

(2) If while on probation his grade-point average for the work undertaken during any semester falls below 1.0 (a C average); or

(3) If after two semesters of probationary status he has not obtained a grade-point average of 1.0 (a C average), computed on the total of all courses undertaken in this University for which he has received a final report.

Students at Los Angeles coming under the above regulations are subject to the supervision of the deans of their respective colleges, who have adopted a policy of limiting study lists of students under their charge to 12 units or less, exclusive of required physical education.

The following provisions apply to all students in the College of Engineering:

A student will be subject to dismissal from the University

(1) If during any semester or summer session he fails to attain a C average in all courses for which he is enrolled; or

(2) If at the end of any semester or summer session he has failed to attain at least a C average in all courses undertaken in the University.

A student who becomes subject to these provisions shall be under the supervision of the Faculty of the College. The Faculty, or persons designated by it, shall have the power to dismiss from the University students under its supervision, or to suspend the provisions of this regulation and permit the retention in the University of the students thus subject to dismissal, and the return to the University of students who have been dismissed under this regulation.

Any student who receives a notice of dismissal from the University may petition the dean of his college for a hearing. Ordinarily, however, a student dismissed for unsatisfactory scholarship will be excluded from the University for an indefinite period, with the presumption that his connection with the University will be ended by such exclusion.

The action to be taken in respect to students in graduate status who acquire scholarship deficiencies is left to the discretion of the Dean of the Graduate Division, Southern Section.

### CREDIT BY EXAMINATION

Provision is made whereby an undergraduate student in residence and in good standing may under certain conditions take examinations for degree credit either (a) in courses offered in the University, without formal enrollment in them, or (b) in subjects appropriate to the student's curriculum, but not

\* Candidates for teaching credentials must also maintain at least a C average in supervised teaching.

† Courses taken by honor students of the College of Letters and Science without letter grades are not counted in determining the grade-point status.



offered as courses by the University. The results of all such examinations, with grades and grade points, are entered upon the student's record in the same manner as for regular courses of instruction (see Grades of Scholarship, above). No fees are required. Applications may be obtained from the Dean of the College.

Application for examination for advanced standing on the basis of work done before entrance to the University should be made to the Admissions Office at the time of entrance to the University. If a student who has already matriculated proposes to enter upon study outside the University of California with a view to asking the University to examine him upon that work and to allow him credit toward the degree, he must make all arrangements *in advance* with the department concerned and with the Director of Admissions. Fees are required for such validation examinations.

The application form for examinations may be obtained from the Office of Admissions.

### FINAL EXAMINATIONS

Final examinations are obligatory in all undergraduate courses except laboratory courses and other courses which, in the opinion of the Committee on Courses, because of resemblance to laboratory courses, require special treatment. In laboratory courses final examinations are held at the option of the department in charge. All examinations will, so far as practicable, be conducted in writing, and a maximum time will be assigned beforehand for each examination, which no student will be allowed to exceed. The time for examination sessions may not be more than three hours. Leave to be absent from a final examination must be sought by written petition to the proper faculty.

If a final examination is one of the regular requirements in a course, there can be no individual exemption from the examination, except as provided in the preceding paragraph.

### WITHDRAWAL FROM THE UNIVERSITY

During the course of any semester a student may file with the Registrar a Notice of Withdrawal and Request for Statement of Conditions for Readmission. Provided the student is in good standing at the time of withdrawal and secures the necessary clearances, he may be issued an "honorable dismissal."

A student is in good standing if he is entitled to enjoy the normal privileges of a student in the status in which he is officially registered. Students dismissed by reason of scholarship deficiencies, and students under supervision or on probation, may receive letters of honorable dismissal which bear a notation concerning their scholarship; students under censure or suspension may not receive an honorable dismissal but may receive transcripts of record which bear a notation concerning such censure or suspension.

*Discontinuance without notice.* Students who discontinue their work without petitioning for honorable dismissal may render themselves ineligible not only for readmission to the University of California but also for admission by transfer to another institution. All grades in courses undertaken in the semester from which a student withdraws without notice become "not passing" (E or F) and remain so upon the student's permanent record.

### TRANSCRIPTS OF RECORD

Each student, upon formal application to the Registrar, may receive or may have issued on his behalf, without cost, one transcript showing all work taken by him in this division of the University. Subsequent transcripts will be issued upon application at a cost of one dollar for one copy, fifty cents for each of five, and twenty-five cents for each of more than five additional copies provided the dollar copy and additional copies are ordered at the same time.

**DISCIPLINE**

When a student enters the University it is taken for granted by the University authorities that he has an earnest purpose and that his conduct will bear out this presumption. If, however, he should be guilty of unbecoming behavior or should neglect his academic duties, the University authorities will take such action as, in their opinion, the particular offense requires. Students who fail to make proper use of the opportunities freely given to them by the University must expect to have their privileges curtailed or withdrawn.

**STUDENT RESPONSIBILITY**

Each student is responsible for compliance with the regulations printed in this bulletin and in the handbook of *Rules and Regulations for Students* issued by the Registrar's Office; also with official notices published in the *Daily Bruin* or posted on official bulletin boards.

## MISCELLANEOUS INFORMATION

### EXPENSES—LIVING ACCOMMODATIONS—EMPLOYMENT— SCHOLARSHIPS—LOANS

#### GENERAL EXPENSES AND FEES\*

THE QUESTION OF EXPENSE while attending the University is of importance to every student. It is difficult, however, to give specific information about yearly expenditures. In a student body of some fifteen thousand members there are so many different tastes, as well as such a wide range of financial resources, that each student must determine his budget in keeping with his own needs and financial condition. It is possible to live simply, and to participate moderately in the life of the student community, on a modest budget. The best help the University authorities can offer the student in planning his budget is to inform him of certain definite expense items, and acquaint him with others for which he will in all probability have to provide.

A table of estimated minimum, moderate, and liberal budgets for one college year of two semesters is given on page 40 C.

Fees and deposits are payable preferably in cash. If a check is presented the face amount must not exceed all the fees to be paid.

*Incidental fee.* The incidental fee for all undergraduate students is \$45. This fee, which must be paid each semester at the time of registration, covers certain expenses of students for counseling service, for library books, for athletic and gymnasium facilities and equipment, for lockers and washrooms,† for registration and graduation, for such consultation, medical advice, and dispensary treatment as can be furnished on the campus by the Student Health Service, and for all laboratory and course fees. It also includes the rights and privileges of membership in the Associated Students, valued at \$8; see page 45 C. No part of this fee is remitted to those students who may not desire to make use of any or all of these privileges. If a student withdraws from the University within the first five weeks from the date of his registration, a part of this fee will be refunded. The incidental fee for graduate students is \$37 each semester; it does not include membership in the Associated Students.

*Tuition fee.* Tuition in the academic colleges is free to students who have been legal residents of the state of California for a period of one year immediately preceding the opening of the semester during which they propose to attend the University. Every student who has not been a legal resident of the state of California for a period of one year immediately preceding the opening day of the semester during which he proposes to enroll is classified as a non-resident. Such students are required to pay, in addition to the incidental fee, a tuition fee of \$150‡ each semester.

\* During registration, fees will be paid as part of the registration procedure. Thereafter, they will be paid at the office of the Cashier, Administration Building. This office is open from 8:30 a.m. to 8 p.m. daily, and from 8:30 a.m. to 12 m. on Saturdays.

† Lockers are issued, as long as they are available, to registered students who have purchased standard locks. These are sold at \$1 each, and may be used as long as desired, or may be transferred by the purchaser to another student.

‡ Graduate students pay the full amount of \$150 regardless of the number of units undertaken unless for reasons of health or employment they are unable to devote more than one-half time to academic study, in which event they may petition the Dean of the Graduate Division for reduction to one-half the amount. If an undergraduate student registers for less than 12 units the tuition fee is \$12.50 a unit or fraction of a unit, with a minimum of \$25.

A student entering the University for the first time should read carefully the rules governing determination of residence (see page 37 C) to the end that he may be prepared, in the event of classification as a nonresident of California, to pay the required tuition fee. This fee must be paid at the time of registration. *The attention of the prospective student who has not attained the age of 22 years and whose parents do not live in the state of California, is directed to the fact that presence in the State of California for a period of more than one year immediately preceding the opening day of the semester in which he proposes to attend the University, does not, of itself entitle him to classification as a resident.*

If a student is in doubt about his residence status, he may communicate with the Attorney for the Regents in Residence Matters. On the day preceding the opening day of registration and during the first week of instruction of each semester the Attorney may be consulted upon the campus at a place which may be ascertained by inquiry at the Information Desk in the Registrar's Office; throughout the registration period, he may be consulted during the hours of registration at the place where registration is being conducted. At other times he may be consulted, or communications may be addressed to him, at Room 910, Crocker Building, San Francisco 4, California.

*The eligibility of a student to register as a resident of California may be determined only by the Attorney for the Regents in Residence Matters.* Every entering student, and every student returning to the University after an absence, is required to make a "Statement as to Residence" on the day of registration, upon a form which will be provided for that purpose, and his status with respect to residence will be determined by the Attorney soon after registration. Old students are advised that application for reclassification as a resident student should be filed within ten days after regular registration. Application for a change of classification with respect to some preceding semester will not be received under any circumstances.

The nonresident tuition fee may be remitted in whole or in part in the case of students in regular graduate status [except in the professional schools, e.g., Law, Medicine, Education (leading to the Ed.D. degree), and except in the case of foreign students whose tuition is paid by their governments], who have proved that they are distinguished scholars and who are carrying full programs of work toward the fulfillment of requirements for academic higher degrees. No graduate student in regular graduate status, no matter how distinguished his scholarship may have been, will be exempted from the payment of the tuition fee if he is merely carrying some lower division courses for his cultural advancement.

The term *distinguished scholarship* in connection with the question of exemption from the payment of the tuition fee is interpreted as follows: the scholarship standing must have been excellent throughout a period of no less than two years just preceding the time of application for this privilege. Moreover, only students from institutions of high standing in scholarly work will be considered. Applicants for this privilege will be required to have sent to the Dean of the Graduate Division confidential letters about themselves from persons who are thoroughly acquainted with their personalities and their intellectual achievements. It should be clear from these statements, therefore, that only the decidedly exceptional student will be eligible for the privilege of exemption from the payment of tuition fee if he is a nonresident. Students exempted from the tuition fee pay only the incidental fee.

The privilege of exemption from the nonresident tuition fee may be revoked at any time at the discretion of the Dean of the Graduate Division if in his judgment a student fails to maintain distinguished scholarship, or if he proves himself unworthy in other respects.

### Other Fees

**Application fee, \$5.**† This fee is charged every applicant for admission to the University, and is payable at the time the first application is filed. Applicants for graduate status must pay this fee, even though it may have been paid once in undergraduate status; see page 24 C.

**Medical examination:** Original appointment, or deferment arranged in advance, no fee; fee for a second appointment, \$2.

**Late filing of registration book, \$2.**

**Late examination in Subject A, \$1.**

**For courses added or dropped after date set for filing registration book, \$1 for each petition.**

**For removal of grade E, \$2 for one course, or \$3 for two or more courses covered by a single petition.**

**For reinstatement of lapsed status, \$5.**

**For late application for teaching assignment, \$1.**

**For late notice of candidacy for the bachelor's degree, \$2.**

**For late return of athletic supplies,\* \$1 for each 24 hours until full purchase price of article is reached.**

**For failure to empty locker within a specified time, \$2.**

**Returned check collection, \$1.**

**For duplicate registration card or student name card, \$1.**

**Fee required of applicants for teaching positions who register with the Office of Teacher Placement, \$5, to cover the clerical cost of correspondence and copying of credentials.**

### Refunds

Refund of a part of the incidental fee is made to a student who withdraws from the University within five weeks from the first day of classes.

Refund on the nonresident fee is made in accordance with a schedule on file in the offices of the Registrar and Cashier; dates are computed from the first day of instruction of the semester.

No claim for refund of fees will be considered unless such claim is presented during the fiscal year to which the claim is applicable. No student will be entitled to a refund except upon surrender to the Registrar of his registration card and receipt. Students should preserve their receipts.

### RULES GOVERNING RESIDENCE

The term "nonresident student" is construed to mean any person who has not been a bona fide resident of the state of California for more than one year immediately preceding the opening day of a semester during which he proposes to attend the University. *Persons who have not attained the age of twenty-two years and whose parents do not reside in California should communicate with the Attorney in Residence Matters, 910 Crocker Building, San Francisco, despite the fact that such person may have lived in California for more than one year.*

The residence of each student is determined in accordance with the rules for determining residence prescribed by the provisions of Section 244 of the Government Code of California, and Section 20005 of the Education Code of California, provided, however:

1. That every alien student who has not made a valid declaration of inten-

\* Supplies or equipment not returned before the close of the fiscal year must be paid for in full; return after that date is not permitted.

† Veterans who expect to enroll under the provisions of Public Law 846 (G.I. Bill of Rights) or Public Law 16 are not required to remit this fee with their applications; if the applicant is accepted and registers in the University, the fee will be paid by the government. However, the fee must be paid by veterans who expect to enroll under the provisions of Public Law 550 (Korean G.I. Bill).

tion to become a citizen of the United States, as provided by the laws thereof, prior to the opening day of the semester during which he proposes to attend the University, is deemed to be a nonresident student.

2. That no person is deemed to have made a valid declaration of intention to become a citizen of the United States whose declaration of intention at the time when it is presented in support of an application for classification as a resident student in the University has lost its force or effectiveness, or who cannot, under said declaration, without renewing the same or making a new declaration, pursue his declared intention of becoming a citizen of the United States.

Every person who has been, or who shall hereafter be classified as a nonresident student shall be considered to retain that status until such time as he shall have made application in the form prescribed by the Registrar of the University for reclassification, and shall have been reclassified as a resident student.

Every person who has been classified as a resident student shall, nevertheless, be subject to reclassification as a nonresident student and shall be reclassified as a nonresident student whenever there shall be found to exist circumstances which, if they had existed at the time of his classification as a resident student, would have caused him to be classified as a nonresident student. If any student who has been classified as a resident student should be determined to have been erroneously so classified, he shall be reclassified as a nonresident student, and if the cause of his incorrect classification shall be found to be due to any concealment of facts or untruthful statement made by him at or before the time of his original classification, he shall be required to pay all tuition fees which would have been charged to him except for such erroneous classification, and shall be subject also to such discipline as the President of the University may approve.

### LIVING ACCOMMODATIONS

Living accommodations for out-of-town students who do not live with friends or relatives are provided in a number of ways—in private homes which accept paying guests; in rooming houses; in residence halls or coöperatives; in neighboring hotels or apartments; in the Veterans Emergency Housing Project (for married students only); and in fraternities or sororities. Information concerning any of these accommodations may be obtained from the Housing Office, Room 169, Administration Building, University of California, Los Angeles 24. Office hours are: Monday through Friday, 8:00 A.M. to 12:00 M. and 1:00 P.M. to 5:00 P.M.; Saturday, 9:00 A.M. to 12:00 M.

#### *Accommodations with Private Landlords*

Up-to-date listings are freely available to any student who desires to call in person at the Housing Office. Arrangements for such rooms cannot be made by mail but must be made by the individual directly with the landlord. Students and landlords are both advised to have a clear understanding, preferably in writing, as to prices, intended length of tenancy, charges to be made during vacation periods, etc.

Prices range from \$60 to \$80 per month for room and board, and from \$30 to \$45 per month per person for room only. Those who are not boarding by the month will find many restaurants in the vicinity. There is also a student-owned cafeteria on the campus where meals may be purchased at moderate prices.

#### *Mira Hershey Hall (Women Only)*

Mira Hershey Hall, made available by the will of the late Miss Mira Hershey, is the only residence hall operated by the University, and is located on the campus. Accommodations are available for 129 undergraduate students. Application for residence may be made to the Housing Office during the semester

preceding that in which the student plans to enroll, and after the student is reasonably sure that she will be accepted for enrollment. The rate for board and room is \$340 per person per semester during the time the University is in session. Three meals are served daily with the exception of Sunday and holiday when two meals only are served.

#### *Privately Owned Residence Halls*

There are a number of privately owned and operated residence halls in the vicinity of the University (all but two for women only). Several provide room and board at rates varying from \$60 to \$80 per month. Two have apartments at rates ranging from \$25 to \$27 per month per person depending on the number of women sharing the apartment. The two halls for men accommodate 93 students, providing room and 16 to 19 meals per week at \$75 to \$80 per month.

All business dealings should be clearly understood by both the student and the owner since the University cannot assume any responsibility for arrangements to which it is not a party.

#### *Coöperatives*

Four residence halls for women are on the coöperative plan with rates for board and room varying from \$30 to \$50 per month per person. Under this plan the students share in the work of operating the hall and work an average of four to five hours per week for part payment of their room and board.

The Coöperative Housing Association is a privately owned, nonprofit organization operating four houses accommodating about 165 men, each member being required to work from three to four hours per week. The cost for board and lodging with two, three, or four in one room is \$50 per month. Information concerning membership application may be secured from the manager at Landfair House, 500 Landfair Avenue, Los Angeles 24.

#### *Fraternities and Sororities*

Most of the 35 fraternities and 23 sororities own or lease homes near the campus and provide lodgings and meals for their members and pledges. Monthly bills for residents range from \$47 to \$75 per month, depending upon the number of meals served and the social and recreational privileges included. Students interested in affiliating with a fraternity or sorority should register for rushing on forms available at the Office of the Dean of Students. Detailed information concerning membership and deadline dates for rushing registration may also be secured at this office.

#### *Accommodations for Married Students*

A housing shortage still exists in the Los Angeles area, especially in low-cost apartments and houses for married couples with children. Prevailing rates are as follows: furnished single apartments, \$60 to \$80; furnished and unfurnished one-bedroom apartments, \$70 to \$100; and furnished and unfurnished two-bedroom apartments, \$85 to \$150. Single-family dwellings are appreciably higher. Although the facilities of the Housing Office are available to all students, listings cannot be sent through the mail inasmuch as most landlords desire to rent on a personal selection basis.

#### *Veteran Housing*

The University operates a Veterans Emergency Housing Project on the campus consisting of 308 two-room apartments, renting at \$33 per month furnished and \$29 per month unfurnished. These are available only to World War II and Korean veterans of the United States Army, Navy, Marine Corps, or Coast Guard who are married or the head of a family, and who are "stu-

dents\*\* at the University of California, Los Angeles. Applications may be obtained from the Housing Office during the semester preceding that in which the student plans to enroll and after he has been accepted by the University. Assignments to the Veteran Housing Project are made on a "desperate need" basis which considers the number of children in the family, lack of suitable income, need for housing, etc. Since it is impossible to make a commitment as to when one might be able to obtain an apartment, a new applicant is advised not to plan on too early occupancy of these units.

Persons not taking a sufficient amount of work to be classified under the Veterans Program as a full-time student *will not* be entitled to housing.

#### Motels and Trailer Courts

Good motels are located one to five miles from the campus with varying rates and accommodations. It is sometimes advisable for family groups to accept these accommodations temporarily until more permanent quarters can be located. Listings may be secured from the Housing Office.

No trailer parking areas are provided on or near the campus. Information relative to such facilities is available at the Housing Office.

### PRINCIPAL ITEMS OF EXPENSE ESTIMATED ON A TWO-SEMESTER BASIS

Expense Items	Minimum		Moderate		Liberal	
	Men	Women	Men	Women	Men	Women
Incidental Fee <sup>1</sup> .....	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90	\$ 90
Books and Supplies.....	30	30	45	45	65	65
Board and Room.....	550	600	650	700	750	800
(or Housekeeping).....		(300)		(350)		(500)
Miscellaneous (recreation, club dues, laundry, drugs, etc.).....	75	100	100	150	200	300
<b>Total.....</b>	<b>\$ 745</b>	<b>\$ 820</b>	<b>\$ 885</b>	<b>\$ 985</b>	<b>\$1105</b>	<b>\$1255</b>

**NOTE.**—It is impossible to include in the above figures such variable items as clothes or transportation to and from home, or fees other than the incidental fee. Students classified as nonresidents of the State must also add to their estimated budgets the tuition fee of \$150 per semester.

<sup>1</sup> Includes \$16 for A.S.U.C.L.A. membership, which is optional for graduate students.

### SELF-SUPPORT AND STUDENT EMPLOYMENT

Many students earn part, and a few earn all, of their expenses while attending the University. The University authorities are eager to offer as much encouragement as possible to students who must maintain themselves, but long experience has brought out the fact that the self-supporting student, early in his college life, may have to face unforeseen problems which affect his welfare.

\* A "student" means any veteran student (regular, special, or graduate) taking a combination of courses during the regular sessions, whose study-load determination under the formula of the Office of Special Services shows that he is entitled to be classified as a full-time student.

Any combination student (carrying regular and extension courses) ranks as a regular student and is eligible, provided the Office of Special Services classifies him as a full-time student.



University work demands the best that a student can give to it. The following statements are made, therefore, not to discourage the able student who must do outside work, but to forearm him with facts and information so that he may plan carefully and intelligently, and by so doing overcome many of the difficulties that might otherwise lead to disappointment and failure.

(1) Whenever possible, it is wise for a student to use his savings to make the first semester of residence in the University one of freedom to give full time to academic work. He may then have an opportunity to adjust himself to new surroundings, to establish sound habits of study, and to maintain a good scholastic standing, and thereby build a foundation for the rest of his University course. By the end of the first semester the student should know the demands of university life and his own capabilities well enough to make it possible to plan, for subsequent semesters, a combined program of studies and work for self-support.

(2) The regular undergraduate four-year course based on an average of 15 units of academic work a semester is organized on the supposition that students will give the major part of their time and attention to their studies while attending the University. Therefore, a student who must give considerable time and energy to outside work should consider at the outset the possibility that more than the usual eight semesters (four years) may be required to complete the program for the degree, if he is to maintain his scholastic standing and his health, and to enjoy the advantages of university life.

With reasonable diligence, a student in good health carrying an average program of study in the undergraduate departments can give as much as twelve hours a week to outside employment without seriously interfering with his college work; employment in excess of this amount should be accompanied by a reduction of the academic program carried.

(3) Students who are not physically strong or in good general health should not, under ordinary circumstances, attempt to be wholly self-supporting because of the danger of jeopardizing health and academic progress.

## **BUREAU OF OCCUPATIONS**

### **Student Employment**

Students desiring employment may register with the Bureau of Occupations, in the Administration Building.

Since it is not always possible to secure employment immediately, the new student who plans to be self-supporting should not begin his University course without sufficient funds to cover the major expenses of at least the first semester.

Women students may obtain board, room, and \$15 to \$20 salary per month in exchange for three hours work daily in a private home. Opportunities of this type for men are limited; however, local boarding houses and restaurants often offer employment for board.

In addition, employment is available on an hourly basis in the fields of typing and stenography, bookkeeping, sales and clerical work, care of children, housework, manual labor, tutoring, and other specialized types of work.

### **Full-Time Placement**

Through its full-time placement service, the Bureau of Occupations refers graduates and students to positions in business and professional fields other than teaching or educational research. Seniors are urged to register as soon as possible in their last year in order that they may be referred to employers before graduation. This service is available to students when they leave the University (if in attendance in regular sessions at least one year) or at any later date if they desire an improvement in their employment situation.

**BUREAU OF COLLEGE AND TEACHER PLACEMENT****OFFICE OF TEACHER PLACEMENT**

The Office recommends graduates, students, and former students for positions in universities, colleges, junior colleges, high schools, and elementary schools, and for educational research, thereby assisting qualified candidates to obtain permanent employment or promotion in the work for which they have prepared themselves. A fee of \$5 is charged each candidate for clerical services; there is no expense to school officials seeking teachers through this office. Communications should be addressed to the Office of Teacher Placement, 123 Education Building.

The University reserves the right to refuse its services to candidates who seek positions for which they are not fully qualified. In every recommendation the aim is to keep in mind the best available persons, remembering candidates already employed as well as those who may be out of employment.

Candidates for positions are urged to inform the office of the result of their candidacy, and of their desires for future promotion or change of occupation.

**STUDENT COUNSELING CENTER**

The services of a staff of trained clinical counselors are available to regularly enrolled students of the University. Assistance in the choice of and preparation for educational and vocational objectives and with personal-social problems is provided. Knowledge of his strengths and weaknesses will enable the student to make optimum use of his University experiences. Individual interviews are arranged by appointments in the Administration Building. Testing is done when it seems advisable as a basis for counseling. A vocational library is available for reference.

Application forms for and information regarding the National Teachers Examinations, Graduate Record Examination, and the Medical College Admission Test are available in the Center. Certain special testing projects for departments and colleges within the University are also administered through the Center.

**BUREAU OF VOCATIONAL REHABILITATION**

Men and women who have a physical or mental disability which handicaps them vocationally or which might be expected to handicap them vocationally are eligible for the services of the Bureau of Vocational Rehabilitation of the State Department of Education. These services include vocational counseling and guidance, training (with payment of costs such as books, fees, tuition, etc.), and placement, and are available at no cost to the individual.

A Vocational Rehabilitation Officer is available on the Los Angeles campus for interviewing applicants. Appointments may be made in the office of Dean of Students-Special Services, Administration Building, or by contacting the regular Vocational Rehabilitation Office at 811 Black Building, 357 South Hill Street, Los Angeles; telephone MA 631. This service may be applied for by both veterans and nonveterans.

**SELECTIVE SERVICE (DRAFT)**

Selective service information and counseling on draft status are available Mondays through Fridays at the Office of Dean of Students-Special Services, Administration Building. Certifications of enrollment, ranking, and training status for students, and occupational status for employees will be submitted to selective service boards on request. Students desiring deferments on the basis of enrollment in University R.O.T.C. programs should consult the proper R.O.T.C. department on the campus as described on page 27 C.

**VETERANS INFORMATION**

Dean of Students—Special Services maintains liaison between veterans and the Veterans Administration, the State Department of Veterans Affairs, and other agencies offering veterans educational benefits to assist veterans in becoming assimilated into the life and spirit of the University. This office is located in the Administration Building. The Los Angeles regional office of the United States Veterans Administration is located at 1880 S. Sepulveda Boulevard.

In order to enroll under the provisions of Public Law 346 (G. I. Bill), and to obtain full veterans benefits, veterans must present an original or supplemental Certificate of Eligibility, register within the University's announced registration period, and file a study list. In order to enroll under the provisions of Public Law 16 (Rehabilitation), authorization to complete such enrollment must be obtained from the United States Veterans Administration Office and be received by Dean of Students—Special Services prior to registration. Veterans should apply to their local United States Veterans Administration offices in sufficient time to receive their Certificates of Eligibility or proper authorization prior to registration, or be prepared to pay all expenses (tuition, books, fees, and supplies). Refunds of such expenditures may be made later to the veteran student based upon the effective date of the Certificate of Eligibility.

Information regarding educational benefits available from the state of California may be obtained in this same office, or from the State Department of Veterans Affairs located at 700 Capitol Avenue, Sacramento, California; or by writing to P. O. Box 1559, Sacramento, California.

Veterans who are transfers from the Santa Barbara campus of the University of California without a change of major or objective, and whose training under Public Law 346 has not been interrupted in excess of four months, need only present a Veterans Transfer Notice from that campus. A veteran must present a supplemental certificate of eligibility if (1) he has been out of training more than four months, (2) he has not completed the last term or session in which enrolled under veterans benefits, (3) he has attended any other institution, or (4) he has attended University Extension, or (5) he last attended a campus within the regional jurisdiction of a different Veterans Administration region. If the transfer is into a different Veterans Administration region, the veteran should request a transfer of his files to the proper regional office.

Veterans wishing to enroll under the provisions of Public Law 550 (Korean G.I. Bill) should obtain from the United States Veterans Administration a certificate for Education and Training which should be filed with the Office of Special Services, Room 38 Administration Building as soon as registration is completed. These veterans must be prepared to pay all fees and educational costs at the time of registration as education and training allowances are paid to the veteran by the Veterans Administration. The first monthly payment will normally be received 60 to 75 days after compliance with the above instructions.

**UNDERGRADUATE SCHOLARSHIPS**

A number of scholarships are available for students on the Los Angeles campus from funds provided by the Regents and friends of the University. These scholarships, which range from \$90 to \$500 and run for one year, are awarded annually upon recommendation of the faculty Committee on Undergraduate Scholarships and Prizes. A circular describing them and the conditions under which they are awarded may be obtained from the Office of the Dean of Students, University of California, Los Angeles 24.

Because the number of qualified applicants exceeds the number of scholarships available, the Committee ordinarily restricts the awards to students who

have successfully completed at least one semester of work on the Los Angeles campus. However, the Committee may recommend awards to a few students entering on the Los Angeles campus for the first time from accredited California high schools, California junior colleges, or other collegiate institutions in California. Application blanks, which contain the necessary instructions, are to be obtained from the Office of the Dean of Students. These blanks must be filed with this Office during the periods December 15 to February 1 for *resident* students and December 15 to March 1 for *entering* students, prior to the academic year for which the awards are to be made. No applications received later than the stated deadlines will be considered.

To be eligible for a scholarship the applicant must meet certain minimum requirements as to scholarship, financial need, and character and promise. The Committee will rate all applicants with respect to these criteria and will base its recommendations for awards upon the relative total ratings of all eligible students applying during the periods specified above. Some of the scholarships are restricted to students with special qualifications in addition to those mentioned above; these special qualifications are listed on the application blank.

### Alumni Scholarships

The U.C.L.A. Alumni Association makes available each year a number of scholarships for entering freshmen from accredited California high schools, and a limited number for students entering for the first time from California junior colleges, or other acceptable collegiate institutions in California. These scholarships are tenable on any campus of the University of California, the applicant specifying which campus at the time of application. Application blanks which give all necessary information may be obtained from the Office of the Dean of Students, University of California, Los Angeles 24. These blanks must be filed with the Committee on Undergraduate Scholarships and Prizes in the Office of the Dean of Students during the period December 15 to March 1 preceding the academic year for which the awards are to be made; if they are received later, they will not be considered. To be eligible, applicants must meet certain minimum requirements as to scholarship, financial need, and character and promise. In the selection of individuals for recommendation for these awards, the Faculty Committee, with the advice of the Alumni Committee, will choose applicants with not only substantial scholastic ability but also high character and outstanding qualities of leadership, who give promise of reflecting credit on themselves and the University.

The California (Berkeley) Alumni Association also makes available a number of scholarships for entering students, and they also are tenable on any of the campuses of the University, with the particular one specified at time of application. Blanks which give all necessary information for application for these scholarships may be obtained from the Committee on Undergraduate Scholarships, University of California, Berkeley 4.

### GRADUATE SCHOLARSHIPS AND FELLOWSHIPS

For information concerning graduate scholarships, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

### LOANS

Various organizations and individuals have contributed toward the building up of several student loan funds. The gifts for this purpose are administered by the University in accordance with the conditions laid down by the donors.

All loans are repayable as soon as possible without defeating the purpose of the loan or seriously inconveniencing the students.

Applications should be filed at least ten days in advance of need. For further information, apply to Office of the Dean of Students, Administration Building.

### PRIZES

The generosity of alumni and friends of the University provides each year for competitive prizes and awards in several fields. These prizes and awards are described in a bulletin issued annually. The recipients are ordinarily announced at Commencement in June of each year. Further information may be obtained from the Office of the Dean of Students.

### PUBLIC LECTURES, CONCERTS, AND ART EXHIBITS

As opportunity offers, the University presents to its members and to the public, lectures of general and of special or scholarly interest by qualified persons. These lectures are intended to supplement and stimulate the work of all departments of the University.

The musical interests of the University are served by the Artists' Concert Series and other specially announced musical events. Each year three young artists are chosen by competitive auditions and are presented as a special feature of the annual Concert Series. Tuesday Noon Recitals and Friday Noon Organ Recitals are presented weekly throughout the year. The Tuesday Recitals feature the A Cappella Choir, the Madrigal Singers, the Glee Clubs, the University Band, the University Symphony Orchestra, opera workshop, individual student artists, and members of the music faculty. All of these events are open to the public. The University Friends of Music, an organization for the promotion of chamber music, offers memberships to persons interested.

The Department of Art schedules a series of exhibitions of painting, design, and craftwork in its exhibition hall. These illustrate the work of students, local artists, national exhibitors, and occasionally of old masters.

Dance recitals are regularly presented under the auspices of the Department of Physical Education and the Dance Wing of the Campus Theater.

A season of four plays is presented each semester by the Department of Theater Arts.

### THE ASSOCIATED STUDENTS

Student self-government, with its accompanying co-curricular program, is organized and administered by the Associated Students, in which all undergraduates hold membership by virtue of paying at registration the regular University incidental fee. The organization has an executive council composed of a president, vice-president, three representatives-at-large, presidents of the Associated Women Students, Associated Men Students, Graduate Students Association, and the University Recreation Association, the National Students Association Coördinator, the Organizations Control Board Chairman, six student board chairmen, a faculty representative, an alumni representative, and the Graduate Manager. The Council administers the general business of the association. Activities of men's and women's affairs, and special interest fields such as publications, speech activities, the arts, athletics, recreation, and departmental and professional areas are coördinated by the executive council. Offices of the Associated Students are in Kerckhoff Hall, a gift to the University of Mrs. William G. Kerckhoff of Los Angeles.

Members are entitled to participation in the affairs of the Associated Students, to subscriptions to the *California Daily Bruin* and *Scop*, to free admission to many athletic contests, and reduced rates to all other athletic contests, as well as to dramatic, social, and similar events coming under the jurisdiction of the Associated Students.

The U.C.L.A. Students' Store is owned and operated by the Associated Students.

The *California Daily Bruin*, the *Southern Campus*, and *Scop* are the official publications of the students. The *California Daily Bruin* contains news of all campus and college activities, official University announcements, and is under

direct charge of an editor and a manager appointed by the Council. The *Southern Campus* is the yearbook and contains a record of the college life of the year. *Scop* is the all-campus literary and humor magazine. Both of the latter publications are edited, managed, and financed by the students.

### **OFFICE OF STUDENT ACTIVITIES**

Student groups as such, and individual students and student organizations which are planning and carrying out the various student activities and social functions are provided advisory, space, and working facilities in the Office of Student Activities, Dean of Students' Office, Administration Building. Not only does this office make these services available, but also it provides the means whereby students and student groups may obtain the various approvals and clearances required for student activities.

### **RELIGIOUS FACILITIES**

In the immediate vicinity of the campus, at the southeast corner of Hilgard and LeConte Avenues, is the University Religious Conference, where official representatives of the Baptist, Catholic, Congregational, Disciple, Episcopal, Jewish, Latter-Day Saints, Lutheran, Methodist, and Presbyterian denominations have student headquarters. Additional facilities are available for Catholic students at the Newman Club, 840 Hilgard Avenue. The Y.W.C.A. occupies its own building, at 574 Hilgard Avenue, near the entrance to the campus; the Y.M.C.A. has its office in the same building, at 572 Hilgard Avenue. The Christian Science Organization reading room and headquarters are located at 560 Hilgard Avenue, near the entrance to the campus.

At these centers are held religious discussion groups, lectures, Bible classes, social gatherings, luncheons, dinners, and other student meetings.

# **REQUIREMENTS**

## **COURSES OF INSTRUCTION**

# REQUIREMENTS IN THE SEVERAL COLLEGES, SCHOOLS, AND CURRICULA

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## COLLEGE OF LETTERS AND SCIENCE

THE curricula of the College of Letters and Science are designed to provide the student with opportunities to broaden his culture and to prepare him for specialized professional studies. These curricula lead to the degree of Associate in Arts, normally at the end of the fourth semester, and to the degree of either Bachelor of Arts or Bachelor of Science, normally at the end of the eighth semester.

A liberal education presupposes a reasonably wide distribution of courses that contribute to a desirable balance of intellectual interests. To this end the student is required to select courses in the lower division that deal with general fundamentals of human knowledge. In the more diverse offering of the upper division the student is relatively free to concentrate his attention upon courses in a field of interest best suited to his aptitudes and purposes.

Each student therefore chooses a field of concentration in the upper division which may be a program of related courses within a single department (departmental major), or a group of coördinated courses involving a number of departments (interdepartmental curriculum), or, under certain circumstances, an organized group of courses chosen to meet a student's special need (individual field of concentration). The pursuit of such definite courses of study necessarily requires a knowledge of antecedent courses known as "prerequisites." With the assistance of his counselor, the student is expected to select those lower division courses which are related to his proposed advanced study. Through such guidance and selection, continuity in a chosen field of learning is assured.

### REQUIREMENTS FOR ADMISSION TO THE UPPER DIVISION AND FOR THE DEGREE OF ASSOCIATE IN ARTS

In order to be admitted to the Upper Division of the College of Letters and Science, students must have completed at least 60 units of college work with a grade-point average in all work done in the University of not less than 1.00 (a C average), and must have satisfied requirements (A), (B), (C), (D), and at least three of the six requirements under (E), (F), and (G) below. However, the remaining requirements from (E), (F), and (G) must be completed prior to receipt of the Associate in Arts degree, or graduation. In fields of concentration requiring unusually heavy preparation, additional postponements are possible, as follows: requirements (B), (E), (F), and (G), or any portion of them, may be postponed to the upper division on recommendation of the department and approval of the Executive Committee of the College. These authorized postponements are listed on page 4. While requirement (B) should, so far as possible, be satisfied by work done in the high school, work done prior to graduation from high school will not be counted as part of the 60 units. Students who transfer to the Los Angeles campus of the University of California with the requirements for upper division standing in the College of Letters and Science at Berkeley completed shall be admitted to the Upper Division in this College and not held for the requirements of this section.



**(A) General University Requirements.\***

- (1) *Subject A.* An examination in Subject A (English Composition) is required of all entrants at the time of their first registration in the University. For further regulations concerning Subject A, see page 28C of this bulletin.
- (2) *Military Science* (6 units), or *Air Science* (6 units), or *Naval Science* (12 units), 4 semesters (men).
- (3) *Physical Education*, 4 semesters (2 units).

**(B) Foreign Language.** At least 16 units in not more than two languages.

- (1) The first two years of high school work in a foreign language will be counted in satisfaction of 4 units of this requirement; the third and fourth years in the same language will be counted in satisfaction of 4 units each. Only work of grade C or higher may be counted.†
- (2) If a new language is begun on the college level it may not apply on this requirement unless course 2, or the equivalent, with its prerequisites is completed.
- (3) This requirement may also be satisfied by passing a proficiency examination in one language. On petition a bona fide foreign student from a non-English-speaking country may be permitted, in lieu of passing a proficiency examination in his mother tongue, to satisfy the foreign language requirement by presentation of credentials showing that the student's secondary education has been carried out in the language in question.
- (4) Courses given in English by a foreign language department will not be accepted in fulfillment of this requirement.
- (5) College credit for the mother tongue of a foreigner and for its literature is allowed only for courses taken in native institutions of college grade, or for upper division and graduate courses actually taken at the University of California or at another English-speaking institution of approved standing.

**(C) Mathematics.** Elementary algebra and plane geometry. If these subjects were not completed in the high school, they may be taken in University of California Extension, but will not be counted as part of the 60 units.

**(D) English Composition.** At least 3 units in English composition (English 1A) with a grade of C or better. This requirement may also be satisfied by passing a proficiency examination in English composition set and administered by the Department of English with the approval of the Executive Committee of the College. A bona fide student from abroad, who has learned English as a foreign language and in whose secondary education English was not the medium of instruction, may satisfy this requirement by completing English 33B with a grade of C or better.

**(E) Natural Sciences.**

- (1) At least 5 units in physical science chosen from the following:

Astronomy 1A, 7, 100

Chemistry 1A, 2A, 2

Geography 1A

Geology 2, 3, 5, 101

\* For information concerning exemption from these requirements apply to the Registrar.

† Any student who because of lapse of time or other circumstances feels unable to continue successfully a language begun in high school may consult the department of the language concerned regarding the possibility of repeating all or a part of the work for credit. Such credit would count on the 60 units required for the degree of Associate in Arts and on the 120 units required for the bachelor's degree; but credit is not allowed toward the required 16 units in foreign language for both the high school and college work thus duplicated.

Mathematics, one course from:  
 C, D, E, 1, 3A, 5A, 5B, 37, Statistics 1  
 Meteorology 3  
 Physics 1A, 1B, 1C, 1D, 2A, 2B, 10

- (2) At least 5 units in biological science, chosen from the following:  
 Anthropology 1  
 Bacteriology 1, 6  
 Biology 12  
 Botany 1, 2, 3  
 Life Sciences 1A-1B (both 1A and 1B must be completed to count on science requirement)  
 Paleontology 101, 111, 136, 137  
 Psychology 1B  
 Zoology 1A, 1B, 15, 138

(F) *Social Sciences.*

- (1) A 6-unit lower division year course in history, chosen from the following:  
 History 1A-1B or 5A-5B or 7A-7B or 8A-8B.  
 (2) At least 6 units in social sciences exclusive of history and including courses in at least two subjects, chosen from the following list:  
 Anthropology 2  
 Economics 1A, 12, 13, 101  
 Geography 1B  
 Political Science 1, 2, 101, 103  
 Psychology 1A, 101  
 Public Health 5  
 Sociology 1, 101

(G) *Humanities.* Two of the following three groups:

- (1) *Literature.* At least 4 units in English, American, or any foreign literature, in the original language\* or in translation, selected from the following list:  
 English 30A, 30B, 46A, 46B, 115, 117J, 125C, 125D, 130A, 132, 133, 135, 136, 190A, 190B  
 French 109A, 109B, 109M, 109N  
 German 104A, 104B, 118A, 118B, 121A, 121B  
 Greek 101, 114, 180A, 180B  
 Humanities 1A-1B  
 Italian 103A, 103B, 109A, 109B  
 Latin 5A, 5B, 180A, 180B  
 Oriental Languages 112, 132  
 Scandinavian 141A, 141B  
 Slavic Languages 130, 132, 143A, 143B  
 Spanish 102A, 102B, 103A, 103B, 104A, 104B  
 (2) *Philosophy.* A 6-unit lower division year course in philosophy, selected from the following:  
 Philosophy 6A-6B, 20A-20B  
 (3) *The Arts.* At least 4 units selected from the following:  
 Art 1A, 1B, 5A, 5B, 108A, 108B, 118A, 118B  
 Music 20A, 20B, 30A, 30B, 170

The degree of Associate in Arts will be granted on the following conditions:

(A) The candidate shall have completed not less than 60 units which may be counted toward the bachelor's degree, with an average grade of C in all courses undertaken in this University.

\* The same courses in foreign language may not be counted both on requirement (G-1) and on the foreign language requirement (B).

(B) The candidate shall have completed either

- (1) Requirements (A) to (G), inclusive, above; or
- (2) The lower division courses specified as prerequisite for a field of concentration, plus requirements (A) to (G), less exemptions authorized for that field of concentration by the Executive Committee of the College.

(C) The candidate shall have completed at least the two final semesters (24 units of work) in residence at the University and at least the final semester in the College of Letters and Science.

(D) The above requirements shall have been completed at least one semester prior to receipt of the bachelor's degree, otherwise they will become requirements for the bachelor's degree and the Associate in Arts degree will not be granted.

### **Authorized Exemptions and Deferments**

The following exemptions and deferments have been authorized in the fields of concentration listed below. Exemptions granted for the Associate in Arts in one of these fields become requirements for the bachelor's degree if the student changes his field of concentration after receipt of the Associate in Arts degree. Requirements deferred to the upper division must be completed before receipt of the bachelor's degree.

#### *Curricula in Astronomy-Mathematics and Astronomy-Physics*

Exemptions:

1. Requirement (F-1); and
2. One of the two groups required under (G).

#### *Major in Botany*

Exemptions:

1. Requirement (F-2); and
2. One of the two groups required under (G).

#### *Major in Chemistry*

Exemptions:

1. Either (F-1), or (F-2); and
2. Either (E-2), or one of the two required groups under (G).

Deferments:

Requirements (B), (E), (F), and (G) may be postponed to the upper division.

#### *Curriculum in Earth Physics and Exploration Geophysics*

Exemptions:

1. Requirement (F-2); and
2. One of the two groups required under (G).

Deferments:

Requirements (B), (E-2), and (G).

#### *Major in Geology*

Exemptions:

1. Requirement (F-2); and
2. One of the two groups required under (G).

Deferments:

Requirements (B) and (G).

#### *Major in Mathematics*

Exemption: Requirement (F-1).\*

Deferments:

Requirements (E-2) or (F-2), and both of the groups required under (G).

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\* Mathematics majors who are candidates for the general secondary teaching credential may be exempted from one of the two groups required under (G) upon petition recommended by the department and approved by the Dean of the College.

*Major in Meteorology*

Deferments:

1. 4 units of requirement (B).
2. Requirement (F-2), and
3. One of the two groups required under (G).

*Premedical Curriculum*

Exemptions:

1. (F-1) or (F-2); and
2. One of the two groups required under (G).

*Major in Zoölogy*

Exemptions:

1. (F-1) or (F-2); and
2. One of the two groups required under (G).

**REQUIREMENTS FOR THE BACHELOR'S DEGREE**

The degree of Bachelor of Arts or Bachelor of Science will be granted upon the following conditions:

(A) The minimum number of units for the bachelor's degree shall be 120, of which at least 108 shall be in courses taken from the Letters and Science List of Courses (see below), and at least 42 shall be in upper division courses from the Letters and Science List. At least 12 of these upper division units shall be outside a single department, and not more than 42 units of upper division courses taken in one department may be counted toward the bachelor's degree. Not more than 4 units in prescribed lower division courses in physical education may be counted toward the bachelor's degree. Not more than 8 units of music courses in the series 40-64, 140-166, and 180-195 will be counted toward the bachelor's degree. No credit will be allowed for work completed at a junior college after the student has completed 70 units toward the degree.

The candidate shall have attained at least a 1.00 grade-point average in all courses undertaken in this University.

(B) The candidate shall have completed requirements (A) to (G), inclusive, pages 2 and 3, except for exemptions authorized for his field of concentration (see page 4).

Students who transfer to the Los Angeles campus of the University of California having completed the requirements for upper division standing of the College of Letters and Science at Berkeley shall not be held for the above requirements.

(C) The candidate shall have met the University requirement in American History and Institutions.

(D) The candidate shall have satisfied the requirements of a field of concentration in the College of Letters and Science. Before the degree is granted, the department or committee in charge of the student's field of concentration must certify that the student has completed the requirements for the field of concentration.

(E) The candidate shall have been registered in the College of Letters and Science while completing the final 24 units of work. This regulation applies to students entering this University from other institutions or from University of California Extension, and to students transferring from other colleges of this University.

The degree of Bachelor of Arts shall be granted to all candidates who qualify for the bachelor's degree, except that the degree of Bachelor of Science shall instead be granted to candidates who have completed such fields of concentration as the Executive Committee of the College may designate as leading to that degree.

**LETTERS AND SCIENCE LIST OF COURSES**

At least 108 units offered for the degree of Bachelor of Arts or Bachelor of Science must be in courses chosen from the Letters and Science List of Courses, and the 42 units in upper division courses (numbered 100-199) required in the upper division must be selected from the same list.

Any course not included in the Letters and Science List of Courses but required or accepted as part of a field of concentration or as a prerequisite therefor, will, for students in that field of concentration, but for no others, be treated as if it were on the Letters and Science List of Courses.

The following list refers to the courses as given in the department offerings for the fall and spring semesters, 1953-1954.

**Agriculture:**

- Agricultural Economics. 120, 130.
- Botany. All undergraduate courses.
- Entomology. 100, 112A, 126, 134, 144.
- Irrigation and Soils. 110A.
- Plant Pathology. 120.
- Subtropical Horticulture. 111.

Air Science. All undergraduate courses up to a total of 12 units.\*

**Anthropology and Sociology:**

- Anthropology. All undergraduate courses.
- Sociology. All undergraduate courses.
- Art. 1A, 1B, 5A, 5B, 10, 12, 45A, 45B, 100A, 100B, 102A, 102B, 103A, 103B, 104A, 104B, 108A, 108B, 110A, 110B, 114A, 114B, 115, 118A, 118B, 119A, 119B, 120A, 120B, 124, 190.

Astronomy. All undergraduate courses.

Bacteriology. All undergraduate courses.

Business Administration. 3, 131, 133, 135, 160.

Chemistry. All undergraduate courses.

**Classics:**

- Latin. All undergraduate courses except 370.
- Greek. All undergraduate courses.
- Economics. All undergraduate courses.
- Education. 101, 102, 106, 110, 111, 170, 197.
- Engineering. 11A-11B, 1FA, 2, 15A-15B, 15AB, 102B, 102C, 155A.

**English:**

- English. All undergraduate courses except 2, 370.
- Speech. All undergraduate courses except 140, 142A, 142B, 370.
- Folklore. All undergraduate courses.
- French. All undergraduate courses except 370.
- Geography. All undergraduate courses.

**Geology:**

- Geology. All undergraduate courses.
- Mineralogy. All undergraduate courses.
- Paleontology. All undergraduate courses.

**Germanic Languages:**

- German. All undergraduate courses except 370.
- Scandinavian Languages. All undergraduate courses.
- History. All undergraduate courses.
- Home Economics. 113, 114, 143, 154, 170.
- Humanities. All undergraduate courses.
- Italian. All undergraduate courses.
- Linguistics and Philology. All undergraduate courses.

\* Effective for all students except those who began upper division work in the department prior to the fall of 1952.

### Mathematics:

Mathematics. All undergraduate courses except 370.

Statistics. All undergraduate courses.

Meteorology. All undergraduate courses.

Military Science and Tactics. All undergraduate courses up to a total of 12 units.\*

Music. All courses included in the following series: 1A-31, 100A-115D, 121-139, 170-177, 199.

Naval Science. All undergraduate courses up to a total of 12 units.\*

Oceanography. All undergraduate courses.

Oriental Languages. All undergraduate courses.

Philosophy. All undergraduate courses.

Physical Education. 1, 26, 44, 130, 139, 146, 147, 150, 151, 155.

Physics. All undergraduate courses except 370.

Political Science. All undergraduate courses.

Psychology. All undergraduate courses except 162.

Public Health. 5, 100A, 106, 110, 145, 147B, 160A.†

Slavic Languages. All undergraduate courses.

Spanish and Portuguese:

Spanish. All undergraduate courses except 370.

Portuguese. All undergraduate courses.

Theater Arts. 7, 24, 102, 103, 104, 105, 106, 169.

Zoology:

Zoology. All undergraduate courses except 136, 136C, 370.

Life Sciences. 1A-1B.

Biology. 12.

## HONORS PROGRAM

The College of Letters and Science has instituted an Honors Program which accords special privileges to superior students whose grade-point average for all work undertaken in the University is not less than 2.5:

### *Honors Program in the Lower Division*

#### 1. Admission to Program

A lower division student in the College who has completed 15 or more units in one semester, and whose grade-point average for all work undertaken in the University is not less than 2.5, may apply for admission to this program on forms to be supplied by the office of the Dean. The application form must be approved by the department or committee in charge of the student's proposed field of concentration and by the Dean of the College.

#### 2. Purpose of Program

The Honors Program in the lower division is designed to give the outstanding student more freedom in meeting the lower division requirements by demonstrating proficiency and achievement by examination. The total credit which may be earned under the special provisions of the Honors Program in the lower division is 18 units, which may be earned in either or both of the following ways:

(a) Credit by examination for courses studied independently which may be undertaken in addition to the maximum study-list limits of the College.

(b) Credit for more advanced courses taken on a "passed" or "not passed" basis in the fields specified as fulfilling Associate in Arts requirements (E), (F), and (G). Work taken under this section must be included in the study-list limits of the College. The quality of the work required of a student in the

\* Effective for all students except those who began upper division work in the department prior to the fall of 1952.

† Students in the Curriculum in Premedical Studies who choose Public Health as one of their two fields may in addition receive Letters and Science credit for Public Health 160B and 170.

Honors Program to be marked "passed" is higher than that required for a barely passing letter grade. In calculating grade-point standing, units gained in this way shall not be counted. Petitions for such credit will not be accepted later than the first week in the semester.

### *Honors Program in the Upper Division*

#### 1. Admission to the Program

A student who has attained upper division standing with a grade-point average for all work undertaken in the University of not less than 2.5, or any other upper division student recommended by his department or committee in charge of his field of concentration, may apply for admission to this program on forms to be supplied by the office of the Dean of the College. The application form must be approved by the department or committee in charge of the student's field of concentration and by the Dean. A student being recommended for this program without the necessary grade-point average must be specially approved as an honor student by the Committee on Honors of the College.

#### 2. Purpose of the Program

A student approved for admission to this program may be admitted to such advanced honors programs as may be provided by the department or committee or faculty adviser in charge of the student's field of concentration. Such honors programs may include:

- (a) Enrollment in small seminar-type classes;
- (b) Independent research or reading during the two semesters of the student's senior year. The maximum amount of credit allowed under provision (b) is 6 units.

Also, an upper division student in the Honors Program may take each semester one course not offered by him to satisfy the requirements for the field of concentration, in which his work shall be marked "passed" or "not passed." The quality of work required to be marked "passed" will be higher than that required for a barely passing letter grade. In calculating grade-point standing, units gained in this way shall not be counted. The maximum number of units which may be earned under this provision is 12. Petitions for such credit will not be accepted later than the first week in the semester.

## HONORS

### *Honorable Mention with the Degree of Associate in Arts.*

1. Honorable mention is granted with the degree of Associate in Arts to students who attain at least an average of two grade points for each unit undertaken.
2. The list of students who receive honorable mention with the degree of Associate in Arts is sent to the chairmen of departments.
3. A student who gains honorable mention has thereby attained the honor status for his first semester in the upper division. To enter the special Honors Program of the College, however, the student must file application for admission to such a program, as set forth above.

### *Honors with the Bachelor's Degree*

Honors may be awarded at graduation as provided under 1, 2, and 3, below, to a student who is recommended for such an award by the department or committee or faculty adviser in charge of his field of concentration and the Committee on Honors.

1. Honors may be awarded to a student who has both (a) completed his field of concentration with participation in such honors program as may have been provided for that field, and (b) qualified for honors by some other method (such as a comprehensive examination) to be prescribed by the department or committee or faculty adviser in charge of his field of concentration and approved by the Executive Committee of the College.

2. Honors also may be awarded to a student who has completed the field of concentration with distinction, and who has a general record satisfactory to the Committee on Honors, but who has not participated in an Honors Program.
3. Students who, in the judgment of the department, committee, or faculty advisers concerned, display marked superiority in their fields of concentration may be recommended for the special distinction of Highest Honors.
4. The Committee on Honors shall consider all recommendations, shall confer with the several departments, committees, faculty advisers, and Dean of the College about doubtful cases, and shall transmit to the Dean of the College its recommendation concerning the award of Honors or Highest Honors.
5. The lists of students to whom Honors and Highest Honors in the various fields of concentration shall have been awarded at time of graduation shall be published in the Commencement Programme each year, and students whose names appear upon these lists shall be issued certificates of honors in addition to University diplomas.

### REGULATIONS GOVERNING THE FIELD OF CONCENTRATION

(A) A field of concentration shall consist of not less than 24, nor more than 42 units of upper division courses. Not more than 42 units of upper division courses taken in one department after receiving upper division standing will be counted toward the bachelor's degree. NOTE.—In economics, this limitation is inclusive of courses in business administration. Only the following courses may be counted in satisfaction of the field of concentration: (1) courses in resident instruction\* at the University of California, Los Angeles campus, or at another college or university; (2) courses in University Extension with numbers having the prefix X, XB, XL, or XSB. Courses numbered in the 300 series (teachers' courses) or in the 400 series (professional courses) are not accepted as part of the field of concentration.

(B) The fields of concentration shall be designated as *departmental*, *inter-departmental*, or *individual*.

- (1) A departmental field of concentration (or major) shall consist of a group of coördinated upper division courses, of which at least two-thirds of the units are in one department, set up and supervised by a department.
- (2) An interdepartmental field of concentration (or curriculum) shall consist of at least 36 units of coördinated upper division courses, of which less than two-thirds are in one department, set up and supervised by a committee appointed by the Executive Committee of the College.
- (3) A student who has some unusual but definite academic interest, for which no suitable major or curriculum is offered in the University of California, and who has completed at least two semesters of work (a minimum of 24 units) in the University with a grade-point average of 2.00, or higher, may, with the consent of the Dean of the College and with the assistance of a faculty adviser appointed by the Dean, plan his own field of concentration.

(C) Each upper division student must designate his field of concentration on his study-list card, he must register with the department or committee in charge of his field of concentration, and his study list must be approved by a representative of the department or committee before it will be accepted by the

\* Resident instruction is defined as that which is offered to students in regular attendance during the fall and spring semesters and the Summer Session.



Registrar. A department or committee may designate the Dean of the College as its representative.

(D) An upper division student may change his field of concentration only by permission of the Dean of the College and of the department or committee in charge of the field of concentration to which the student petitions to transfer. No change of field of concentration will be permitted after the opening of the student's last semester.

(E) Students who fail to attain a grade-point average of at least 1.00 in work taken in the prerequisites for the field of concentration, or in courses in the field of concentration, may, at the option of the department or committee in charge, be denied the privilege of continuing in that field of concentration. The student must attain an average grade of C (1 grade point for each unit undertaken) in all courses offered as part of the field of concentration.

(F) All students must take at least one course in their field of concentration each semester during their last, or senior year.

(G) Students who are admitted to senior standing in the College of Letters and Science (Los Angeles) on the basis of credit from another institution, from University Extension, or from another college or school of the University must complete, subsequent to such admission, at least 18 units of upper division courses, including at least 12 units in their field of concentration. The Executive Committee of the College shall have authority to reduce this requirement in the case of students transferring from the College of Letters and Science at Berkeley.

In the College of Letters and Science a student may take any course for which he has completed the prerequisites, if he has attained upper division standing or such other standing as may be required for the course.

#### ORGANIZED FIELDS OF CONCENTRATION IN THE COLLEGE OF LETTERS AND SCIENCE

A field of concentration consists of a substantial group of coördinated upper division courses in one or more departments. The details of the student's program in his field must be approved by his official adviser. Before undertaking this program the student must, in most cases, complete the special courses which are listed as preparation for it.

The College offers majors or curricula leading to the degree of Bachelor of Arts in the following fields:

#### *Majors Leading to the Bachelor's Degree*

The College offers majors (departmental fields of concentration) in the following fields. These majors lead to the degree of Bachelor of Arts unless otherwise noted.

Anthropology	Geography	Oriental Languages
Applied Physics†	Geology	Philosophy
Art History	German	Physics
Astronomy	Greek	Political Science
Bacteriology	History	Psychology
Botany	Italian	Slavic Languages
Chemistry†	Latin	Sociology
Economics	Mathematics	Spanish
English	Meteorology	Speech
French	Musie	Zoölogy

† Leading to degree of Bachelor of Science.

*Curricula Leading to the Bachelor's Degree*

The College offers curricula (interdepartmental fields of concentration) leading to the degree of Bachelor of Arts in the following fields:

- Astronomy-Mathematics
- Astronomy-Physics
- Earth Physics and Exploration Geophysics
- Elementary and Kindergarten-Primary Teaching
- International Relations
- Latin-American Studies
- Prelibrarianship
- Premedical Studies
- Presocial Welfare
- Public Service
- Religion

Requirements of these curricula are listed in detail in the following pages.

*Individual Fields of Concentration Leading to the Bachelor's Degree*

A student with an unusual but definite academic interest, for which no suitable curriculum is offered in this University, who has completed at least two semesters of work (a minimum of 24 units) in the University with a grade-point average of 2.00 or higher may, with the consent of the Dean and the assistance of a faculty adviser appointed by the Dean, plan his own field of concentration. Conditions: (1) the plan must be approved by the Executive Committee of the College; (2) the faculty adviser shall supervise the student's work and sign his study list; (3) the Dean must certify the student for graduation. All rules for fields of concentration not in conflict with this provision apply to individual fields of concentration.

**CURRICULA LEADING TO DEGREES**

**CURRICULUM IN ASTRONOMY-MATHEMATICS**

*Committee in Charge of the Curriculum:* J. Kaplan (chairman), Samuel Herick, Angus E. Taylor.

**Lower Division**

Required: Astronomy 2 (2), 4 (3), 7 (3), Physics 1A-1B-1C-1D (12) or, with the consent of the adviser, Physics 2A-2B; Mathematics 5A-5B, 6A-6B or 1-3A, 3B, 4A-4B (14).

**Upper Division**

The curriculum comprises 36 upper division units in astronomy, mathematics and physics of which at least 12 units must be taken in each of the first two departments.

I. Required: Astronomy 112, 115 (6 units), Mathematics 119A and three of the courses 108, 124, 125, 126. (12 units), Physics 105.

II. Electives in astronomy, mathematics, and physics. The following courses are recommended: Astronomy 108 or Mathematics 135A-135B, Astronomy 117A-117B, Mathematics 119B, 122A-122B, Physics 108B, 121.

**CURRICULUM IN ASTRONOMY-PHYSICS**

*Committee in Charge of the Curriculum:* J. Kaplan (chairman), F. A. Valentine, D. M. Popper.

**Lower Division**

Required: Astronomy 2 (2), 4 (3), 7 (3), Physics 1A-1B-1C-1D (12) or, with the consent of the adviser, Physics 2A-2B, Mathematics 5A-5B, 6A-6B or 1-3A, 3B, 4A-4B (14).

**Upper Division**

The curriculum comprises 36 upper division units, distributed as follows:

I. Required: Astronomy 117A-117B (6), Physics 105 (3), 108B (3), 121 (3), Mathematics 110AB (4) or 119A (3).

II. Electives in astronomy, mathematics, and physics, of which at least 6 units must be in astronomy, and all of which must be in courses approved for the individual.

**CURRICULUM IN EARTH PHYSICS AND EXPLORATION GEOPHYSICS**

*Committee in Charge of the Curriculum:* D. I. Axelrod (chairman), R. E. Holzer, W. G. Young.

This curriculum is designed to provide training in physics, chemistry, mathematics, and geology, which are basic to geophysics. The requirements of the petroleum and mining industries for exploration experts, and the demands of educational and research institutions, indicate the desirability of a broad training in the physical sciences for those intending to enter either the field of applied geophysics or the general field of the physics of the earth. The curriculum below is subject to modification to meet the needs or interests of individual students.

**Lower Division**

Required: Chemistry 1A-1B (10), Geology 5 (4), 3 (3), Mineralogy 6 (4), Mathematics 5A-5B (8), 6A-6B (6), or Mathematics 1-3A, 3B, 4A-4B (14), Physics 1A-1B-1C-1D (12).

**Upper Division**

The curriculum comprises 36 upper division units, distributed as follows:

Required: Geology 102A-102B (6), 103 (4), Geophysics 122 (3), Mathematics 110A-110B (4), Physics 107 (3), 107C (2). Recommended: Chemistry 110A-110B (6), 111 (4), Geology 110 (3), 111 (3), 116 (3), Mathematics 126 (3), 135A-135B (6), Physics 105 (3), 110 (3), 112 (3), 116A (3), 116C (2).

**CURRICULA IN GENERAL ELEMENTARY AND KINDERGARTEN-****PRIMARY TEACHING**

*Committee in Charge of the Curricula:* A. E. Longueil (chairman), John Hockett, F. P. Rolfe, F. H. Sherwood, C. M. Zierer, Miss Virginia Richard (secretary).

*Lower Division Adviser:* Mrs. Estelle Dupree, Room 200, Education Building.

*Upper Division Adviser:* Miss Virginia Richard, Room 200, Education Building.

These curricula have been designed by the College of Letters and Science and the School of Education to lead to both the degree of bachelor of arts from the College of Letters and Science, and the *Certificate of Completion* in general elementary or kindergarten-primary teaching from the School of Education. It is possible to complete the requirements for these two objectives in approximately four years and one summer session by completing the requirements for the bachelor's degree concurrently with one of the curricula set forth below.\*

At the beginning of their junior year students in these curricula must formally register in the School of Education as credential candidates; this is in addition to registration in the College of Letters and Science as candidates for the bachelor's degree.

\* It is also possible to secure the recommendation of the School of Education for the general elementary or kindergarten-primary teaching credential by pursuing a departmental field of concentration and by completing, in addition to the requirements for the bachelor's degree, the credential requirements set forth in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES. This program will require approximately one semester longer than the special program outlined above.

**Curriculum I. General Elementary Teaching****Lower Division**

Required: English 1A and either English 1B or Speech 3A; Psychology 1A and either 1B or 33 (transfer students may meet this requirement by taking Psychology 101); Art 10; Music 31; Physical Education 27, 28, and 44; Mathematics 38. Recommended: Life Science 1A-1B or Biology 12, Botany 1, or Zoölogy 1A; History 7A-7B or 8A-8B.

**Upper Division**

The following courses in education are required for the credential and should be taken approximately in the order listed: Education 106 (open to high sophomores), 111, 110, 147, 330, E335A-E335B (Supervised Teaching). (At least a C average is required for all courses in education including at least a grade of C in Supervised Teaching.)

The field of concentration in this curriculum comprises at least 36 upper division units of professional and academic courses. At least a C average must be maintained in the field of concentration.

1. The professional courses in the field of concentration: Education 139 (4), Art 330 (3), Music 330 (3), Physical Education 330 (3).

2. The academic courses in the field of concentration: At least 27 units of work in no more than four departments, according to one of the following patterns. (The units in any department may vary by one unit above or below that specified, provided the total is 27 or more units.)

(a) English .....	9	(c) English .....	6
Geography .....	9	Geography .....	6
History .....	9	Anthropology or Sociology...	6
	—	Phys. Ed. or Poli. Sci. or	
	27	Psych. ....	6
(b) English .....	6	Additional units in one of above	
Geography .....	6	departments (other than	
History .....	6	Phys. Ed.) already chosen	
Additional units in one of		by the student.....	3
above .....	3		—
6 units from one of the follow-			27
ing: Anthro., Phys. Ed., Poli.		(d) Same as (c) except that His-	
Sci. or Soc. ....	6	tory may be substituted for	
	—	Geography	
	27		

The courses in the field of concentration must be chosen from the approved list which is available in the College office and the Credentials office, School of Education, Room 200 Education Building.

**Curriculum II. Kindergarten-Primary Teaching****Lower Division**

Required: Same as in Curriculum I with the exception of Mathematics 38 which is not required for kindergarten-primary teaching.

**Upper Division**

The following courses in education are required for the credential and should be taken approximately in the order listed: Education 106 (open to high sophomores), 111, 110, 128A, 330, K335A-K335B (Supervised Teaching). (At least a C average is required for all courses in education including at least a grade of C in Supervised Teaching.)

The field of concentration in this curriculum comprises at least 36 upper division units of professional and academic courses. At least a C average must be maintained in the field of concentration.

1. The professional courses in the field of concentration: Education 128B (3), Art 330 (3), Music 330 (3), Physical Education 330 (3).

2. The academic courses in the field of concentration: Same as for Curriculum I.

#### CURRICULUM IN INTERNATIONAL RELATIONS

*Committee in Charge of the Curriculum:* R. G. Neumann (chairman), W. Gorter, M. W. Graham, T. P. Jenkin, J. E. Spencer.

This curriculum is designed primarily for students in the College of Letters and Science whose interests, while not specialized, fall in the field of international relations and modern diplomacy. Students interested in preparing for the American Foreign Service examinations should consult the adviser with respect to additional courses.

##### Lower Division

Required: Political Science 1-2 (3-3); History 1A-1B, 5A-5B, or 8A-8B (3-3); Economics 1A-1B (3-3); Geography 1A-1B (3-3). Recommended: Anthropology 1-2 (3-3); Economics 12 (3).

##### Upper Division

The curriculum comprises 36 upper division units, distributed as follows:

I. General requirements (24 units): (a) Political Science 125 (3), and 127 (3), or Political Science 130 (3), and 131 (3); (b) Political Science 133A-133B (3-3); (c) Geography 181 (3); (d) History, 6 units from 140B (3), 147 (3), 178 (3), or 148A-148B (3-3); (e) Economics 107, 108 or 195 (3).

II. Field requirements: At least 12 units in one of the four following fields of specialization (to be distributed in not less than two departments):

(a) *Far Eastern Affairs:* Political Science 136 (3), 138 (3), 159 (3); History 191A-191B (3-3), 192A-192B (2-2), 194A-194B (3-3), 195A-195B (2-2); Geography 124A-124B (3-3).

(b) *Latin-American Affairs:* Political Science 126 (3), 150A-150B (3-3); History 160 (3), 161 (3), 162A-162B (3-3), 166A-166B (2-2), 169 (3); Geography 122A-122B (3-3); Economics 120 (3).

(c) *European Affairs:* Political Science 154 (3), 155 (3), 157 (3); History 143 (3), 144 (3), 145 (3), 147 (3) [if not offered under I, above], 148A-148B (3-3) [if not offered under I, above], 149A-149B (3-3), 149C (3); Geography 123A-123B (3-3), 173 (3).

(d) *British Empire Affairs:* Political Science 152 (3), 153 (2); History 153A-153B (3-3), 156 (3), 157 (3), 158A-158B (3-3), 159 (3), 196B (3); Geography 125 (3).

Recommended: Political Science 102 (3), 112 (3), 120 (2); Economics 196 (3), 197 (3).

Candidates for the degree in this curriculum will be required to give evidence, normally by examination, of their ability to read current literature on international relations in one modern language: French, German, Spanish, Russian, or Italian. With permission, candidates may offer other languages not native to them.

#### CURRICULA IN LATIN AMERICAN STUDIES

*Committee in Charge of the Curriculum:* M. A. Zeitlin (chairman), R. H. Beals, R. H. Fitzgibbon, R. D. Hussey.

The curricula in Latin American Studies are designed to serve the needs of the following classes of students: (1) students preparing to teach Spanish in the secondary schools; (2) students preparing for advanced study in the social

sciences, primarily in the Latin American field; (3) students planning careers which will necessitate residence in or knowledge of Latin America, such as teaching, business, scientific research, engineering, journalism, or government service; (4) students desiring a general education focused on this particular area. Selection of courses should be governed in part by the objective of the student.

It is recommended that students who wish to receive credit on this curriculum for work taken in Latin American schools obtain the prior written approval of the Committee. Of the 30 units of "additional courses" chosen from the list at the end of this statement, a minimum of 18 units, including at least 9 units of Latin American content, must be taken at this University.

#### Lower Division

Required: Spanish 4 and 44; Portuguese 1 and 2; Geography 1A; Anthropology 1; History 8A-8B; 9 units chosen from: Economics 1A-1B; Geography 1B; Political Science 1, 2; Sociology 1.

#### Upper Division

*Curriculum I* (for students preparing to be teachers of Spanish, including candidates for the general secondary credential with a teaching major in Spanish and a teaching minor in social sciences): Spanish 101A-101B (may be omitted if 20 or 25A-25B have been completed with a grade of A or B), 102A-102B (prerequisite: Spanish 42), 104A-104B, 116A-116B; 18 to 24 units of additional courses chosen from the list below. Courses must be chosen from at least three departments, with at least 6 units from each of two departments other than Spanish, and at least 15 units of courses of Latin-American content (indicated below by asterisks).

Candidates for the general secondary credential may complete a teaching minor in social science by meeting the requirements of this curriculum. Completion of the teaching major in Spanish also requires 6 units of graduate courses in Spanish after completion of the A.B. degree. Candidates for the credential must take Psychology 1A, 1B (or 33) and 18 units of prescribed courses in Education. For further information consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION and the appropriate adviser.

*Curriculum II* (for students desiring a general education or careers in business, research, or government service): Spanish 104A-104B; 6 units chosen from Spanish 101A-101B, 116A-116B, Portuguese 101A-101B; 80 units of additional courses chosen from the list below. Courses must be chosen from at least three departments, with at least 9 units from each of two departments other than Spanish, and at least 20 units of courses of Latin-American content (indicated below by asterisks).

*Additional Courses:* Anthropology 102, 105, 110, 125, 140\*, 141\*, 165; Economics 120\*, 195, 197, 199; Folklore 145; Linguistics and Philology 170, 171; Geography 113, 122A-122B\*, 131, 165, 175, 199\*; History 160\*, 161, 162A-162B\*, 166A-166B\*, 169\*, 178, 188, 199\* (Section 9); Music 136; Political Science 126\*, 150A-150B\*, 199A-199B\* (Section 7); Portuguese 123\*; Sociology 143, 144, 150\*, 186; Spanish 108\*, 112\*, 114\*, 124\*, 134\*, 140\*.

#### MEDICAL TECHNOLOGY

*Adviser:* Mrs. Meridian G. Ball.

For requirements, see program given under the Department of Bacteriology in the GENERAL CATALOGUE, DEPARTMENTS AT LOS ANGELES.

## CURRICULUM IN PRELIBRARIANSHIP

*Committee in Charge of the Curriculum:* L. C. Powell (chairman), T. L. Jacobs, J. E. Phillips.

**Advisers:** Mr. Powell in charge.

The prelibrarianship curriculum is designed to meet the needs of students who plan to pursue a general course in a graduate library school. The requirements of library schools and the demands of the profession indicate the desirability of a broad background in liberal arts subjects for students who plan to enter the general field of public and university library work. Proficiency in at least one foreign language is advantageous.

Students who intend to specialize in scientific, industrial, or other technical fields of librarianship should complete a major in the appropriate subject under the direction of the department concerned, rather than pursue the prelibrarianship curriculum. Students primarily interested in public school librarianship are advised to complete the requirements for a general teaching credential as described in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES. A major in a subject field is also desirable for some phases of university library work.

Students interested in librarianship as a career should be advised that, in general, applications for admission to the accredited library schools from persons more than thirty-five years of age are considered only when the applicants hold responsible library positions from which they can obtain leaves of absence.

To be admitted to the prelibrarianship curriculum a student must file a "Prelibrarianship Plan" which has been approved by an authorized library adviser, and which meets general requirements stated as follows:

- (1) One year in each of two of the following languages: French, German, Italian, Russian, Spanish. Additional study in at least one of the two languages is strongly recommended.
- (2) Lower division courses:
  - (a) Requirements of the College of Letters and Science.
  - (b) Prerequisites for upper division courses selected by the student.
  - (c) Recommended electives:
 

Astronomy 1A	Economics 1A
Bacteriology 6	English 1B, 31, 46A-46B
Life Sciences 1A	Speech 1A
Botany 1	Philosophy 6A-6B
Chemistry 2	Physics 10
Geology 2	
  - (d) Ability to type is recommended by many library schools and is generally recognized as an asset to the professional librarian.
- (3) Upper division courses: At least 36 upper division units chosen from the fields listed below, with no less than 12 units in one field, and no less than 6 units in each of four other fields. The particular choice of courses should be determined by the student in consultation with a library adviser on the basis of the student's individual interest and needs. (Courses marked with asterisks have lower division prerequisites.)

**I. Art and Music:**

Art 108A-108B (4), 118A-118B (4), 119A-119B (4), 120A-120B (4), 173A-173B (4); Music 121\* (2), 136 (2), 170 (3).

**II. Education and Philosophy:**

Education 101 (3), 102 (3), 106 (3), 110\* (3), 111\* (3), 147 (2), 181 (2), 197 (2); Philosophy 114 (3), 125 (2), 126 (2), 146 (3), 170A-170B (3-3), 183 (3).

**III. English and American Literature:**

English 110 (3), 113 (2), 114A-114B\* (6), 117J (3), 122A-122B\* (6), 125C-125D (6), 125G-125H\* (6), 131 (3), 132 (3), 133 (3), 190A-190B (4).

**IV. Foreign Language and Literature:**

French 109M-109N (6); German 121A-121B (4); Greek 180A-180B (4); Italian 152A-152B\* (6); Latin 180A-180B (4); Oriental Languages 112 (2), 132 (2); Slavic Languages 130 (3), 152 (3); Spanish 102A-102B\* (6), 103A-103B\* (6); Folklore 145\* (3); Linguistics and Philology 170 (3).

(Note: Upper division survey courses in the foreign language itself may be substituted for survey courses in translation.)

**V. History, Economics, and Political Science:**

History 101 (2), 140A-140B\* (6), 149A-149B\* (6), 153A-153B\* (6), 162A-162B\* (6), 177\* (3), 179\* (3), 188\* (3), 191A-191B\* (6), 198\* (3); Economics 100A\* (3), 103\* (3), 107\* (3), 108\* (3), 131A-131B\* (4); Political Science 103\* (2), 110 (3), 127 (3), 143\* (3), 146 (2), 148\* (2), 155\* (2), 181\* (3), 184\* (3), 185\* (3).

**VI. Psychology, Anthropology, and Sociology:**

Psychology 110\* (3), 120\* (3), 126\* (2), 143\* (2), 145A-145B\* (4), 147\* (3); Anthropology 102\* (3), 103\* (3), 124 (3), 125 (3), 164 (3); Sociology 161\* (3), 143\* (3), 144\* (3), 145\* (3), 168\* (3), 189\* (3).

**CURRICULUM IN PREMEDICAL STUDIES**

(Leading to the Degree of Bachelor of Arts)

*Committee in Charge of the Curriculum:* R. M. Doreus (chairman), G. H. Ball, F. Crescitelli, M. S. Dunn, A. J. Salle, G. J. Jann.

A premedical student may satisfy the requirements for admission to a medical school by one of two plans: (a) by majoring in any one department in which he fulfills the departmental requirements concurrently with or in addition to the specific course requirements of the medical school which the student expects to attend; (b) by completing the premedical curriculum as set forth below and the specific course requirements of the medical school which the student expects to attend.

A grade-point average of 1.5 is required in the freshman and sophomore years in order that a student may be eligible for admission to the Premedical Curriculum in the junior year. Transfer students will not be allowed to continue in this curriculum unless their grade-point average for their first year of work at the University of California is 1.5 or higher.

*Preparation:* English 1A-1B (6), Chemistry 1A-1B, 5A, 8, 9 (19), Zoölogy 1A-1B, 4, 100 (14), Physics 2A-2B (8), or 2A, 1C, 1D (10), or 1A, 1B, 1C, 1D (12), French 1, 2 (8), or German 1, 2 (8).

*Curriculum:* Either (a) completion of at least 36 units of coördinated upper division courses in two of the following departments: Bacteriology, Chemistry, Physics, Zoölogy; or (b) completion of at least 36 units of coördinated upper division courses divided between those offered in one of the above departments, namely, Bacteriology, Chemistry, Physics, Zoölogy, and upper division courses in one of the following: Anthropology-Sociology, Business Administration, Economics, English, History, Mathematics, Political Science, Psychology, Public Health.

In no case may more than 21 units be taken in any one of these departments.



**CURRICULUM IN PRISOCIAL WELFARE**

*Committee in Charge of the Curriculum:* E. M. Lemert (chairman), D. S. Howard, T. P. Jenkin, J. Sheehan, E. L. Warren.

The field of concentration in social welfare is designed to give the student what is currently regarded as the most suitable background for professional training at the graduate level in a school of social welfare. Completion of this curriculum does not guarantee admission to such a school, and the student is expected to consult his adviser regarding the specific requirements of the school of social welfare he expects to enter.

*Preparation:* Anthropology 1-2 (6); Life Sciences 1A-1B (6); Sociology 101 (3); Psychology 1A-1B (6) or 101 (3); Economics 1A-1B (6) or 101 (3); Political Science 1-2 (6) or 103 (2); Statistics 1 (2).

*Basic Requirements:*

The curriculum in social welfare shall consist of 42 units in upper division Letters and Science courses of which 31 (or 32) units shall be distributed in the fields indicated below. The remaining 10 (or 11) units shall be elective and selected from the list below.

*Sociology*, at least 12 units, including Sociology 185 and 9 units of upper division sociology.

*Psychology*, at least 8 units selected from the following courses: Psychology 112, 113, 134, 145A, 145B, 147, and 161.

*Economics*, at least 5-6 units (two courses) selected from the following: Economics 131A, 150, 152.

*Political Science*, at least 6 units, including Political Science 181, and the remaining units to be selected from the following: Political Science 171, 172, 184, 185, and 187.

*Electives:*

Ten (or 11) units to complete the field shall be chosen from the following list of courses with approval of, and in consultation with, an adviser. Courses in the list above, if not used to satisfy the Basic Requirements, may be added to the following list of electives:

Anthropology 103, 125, 151, 165; Economics 100A, 103, 106, 107, 131B, 133, 156A-156B; History 174, 175, 176, 188; Philosophy 104A-104B, 114, 183; Political Science 113, 166, 186; Psychology 105, 148, 168; Sociology 120, 126, 142, 143, 144, 145, 161, 168, 181, 182, 186, 189; Home Economics 112, 143, 144; Public Health 106, 110, 125, 170.

**CURRICULUM IN PUBLIC SERVICE**

*Committee in Charge of the Curriculum:* E. A. Engelbert (chairman), P. Neff, R. H. Turner.

The curriculum in public service is designed to be of assistance to students who wish to qualify themselves for positions in government work. It should be noted that a large percentage of government positions are open only through competitive examinations. The curriculum, therefore, is designed to allow the student to coördinate a program drawn from several departments in preparation for a general class of position. Although the curriculum is primarily related to political science, it is designed to allow a broader training in administrative work than is permitted in a departmental major.

**Lower Division**

Required: Business Administration 1A-1B (3-3), Economics 1A-1B (3-3), Political Science 1-2 (3-3), Statistics 1 (2), Speech 1A or 1B (3). In certain

fields, other courses are prerequisite to upper division courses included in the curriculum:

*Public Personnel*—Psychology 1A-1B.

*Public Relations*—Six units of lower division history.

#### Upper Division

The curriculum itself consists of 36 units of upper division courses selected from one of four possible fields of concentration, Public Personnel Administration, Public Management, Public Relations, and Financial Administration. Political Science 141, 166 or 187, 172 or 184, 181, and 185 are required courses for each field of concentration. The remaining units must be chosen from the approved list of courses offered under the student's chosen field:

#### I. *Public Personnel Administration*

Political Science 166 (3), 171 (3), 172 (3), 183 (3), 184 (3), 186 (3), 187 (3); Psychology 105A-105B (3-2), 185 (2); Business Administration 150 (3), 152 (3); Economics 150 (3), 152 (3), 155 (2); Sociology 118A-118B (3-3).

#### II. *Public Management*

Political Science 113 (3), 143 (3), 146 (2), 166 (3), 168 (3), 171 (3), 172 (3), 183 (3), 184 (3), 186 (3), 187 (3); Business Administration 150 (3), 152 (3); Economics 131A-131B (2-2), 150 (3), 152 (3); Sociology 118A-118B (3-3), 128 (3), 144 (3).

#### III. *Public Relations*

Political Science 125 (3), 127 (3), 142 (2), 143 (3), 146 (2), 148 (2), 166 (3), 167A-167B (3-3), 171 (3), 172 (3), 183 (3), 184 (3), 186 (3), 187 (3); Business Administration 150 (3); Economics 150 (3); Sociology 118A-118B (3-3), 128 (3); not more than 6 units from History 171 (3), 172 (3), 173 (3), 174 (3), 175 (3).

#### IV. *Financial Administration*

Political Science 143 (3), 166 (3), 167A-167B (3-3), 171 (3), 172 (3), 183 (3), 184 (3), 186 (3), 187 (3); Business Administration 120 (3), 121 (3); Economics 131A-131B (2-2), 133 (3), 135 (3); Sociology 118A-118B (3-3).

Variations in the programs may be made with the approval of the adviser.

The curriculum in public service, which combines work of the departments of Political Science, Economics, Psychology, and Business Administration, prepares students for positions in governmental work other than foreign service. The curriculum is of value also for students interested in careers as public relations counselors, personnel managers, etc.

During the past few years, governmental employment, both in the federal and local governments, has offered an attractive field to young men and women who have the proper training and interest. Governmental positions increasingly require specialized training in fields such as budgeting, personnel, engineering, and in government management. In addition to regular positions with the government, there are openings for part-time or full-time internship training in various governmental agencies in the Los Angeles area.

#### CURRICULUM IN RELIGION

*Committee in Charge of the Curriculum*: D. K. Bjork (chairman), Miss A. B. Nisbet, D. F. Pegrum.

*Preparation*: Greek and Latin, 16 units; English 1A-1B (6), 31 (2), 46A-46B (6); Psychology 1A-1B (6); Philosophy 20A-20B (6). Recommended: History 1A-1B.

**Upper Division:** 36 units from (A) and (B), with prescribed prerequisites.

- (A) *Required Courses* (22 units): Speech 122 (3); History 121A-121B (3-3), 141A-141B (2-2); philosophy: 6 units from 104A-104B (3-3), 112 (3), 121 (2), 146 (3), 147 (3); Psychology 168 (3).
- (B) *Selective Requirements* (14 units chosen from the following list): Anthropology 124 (3); Economics 101 (3); Education 101 (3); English 106F (2), 156 (3); 157 (3); Greek 117A-117B (2-2); History 114 (2); Music 171 (2); philosophy: 3 units from the courses listed under (A); political science: 3 units from 110 (3), 112 (3), 127 (3).
- (C) *Recommended Courses:* Anthropology 102 (3); Sociology 142 (3), 143 (3), 144 (3), 189 (3); Economics 150 (3), 155 (2), 158 (3); English 117J (3), 167 (3); History 142 (3), 147 (3), 176 (3), 178 (3), 191A-191B (3-3); Music 111A-111B (2-2), 131 (2); Political Science 146 (2), 148 (2); Psychology 134 (2), 138 (2), 143 (2), 145A-145B (2-2), 175 (3).

### PREPARATION FOR VARIOUS PROFESSIONAL CURRICULA

In addition to the curricula described in the preceding pages, all of which lead to the bachelor's degree, certain courses given at the University of California, Los Angeles, may be used as preparation for admission to the professional colleges and schools of the University in Los Angeles, in Berkeley, and in San Francisco.

#### PREBUSINESS CURRICULUM: TWO YEARS

*Committee in Charge of the Curriculum:* J. A. C. Grant (chairman), T. S. Brown, J. C. Clendenin, W. C. Scoville, R. Tannenbaum.

The prebusiness curriculum offered in the lower division of the College of Letters and Science, Los Angeles, is designed to prepare students to meet the entrance requirements specified by the Faculty of the School of Business Administration, Los Angeles (see page 45).

The prebusiness curriculum differs from the requirements for the Associate in Arts degree in the College of Letters and Sciences in the following respects:

1. The specific courses which are required for acceptance by the School of Business Administration, Los Angeles;
2. Completion of course 2 in a foreign language is required, rather than completion of 16 units in not more than two languages.

#### The Prebusiness Curriculum

The curriculum as set forth below includes the specific requirements for acceptance by the School of Business Administration and provides for meeting all of the requirements for the Associate in Arts degree in the College of Letters and Science with the exception of the language requirement. The specific courses acceptable on this curriculum must be selected from the courses listed under the Associate in Arts degree requirements for the College of Letters and Science (see pages 1-5). Students who wish to qualify for the Associate in Arts degree must complete all requirements (including the 16-unit language requirement in full) before transferring to the School of Business Administration.

(A) General University Requirements	<i>Units</i>
(1) Subject A .....	0
(2) Military, air, or naval science (minimum) .....	6
(3) Physical education .....	2
(B) Foreign language (Completion of course 2) * .....	4

\* Completion of course 2 in a foreign language or 3 years of one language in high school is required for the prebusiness curriculum. Sixteen units in not more than two languages are required for those students who desire to qualify for the Associate in Arts degree.

(C) Elementary algebra and plane geometry .....	0
(D) English composition (English 1A) .....	3
(E) Natural science	
(1) Physical science† .....	5
(2) Life science† .....	5
(F) Social sciences	
(1) Lower division year course in history (History 7A-7B recommended) .....	6
(2) Social science exclusive of history, including courses in at least two subjects: Economics 1A (required for prebusiness curriculum) .....	3
Elective (to be selected from list on page 3).....	3
(G) Humanities. Two of the following three groups:	
(1) Literature	} 8-12
(2) Philosophy	
(3) The arts	
(H) Additional courses required for acceptance by School of Business Administration:	
Economics 1B .....	3
Business Administration 1A-1B .....	6
Mathematics 2 (prerequisites are Mathematics D, E, or 1) .....	6

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Total Units 60-64

#### PRECRIMINOLOGY CURRICULA: TWO YEARS

The University offers a four-year program in Criminology leading to the bachelor's degree. Three distinct fields of study are provided. Two of them deal with the application of the social sciences to: (a) law enforcement, and (b) correctional work; these lead to the degree of Bachelor of Arts. The third is concerned primarily with the application of the natural sciences to law enforcement and crime investigation and leads to the degree of Bachelor of Science. The first two years of work in each field may be taken at Los Angeles; the last two years must be taken in the School of Criminology at Berkeley.

All applicants for admission to the School of Criminology must have completed at least 60 units of college work with a "C" average or better. In addition to fulfilling the lower division requirements of the College of Letters and Science (see pages 1-5), students are expected to complete certain prerequisite courses. While not all of the prerequisite courses are available on the Los Angeles campus, students should complete so far as possible those courses which are listed below. The remaining courses may be completed after admission to the School of Criminology.

#### Prerequisite Courses:

##### For Law Enforcement and Correctional Work

Required: Political Science 1-2, Sociology 1-2, Psychology 1A,  
 Statistics 1 ..... 17 units  
 Recommended: Anthropology 1, Business Administration 1A-1B, Chem-  
 istry 1A-1B, Physics 2A-2B, Public Health 5, Speech 1A-1B. Students  
 interested in law enforcement are urged to take a year of wrestling and  
 a year of boxing.

##### For Criminalistics

Required: Chemistry 1A-1B, 5A, 8, 9, Psychology 1A, Zoölogy  
 15 ..... 27 units  
 Recommended: Botany 1, Geology 1, Mineralogy 6, Zoölogy 1A-1B, 4.

† Students in the prebusiness curriculum must include at least one laboratory course in meeting either requirement E-1 or E-2.

**PREDENTAL CURRICULUM: TWO YEARS\***

The University offers a six-year program in dentistry leading to the degrees of Bachelor of Science and Doctor of Dental Surgery. The first two years may be taken at Los Angeles; the last four years must be taken in the College of Dentistry in San Francisco.

The student will find himself more adequately prepared for the predental curriculum if he has taken in high school the following subjects: English, 3 units; history, 1 unit; mathematics, 3 units (algebra, plane geometry, and trigonometry); chemistry, 1 unit; physics, 1 unit; foreign language, 2-4 units.

The sixty units of work required for admission to the College of Dentistry include general University requirements and additional specific requirements, as follows (the numbers in parentheses refer to courses at the University of California, Los Angeles, which fulfill the requirements):

(1) *General University requirements:*

## Subject A

Military science or air science (four semesters)

Physical education (four semesters)

American History and Institutions is prerequisite to the bachelor's degree. (Although this requirement may be satisfied in the College of Dentistry, it is preferable that it be completed in the predental program.)

(2) English or Speech (1A-1B)..... 6 units

(3) Science ..... 32 units

(a) Chemistry 1A, 1B, 8, 9..... 16

(b) Physics 2A, 2B ..... 8

(c) Zoölogy 1A, 1B ..... 8

(4) Trigonometry (Mathematics C)

(if not completed in high school)

(5) Electives selected as indicated from the following groups... 16-20 units

(a) *Group I:* 2 year courses selected from Anthropology 1, 2; Economics 1A-1B; Geography 1A-1B or 5A-5B; History 1A-1B, 7A-7B, 8A-8B; Mathematics, any 2 sequential courses, not including course C; Political Science 1, 2; Psychology 1A, and 33; Sociology 1, 2.

(b) *Group II:* *Either* (a) one year course or year sequence in foreign literature in translation, a year sequence of any foreign language, English 46A-46B, Music 30A-30B, Philosophy 6A-6B, 20A-20B; *or* (b) Art 1A, 1B; *or* any two semesters of a foreign language in which at least 6 units have previously been completed or are completed concurrently.

**PREDENTAL HYGIENE CURRICULUM: TWO YEARS †***(Open to Women Only)*

The University offers a four-year program in dental hygiene leading to the degree of Bachelor of Science. The first two years may be taken at Los An-

\* The College of Dentistry reserves the right to limit enrollment on the basis of scholarship, results of the performance and aptitude tests, recommendations, and interviews. At the present time, because of limited facilities and the large number of applications, it is not possible for the College of Dentistry to act favorably upon applications from persons who have not had the major portion of their high school and preprofessional education and residence in California or in one of the far western states which does not have a dental school. For further information see the ANNOUNCEMENT OF THE COLLEGE OF DENTISTRY.

† The College of Dentistry reserves the right to limit enrollment if applications exceed the available facilities, and to require interviews and aptitude tests if they are necessary in the selection of the class. For further information see the ANNOUNCEMENT OF THE COLLEGE OF DENTISTRY.

geles; the last two years must be taken in the College of Dentistry in San Francisco.

The student will find herself more adequately prepared if she has taken in high school the following subjects: English, 3 units; history, 1 unit; mathematics, 3 units (algebra and plane geometry); chemistry, 1 unit; physics, 1 unit; foreign language, 3 (or, preferably, 4 units).

The 60 units of work required for admission to the College of Dentistry include general University requirements and additional specific requirements, as follows (the numbers in parentheses refer to courses at the University of California, Los Angeles, which fulfill the requirements):

(1) *General University requirements:*

Subject A

American History and Institutions (required for the bachelor's degree.

The examination in American History and Institutions may be taken in the College of Dentistry, but it is preferable to satisfy the requirement in the pre dental program).

- |  |             |
|--|-------------|
| (2) English or Speech 1A-1B.....   | 6 units     |
| (3) Chemistry 1A, 8 .....  | 8 units     |
| (4) Zoölogy 1A-1B .....  | 8 units     |
| (5) Either the degree of Associate in Arts from the University of California (or its equivalent), or the following program of courses: |             |
| (a) A year course selected from each of the following groups:  |             |
| Group I: Anthropology 1, 2, Economics 1A-1B, History 1A-1B, 7A-7B, 8A-8B, Political Science 1, 2, Sociology 1, 2,                      |             |
| Group II: Psychology 1A, 33, Home Economics 11, 12, any two courses in public health,  |             |
| Group III: Philosophy 6A-6B, 20A-20B, Art 1A, 1B, Music 30A-30B, literature, foreign language .....                                    | 18-20 units |
| (b) Six additional units selected from any of the three groups listed under (a) .....  | 6 units     |
| (c) Electives .....  | 12-16 units |

**PREMEDICAL CURRICULUM: THREE YEARS\***

It is assumed that as preparation for this curriculum the student will have completed in the high school the following subjects: English, 3 units; United States history, 1 unit; mathematics, 2 units (elementary algebra and plane geometry); chemistry, 1 unit; physics, 1 unit; foreign language (preferably French or German), 2 units. The requirements for the degree of Associate in Arts may be met more easily if the foreign language has been pursued four years in the high school. It is desirable that a course in freehand drawing be taken in high school. If possible, the student should also complete in high school intermediate algebra,  $\frac{1}{2}$  unit, and trigonometry,  $\frac{1}{2}$  unit, although these courses may be taken in the University.

It is important for students to bear in mind that the class entering the School of Medicine is limited; in the past there have been a great many more applicants than could be admitted. Premedical students who, upon the conclusion of their sixth semester, find themselves thus excluded from the School of Medicine, will be unable to obtain the bachelor's degree in the College of Letters and Science at the end of the eighth semester, unless they plan their program with this contingency in mind. They should, therefore, either enter a

\* This section applies both to the School of Medicine at San Francisco and to the School of Medicine at Los Angeles.

departmental major at the beginning of the fifth semester, at the same time meeting all premedical requirements, or include in their premedical program a sufficient number of appropriate courses in some major department. Provision for the completion of such a major does not prejudice the student's eligibility for admission to the School of Medicine.

#### PREPHARMACY CURRICULUM: ONE YEAR

The University offers a five-year program leading to the degree of Bachelor of Science in Pharmacy. The requirements for this degree include one year of prepharmacy (30 units) and four years of residence in the College of Pharmacy (129 units). The first two years of the five-year program may be taken at Los Angeles (one year of prepharmacy in the College of Letters and Science followed by the first year of residence in the College of Pharmacy); the remaining three years are given at the Medical Center in San Francisco.\*

To be admitted to the first year of the College of Pharmacy, Los Angeles, students must have satisfied the requirements for admission to the University and must have completed, with an average grade of C or better, at least 30 units of the program set forth below under the heading *Prepharmacy Curriculum*. Students enrolled in this program in the College of Letters and Science must petition to transfer to the College of Pharmacy upon completion of the curriculum. Students who fail to transfer to the College of Pharmacy will be unable to qualify for the California State Board examinations in pharmacy in the minimum time.

The student will find himself more adequately prepared for the prepharmacy curriculum if he has taken in high school the following subjects: intermediate algebra, trigonometry, and elementary chemistry.

#### Prepharmacy Curriculum

Adviser: Mr. Plunkett

(1) General University Requirements	Units
Subject A .....	0
Military, air or naval science (minimum) .....	3
Physical education .....	1
(2) English 1A-1B or Speech 1A-1B .....	6
(3) Science	
Chemistry 1A-1B .....	10
Botany 1 .....	5
(4) Mathematics (if not completed in high school)	
Trigonometry (Mathematics C)	
Intermediate Algebra (Mathematics D)	
(5) Electives .....	5
Electives should be selected from courses in foreign language, social science, and humanities offered in satisfaction of the Associate in Arts requirements of the College of Letters and Science.	

#### OTHER PROFESSIONAL CURRICULA IN THE UNIVERSITY

**Architecture.** Students in good standing having a minimum of 60 units of University credit will be admitted to the School of Architecture upon formal application filed with the Secretary of the School. In order to complete the prescribed curriculum in the indicated time, such students should also have completed the prerequisites to the work of the junior year. Only the academic courses in this program may be taken in the College of Letters and Science at

\* Students who have completed the prepharmacy studies and the requirements of the first year of pharmacy cannot be assured of admission to the second year on the Medical Center campus. When the number of qualified applicants for the second year of the four-year curriculum exceeds the available facilities, selection will be made on the basis of scholarship as determined from the college record and by examination.

Los Angeles; consequently, the student desiring a major in architecture is advised to enroll at Berkeley for the professional courses leading to the M.A. degree which carries the School's recommendation to State License Boards.

**Journalism.** The University does not offer an undergraduate major in Journalism at Los Angeles; therefore, it is not possible to receive a bachelor's degree in journalism on the Los Angeles campus. Instead, the basic background for the graduate program in journalism is drawn principally from the work offered in the various departments in the College of Letters and Science.

Undergraduate students who are primarily interested in journalism should select a major from the list of Majors and Curricula and indicate this major and the appropriate college on the Application for Admission, Undergraduate, with Journalism in parentheses: e.g., *Letters and Science, Anthropology (Journalism)*. This will make it possible for the college to assign the student to the proper adviser who will help the student plan a program in his selected major with electives recommended by the Graduate Department of Journalism. Journalism should not be listed as a major. If the student is undecided regarding a choice of major and desires ultimately to enter the Graduate Department of Journalism as a graduate student, he should indicate on the Application, *Letters and Science, Undecided (Journalism)*.

It is advisable to choose a major that will follow one's field of interest and include as many as possible of the following courses recommended by the Graduate Department of Journalism: English 1A-1B, English 2, English 31, English 106A and English 130A-130B; Economics 1A-1B, Economics 12 and 13; Geography 1A-1B or 100, Geography 4; History 7A-7B and History 5A-5B or 8A-8B; Political Science 1 or 101, Political Science 2, 110; Psychology 1A-1B; Anthropology 1, 2; Sociology 1A-1B or 101.

**Librarianship.** The School of Librarianship in Berkeley offers two separate curricula of two years subsequent to the bachelor's degree, leading at the end of the first year to the degree of Bachelor of Library Science, and at the end of the second year to a master's degree—ordinarily the Master of Library Science, but in certain cases the Master of Arts. The A.B. degree of the University of California (Los Angeles or Berkeley) or its equivalent, a minimum grade-point average of 1.5 in the last two years of academic work, graduate standing in the University without deficiencies, a satisfactory score on the Graduate Record Examination (Profile and Aptitude Tests) and a college year of each of two modern languages (preferably French and German) are required for admission to the B.L.S. program. For admission to the master's program the same requirements obtain except that a minimum 2.0 grade-point average in an accredited graduate library school is required.

## COLLEGE OF AGRICULTURE

THE COLLEGE OF AGRICULTURE of the University of California offers at Los Angeles the plant science curriculum with the majors in subtropical horticulture, floriculture and ornamental horticulture, and general horticulture leading to the degree of Bachelor of Science. The first two mentioned majors are not available on the other campuses where the College of Agriculture offers instruction. Graduate work is also offered at Los Angeles leading to the degrees of Master of Science and Doctor of Philosophy in horticultural science.

Students electing other majors in the plant science curriculum—agronomy, genetics, plant pathology, pomology, vegetable crops, and viticulture—may spend the freshman and sophomore years at Los Angeles and then transfer to the campus, Berkeley or Davis, where their major work is offered. The same is true of students electing certain other curricula in the College of Agriculture—agricultural economics, agricultural education (general agriculture), entomology and parasitology, food science, irrigation science, preforestry, soil science, range management, and preveterinary medicine. Students electing the



animal science and landscape architecture curricula are advised to transfer after one year at Los Angeles. The first three years of the agricultural engineering curriculum are available in the College of Engineering at Los Angeles. Students who register with the intention of later transferring to Berkeley or Davis to pursue other curricula or to obtain majors in the plant science curriculum other than those offered at Los Angeles are requested to consult the PROSPECTUS OF THE COLLEGE OF AGRICULTURE (obtainable from the Office of the Dean) and the appropriate advisers in agriculture at Los Angeles.

Every student *must* consult his adviser each semester for guidance in meeting the requirements of the curriculum of his choice, and his study list *must* be approved by the Dean's Office.

The Department of Botany of the College of Agriculture, Los Angeles, offers the major in botany in the College of Letters and Science. Graduate work is also offered which leads to the degrees of Master of Arts and Doctor of Philosophy in botanical science. Students who elect the major in botany are directed to register in the College of Letters and Science. Each student will be required to consult an educational counselor during his freshman and sophomore years, and thereafter an official adviser in the Department of Botany.

## REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

### PLANT SCIENCE CURRICULUM, MAJORS IN SUBTROPICAL HORTICULTURE, FLORICULTURE AND ORNAMENTAL HORTICULTURE, AND GENERAL HORTICULTURE

The candidate for the degree of Bachelor of Science in the College of Agriculture must complete the following requirements:

(1) The equivalent of four years of university residence. The senior year must be spent in the College of Agriculture, University of California.

The student should note that in order to complete the work in agriculture within the normal four-year period, prerequisites must be systematically met and the proper sequence of courses followed. Unnecessary delay will thereby be avoided. It is advisable, therefore, for the student who wishes to receive his bachelor's degree in agriculture at the University of California to take as much of his undergraduate program as possible in this University.

(2) One hundred and twenty-four units of university work, with at least an equal number of grade points, in addition to matriculation units and Subject A. (The Subject A examination in English Composition is required of every undergraduate student on or before his first registration in the University.)

(3) Thirty-six of the 124 units must be in upper division courses (courses numbered 100-199). Not more than 4 units may be in lower division physical education courses.

(4) Nine units of mathematics. Matriculation work may be offered toward this requirement, with each year of high school work valued at 3 units. The student normally satisfies this requirement before the end of his sophomore year in the University.

(5) American History and Institutions. The student may meet this requirement by passing an examination for which no credit is given, or by completing certain prescribed courses or course sequences.

(6) In addition, every student must complete the requirements as listed under the following curriculum:

#### PLANT SCIENCE CURRICULUM

(a) Students must complete the following:	Units
Chemistry (may include Biochemistry) .....	16
Botany and Plant Physiology .....	9

Physics .....	6
Bacteriology .....	4
Economics .....	3
English and/or Speech .....	6
Genetics .....	4
Plant Pathology .....	4
Geology, Soils, Irrigation, or Plant Nutrition .....	6
Entomology .....	4
Zoölogy or 3 additional units of Botany or Plant Physiology	3
Military, Air, or Naval Science and Physical Education....	8-14

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(b) Students must also complete a major, the minimum requirement of which consists of 12 units of approved upper division courses in the field of the major.

Certain courses, or their equivalent, are required by the following majors:

*Floriculture and Ornamental Horticulture:* Chemistry 1A, 1B, 8; Botany 1 and 107; Entomology 144; Irrigation and Soils 126, and 105 or 110A; and Floriculture 131A or 131B, 136 and 139. Recommended: Botany 3 or 151, Plant Pathology 140, Agricultural Economics 130, and Subtropical Horticulture 2 and 110.

*Subtropical Horticulture:* Chemistry 1A, 1B, and 8; Botany 1 and 107; Subtropical Horticulture 2. Recommended: Plant Pathology 130, Irrigation and Soils 126 and 105; Entomology 134, and Subtropical Horticulture 100 and 110.

**Freshman and Sophomore Years**

During the freshman and sophomore years the following schedule will normally be followed. For examples of programs in other curricula of the College of Agriculture students should consult the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and the appropriate advisers for agricultural students at Los Angeles.

The College of Agriculture requirements for graduation are the same whether the student registers at Berkeley, Davis, or Los Angeles.

**Example of Minimum Program—Plant Science Curriculum**

	Units First Semester	Units Second Semester
<i>Freshman Year</i>		
*Military or Air Science (for men) .....	1½	1½
Physical Education .....	½	½
English or Speech 1A-1B .....	3	3
Botany 1, 6 .....	5	4
Chemistry 1A-1B .....	5	5
History 7A .....	..	3
	15	17
<i>Sophomore Year</i>		
*Military or Air Science (for men) .....	1½	1½
Physical Education .....	½	½
Physics 2A-2B .....	4	4
Chemistry 8 or 10, 5A .....	3 or 4	3
Subtropical Horticulture 2, 110 .....	3	2
Economics 1A .....	3	..
Bacteriology 1 .....	..	4
	15 or 16	15

\* Or Naval Science (8 units per semester)

There is no degree of Associate in Arts in the College of Agriculture. Consequently students who are unable to meet the above-outlined program of study during the first two years may take some of the requirements in their junior or senior years. It should be noted, however, that any great departure from the above program will delay graduation beyond the normal four-year period.

### Junior and Senior Years

The additional required courses—Entomology 134 or 144; Botany 140 (Plant Genetics); 6 units from Irrigation and Soils 105, 110A, 126 and Geology; Plant Pathology 120 or 130; and American History and Institutions—together with such electives in any department as may be approved by the major adviser, will be taken during the junior and senior years. For elective courses in other departments, see the GENERAL CATALOGUE, DEPARTMENTS AT LOS ANGELES.

Where the option exists, the student should consult the major adviser concerning the 12 units required for his major.

### OTHER CURRICULA

The requirements in the other curricula offered by the College of Agriculture will be found in the PROSPECTUS OF THE COLLEGE OF AGRICULTURE (obtainable from the Office of the Dean). Programs suitable for the conditions at Los Angeles are given in the PROSPECTUS or may be had from the appropriate advisers in agriculture, who should be consulted.

## REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

### MAJOR IN BOTANY

Since the major in botany is given in the College of Letters and Science, the requirements for the degree of Bachelor of Arts with the major in botany will be found under College of Letters and Science (see page 5).

### HONORS

Students who become candidates for the bachelor's degree in the College of Agriculture may be recommended for honors on the basis of the quality of the work done in the regular curriculum.

I. *Honorable Mention with Junior Standing* (that is, to students who have completed 64 units in their freshman and sophomore years).

(1) Honorable mention is granted with junior standing to students who attain at least an average of two grade points for each unit of credit undertaken. Such students will remain in honors status unless their average for all work at the end of any semester falls below two grade points for each unit undertaken.

(2) The list of students who receive Honorable Mention is sent to the chairman or study-list officer of the College before the beginning of the next semester.

II. *Honors with the Bachelor's Degree.*

(1) Honors are granted at graduation only to students in honor status who have completed the major with distinction, and who have a general record satisfactory to the Study-Lists and Courses Committee.

(2) Students who, in the judgment of the Study-Lists and Courses Committee, show marked superiority in their major subject may be recommended for the special distinction of Highest Honors.

(3) A list of students to whom Honors or Highest Honors in the College have been awarded is published in the COMMENCEMENT PROGRAMME.

## COLLEGE OF ENGINEERING

THE DEPARTMENT OF ENGINEERING offers courses leading to the degrees of Bachelor of Science, Master of Science, and Doctor of Philosophy.

The degrees of Bachelor of Science, Master of Science, and Doctor of Philosophy are granted on the Los Angeles campus for the completion of appropriate programs of study in Engineering.

The principal undergraduate curriculum, and the one to which the other curricula are related, is the basic Engineering Curriculum. This curriculum emphasizes a thorough understanding of the following fundamentals of engineering: mathematics, physics, chemistry, mensuration, graphics, materials, engineering mechanics, circuit analysis, thermodynamics and heat transfer, fluid mechanics, strength of materials, engineering design, and economics. Superimposed on this framework are 24 or more units pertinent to a chosen major field of engineering, and eighteen or more units selected from fields complementary to the major field, such as English, the fine arts, foreign language, the humanities, and the social sciences. The elective courses not only provide for some degree of specialization in the conventional fields designated as aeronautical, civil, chemical, electrical, mechanical, etc., but also permit the student to make a selection of courses with emphasis in a nonconventional field of his own choosing, subject to departmental approval. Moreover, this basic curriculum is designed to lead toward professional engineering and competence in solving the problems in whatever field of engineering the graduate may undertake.

Some students may wish to take courses, or to work under faculty members, which are available only on the campuses at Berkeley or Davis. Such transfer between campuses is encouraged since the curricula and courses are arranged to complement rather than duplicate activities. Transferring students may elect to receive their degrees from the College of Engineering on the Los Angeles campus under the basic curriculum in engineering or under one of the alternative curricula which are available. All curricula offered by the College have been accredited by the Engineers' Council for Professional Development.

An optional Cooperative Work-Study Program enables students to obtain appropriate experience during an occasional fall or spring semester. Students who are self-supporting proceed more slowly toward graduation than do those who follow the regular schedule. Students who engage in part-time employment or extracurricular activities may plan to spend more than four years by securing permission to register for fewer units per semester.

Upon admission to the College of Engineering, students are assigned to faculty advisers and are under the guidance of the Dean of the College of Engineering. Study programs are arranged in conference with the adviser and must be approved by the Dean.

### ADMISSION TO ENGINEERING

*Matriculation requirements.* A statement concerning matriculation requirements will be found on pages 15C-18C of this bulletin. High school subjects prerequisite to college courses required in all engineering curricula include: plane geometry, 1 unit; algebra, 2 units; trigonometry,  $\frac{1}{2}$  unit; mechanical drawing, 1 unit; chemistry, 1 unit, or physics, 1 unit (both are desirable). Without this preparation it will be necessary for the student to take equivalent courses in college, thereby barring him from regular courses and delaying his graduation.

\**Admission to the College of Engineering.* Satisfaction of the matriculation requirements admits the student to the University but not necessarily to the College of Engineering. Admission to the College of Engineering is based primarily on the combined results of an entrance examination and a further consideration of previous scholastic achievement. There are two qualifying examinations: the Engineering Examination, Lower Division; and the Engineering Examination, Upper Division.

The Engineering Examination, Lower Division, is an aptitude test designed to demonstrate the applicant's general scholastic ability, and his ability to comprehend scientific materials and principles, to use mathematical concepts and to judge spatial relationships.

The Engineering Examination, Upper Division, is an achievement test including the subject areas of English usage, engineering drawing, general chemistry, mathematics through integral calculus, and general physics. This examination is given to all students just prior to completion of the sophomore year, irrespective of the school or campus in which the student has completed the first two years. Admission to upper division courses and continuation in the College of Engineering is based on satisfactory completion of this examination and a consideration of the student's grades in required freshman and sophomore subjects. Each undergraduate student transferring to the College of Engineering at the junior level also must take the Engineering Examination, Upper Division, and his admission to the college will be based upon satisfactory completion of the examination and upon his grades in required freshman and sophomore subjects. Places and times for the examination may be obtained from the Dean of the College of Engineering.

Students who do not have facility in the use of English language will usually find it necessary to acquire this training before undertaking the engineering course of study.

*Advanced standing.* Many graduates of California high schools will find it desirable to complete the first and second years at junior college. Students transferring from other colleges and universities to the University of California for the study of engineering should have adequate training in the basic subjects of the curricula as outlined in the following pages.

*Intercampus transfer.* Application blanks may be obtained at the Office of Admissions. Transfer will be restricted to students who are in good standing (C average or better) and who can also present adequate reason for wishing to transfer.

## CURRICULA IN ENGINEERING

Programs for the five curricula leading to the degree of Bachelor of Science are outlined on the succeeding pages. Each curriculum requires 140 units and is normally completed in four years of residence.

*Honors with the Bachelor's Degree.* Students in the College of Engineering may receive honors for high scholarship or for distinction in advanced work. Students who display marked superiority may be recommended for the special recognition of highest honors.

Students who plan to seek advanced degrees are referred to the ANNOUNCEMENTS OF THE GRADUATE DIVISION, SOUTHERN AND NORTHERN SECTIONS.

The ANNOUNCEMENT OF THE COLLEGES OF ENGINEERING, Berkeley and Los Angeles, gives information concerning the history of the Colleges, facilities for instruction and research, Engineering Extension, and other related matters.

\* Enrollment in engineering courses is permitted to students from other colleges who are undertaking curricula in which engineering courses are prescribed. A non-engineering student may be admitted to engineering courses by petition approved by the Dean of his College and by the Dean of the College of Engineering.

## ENGINEERING CURRICULUM

*The Scientific and Professional Core—*

The basic training for all students, regardless of major field of interest, comprises the major work of the first three undergraduate years. The following tabulation gives these required courses, together with a schedule for the military and physical education requirements, and an indication of allowances for elective work.

	Units First Semester	Units Second Semester
<i>Freshman Year</i>		
Subject A (if required) .....	..	..
†Military Science or Air Science .....	1½	1½
Physical Education .....	½	½
Chemistry 1A-1B .....	5	5
Engineering 1LA .....	2	..
Engineering 1FA, Engineering 2 .....	1	3
Engineering 8 .....	..	2
Engineering 48 .....	1	..
Mathematics 5A-5B .....	5	3
Physics 1A .....	..	3
	16	18
<i>Sophomore Year</i>		
†Military Science or Air Science .....	1½	1½
Physical Education .....	½	½
Engineering 15A-15B .....	3	3
Mathematics 6A-6B .....	3	3
Physics 1D-1C .....	3	3
Electives .....	7	7
	18	18
<i>Junior Year§</i>		
Engineering 100A-100B .....	3	3
Engineering 102B .....	3	..
Engineering 103A .....	..	3
Engineering 104A-104B .....	3	3
Engineering 105A-105B .....	3	3
Engineering 108B .....	2	..
Mathematics 110C .....	3	..
Electives .....	1	6
	18	18
<i>Senior Year</i>		
Engineering 104C-104D .....	4	4
Engineering 113A .....	2	..
Electives .....	12	12
	18	16

*The Individualized Program—*

The Engineering Curriculum provides for an individualized program based on

† Naval science may be substituted for military or air science and the excess units (not to exceed 6 units) credited to nonmajor field electives. Additional elective courses may be substituted for military or air science by those students who are exempt from the requirement.

§ Satisfactory completion of the Engineering Examination, Upper Division, is prerequisite to upper division work in engineering.

45 units of elective work, approved by the Dean of the College of Engineering, within the following requirements:

1. **The Major Field Electives:** A minimum of 24 units must be devoted to a field of engineering endeavor selected by the student. Eighteen of these units must be upper division courses; 6 units may be lower division courses. This program should contain a reasonable balance of courses in the practice and in the science of engineering and may include appropriate advanced courses in other departments of the University. Each student, in consultation with faculty advisers, is encouraged to select a program suited to his individual needs and interests.  
Six units of work in engineering design and engineering economics are required of all students and may be accomplished within the 24 units of major field electives.
2. **The Non-Major Field Electives:** A minimum of 18 units must be devoted to humanistic social subjects such as social sciences, literature, philosophy, and the arts. The student may satisfy the University requirement in American History and Institutions within this category.  
Three units of study must be in the life sciences and may be accomplished within either the major field or the non-major field electives. Subjects such as psychology, physiology, bacteriology, etc., are acceptable, as are the applied life science courses, Engineering 30, 130A, 130B.
3. **The Free Electives:** Three units of the 45 units of elective subjects may be chosen from either major field or non-major field electives.

### ALTERNATIVE CURRICULA

(Senior years to be completed on other campuses)

In order to make available certain courses which are offered only on the Berkeley or Davis campuses, students who are graduating under the College of Engineering, Los Angeles, may elect to substitute the senior year of one of four alternative curricula in Agricultural Engineering, Civil Engineering, Electrical Engineering, or Mechanical Engineering for the senior year of the Engineering Curriculum.

The first three years of these alternative curricula may be completed on the Los Angeles campus by adding to the courses specified under the Engineering Curriculum, in substitution of an equivalent number of major field elective units, certain sophomore and junior year subjects. For example, in the Agricultural Engineering curriculum the following substitutions would be elected:

#### *Agricultural Engineering*

To be taken on the Davis Campus during Summer Session following the sophomore year:

Agricultural Engineering 49 ..... 6 units

	Units First Semester	Units Second Semester
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#### *Senior Year, Davis Campus*

Agricultural Engineering 113 .....	3	4
Agricultural Engineering 114 .....	3	..
Agricultural Engineering 115 .....	3	..
Agricultural Engineering 130 .....	..	1
Agronomy 1 .....	3	..
Irrigation 120 .....	3	..
Mechanical Engineering 151 (or Physics 112) .....	3	..
Mechanical Engineering 152A (or Chemistry 109) .....	..	3
Soil Science 106 .....	..	4
Electives .....	3	3
	<hr/>	<hr/>
	18	15

## COLLEGE OF APPLIED ARTS

THE COLLEGE OF APPLIED ARTS was established on the Los Angeles campus of the University of California in 1939 in order to meet the demand for training of a specialized character which has a technical or professional appeal, to organize certain scientific and scholarly studies into suitable curricula which may be applied in the fields of industry and the arts, and to provide curricula for the training of teachers in specialized areas.

The College now offers majors in art, music, and theater arts, leading to the degree of Bachelor of Arts; and majors in business education, home economics, and physical education, leading to the degree of Bachelor of Science. Interdepartmental curricula leading to the degree of Bachelor of Science are offered in apparel design, apparel merchandising, and dance.

Nondegree curricula are offered in prenursing, preoccupational therapy, preoptometry, and prepublic health.

By completing additional requirements set up by the School of Education, students may secure *teaching credentials* in connection with the majors in art, business education, home economics, music, physical education, and theater arts.

### REQUIREMENTS FOR GRADUATION

#### Lower Division

#### *Requirements for Upper Division Standing and the Degree of Associate in Arts*

The work of the lower division comprises the studies of the freshman and sophomore years, while the upper division refers to the junior and senior years. In order to be admitted to upper division courses, a student must have attained upper division standing.

Upper division standing is granted to students who have completed at least 60 units of college work, including requirements (A), (B), (C), and (D) below, with a C average in all work done in the University.

Students transferring from other colleges in the University or from other institutions with 60 or more units of credit are given upper division standing, but any subject shortages in requirements (A) to (D) must be completed concurrently with the requirements for the bachelor's degree.

The degree of Associate in Arts will be granted to students who have completed not less than 60 nor more than 90\* units of college work, including requirements (A) to (D) below, with at least a C average in all work done in the University. In addition, the last two semesters (24 units) must be spent in residence at the University and at least the final semester must be completed in the College of Applied Arts.

Certain courses taken in the high school are accepted as fulfilling in part or in whole some of the lower division requirements. However, the fulfillment of lower division requirements in the high school does not reduce the number of units required in the University for the degree of Associate in Arts (60) or for the bachelor's degree (120).

#### (A) General University requirements.†

Subject A.‡

Military, Naval, or Air Science, 6 to 12 units (men).

Physical Education, 2 units.

\* If a student fails to satisfy the requirements for the degree of Associate in Arts by the time he completes 90 units of work, he will proceed toward the bachelor's degree without the degree of Associate in Arts.

† For information concerning exemption from these requirements apply to the Registrar.

‡ An examination in Subject A (English Composition) is required of all entrants at the time of their first registration in the University. For further regulations concerning Subject A, see page 28C of this bulletin.



**(B) EITHER:**

**(B<sub>1</sub>) Foreign Language.** At least 16 units in one foreign language. Without reducing the total number of units required for the degree of Associate in Arts or the bachelor's degree, high school work with grades of C or better and not duplicated by college work<sup>§</sup> will count as follows: 4 units for the first two years together, and 4 units each for the third and fourth years. The requirement may also be met by passing a proficiency examination in one language. Courses given in English by a foreign language department may not be applied on this requirement. (A foreign student whose entire secondary school work was completed in his native tongue may *upon petition* be considered as having fulfilled the foreign language requirement.)

OR

**(B<sub>2</sub>) Natural Science.** At least 12 units chosen from the following list, of which not less than one unit must be in laboratory work. Courses marked with an asterisk (\*) meet the laboratory requirement. Only college courses may apply on the natural science requirement.

Anthropology 1°.

Astronomy 1A or 10, 1B, 2\*, 7.

Bacteriology 1\*, 6.

Biology 12.

Botany 1\*, 2\*, 3\*, 6\*.

Chemistry 1A\*, 1B\*, 2, 2A\*, 5A\*, 5B\*, 8, 9\*, 10\*.

Geography 1A°, 3, 5A°.

Geology 2, 3, 5\*.

Life Sciences 1A-1B (both 1A and 1B must be completed to count on the science requirement).

Meteorology 3 or Geography 3.

Mineralogy 6\*.

Physics 1A\*, 1B\*, 1C\*, 1D\*, 2A\*, 2B\*, 10, 21\*.

Psychology 1B°.

Zoölogy 1A\*, 1B\*, 4\*, 15\*, 25\*, 36\*.

OR

**(B<sub>3</sub>) A combination of Foreign Language and Natural Science** to be distributed as follows:

**Foreign Language.** At least 16 units in not more than two languages. Without reducing the total number of units required for the degree of Associate in Arts or the bachelor's degree, high school work with grades of C or better and not duplicated by college work<sup>§</sup> will count as follows: 4 units for the first two years together, and 4 units each for the third and fourth years. If a new language is begun in college, it may not apply on this requirement unless course 2 with its prerequisites is completed. The requirement may also be met by passing a proficiency examination in one language. Courses given in English by a foreign language department may not be applied on this requirement.

**Natural Science.** At least 9 units chosen from the natural science list set forth above, of which not less than one unit must be in laboratory work. Three units of mathematics not offered in satisfaction

<sup>§</sup> Any student who because of lapse of time or other circumstance feels unable to continue successfully a language begun in high school may consult the department of the language concerned regarding the possibility of repeating all or a part of the work for credit. Such credit would count on the 60 units required for the degree of Associate in Arts and on the 120 units required for the bachelor's degree; but credit is not allowed toward the required 16 units in foreign language for both the high school courses and the college work duplicating them.

\* May be used on natural science or year-course requirement, but not on both.

of (D) may be substituted for three units of this requirement if Astronomy 10 is not also offered.

- (C) *Matriculation Mathematics*. Elementary algebra and plane geometry. If these subjects were not completed in the high school, they may be taken in University of California Extension, but will not be counted as a part of the 60 units.
- (D) *Three Year Courses*. A year course chosen from three of the following seven groups, one sequence to be selected from group 1, 2, or 3.

Only the courses specified below are acceptable.

1. English, Speech:

English 1A-1B, 46A-46B.

Speech 1A-1B, 3A-3B.

English 1A and Speech 1A or 3A.

2. Foreign language. Courses offered in satisfaction of this requirement may not include any of the work offered as part of requirement (B) above. No high school work may be counted on this requirement.

French, any two consecutive courses from the following: 1, 2, 3, 4, 25A, 25B.

German, any two consecutive courses from the following: 1, 2, 3, 3LS, 3PS, 3SS, 4 or 4H.

Greek 1, 2.

Italian, any two consecutive courses from the following: 1, 2, 3, 4.

Latin, any two consecutive courses from the following: 1, 2, 3, 5A, 5B.

Oriental Languages 1A, 1B or 9A, 9B.

Portuguese 1, 2.

Scandinavian, any two consecutive courses from the following: 1, 2, 11, 12.

Slavic Languages 1, 2.

Spanish, any two consecutive courses from the following: 1, 2, 3, 4, 20, 25A, 25B.

3. Mathematics.

Any two of the following courses: Mathematics C, D or E or 1, 2, 3A, 3B, 4A, 4B, 37; Statistics 1.

4. Social Sciences:

Anthropology 1°, 2.

Economics 1A-1B.

Geography 1A°-1B, 5A°-5B.

History 1A-1B, 5A-5B, 7A-7B, 8A-8B.

Political Science 1, 2.

Sociology 1, 2.

5. Psychology:

Psychology 1A, and 1B° or 33.

6. Philosophy:

Philosophy 6A-6B, 20A-20B, 30 and 31.

7. Music, Art (acceptable only when the specific sequence is not the student's major):

Art 1A-1B, 2A-2B, 5A-5B, 6A-6B.

Music 1A-1B, 3A-3B, 5A-5B, 20A-20B, 30A-30B.

*University Extension*. Courses in University of California Extension (either class or correspondence) may be offered in satisfaction of requirements for the degree of Associate in Arts provided they bear the same number as acceptable courses in the regular session. (Equivalent courses bear the prefix X, XL, XB, or XSB.) Extension courses may not, however, be offered as a part of the residence requirement.

\* May be used on natural science or year-course requirement, but not on both.

### Upper Division\*

#### Requirements for the Bachelor's Degree

The bachelor's degree will be granted upon the following conditions:

1. The minimum number of units for the degree is 120. The student must attain at least a C average, that is, he must obtain as many grade points as units attempted in the University of California.
2. He must complete all the lower division requirements of the College of Applied Arts.
3. The requirement of American History and Institutions must be met by passing an examination or courses accepted as satisfactory for this purpose.
4. All candidates for the degree must be registered in the College of Applied Arts while completing the final 24 units. Courses completed in University of California Extension are not considered work in residence.  
Students transferring from other institutions or from University of California Extension with senior standing must complete in the College of Applied Arts at least 18 units in upper division courses, including 12 or more units in the major department. This regulation does not apply to students transferring from other colleges within the University.  
Courses taken at a junior college after the completion of 70 units toward the degree may satisfy lower division subject requirements, but they are not given unit credit toward the 120 units required for graduation.
5. After admission to the upper division, the candidate must complete at least 50 units of college work, of which at least 42 must be in upper division courses.
6. The candidate must complete a minor of not less than 20 units of coördinated courses, of which at least 6 units must be in *closely related* upper division courses. (All courses in a single department are considered closely related.) Courses used on the major or teaching credential may not apply on the minor.
7. The candidate must complete, with a scholarship average of at least one grade point per unit, a major† or curriculum in the College of Applied Arts, and must be recommended by the appropriate department or curriculum committee.

Each student is required to take at least 6 units in his major (either 3 units each semester or 2 units one semester and 4 units the other) during his last or senior year.

Subject to the requirement that at least 12 units of upper division major work must be completed in the College of Applied Arts (see paragraph 4 above), students transferring from other institutions or from University of California Extension may apply transferred upper division credits on the major in an amount equal to the difference between 60 units and their total number of advanced standing units. This regulation does not apply to students transferring from other colleges within the University of California. (NOTE: Junior college credits may not apply on any upper division requirement.)

No student is permitted to change his major after the opening of the last semester of the year in which he intends to graduate.

Students who fail in the lower division to attain at least a C average in any department may be denied the privilege of a major in that department.

\* See page 33 for lower division requirements to be satisfied before taking upper division courses.

† With the approval of the department chairman, six units of "300" courses may be used on both the major and the teaching credential.

A department may submit to the Dean of the College the name of any student who, in the opinion of the department, cannot profitably continue in the major, together with a statement of the basis for this opinion, and the probable cause of the lack of success. The Dean may permit a change of major or may, with the approval of the President, require the student to withdraw from the College.

Any department offering a major in the College of Applied Arts may require from candidates for the degree a general final examination in the department.

## HONORS

*Honorable Mention with the Degree of Associate in Arts.* Honorable Mention is granted with junior standing to students who attain an average of at least two grade points for each unit of work undertaken. Such students remain in honor status for the rest of the undergraduate course unless the average for all work at the end of any semester falls below two grade points for each unit undertaken.

The list of students who receive Honorable Mention with the degree of Associate in Arts is sent to the chairmen of the departments.

*Honor Students in the Upper Division.* The honor list includes the names of:

- A. Students who received Honorable Mention with the degree of Associate in Arts and who are in their first semester of the upper division.
- B. Upper division students who have an average of at least two grade points for each unit undertaken in all undergraduate work in the University of California.
- C. Other upper division students specially approved for listing in the honor status by the Committee on Honors, either upon recommendation made to the Committee by departments of instruction, or upon such other basis as the Committee may determine.

*Honors with the Bachelor's Degree.*

- A. Honors are granted at graduation only to students who have completed the major with distinction, and who have a general record satisfactory to the Committee on Honors. Departmental recommendations are reported to the Registrar.
- B. Students who in the judgment of their departments display marked superiority in their major subject may be recommended for the special distinction of Highest Honors. Departmental recommendations are reported to the Registrar.
- C. A list of students to whom Honors or Highest Honors in the various departments have been awarded is published in the COMMENCEMENT PROGRAMME.

## ORGANIZED MAJORS AND CURRICULA

A major or a curriculum consists of at least 36 units of coördinated upper division courses, together with the required prerequisites designated as "preparation for the major." A major is composed of courses from one or more departments arranged and supervised by a department, whereas a curriculum is a program of study made up of courses from several departments and supervised by a special committee.

Departmental *majors*, with opportunities for specialization as indicated, are offered in the following fields (on page 38):

**MAJOR IN ART**

History and Practice  
 Painting, Sculpture and Graphic Arts  
 Advertising Art  
 Applied Design  
 Costume Design  
 Interior Design  
 Industrial Design  
 Teaching

**MAJOR IN BUSINESS EDUCATION**

Office Administration  
 Accounting  
 General Business  
 Merchandising  
 Office Administration, Accounting, and General Business  
 Accounting, General Business, and Merchandising

**MAJOR IN HOME ECONOMICS**

Clothing and Textiles  
 Foods and Nutrition (Commercial)  
 Food Technology  
 General  
 Teacher Education

**MAJOR IN MUSIC**

General  
 Teaching  
 Performance

**MAJOR IN PHYSICAL EDUCATION**

Physical Education  
 Health Education  
 Physical Therapy  
 Recreation

**MAJOR IN THEATER ARTS**

Motion Pictures  
 Radio  
 Theater  
 Theater Arts—English

Special *curricula*, each involving work in several departments, are offered as follows:

Curriculum in Apparel Design

Curriculum in Dance

Curriculum in Apparel Merchandising

Special attention is directed to the courses listed as preparation for the major. In general, it is essential that these courses be completed before upper division major work is undertaken. In any event they are essential requirements for the completion of the major.

The major must, in its entirety, consist (1) of courses taken *in resident instruction* at this or another university, or (2) of courses with numbers having the prefix XL, XB, XSB, or X taken in University of California Extension.

The student must attain an average grade of C (1 grade point for each unit of credit) in all courses offered as part of the major (or curriculum).

**CURRICULUM IN APPAREL DESIGN**

The curriculum in apparel design is planned to provide students with the knowledge, taste, originality, and technical skills essential to the successful designer in either the wholesale or retail trade, or for the stage and screen.

*Preparation for the Major.*—Art 6A-6B, 7A-7B, 16, 21A, 24, Economics 1A-1B, Home Economics 16.

*The Major.*—Thirty-six units of coordinated upper division courses, including Art 160, 163A-163B, 167, 169A-169B, Home Economics 161, 170, 171A, 172, 175, 176A, 177A, and additional courses chosen from: Art 157A, 161, 166, 176A. Home Economics 162. Recommended: at least one summer of practical experience in a factory or retail store.

**CURRICULUM IN APPAREL MERCHANDISING**

The curriculum in apparel merchandising is designed for students interested in the retailing of clothing, preparing them for positions as salespeople, buyers, or department managers with manufacturers, retail stores, and custom shops.

*Preparation for the Major.*—Art 6A-6B, 7A-7B, 21A, Business Administration 3, Economics 1A-1B, Home Economics 16.

*The Major.*—Thirty-six units of coordinated upper division courses, including Art 160, 163A, 167, Business Administration 150, 160, 162, 163, Home Economics 161, 170, 172, 175, and additional courses chosen from: Art 157,

161, 163B, Economics 170, Home Economics 142, 143, 162, 171A, 176A, Psychology 180. Recommended: at least one summer of practical experience in a factory or retail store.

**CURRICULUM IN DANCE**

The curriculum in dance is designed to give students an opportunity to study in an area involving art, English, music, philosophy, physical education, and psychology as related to dance. This curriculum is not planned to train professional dancers, but rather to offer those interested in dance a program of study in contributing fields.

*Preparation for the Major.*—Art 5A, 6A–6B, Theater Arts 28B, English 1A–1B, 46A–46B, Philosophy 6A–6B, or 20A–20B, or 30 and 31, Physical Education 7, 34, 35, Psychology 1A–1B. Recommended: Chemistry 2, French 1, 2, Music 30A–30B, Zoölogy 15, 25.

*The Major.*—Thirty-six units of coördinated upper division courses, including Art 160, English 114A–114B, Philosophy 136, Psychology 135, 177, Physical Education 130, 150, 151, 153A–153B, 155, and additional courses selected from 100, 131, 140, 141, 142, 145A, 146, 152, 327A–327B.

**PREPARATION FOR PROFESSIONAL CURRICULA**

Certain courses given on the Los Angeles campus of the University of California may be used as preparation for admission to professional colleges and schools of the University.

**PROGRAM FOR REGISTERED NURSES \***

Registered nurses needing further work to meet the requirements for admission to the degree program in the School of Nursing may register in the College of Applied Arts to satisfy the requirements for the degree of Associate in Arts. English 1A–1B, Psychology 1A–1B, Sociology 1, 2 or Sociology 1 and Anthropology 2, or the equivalent, and a laboratory science course should be included.

**PRENURSING CURRICULUM**

The University of California, Los Angeles, offers a four-year collegiate basic program leading to the Bachelor of Science degree in Nursing. The requirements for the Associate in Arts degree in the College of Applied Arts and the courses required by the School of Nursing in the first and second years† are as follows:

<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required).....	..	..
§Physical Education 26.....	½	½
Chemistry 2A.....	5	..
Zoölogy 15.....	..	5
Physics 10.....	..	3
English 1A–1B.....	3	3
History 7A.....	3	..
Psychology 1A–1B.....	3	3
Home Economics 11.....	..	3
	14½	17½

\* Twenty-four to 30 units of credit will be granted for the hospital nursing course.

† Students transferring to the School of Nursing from other colleges may have a longer program than will those who enter the University of California, Los Angeles, as freshmen, since the nursing courses required in the pre-nursing curriculum are available only at the University of California, Los Angeles.

‡ Special sections of Physical Education 26 for nursing students their first and fourth semesters.

	Units First Semester	Units Second Semester
<i>Second Year</i>		
§Physical Education 26 .....	½	½
Zoölogy 25 .....	3	..
Bacteriology 1 .....	4	..
History 7B .....	..	3
Anthropology 2 .....	3	..
Nursing 10 .....	3	..
Nursing 15 .....	3	..
Nursing 20 .....	..	4
Nursing 30 .....	..	8
	16½	15½

### PROOCCUPATIONAL THERAPY CURRICULUM

The University does not offer a complete course in occupational therapy. The following two-year program meets the requirements for the degree of Associate in Arts and includes those subjects recommended by the American Occupational Therapy Association for the freshman and sophomore years. It does not, however, necessarily meet the lower division requirements of all schools of occupational therapy, and each student should ascertain the requirements of the professional school where he plans to take his advanced work and adjust his program accordingly.

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required) .....	..	..
Physical Education 26 .....	½	½
Chemistry 2 .....	3	..
Zoölogy 15 .....	..	5
English 1A-1B .....	3	3
Art 27A-27B .....	2	2
Speech 1A or 3A .....	3	..
American History and Institutions .....	3	3
Elective .....	..	2
	14½	15½

<i>Second Year</i>		
Physical Education 26 .....	½	½
Zoölogy 25 .....	3	..
Physical Education 44 .....	3	..
English 46A-46B .....	3	3
Psychology 1A, 1B or 33 .....	3	3
Sociology 1, 2 .....	3	3
Physical Education 43 .....	..	1
Bacteriology 6 .....	..	2
Electives .....	..	3
	15½	15½

§ Special sections of Physical Education 26 for nursing students their first and fourth semesters.

### PRIOPTOMETRY CURRICULUM

The University offers a five-year program in optometry leading to the degree of Bachelor of Science at the end of the fourth year, and to the Certificate in Optometry and the Master of Optometry degree at the end of the fifth year. The first two years may be taken at Los Angeles; the last three years must be taken in the School of Optometry† at Berkeley.

As prerequisites, students should offer the following high school subjects for matriculation: algebra, plane geometry, trigonometry, chemistry, physics, and three years of foreign language.

During the first two years, the following curriculum outline should be followed, with such choice of electives as will meet the requirements for the degree of Associate in Arts in the College of Letters and Science at Berkeley, which is prerequisite to admission to the School of Optometry. For further information see the ANNOUNCEMENT OF THE SCHOOL OF OPTOMETRY.

<i>First Year</i>	Units First Semester	Units Second Semester
Subject A (if required).....	..	..
Military, Air, or Naval Science.....	1½-3	1½-3
Physical Education .....	½	½
Chemistry 1A-1B .....	5	5
Speech 1A-1B or English 1A-1B.....	3	3
Foreign Language .....	4	4
Mathematics D or 1, 3A.....	3	3
	—	—
	*	*
 <i>Second Year</i> 		
Military, Air, or Naval Science.....	1½-3	1½-3
Physical Education .....	½	½
Bacteriology 1 .....	..	4
Psychology 1A, 1B or 33.....	3	3
§Zoölogy 15, 25 .....	5	3
Physics 2A-2B .....	4	4
Chemistry 8 .....	3	..
	—	—
	*	*

\* Normal total, 15 or 16 units. Many students find it advisable to attend Summer Session to avoid excess programs.

† Enrollment in the School of Optometry is limited. Candidates for admission to the first year (junior) class are accepted primarily on the basis of scholarship, particular emphasis being placed on the required subjects. Of applicants who are not legal residents of California, not more than fifteen will be admitted to the first-year class unless the number of California applicants admitted is less than thirty-five. In the selection of these non-residents, special consideration will be given to applicants from states west of the Mississippi. Applications for admission for any year must be filed with the Director of Admissions by May 1 of that year.

§ While Zoölogy 15, 25 is preferred, one of the following sequences will be accepted for admission purposes: Zoölogy 1A-1B, or Zoölogy 1A and comparative anatomy, or Zoölogy 1A and human anatomy. Unless a human anatomy course equivalent to Anatomy 102 at the University of California, Berkeley, or Zoölogy 25 at the University of California, Los Angeles, is included, Anatomy 102 must be taken in the junior year program in the School of Optometry.



## PREPUBLIC HEALTH CURRICULUM

The University offers a four-year program in public health leading to the degree of Bachelor of Science. Options are available in the fields of sanitation, public health statistics, and preadministration.

The high school preparation should include chemistry and trigonometry; physics and second-year algebra are recommended.

On the Los Angeles campus it is recommended that the first two years' work be taken in the College of Applied Arts, following the program outlined below. The last two years' work is given under the School of Public Health. For further information see the ANNOUNCEMENT OF THE SCHOOL OF PUBLIC HEALTH.

	Units First Semester	Units Second Semester
<i>First Year</i>		
Subject A (if required).....	..	..
†Mathematics D (if required).....	3	..
Physical Education.....	$\frac{1}{2}$	$\frac{1}{2}$
Military, Air, or Naval Science.....	$1\frac{1}{2}$ -3	$1\frac{1}{2}$ -3
Chemistry 1A-1B.....	5	5
English 1A-1B or Speech 1A-1B.....	3	3
Psychology 1A, 1B or 33.....	3	3
Public Health 5.....	..	3
Political Science 1.....	3	..
	4	4

<i>Second Year</i>		
Physical Education.....	$\frac{1}{2}$	$\frac{1}{2}$
Military, Air, or Naval Science.....	$1\frac{1}{2}$ -3	$1\frac{1}{2}$ -3
Zoölogy 1A-1B or 15 and 25.....	4	4
Bacteriology 1.....	..	4
Economics 1A-1B or Sociology 1 and 2.....	3	3
History 7A.....	3	..
Physics 2A-2B, or 2A and Business Administration 3.....	4	4
	4	4

## COLLEGE OF PHARMACY

THE NEED for more extended education in pharmacy and the recent changes in the qualifications required in order to take the state licensing examinations in pharmacy have necessitated changes in the requirements for the degree Bachelor of Science in Pharmacy. The new requirements include one year of prepharmacy, as part of the admission requirements, and four years of residence in the College of Pharmacy. The new requirements will be in effect for all students starting the prepharmacy curriculum September, 1953. Students who fail to satisfy the new admission requirements will not be eligible for admission to the College of Pharmacy with sophomore standing after September, 1953.\*

\* Students are reminded that in order to qualify for the California State Board examinations in pharmacy the candidate must have four years of resident attendance in an accredited College of Pharmacy.

† Mathematics D required if student did not take either two years of high school algebra or  $1\frac{1}{2}$  years of algebra and trigonometry.

‡ Normal program, 15 or 16 units.

The College of Pharmacy offers a four-year curriculum leading to the degree Bachelor of Science in Pharmacy. (The four years do not include the year of prepharmacy.) A fifth year leading to the degree Master of Pharmacy is available to those who qualify for admission to the Graduate Division, Northern Section. Information concerning these curricula, in addition to that given below, may be found in the ANNOUNCEMENT OF THE COLLEGE OF PHARMACY which may be obtained from the Dean, College of Pharmacy, University of California Medical Center, San Francisco 22.

In addition to the above curricula, graduate courses leading to the degrees Master of Science and Doctor of Philosophy in Pharmaceutical Chemistry are open to qualified students. These programs are under jurisdiction of the Graduate Division of the University. For details concerning them, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, NORTHERN SECTION, and the Graduate Division bulletin entitled ANNOUNCEMENT IN THE BIOLOGICAL SCIENCES, both of which may be obtained from the Graduate Division, University of California, Berkeley 4, California.

#### THE FOUR-YEAR CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

##### *Requirements for Admission*

To be admitted to the College of Pharmacy, students must have satisfied the requirements for admission to the University and must have completed in the University of California or in another institution of approved standing, with an average grade of C or better, at least 30 units of the program set forth on page 24 under the heading Prepharmacy. In order to complete the prepharmacy studies in the minimum time, it is recommended that the students complete intermediate algebra, trigonometry, and elementary chemistry in the high school.

##### *Program*

The first year of the four-year curriculum may be taken at any approved collegiate institution. However, the work of the first year will count in satisfaction of one year of residence (see below) only when taken in the College of Pharmacy on either the Berkeley or the Los Angeles campus of the University. The courses required for completion of the first year are set forth below. The additional three years, leading to the degree Bachelor of Science in Pharmacy, are offered on the San Francisco campus.

<i>First Year</i>	Units First Semester	Units Second Semester
Zoölogy 1A-1B .....	4	4
Physics 2A-2B .....	4	4
Mathematics 3A-3B .....	3	3
History 7A-7B .....	3	3
Military Science .....	3	3
	—	—
	17	17

Students who have completed the prepharmacy studies and the requirements of the first year of pharmacy cannot be assured of admission to the second year on the Medical Center campus. When the number of qualified applicants for the second year of the four-year curriculum exceeds the available facilities, selection will be made on the basis of scholarship as determined from the College record and by examination. A personal interview may be required. Application blanks for admission to the College of Pharmacy on the Medical

Center campus may be obtained from the Admissions Office, 103 Pharmacy Building, The University of California Medical Center, San Francisco 22, California. *Application for admission to the College of Pharmacy, Medical Center Campus (San Francisco), must be filed between October 1 and April 1 preceding the September of the proposed admission.*

### *Graduation*

Candidates for the degree Bachelor of Science in Pharmacy must have completed at least four years of residence in an accredited college of pharmacy and must have completed the four-year curriculum of the College of Pharmacy, University of California, including at least 129 units of work, with an average grade of C or better. It should be emphasized that the four-year residence requirement can be met in the minimum time only by taking the studies of the first year in residence in the College of Pharmacy on either the Berkeley or the Los Angeles campus of the University.

### *Master of Pharmacy*

Qualified students who have received the degree Bachelor of Science in Pharmacy, or who have completed all requirements for that degree except the residence requirement, may undertake the studies of the fifth year leading to the master's degree. Students completing the program of the fifth year with an average grade of B or better will be awarded the degree Master of Pharmacy.

Provision is made for students who elect to take both the prepharmacy year and the first year of the pharmacy curriculum at an approved institution (junior college, state college, etc.) other than a college of pharmacy. Such students can satisfy both the curricula requirements and the residence requirements by completing the work of the fifth year. Qualified students taking the fifth year of the professional program in satisfaction of the residence requirement for the bachelor's degree may be awarded the degree Master of Pharmacy together with the degree Bachelor of Science in Pharmacy upon completion of these studies with an average grade of B or better. Students who do not achieve a B average for the work of the fifth year will receive the bachelor's degree and a certificate of completion of the fifth year.

## **SCHOOL OF BUSINESS ADMINISTRATION**

THE SCHOOL OF BUSINESS ADMINISTRATION at Los Angeles, replacing the College of Business Administration, was established in the spring of 1950. The School admits students of junior or higher standing, and offers curricula leading to the undergraduate degree of Bachelor of Science and to the graduate degrees of Master of Business Administration and Doctor of Philosophy.

The School of Business Administration, in general, continues the tradition of the College of Business Administration as a professional school of the University whose purpose is to provide for qualified students a well-balanced education for careers in business at the management and administrative levels. The general and specific requirements of the School are designed to furnish a broad preparation for careers of management rather than a highly specialized proficiency in particular occupations. The two-year curriculum leading to the degree of Bachelor of Science consists of a basic program of professional education for business management plus specialization in one field. The basic program attempts to create an understanding of the operation of the business enterprise within the whole economy; to develop proficiency in the use of such tools of management as accounting, business law, statistical and economic analysis; and to provide knowledge of the principles of management in several functional fields. Upon completing the basic program, students undertake a minimum of four courses in their chosen field of emphasis. Opportunity for

concentration is offered in the fields of accounting, finance, insurance, production management, personnel management and industrial relations, marketing, transportation and traffic management, real estate and urban land economics, and office management.

Under the jurisdiction of the Graduate Division, Southern Section, the School of Business Administration offers two graduate programs, one for the degree of Master of Business Administration, and a second for the degree of Doctor of Philosophy. While both programs encompass advanced work in a field of concentration, the M.B.A. degree emphasizes preparation for a professional career in the management and operation of economic enterprises, while the Ph.D. program emphasizes broad scholarship, correlation of knowledge, and ability to make original contributions through independent investigation. For further information about the graduate program in business administration, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, and the ANNOUNCEMENT OF THE SCHOOL OF BUSINESS ADMINISTRATION, LOS ANGELES.

## **UNDERGRADUATE SCHOOL OF BUSINESS ADMINISTRATION**

### **Admission to Undergraduate Status**

In accordance with the general objectives of the School of Business Administration, students are accepted on the basis of intellectual capacity and academic preparation as demonstrated by their work in the first two years of college. It is recommended that students prepare themselves by completing an organized program of broad general education in the natural sciences, the social sciences, and the humanities—fields of knowledge that provide a useful foundation for students preparing themselves for positions of responsibility in business. Such a program, for example, may be fulfilled by meeting the requirements for the Associate in Arts degree in the College of Letters and Science (Berkeley or Los Angeles), the prebusiness curriculum in the College of Letters and Science (Los Angeles), or the Associate in Arts degree in the College of Applied Arts (Los Angeles). Students who have pursued one of these programs and who have completed 60 units of college work with an average of grade C or better, but who lack a few courses for the completion of the curriculum, should be encouraged to make application. Students who are accepted with deficiencies in subject or curriculum requirements in the lower division will be required to remove these deficiencies the first semester of residence, wherever possible, and it is normally preferable for them to remove these minor deficiencies as a part of a planned program in the School of Business Administration.

Organized programs of study in other colleges, such as Engineering, Agriculture, or Letters and Science at the Santa Barbara, Riverside, or Davis campus of the University of California, are also acceptable if junior standing is achieved. In fact, students who plan for careers in Agriculture or in Production Management may find it highly desirable to spend their first two years completing work acceptable in the curricula of these colleges.

Students who apply to enter the School of Business Administration as candidates for the Bachelor of Science degree are expected to meet the following requirements:

- (1) Admission to the University of California (see page 14C of this bulletin).
- (2) Achievement of upper division standing (minimum of 60 units with at least a grade C average) in one of the colleges of the University of California, or an equivalent program of work completed at another institution. (Although, as noted above, completion of certain curricula is recommended, admission to the School of Business Administration may be granted before completion, provided upper division standing is achieved.)

- (3) Completion of the following specific course requirements, or their equivalent (admission to the School will normally be granted to otherwise qualified students who have completed parts but not all of these requirements):
- (a) Business Administration 1A-1B, Elementary Accounting.
  - (b) Economics 1A-1B, Principles of Economics.
  - (c) Mathematics 2, Mathematics of Finance, or, Mathematics 3B, First Course in Calculus.
  - (d) English 1A, English Composition.
  - (e) Completion of course 2 (or the equivalent) in a foreign language.
  - (f) Completion of at least one laboratory course in natural science at the college level.

Applications for acceptance by the School of Business Administration (Los Angeles) should be filed with the Director of Admissions not later than August 15 for the fall semester and not later than January 15 for the spring semester.

### Requirements for the Degree of Bachelor of Science

The degree of Bachelor of Science will be granted upon fulfillment of the following conditions:

- (1) A minimum of 128 units. A candidate must have attained at least a grade C average or as many grade points as units attempted.
- (2) A candidate for the degree must be registered in the School of Business Administration while completing the final 24 units of work and must have followed organized semester programs approved by the Dean. This regulation applies both to students entering the School of Business Administration from another university and to students transferring from other divisions of this University.
- (3) Students admitted to senior standing in the School of Business Administration (Los Angeles) on the basis of credit from other institutions or on the basis of credit from University Extension, must complete in residence, subsequent to such admission, at least 18 units of upper division Business Administration courses, including at least 6 units in their chosen field of concentration.
- (4) Completion of requirements (a) to (d) below is required of all candidates.
  - (a) *University requirement of American History and Institutions.*
  - (b) *Basic Courses:* All students in the School of Business Administration must complete a minimum of 3 units in each semester course, and must complete the courses in proper sequence.
    - Business Administration 100 (Theory of Business)
    - Business Administration 101 (Business Fluctuations and Forecasting)
    - Business Administration 105A-105B (Business Law)
    - Business Administration 115 (Business Statistics)
    - Business Administration 120 (Intermediate Accounting)
    - Economics 135 (Money and Banking)
    - Business Administration 140 (Elements of Production Management)
    - Business Administration 150 (Elements of Personnel Management)
    - Business Administration 160 (Elements of Marketing)
    - Business Administration 190 (Organization and Management Theory)

It is the policy of the School of Business Administration to require courses 100, 105A, 115 and 120 to be taken in the student's first semester in the School, followed immediately by the second semester program including courses 101, 105B, and Economics 135. Thus, the basic tools of economic analysis, business law, statistics and account-

ing are acquired before the senior work begins in the functional areas of concentration. Any adjustments in the programs of entrants, necessitated by subject deficiencies from lower division, or any other reason, may be made only by the Associate Dean for Student Affairs.

- (c) *The field of concentration*: At least four courses aggregating not less than 10 units in one of the nine following fields (may not include basic required courses listed under (b) above):

Accounting  
 Finance  
 Insurance  
 Production Management  
 Personnel Management and Industrial Relations  
 Marketing  
 Office Management  
 Transportation and Traffic Management  
 Real Estate and Urban Land Economics

Students who do not wish to specialize in any one of the fields of concentration must complete four upper division business administration courses beyond the basic required courses listed under (b), each one of which must be in a separate subject-matter field.

- (d) *Scholarship requirements*:

- (1) At least a C average in all work undertaken in the University.
- (2) At least a C average in all upper division courses taken under requirements (b) and (c) above and any other upper division courses in business administration, business education, and economics.
- (3) At least a C average in all subjects undertaken in the field of concentration (c) above.

## GRADUATE PROGRAMS OF THE SCHOOL OF BUSINESS ADMINISTRATION

### Admission

Admission procedures are the same for the programs leading to the Master of Business Administration and the Doctor of Philosophy degrees.

(1) Formal application is made to the Dean of the Graduate Division for *regular* graduate status, and should state the degree objective of the candidate. Transcripts are then evaluated to determine if the prerequisites for this status are met. These prerequisites include the following:

- (a) *Regular* Graduate Status will be indicated if the student's undergraduate scholarship record is at least the equivalent of 1.5 grade-point average (half way between grade B and C) at the University of California, Los Angeles, in all courses taken in the junior and senior years and in junior-senior courses in Business Administration and Economics.
- (b) *Unclassified* Graduate Status will be indicated if the student's undergraduate record does not meet the above minimum requirement for regular status.

(2) The two graduate programs of the School of Business Administration presuppose a working knowledge of the nine core-course areas which comprise the basis of the Bachelor of Science degree in Business Administration. These subjects provide the fundamental ideas and the basic tools used in the graduate courses. Each student is expected to demonstrate his understanding of these core subjects by passing a Classifying Examination covering the nine areas. The nine core-course requirements or their equivalent for the B.S. degree in the School of Business Administration are:

Business Administration 100. Theory of Business.  
 Business Administration 101. Business Fluctuations and Forecasting.  
 Business Administration 105A-105B. Business Law.  
 Business Administration 115. Business Statistics.  
 Business Administration 120. Intermediate Accounting.  
 Economics 135. Money and Banking.  
 Business Administration 140. Elements of Production Management.  
 Business Administration 150. Elements of Personnel Management.  
 Business Administration 160. Elements of Marketing.  
 Business Administration 190. Organization and Management Theory.

He may take these examinations as soon as he has demonstrated by the passing of formal courses or by other suitable means that he is prepared for them. Review of the nine fields is advised. When the Classifying Examination is completed satisfactorily, the student enters either the M.B.A. program or the Ph.D. program, residence for which begins at this point.

(3) The applicant receives from the School of Business Administration and the Graduate Division a reply to his application.

- (a) If there are no scholarship or subject shortages, the acceptance is accompanied by a statement of the procedures required, including the date of the Classifying Examination, normally held immediately prior to registration.
- (b) If the application shows subject or scholarship deficiencies, it may be accepted, and the student is granted unclassified graduate status and receives a statement of the deficiencies and an appointment with an adviser. Students in unclassified graduate status are given reasonable time in which to qualify for regular status, and will not be registered in graduate courses until that status is achieved.

### Requirements for the Degree of Doctor of Philosophy

The following information supplements the statement of general requirements for the Doctor of Philosophy degree in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

The program of study leading to the Ph.D. degree in Business Administration embraces five fields of study. Three of these fields, Quantitative Methods, Management Theory and Policy, and General Economic Theory, normally are included in every doctoral program, although a substitution may be made by the guidance committee in one of these fields. The other fields may be chosen from the list currently offered by the Department of Business Administration: Accounting, Finance, Personnel Management, Production Management, Marketing, Management Theory and Policy. With the approval of the Guidance Committee, a candidate may elect one of the above fields in the Department of Business Administration, and a second field from another department in the University.

Normally a student will be expected to complete at least three courses in each of the five fields of concentration in preparation for the Qualifying Examinations. The programs of study of all candidates shall be reviewed and approved by the departmental Committee on Graduate Studies.

*Foreign Language.* Reading proficiency in the two foreign languages most useful in the conduct of the candidate's studies will be required; except that the Department, with the consent of the Graduate Council, will permit substitution for one foreign language of a program of study, or a demonstration of proficiency, in a field external to the candidate's major subject where this will be more conducive to sound research results. (For example, economic history or mathematics through calculus might be substituted in appropriate cases.)

*Notice of Ph.D. Candidacy.* As early as possible, preferably at the end of the first semester of graduate study, the student should declare his intention

of proceeding to candidacy for the Ph.D. degree. This statement of intention should be made in duplicate, on Form 1, which is available at the Office of the Dean of the Graduate Division.

**Guidance Committees.** On approval of the notice of Ph.D. candidacy, the student enters the formal Ph.D. degree program. A guidance committee will be appointed to assist the student in the preparation of his *proposed program for residence study*, to make a report to the department chairman of the progress of the candidate, and to make recommendation of the candidate for his Qualifying Examinations.

**Doctoral Committees.** On recommendation of the guidance committee and upon nomination of the department to the Graduate Council, a doctoral committee for each candidate is appointed. This committee conducts the written and oral Qualifying Examinations, and is responsible for making nominations for advancement to candidacy.

**Advancement to Candidacy.** At least one semester prior to the date the degree is anticipated, the candidate must file with the Graduate Division his *Application for Candidacy for the Degree, Doctor of Philosophy* (Form 4).

**The Dissertation.** The candidate files with the Department of Business Administration a *proposal for a doctoral dissertation* and proceeds under the guidance of his doctoral committee. The dissertation must be prepared in accordance with the instructions furnished by the Graduate Division.

**Final Examination.** The final examination, conducted by the doctoral committee, is oral and deals primarily with the subject matter of the dissertation.

### Requirements for the Degree of Master of Business Administration

1. **Units of work.** (Minimum unit requirements only are outlined below. The Departments may prescribe such additional courses as are believed necessary to satisfy the educational needs of the student.)
  - a. At least 12 units of graduate courses (200 series) in business administration are required, 6 of which must be taken in the student's field of concentration and 6 of which must be outside the field of concentration and divided between at least two other fields. In certain instances, graduate work taken in economics may be counted toward the 12 units of graduate work required in business administration. These units may also be applied to meet the 6 units required outside the Department, but will not reduce the total number of 24 units required for the degree.
  - b. Six units of electives in business administration or economics, which may either be graduate courses (200 series) or upper division courses (100 series) listed as acceptable for the master's degree, are required. These selections must have the approval of the adviser.
  - c. At least 6 units (100 or 200 series) of the 24 required for the degree must be taken outside the Department of Business Administration. These selections must have the approval of the adviser. Students whose undergraduate preparation has been in fields other than business administration are advised to substitute business administration courses on this requirement.
2. **Fields of concentration.** Fields of concentration in which graduate work is offered by the Department of Business Administration are the following:
  - a. Statistics
  - b. Accounting
  - c. Finance
  - d. Production management
  - e. Personnel management and industrial relations
  - f. Marketing
  - g. Real estate and urban land economics
  - h. Business organization and policy
 Substitute fields of concentration based upon graduate work offered by other departments where the material is closely related to the central prob-



lems of business administration may in certain instances be approved. Although a research report is not a requirement for the master's degree, students are encouraged, as part of their graduate programs, to register for Business Administration 299, Research in Business Administration, and to submit a research report for a maximum of 4 units of graduate credit.

3. *The comprehensive examination.* The candidate for the degree of Master of Business Administration must pass an integrated comprehensive written examination based on his program of graduate study.
4. *Foreign language requirement.* For the degree of Master of Business Administration, no foreign language examination is required.
5. *Scholastic requirement.* To qualify for the degree of Master of Business Administration, a grade-point average of 2.0 or better must be maintained for all work taken in graduate standing, including undergraduate courses taken in unclassified status. No credit will be given for any course in which the grade is less than C.

### HONORS

The Executive Committee of the School will recommend for Senior Honors Privileges and for Honors or Highest Honors with the bachelor's degree such students as it may judge worthy of that distinction.

## SCHOOL OF EDUCATION

THE SCHOOL OF EDUCATION, established on the Los Angeles campus July 1, 1939, offers professional curricula to students preparing for teaching service in elementary and secondary schools, for experienced teachers desiring preparation for educational administration, research, or other specialized phases of public school education; and for graduate students who seek the degrees of Master of Arts in Education, Master of Education, or Doctor of Education. The School of Education makes provision for all types of teacher preparation formerly offered in the Teachers College, which was discontinued on June 30, 1939.

The School of Education maintains a Selection and Counseling Service designed to help prospective students in Education discover the vocational opportunities in the public schools, whether or not as individuals they can qualify for teaching credentials or degrees, and what program each should follow in order to achieve his chosen professional objective.

Each person planning to qualify for a credential or for a graduate degree in Education should consult the Selection and Counseling Service in Room 206, Education Building, as early as possible in his academic career. This applies to freshmen and sophomores as well as upper division and graduate students even though enrollment in the School of Education is contingent on the attainment of junior standing. Graduate students qualifying for teaching credentials and those working toward advanced degrees (M.A. in Education, M.Ed. and Ed.D.) should also consult the Selection and Counseling Service.

The Selection and Counseling Service provides a testing program once each semester covering aptitude for teaching and for advanced work in Education. Credential candidates are also referred to the University Health Service for a special health check for teaching, and to the Credentials Counselor for advice on academic course patterns. *Specific assignment to student teaching will be contingent upon completion of these steps at least a semester in advance of application for student teaching.* Both credential candidates and candidates for advanced degrees in Education may request (a) interpretation of test results in the light of general qualifications and specific plans; (b) a complete speech check and assistance with speech problems; (c) referral to community

agencies for preteaching experience with children; (d) and discussion of personal and professional problems.

All candidates for enrollment in curricula of the School of Education must be students in good standing in the University of California, must have completed the requirements for the degree of Associate in Arts in one of the colleges of the University, or the equivalent, and must be approved by a physician of the University of California as having met the health requirements of the State Board of Education.

The School of Education offers curricula leading to certificates of completion and State credentials authorizing service in the following fields:

1. Kindergarten-Primary
2. General Elementary
3. Junior High School
4. Special Secondary in the fields of:
  - a. Art
  - b. Business Education
  - c. Homemaking
  - d. Music
  - e. Physical Education
  - f. Trade and Industrial Education\*
5. General Secondary
6. Junior College
7. Special Education Credentials:
  - a. Special Secondary for Teaching the Mentally Retarded Child
  - b. Special Secondary in Correction of Speech Defects
  - c. School Psychometrist
  - d. School Psychologist
8. Attendance Officer
9. Special Supervision
10. Elementary School Supervision
11. Elementary School Administration
12. Secondary School Supervision
13. Secondary School Administration
14. General Administration
15. Supervising School Budgets.

In addition to maintaining the foregoing curricula, the School of Education provides opportunity for individual programs of study meeting the requirements of the State Board of Education for credentials in certain other limited fields.

Students planning to prepare for kindergarten-primary or general elementary credentials are advised to choose the recommended curricula which are designed to include fields related to teaching in the elementary schools.

Students desiring to prepare for the special secondary credential which is limited to one field should complete the appropriate major in any college in which it is offered. Students desiring to qualify for the general secondary credential are likewise required to complete the appropriate major in any college in which it is offered. In addition, all course requirements for such credentials, as specified by the School of Education, must be completed.

For a general interpretation of credential requirements and assistance in outlining a first semester program, the candidate may arrange for a *prelim-*

\* Courses for the vocational type of credentials in trade and industrial education are provided primarily in Summer Sessions.

*inary interview* in the Office of the Credentials Counselor, 200 Education Building.

A complete statement of curricula, requirements, and procedures in the School of Education will be found in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES, which may be obtained at the Office of the Dean, 231 Education Building on the Los Angeles campus, or by mail upon application to the Registrar of the University of California, Los Angeles 24, California.

## SCHOOL OF LAW

THE SCHOOL OF LAW on the Los Angeles campus of the University of California opened in September, 1949. The new Law Building was completed in the Fall of 1951, and all work of the School of Law has been conducted in the new building since then. The most modern facilities are provided for the teaching and study of law and for legal research.

Applicants for admission to the School of Law must have a bachelor's degree from an accredited institution and must have taken the Law School Admission Test. The application for admission to the School of Law must be made on forms supplied by the School of Law, University of California, Los Angeles 24, California, and should be filed with the School not later than May 1 preceding the fall semester for which application is made. Transcripts of all college, university, or professional school records including the records of work completed on the Los Angeles campus of the University of California must be sent from the institutions of origin to the School of Law, University of California, Los Angeles 24. If the applicant is currently enrolled in a college or university, the transcripts should cover all work completed to date, including a statement showing work in progress. The transcripts should be accompanied by a statement indicating the date on which it is expected the work in progress will be completed, and the necessary supplementary transcripts should be sent to the School of Law.

The Educational Testing Service will supply each applicant with a bulletin of information concerning the Law School Admission Test. For permission to take the Law School Admission Test, applicants should write directly to the Educational Testing Service, P. O. Box 592, Princeton, New Jersey, or 4641 Hollywood Boulevard, Los Angeles 27, California, requesting an application blank and bulletin of information listing places where the test may be taken.

Admissions will be on a competitive basis. Official notice of admission, or denial of admission, will be sent at the earliest possible date.

## SCHOOL OF MEDICINE

THE UNIVERSITY OF CALIFORNIA SCHOOL OF MEDICINE at Los Angeles will admit a first-year class of candidates for the M.D. degree each Fall; the first class was admitted in September, 1951. Applications, together with all transcripts of record and other necessary documents, must be filed by the end of November with the Office of Admissions, University of California, Los Angeles 24. Information regarding the procedure to be followed in making application may be secured from that office.

The requirements for admission to the first-year class of the University of California School of Medicine, Los Angeles, are similar to but not identical with those at the University of California School of Medicine, San Francisco. These requirements, which are detailed below, meet or exceed those set by the Association of American Medical Colleges.

*Basis of Selection:* Enrollment in the School of Medicine will be limited and it will not be possible to accept a number of applicants who might qualify for

admission were the laboratory and clinical facilities greater. Candidates will be considered on the basis of scholarship in a premedical program, especially scholarship in the required subjects listed below. In addition, the candidate must have taken the Medical College Admission Test, administered for the Association of American Medical Colleges by the Educational Testing Service, and must be interviewed by members of the Committee on Admissions of the School of Medicine. The Committee on Admissions is authorized to refuse admission to a student with a low academic record and reserves the right to reject any applicant on the grounds of obvious physical, mental, or moral disability. Successful candidates must pass a physical examination before registering in the School of Medicine.

Except under extraordinary circumstances, no more than ten per cent of each entering class will be selected from those who are not California applicants. To be considered a *California applicant*, a student must meet one of the following requirements:

1. He must have completed 60 units or more in an accredited college or university in the State of California, or

2. He must be a legal resident of the State of California, who lived in the State immediately prior to beginning his premedical work and who left the State temporarily for the completion of all or part of his premedical work.

*Premedical Subjects:* The requirement for admission to the first-year class of the School of Medicine is a baccalaureate degree from an approved college or university. (Work completed at a Junior College will be accepted on the same basis, and with the same limitations, as for other divisions of the University). In exceptional instances a candidate may be admitted after completion of three full academic years (90 semester units). The academic years should be devoted to obtaining as broad an education as possible. Included therein the student will be expected to have completed a pattern of general education essentially equivalent to that required for the Bachelor of Arts degree (or Associate in Arts degree if he is a three-year candidate) by the College of Letters and Sciences on the Berkeley or Los Angeles campus. The major objectives which the student should bear in mind in planning his course are the following: (1) Facility in quantitative thinking represented by mastery of at least elementary mathematics. (2) Facility in the use of English, written and spoken. (3) A thorough understanding of the scientific method. (4) A foundation for ever-increasing insight into human behavior and human thought. The individual man, his culture, and his society must all be studied. Courses in both the social sciences and the humanities are indispensable. Some knowledge of a culture other than the student's own is also highly desirable. In addition, instruction in the School of Medicine presumes a knowledge of the natural sciences represented by 12 semester units of zoölogy, including vertebrate embryology, 16 units of chemistry, including techniques of quantitative analysis and organic chemistry, and 8 units of physics. Only in exceptional instances will students be admitted without this specific preparation. Courses in the Medical Sciences or in closely related fields are undesirable since not only will such work be covered adequately in the School of Medicine, but also because its inclusion in the premedical studies displaces courses that would contribute to the student's broad education. If a student is sometime to attempt research, facility in reading at least one foreign language is essential. French and German will prove most useful, although there is considerable scientific literature in Italian, Spanish, and other European languages.

The third and fourth years should provide the students with the intellectual discipline and the maturing experience to be derived from intensive work in a selected area of study. The students' choice of field of concentration should be based on their interests. Preference will not be given to students who major in some field of natural science; intensive study in the social sciences or in

the humanities is considered equally valuable. Preoccupation with natural science is not necessarily the mark of future success in medicine.

Preference is given in the selection of students to those who, in the opinion of the Committee on Admissions, present evidence of broad training and high achievements in their college education and who possess in greatest degree those traits of personality and character essential to success in medicine; rather than to those who present the greatest number of course credits or who have limited their preparation to the premedical sciences.

*Completion of Requirements:* The student must complete all premedical requirements before beginning the first year of the School of Medicine, although these requirements need not be completed at the time application for admission is filed.

*Graduate Work:* Graduate work leading to the degrees of Master of Science and Doctor of Philosophy is authorized in Anatomy, Biophysics, Infectious Diseases, Physiological Chemistry and Physiology. Students are referred to the Office of the Graduate Division for further information.

*Scholarships:* A limited number of scholarships of varying amounts are available to medical students in all classes.

## SCHOOL OF NURSING

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA authorized the establishment of a School of Nursing at Los Angeles in the summer of 1949. The School admits students of junior or higher standing, and offers curricula leading to the degrees of Bachelor of Science and Master of Science in nursing.

Three curricula are available:

1. *The Basic Nursing Program* leading to the Bachelor of Science degree provides for a close interweaving of general and professional education. The social, emotional and health aspects of nursing are emphasized throughout the curriculum. Nursing laboratory practice under the guidance of faculty members will be provided in hospitals, outpatient clinics, schools, homes, and community health centers.

Requirements for admission:

Satisfactory completion of the prenursing curriculum in the College of Applied Arts.\* (See page 39.)

Personal recommendations as required by the School of Nursing, Los Angeles.

Eligibility for the study of nursing as determined by recommendations, interviews, physical examinations, scholastic attainment, and demonstrated aptitudes.

2. *The Program for Registered Nurses* leading to the Bachelor of Science degree is designed to prepare the registered nurse for professional service in the broad field of community nursing.

Requirements for admission:

Graduation from an accredited School of Nursing and evidence of the fulfillment of the legal requirements for the practice of nursing.

Personal and professional recommendations as required by the School of Nursing.

Eligibility for the study of nursing as measured by the Graduate Nurse Qualifying Examination and other tests administered by the University.

Satisfactory completion of the Associate in Arts degree in the College of

\* Students transferring to the School of Nursing from other colleges may have a longer program than will those who enter the University of California, Los Angeles, as freshmen, since the nursing courses required in the prenursing curriculum are available only at the University of California, Los Angeles.

Applied Arts or an equivalent thereof acceptable to the faculty of the School of Nursing. The following specific courses, however, are prerequisite for admission to the School of Nursing:

English 1A-1B

Psychology 1A-1B

Sociology 1, 2 or Sociology 1 and Anthropology 2 or the equivalent.

One laboratory course in natural science (on college level)

3. Under the jurisdiction of the Graduate Division, Southern Section, the School of Nursing administers *programs leading to the Master of Science degree*. These programs are designed to prepare professional nurses for administrative, supervisory and teaching positions in schools of nursing, hospitals and public health agencies. For further information about the graduate programs in nursing, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

**Requirements for admission:**

Graduation from a recognized college or university having an accredited basic nursing program satisfactory to the School of Nursing, Los Angeles, and the Graduate Division, Southern Section.

or

Graduation from an accredited school of nursing offering satisfactory basic preparation in nursing and from a recognized college or university with a major satisfactory to the School of Nursing, Los Angeles, and Graduate Division, Southern Section.

Evidence of the fulfillment of the legal requirements for the practice of nursing.

An undergraduate scholarship record satisfactory to the School of Nursing, Los Angeles, and to the Graduate Division, Southern Section.

Evidence of two years of successful professional nursing experience in the chosen field of concentration.

Personal and professional recommendations as requested by the School of Nursing, Los Angeles.

**Admission:** All applications for admission to the School of Nursing should be filed not later than June 1 for the fall semester and not later than November 1 for the spring semester. The number of students who can enroll in the School is limited. The School of Nursing reserves the right to admit students on the basis of scholarship, recommendations, interviews and demonstrated aptitudes.

Applications for admission to the undergraduate programs should be filed with the Office of Admissions, University of California, 405 Hilgard Avenue, Los Angeles 24, California.

Applications for admission to the graduate programs should be filed with the Graduate Division, Southern Section, University of California, 405 Hilgard Avenue, Los Angeles 24, California.

## **REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE**

The degree of Bachelor of Science will be granted upon fulfillment of the following requirements.

- (1) The candidate shall have completed at least 126 units of college work, and shall have satisfied the general University requirements. Not more than 30 units toward the required total will be granted the registered nurse for work completed in a hospital school of nursing.
- (2) The candidate shall have maintained at least a C average or as many grade points as units attempted.

- (3) Candidates in the Basic Program shall have completed all required nursing courses in the School of Nursing, Los Angeles.
- (4) Candidates in the Registered Nurse Program shall have completed at least 36 units of coordinated upper division courses as prescribed by the faculty of the School of Nursing, Los Angeles, and shall have been registered in the School while completing the final 24 units of work.

### HONORS

The faculty of the School of Nursing or a duly authorized committee thereof shall recommend for Honors or Highest Honors such students as it may judge worthy of that distinction.

### REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE

The degree of Master of Science will be granted upon fulfillment of the following requirements:

- (1) The candidate shall have met the general requirements of the Graduate Division, Southern Section. (See pages 59-62.)
- (2) The candidate shall have completed in graduate or upper division courses: at least 20 units for Plan I of which 14 shall be in nursing; at least 24 units for Plan II of which 18 shall be in nursing. The additional units required for the degree may be distributed among courses in the 100 or 200 series subject to approval by the student's faculty adviser.

For further information concerning graduate work consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

## SCHOOL OF PUBLIC HEALTH

THE SCHOOL OF PUBLIC HEALTH is a University-wide school. Instruction is given on the campuses at Berkeley, Los Angeles, and San Francisco, leading to the degrees of Bachelor of Science, Master of Public Health, and Doctor of Public Health. A Department of Public Health has been established on the Los Angeles campus which offers courses leading to the degree of Bachelor of Science (with options in the respective fields of sanitation, biostatistics, and administration) and a number of courses that carry credit toward the advanced degrees. The graduate program is administratively centered in the School of Public Health at Berkeley.

### BACHELOR OF SCIENCE DEGREE

*Admission:* Undergraduate students who have satisfactorily completed at least 60 units of work in one of the colleges of the University, or transfer credit evaluated as equivalent, may apply for admission to the School of Public Health. A formal application must be filed in the office of the School. Students are admitted on a competitive basis of aptitude and scholastic record. Any prerequisites in the student's curriculum must be completed in addition to the upper division major requirements. The College of Applied Arts offers a Pre-public Health Curriculum (page 42). It is suggested that interested students follow this program, although it is not necessary that these requirements be completed prior to admittance to the School of Public Health.

*Requirements:* Candidates for the degree of Bachelor of Science must have completed at least 128 units of college work, of which at least the last 24 units shall have been completed in the School of Public Health. The student must have obtained at least as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California.

The degree is granted upon satisfactory completion of the following requirements, including a selected option:

- |                                 |                             |
|---------------------------------|-----------------------------|
| *Subject A                      | Economics 1A-1B             |
| *Military, Air or Naval Science | or Economics 101            |
| *Physical Education             | Sociology 1 and Sociology 2 |
| †Mathematics D, or 1            | or Sociology 101            |
| Public Health 5                 | History 7A                  |
| Bacteriology 1                  | Political Science 1         |
| Chemistry 1A-1B                 | Public Health 100           |
| Physics 2A-2B                   | Public Health 106           |
| Business Administration 3       | Public Health 110           |
| Zoölogy 1A-1B or                | Public Health 134           |
| Zoölogy 15 and Zoölogy 25       | Public Health 145           |
| Psychology 1A                   | Public Health 147B          |
| Psychology 1B or Psychology 33  | Public Health 170           |
| English 1A-1B or Speech 1A-1B   |                             |

Additional requirements for the option in Sanitation:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| Chemistry 8                        | Public Health 113A-113B            |
| Entomology 126                     | Public Health 114                  |
| Engineering 132 or Engineering 172 | Public Health 162                  |
| Political Science 148 or           | Electives to yield a total program |
| Political Science 146              | of 128 units.                      |

Additional requirements for the option in Biostatistics:

- |                         |                                    |
|-------------------------|------------------------------------|
| Mathematics 3A-3B       | Public Health 199                  |
| Public Health 160A-160B | Electives to yield a total program |
| Public Health 161A-161B | of 128 units.                      |

Additional requirements for the option in Administration:

- |                              |                                    |
|------------------------------|------------------------------------|
| Business Administration 105A | Engineering 172                    |
| Business Administration 150  | Public Health 101                  |
| Business Administration 152  | Public Health 162                  |
| Business Administration 190  | Electives to yield a total program |
| Economics 152 or             | of 128 units.                      |
| Business Administration 135  |                                    |

## **GRADUATE DEGREES**

**(Master of Public Health; Doctor of Public Health)**

The Department of Public Health at Los Angeles offers courses in the University's graduate program in public health, but does not offer the full curriculum leading to a graduate degree. However, graduate students may be enrolled on this campus for special work or for work constituting a part of the program leading to either the Master of Public Health or the Doctor of Public Health degree. All applications for graduate study in public health should be addressed to the Dean of the School of Public Health, University of California, Berkeley 4.

\* If required.

† Required if student had less than two years of high school algebra or 1½ years of algebra and trigonometry.



## SCHOOL OF SOCIAL WELFARE

THE SCHOOL OF SOCIAL WELFARE offers a two-year graduate program in social welfare which is fully accredited by the American Association of Schools of Social Work. In addition, the psychiatric specialization is accredited by the American Association of Psychiatric Social Workers. The degree of Master of Social Welfare is awarded to students who successfully complete the prescribed two-year program (four semesters) of 48 units including field work, and who comply with additional specified requirements.

Certain courses are open to part-time students who qualify for admission to the School. A maximum of 6 units of work taken on a part-time basis may be credited toward the master's degree. Part-time students are not, however, admitted to methods courses, to certain related courses, or to field work. Part-time students, with the permission of the School, may enter either in the fall or the spring semester.

Full-time students are admitted to the School in the fall semester and are expected to continue in attendance throughout the academic year. Students who have successfully completed their first year of training in another accredited school of social work may be admitted for a second year of training if they otherwise qualify for admission to the School. Students who have previously attended an accredited school of social work may have certain courses counted toward the degree provided they have been completed within the past seven years. A maximum of 24 such units may be applied toward the Master of Social Welfare degree.

The School of Social Welfare offers courses on the graduate level only. Completion of the University's program in presocial welfare or its equivalent is most desirable as preparation for graduate study in social welfare. Applicants who have not had this preparation will, however, be considered if they have completed a broad undergraduate program in the biological and social sciences and psychology.

Applications for admission should be filed by April 15 of the year in which the applicant wishes to enter the School. Applicants must file an "Application for Admission to Graduate Status" with the Graduate Division of the University, and, in addition, must file an application with the School of Social Welfare and submit other specified information. To qualify for admission to the first-year program an applicant must: (1) have a bachelor's degree from a recognized college or university, and establish his eligibility for admission to regular graduate status at the University of California, Los Angeles; (2) have maintained at least a 1.75 average in undergraduate work except that an applicant with a grade-point average between 1.5 and 1.75 may be considered if the School is convinced that the applicant's potential achievement in the social welfare field is higher than was demonstrated in undergraduate work; (3) have completed at least 15 semester hours in the social sciences and/or psychology; (4) be not over 35 years of age, unless capacity for professional development in the field of social welfare has been demonstrated in social work or in a closely related field; (5) be physically able to meet the demands of the graduate curriculum, as evidenced by a physical examination conducted by the Student Health Service immediately prior to registration; (6) satisfy the School that he possesses the personal attributes essential for professional education and for successful social work practice.

To qualify for admission to the second-year program an applicant must: (1) have successfully completed in an accredited school of social work, a first-year program meeting the current requirements of this School; (2) be physically able to meet the demands of the graduate curriculum, as evidenced by a physical examination conducted by the Student Health Service immediately prior to registration; and (3) satisfy the School that he possesses the personal

attributes essential for further professional education and for successful social work practice.

Agencies having stable and progressive programs capable of providing students with educational as well as practical experience are utilized for field instruction. While the overwhelming majority of placements are in the Los Angeles area, a few may be as far away as Camarillo State Hospital to the north and San Diego to the south. Students are assigned to placements on the basis of their particular educational needs and are expected to work within agency policy including the observation of employment practices and, where stipulated by the agency, the signing of oaths sometimes required of agency employees. In a few agencies stipends are paid to students for field work.

Total enrollment in the School of Social Welfare is limited to the number for whom suitable field work placement can be arranged. As a result, it may not be possible to accept some applicants, even though they may otherwise meet all the qualifications for admission. Preference in the selection of students will be given to those applicants who appear to be best qualified as indicated by their previous experience, scholastic achievements, personal fitness, and aptitude for the social work profession.

### **GRADUATE COURSES**

Admission to courses is by specific approval of the School. Inasmuch as the social work profession is a discipline primarily based upon interpersonal relationships, the School reserves the right to exclude from courses students who have not demonstrated in class, practice, and professional relationships the personal attributes regarded as essential to the successful practice of social work even though the academic work done by such students may be satisfactorily performed. The School reserves the right to exclude from courses any student whose performance as reflected in grades falls below the requirement for the master's degree.

## **THE GRADUATE DIVISION**

### **SOUTHERN SECTION**

THE UNIVERSITY OF CALIFORNIA offers on its southern campuses advanced study leading to the degrees of Master of Arts, Master of Business Administration, Master of Education, Master of Public Administration, Master of Science, Master of Social Welfare, Doctor of Philosophy, and Doctor of Education, to the Certificate in Social Welfare, and to the certificates of completion for the general secondary and junior college teaching credentials and the supervision and administration credentials. For more complete information concerning the work of the Division, and concerning the requirements for higher degrees, consult the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, which may be had upon application to the Registrar of the University of California, Los Angeles 24, California.

### **DEFINITION OF ACADEMIC RESIDENCE**

Every regular graduate student must register for, attend, and complete upper division courses (courses in the 100 series) or graduate courses (200 series) amounting to at least 4 units for each semester or 2 units for each summer session, in order to satisfy the minimum residence requirement in candidacy for any higher degree or certificate issued by the University.

### **STUDY-LIST LIMITS**

In order to counteract the tendency to accumulate credits by sacrificing thoroughness and the high scholarly attainment which comes only through intense

application, the University restricts the number of units in which a student may enroll.

A graduate student in a regular semester is limited to 16 units when he takes only upper division courses, to 12 units when he takes only graduate courses, and to a total made up in the proper proportion of 12 to 16—as for example, 6 graduate and 8 upper division—when he takes both upper division and graduate courses.

Teaching assistants and others employed for approximately half time are limited to three-fourths of these totals. Graduate students engaged full time in other occupations are limited to 4 units of graduate courses or the equivalent thereof.

### REQUIREMENTS FOR THE MASTER'S DEGREE

*Preparation.* The candidate's preliminary training for the master's degree should be substantially the equivalent of that represented by the corresponding bachelor's degree. In the University of California, the bachelor's degree indicates eight years of systematic high school and college work distributed according to the University's requirements for the particular college or course in which the degree is offered.

If the candidate's undergraduate course has been deficient in breadth of fundamental training and fails to provide a proper foundation for advanced work in the department or departments of his choice, it probably will be necessary for him to take specified undergraduate courses before he may be admitted to regular graduate status.

*The degree.* The degree of Master of Arts is awarded for the completion of requirements in any of the major subjects of graduate study at the University of California, Los Angeles, except applied physics, biological chemistry, chemistry, engineering, home economics, horticultural science, infectious diseases, nursing, oceanography, physical education, and social welfare, in which the degree of Master of Science is given. In the Department of Journalism both the degree of Master of Arts and the degree of Master of Science are given. In addition to work leading to the degree of Master of Arts in political science and in international relations, the Department of Political Science also offers work leading to the degree of Master of Public Administration.

Work is offered in the School of Business Administration leading to the degree of Master of Business Administration, in the School of Education leading to the degree of Master of Education, and in the School of Social Welfare leading to the degree of Master of Social Welfare.

*Major fields.* The major fields for the master's degree are:

Anatomy	Geography	Nursing
Anthropology	Geology	*Oceanography
Anthropology-Sociology	German	Philosophy
Applied Physics	Greek	Physical Education (including Recreation)
Art	Health Education	Physics
Astronomy	History	Physiological Chemistry
Biological Chemistry	Home Economics	Physiology
Biophysics	Horticultural Science	Political Science
Botanical Science	Infectious Diseases	Psychology
Business Administration	International Relations	Public Administration
Chemistry	Italian	Social Welfare
Economics	Journalism	Sociology
Education	Latin	Spanish
Engineering	Mathematics	Speech
English	Meteorology	Theater Arts
French	Microbiology	Zoölogy
	Music	

\* At Scripps Institution of Oceanography, La Jolla.

*Application for advancement to candidacy.* Advancement to candidacy must occur not later than one semester prior to the completion of requirements for the degree. Students are warned that such advancement is not automatic, but requires a formal application distinct from registration. A date approximately two weeks after the opening date is set each semester for application for candidacy by those who hope to qualify for degrees at the close of that session.

*Amount and distribution of work.* A student must pursue one of the following plans at the option of the department of his major field for fulfillment of the requirements for the master's degree. Under either plan all requirements for the degree must be satisfied within a calendar year from the time of completion of the course requirement.

*Plan I: Thesis Plan.* At least 20 units and a thesis are required. The units must be taken in graduate or upper division undergraduate courses, and at least 8 of the 20 must be strictly graduate work in the major subject. No unit credit is allowed for the thesis. It is expected that the work of the graduate course, or courses, together with the thesis will not be less than half of the work presented for the degree. After these general and the special departmental requirements are met, the student may take any course in the 100 or 200 series, although he is subject to his major department's guidance in the distribution of his work among the departments. In addition, the major department may require any examination which seems necessary to test the candidate's knowledge of his field.

*Plan II: Comprehensive Examination Plan.* Twenty-four units of upper division and graduate courses are required, of which at least 12 units must be in strictly graduate courses in the major subject. After these general and the special departmental requirements are met, the student may take any course in the 100 or 200 series, although he is subject to his major department's guidance in the distribution of his work among the departments. A comprehensive final examination in the major subject, its kind and conduct to be determined by the department concerned, is taken by each candidate.

*Scholarship.* Only courses in which the student is assigned grades A, B, or C are counted in satisfaction of the requirements for the master's degree. Furthermore, the student must maintain an average of at least two grade points a unit in those courses and also in all others elected at the University subsequent to the bachelor's degree; this includes upper division or lower division courses taken in unclassified status. Three grade points for each unit of credit are given to grade A, two points to grade B, one point to grade C, none to grades D, E, and F.

*Foreign language.* Each department shall determine at its option whether a reading knowledge of a foreign language shall be required of a candidate for the master's degree. The examination in all cases is to be administered by an examiner under the supervision of a committee of the Graduate Council.

*Residence.* The minimum period of academic residence required is two semesters, of which at least one semester must be spent at Los Angeles. The requirement may be satisfied in part by residence in the Graduate Division, Northern Section.

A student is not regarded as in residence unless he is actually attending regularly authorized university exercises amounting to at least 4 units of upper division or graduate work in a regular session, or 2 units in a summer session.

Ordinarily all the work for the master's degree is expected to be done in residence, but a graduate of this University or any other approved candidate may complete part of his work in absence, subject to the approval of the Graduate Council, the regulations on study in absence, and the minimum residence requirement of one year.

*The thesis.* The thesis is the student's report, in as brief a form as possible, of the results of his original investigation. Although the problems for master's degree candidates are of limited scope, they must be attacked in the same sys-

tematic and scholarly way as problems of greater magnitude, as, for example, one under investigation by a candidate for the doctor's degree. Before beginning his work on a thesis, the student must receive the approval of his major department and the instructor concerned, on the subject and general plan of investigation. Detailed instructions concerning the physical form in which theses must be submitted may be had upon application to the Dean of the Graduate Division.

### REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Students who desire to become candidates for the doctor's degree should bear in mind that the degree of Doctor of Philosophy is granted by the University of California not for the fulfillment of technical requirements alone, such as residence and the completion of fundamental courses within a chosen field, but more for the student's general grasp of the subject matter of a large field of study and his distinguished attainments within it, for his critical ability, his power to analyze problems and to coordinate and correlate the data from allied fields to serve the progress of ideas. In addition, he must demonstrate, through his dissertation, the ability to make an original contribution to the knowledge of his chosen field, and throughout his career as a graduate student must prove himself capable of working independently.

*Fields of study.* The fields of study open to candidates for the degree of Doctor of Philosophy are:

Anatomy	Geology	Philosophy
Anthropology	Germanic Languages	Physical-Biological Science
Anthropology-Sociology	Hispanic Languages and Literature	Physics
Biological Chemistry	History	Physiological Chemistry
Biophysics	Horticultural Science	Political Science
Botanical Science	Infectious Diseases	Psychology
Business Administration	Mathematics	Romance Languages and Literature
Chemistry	Meteorology	Sociology
Economics	Microbiology	Zoölogy
Engineering	Music	
English	Oceanography	
Geography		

Other fields and departments will be added as circumstances warrant.

*Preparation.* A prospective candidate for this degree must hold a bachelor's degree from one of the colleges of this University, based on a curriculum that includes the requirements for full graduate status in the department of his major subject, or must have pursued successfully an equivalent course of study elsewhere.

*Residence.* The minimum residence requirement for the doctor's degree is two academic years (or four semesters), one of which, ordinarily the second, must be spent in continuous residence at the University of California, Los Angeles. (See also *Program of study*, below.)

*Foreign language.* Before taking the qualifying examinations for advancement to candidacy for the Ph.D. degree the student must normally pass examinations in two foreign languages acceptable to the department of the candidate's major and the Dean of the Graduate Division. The examinations must show that he is able to read and understand the written form in these languages. These examinations will be administered by an examiner under supervision of a committee of the Graduate Council. A student's native language will not count as satisfying one of the language requirements above.

A department may, with the approval of the Graduate Council, permit a Ph.D. candidate to substitute for one of the languages an adequate program of study or demonstration of proficiency in a field external to the major subject. This substitute program shall be in addition to the normal program

of study and shall be permitted only if, in the judgment of the Graduate Council, the department has demonstrated that such substitution will be more conducive to sound research results than would a reading knowledge of any second language.

*Program of study.* The student's program of study must be approved by the Graduate Council, must embrace a field of investigation previously approved by his department or interdepartment group, and must extend over the full period of study. However, recommendation for the degree is based on the attainments of the candidate rather than duration of his study, and ordinarily not less than three full years will be needed to finish the work.

*Notice of Ph.D. degree candidacy.* As early as possible, preferably at the end of the first semester of graduate study, the student should declare his intention of proceeding to candidacy for the Ph.D. degree. Statement of such intention should be made in duplicate on Form 1, which is available at the Office of the Dean of the Graduate Division. One copy of the form should be filed with the department or interdepartment group of the student's field of study and the other with the Dean.

*Guidance committees.* On receiving such notification an informal guidance committee will be appointed by the department or interdepartment group of the student's field of study to assist the student in making out his program and in preparing him for the qualifying examinations. This committee must give its written approval to the department before the student is permitted to take these examinations and it ceases to exist as soon as he has passed the qualifying examinations.

*Doctoral committees.* Upon nomination of the department or interdepartment group of the student's field of study a doctoral committee will be appointed by the Graduate Council. Nomination of the doctoral committee should be made on Form 2, which is available at the Graduate Division Office. This committee shall consist of not fewer than five members, three of whom shall be from the department of the candidate's major and two from a department or departments other than the major. The doctoral committee conducts the qualifying oral examination (in some cases also the written examinations), supervises and passes upon the student's dissertation, and conducts the final oral examination. For this final oral examination additional members may be appointed to the committee by the Dean of the Graduate Division in consultation with the department.

*Qualifying examinations.* Before he is admitted to candidacy, the student must pass a series of qualifying examinations, both written and oral. The written examinations may be administered by the department of the student's field of study, but the oral examination must be conducted by his doctoral committee. The qualifying oral examination is never open to the public. The report on the qualifying examinations should be made on Form 3, which is available at the Graduate Division Office. The report form must be signed by the members of the doctoral committee.

*Advancement to candidacy.* Upon receipt of the report on the qualifying examinations an application form for advancement to candidacy (Form 4) will be sent to the candidate. The candidate must file his application, properly approved by the chairman of his doctoral committee, and must report in person to the Dean of the Graduate Division, who determines whether all formal requirements have been met.

A minimum period of resident study approximately equivalent to two semesters must intervene between the date of formal advancement to candidacy and the date of the final examination. The semester in which the student is advanced to candidacy will be counted as a full semester for the purpose of the residence requirement, provided advancement to candidacy occurs at or before midterm.

*The dissertation.* A dissertation on a subject chosen by the candidate, bear-

ing on his principal study and showing his ability to make independent investigation, is required of every candidate for the degree. In its preparation the candidate is guided by his doctoral committee, which also passes on the merits of the completed dissertation, and the approval of this committee, as well as that of the Graduate Council, is required before he is recommended for the degree. Special emphasis is laid on this requirement. The degree is never given merely for the faithful completion of a course of study, however extensive.

The dissertation must be typewritten or printed. Specific instructions concerning the form may be obtained from the Dean of the Graduate Division. Two copies\* of the approved dissertation must be filed with the Dean two weeks before the proposed date of the final examination, for later deposition in the University Library. In certain instances, however, the Graduate Council may authorize the final examination to be taken before the dissertation is accepted. A memorandum of approval from the University Archivist must be submitted with the thesis to the Dean of the Graduate Division.

*Final examination.* The candidate's final examination is conducted by his doctoral committee. The examination is oral and deals primarily with the relations of the dissertation to the general field in which its subject lies. Admission to the final examination may be restricted to committee members, members of the Academic Senate, and guests of equivalent academic rank from other institutions. The report on the final examination should be made on Form 5, which is available at the Graduate Division Office. The report form must be signed by the members of the doctoral committee.

## REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

The requirements for the degree of Doctor of Education are similar in general outline to those for the degree of Doctor of Philosophy; for a detailed statement consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

## THE BACHELOR'S DEGREE FOR GRADUATE STUDENTS

Graduate students may be recommended as candidates for the degree of Bachelor of Arts or Bachelor of Science on completing at least 24 units during one or more years of attendance upon such courses of instruction as are regularly pursued by seniors in the University of California, and on performing such additional work and passing such examinations as may appear necessary to the Executive Committee of the appropriate college. Graduate students may, with the permission of the Graduate Council and the approval of the college concerned, register as candidates for a bachelor's degree, but their course of study will be subject to the jurisdiction of the college concerned, which college shall set requirements and shall also make recommendation for the degree. In all cases candidates must satisfy the requirement of 42 units of advanced studies in the College of Letters and Science, or their equivalent in the colleges of applied science, not all of which, however, need have been completed while in residence at this University. No person will be recommended for a bachelor's degree who shall not have satisfied substantially, at the time of procedure to the degree, the conditions imposed upon undergraduate students at the University of California.

\* If the thesis is typewritten, both the original and first carbon must be on bond paper of one hundred per cent rag content. Onionskin paper is not acceptable. If the thesis is prepared by Osalid process, the candidate is required to submit to the Dean of the Graduate Division the original copy on vellum and two Osalid copies. Candidates for degrees in engineering are required to submit the original on vellum and three Osalid copies.

# COURSES OF INSTRUCTION OFFERED AT LOS ANGELES, FALL AND SPRING SEMESTERS, 1953-1954

The course offerings listed in this bulletin are subject to  
change without notice

## CLASSIFICATION AND NUMBERING

COURSES ARE CLASSIFIED and numbered as follows:

*Undergraduate courses.* These are of two kinds, lower division and upper division.

A lower division course (numbered 1-49, or sometimes indicated by a letter if the subject is one usually given in high school) is open to freshmen and sophomores, and does not count as upper division work in any department.

An upper division course (numbered 100-199) is advanced study in a field which has been pursued in the lower division, or elementary work in a subject of sufficient difficulty to require the maturity of upper division students. A lower division student (except in agriculture) may not take an upper division course without written permission of his dean.

*Graduate courses* (numbered 200-299) are open only to students accepted in regular graduate status. As a condition for enrollment in a graduate course the student must submit to the instructor in charge of the course evidence of satisfactory preparation for the work proposed; adequate preparation will consist normally of the completion of at least 12 units of upper division work basic to the subject of the graduate course. Students in unclassified graduate status are not admitted to graduate courses.

*Teachers' courses* (numbered 300-399) are highly specialized courses dealing with methods of teaching specific subjects, and are acceptable toward academic degrees only within the limitations prescribed by the various colleges.

## ABBREVIATIONS

In the following list of courses, the credit value of each course in semester units is indicated by a number in parentheses after the title. A unit of registration is one hour of the student's time at the University, weekly, during one semester, in lecture or recitation, together with the time necessary in preparation therefor; or a longer time in laboratory or other exercises not requiring preparation. The session in which the course is given is shown by Roman numerals: I for the fall semester, and II for the spring semester. A course given throughout the period September to June is designated Yr. The assignment of hours is made in the SCHEDULE OF CLASSES to be obtained at the time of registration.

*Year courses.* A course given in a period of two semesters is designated by a double number. Economics 1A-1B is an example. Each half of the course constitutes a semester's work. The first half is prerequisite to the second unless there is an explicit statement to the contrary. The instructor makes a final report on the student's work at the end of each semester. Unless otherwise noted, the student may take the first half only and receive final credit for it.



## AGRICULTURE

Harry R. Wellman, Ph.D., *Professor of Agricultural Economics, Berkeley (Vice-President—Agricultural Sciences)*.

Claude B. Hutchison, M.S., LL.D., D.Agr. (hon.e.), *Professor of Agriculture, Emeritus, Berkeley*.

Robert W. Hodgson, M.S., *Professor of Subtropical Horticulture (Dean of the College of Agriculture), Los Angeles*.

*Letters and Science List.*—Agricultural Economics 120, 130; all undergraduate courses in botany; Entomology 100, 126, 134, 144; Irrigation and Soils 110A; Plant Pathology 120; and Subtropical Horticulture 111. For regulations governing this list, see page 6.

*Upper Division Courses.*—All upper division courses announced by this department presuppose at least junior standing. Juniors and seniors in colleges other than Agriculture may elect such courses in the Department of Agriculture as they are qualified to pursue.

*Majors Offered.*—Four majors are offered on the Los Angeles campus, the majors in general horticulture, subtropical horticulture, and floriculture and ornamental horticulture in the plant-science curriculum of the College of Agriculture (for requirements see sections under the College of Agriculture and the departments of Subtropical Horticulture, and Floriculture and Ornamental Horticulture) and the major in botany in the College of Letters and Science (for requirements see sections under the College of Letters and Science and the Department of Botany).

*Preparation for Other Majors in the Plant Science Curriculum and for Other Curricula in the College of Agriculture.*—See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers for students in agriculture.

*Course Offerings.*—On the Los Angeles campus courses are offered by the following departments of the College of Agriculture:

Agricultural Economics (see below). Botany (see page 94). Entomology (see page 169). Floriculture and Ornamental Horticulture (see page 170). Irrigation and Soils (see page 205). Plant Pathology (see page 218). Subtropical Horticulture (see page 314).

## AGRICULTURAL ECONOMICS

Roy J. Smith, Ph.D., *Associate Professor of Agricultural Economics (Vice-Chairman of the Department)*.

Kenneth D. Naden, Ph.D., *Assistant Professor of Agricultural Economics*.

*The Major.*—The major is offered on the Berkeley and the Davis campuses. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in agriculture.

### UPPER DIVISION COURSES

#### 120. Agricultural Policy. (3) I.

Mr. Smith

Lectures and discussions, three hours.

Prerequisite: Economics 1A-1B.

The evolution of agricultural policy in the United States. Historical and analytical treatment of principal farmer movements, legislative provisions for the betterment of agriculture, and current policy problems.

**130. Agricultural Marketing. (3) II.**

Mr. Naden

Lectures and discussions, three hours. Three field trips to be arranged.

Prerequisite: Economics 1A-1B.

Nature of the problems, types of marketing agencies, principal marketing functions and their combination, marketing costs and margins, price quotations and speculation in farm products. Government in its relation to marketing; consideration of proposals for improvement.

**140. Farm Management. (3) I.**

Mr. Smith

Lectures and discussions, three hours. Three field trips to be arranged.

The place, purpose, and scope of organization; community and farm basis; farm enterprise; selecting farms; planning and equipping; capital needs; earnings.

## AIR SCIENCE AND TACTICS

Wiley T. Moore, B.S.Mil.E., B.S.M.E., Colonel, U. S. Air Force, *Professor of Air Science and Tactics (Chairman of the Department)*.

Don S. Cosner, B.S., Major, U. S. Air Force, *Associate Professor of Air Science and Tactics*.

Alfred Kaufman, B.S., Lt. Colonel, U. S. Air Force, *Associate Professor of Air Science and Tactics*.

Clarence H. Schutte, M.Ed., Lt. Colonel, U. S. Air Force, *Associate Professor of Air Science and Tactics*.

Edgar H. Smith, A.B., Major, U. S. Air Force, *Professor of Air Science and Tactics*.

Howard A. Stillwell, A.B., M.S., Major, U. S. Air Force, *Associate Professor of Air Science and Tactics*.

Lansford E. Trapp, M.S., Major, U. S. Air Force, *Associate Professor of Air Science and Tactics*.

Hyman Doros, LL.B., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

William M. Drennan, A.B., M.Ed., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

Kenneth H. Gallagher, B.S., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

Ivan E. Lawrence, A.B., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

William S. Morton, Jr., B.S., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

Jack G. Walker, B.S., Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

John N. Week, Captain, U. S. Air Force, *Assistant Professor of Air Science and Tactics*.

*Letters and Science List.*—All undergraduate courses in this department up to a total of 12 units are included in the Letters and Science List of Courses. Note: This in no way prejudices counting additional Military Science courses up to the 12 units of non-Letters and Science credit accepted toward the degree. For regulations governing this list, see page 6.

*College of Engineering.*—6 units of lower division credit and 9 units of upper division credit for Air Science courses are accepted toward a degree in the College of Engineering.

### Air Force Reserve Officers' Training Corps

The Air Force R.O.T.C. courses are particularly adaptable to students physically qualified who desire to become flying officers or expect to follow an engineering or basic science major. The Air Force R.O.T.C. program constitutes the principal source of junior officers for the Reserve Forces of the United States Air Force, and a major source for the Regular Air Force.

*Objectives.*—The objectives of the Air Force R.O.T.C. program are:

1. To develop by precept, example and student participation, the attributes of character, personality and leadership, which are indispensable to civilian leaders and Air Force officers.

2. To develop an interest in the Air Force and an understanding of its organization, mission, problems, and techniques.

3. To provide the student with a balanced course of officer development training, and officer career training, both theoretical and practical, which in conjunction with his academic curriculum will prepare him to discharge all duties and responsibilities which may be required of him as a junior officer of any component of the Air Force.

4. To arouse in students the desire to become pilots and aircraft observers in the Air Force.

#### LOWER DIVISION COURSES

The lower division or basic courses in either Military or Air Science are prescribed for all first- and second-year undergraduate male students who are citizens of the United States, have not reached their twenty-fourth birthday, and are physically fit for military service unless exempted. Students other than those required to take R.O.T.C. training may be informally enrolled in Air Force R.O.T.C. on application. The Professor of Air Science and Tactics may, at his discretion, allow credit for portions or all of the Air Science I and II courses for equivalent training obtained from active service in one of the Armed Forces. The Air Science basic course consists of two hours of formal academic instruction and one hour of Leadership and Command laboratory per week for the first two academic years. The Air Force supplies formally enrolled basic students on a temporary loan basis, without charge, all the required Air Science textbooks, instructional equipment and a regulation Air Force blue uniform. This Air Force equipment is to be returned in good condition on completion of the course and students are held liable for loss or damage to any component thereof. Informally enrolled Air Force R.O.T.C. students may be supplied Air Force texts and training equipment if available, but not a uniform.

**1A. First-Year Basic Air Science. (1½) I, II.** The Staff  
Introduction to Air Force R.O.T.C.; introduction to aviation; fundamentals of global geography. Leadership laboratory.

**1B. First-Year Basic Air Science. (1½) I, II.** The Staff  
Prerequisite: course 1A or equivalent.  
International tensions and security organizations; instruments of national military security. Leadership laboratory.

**21A. Second-Year Basic Air Science. (1½) I, II.** The Staff  
Prerequisite: course 1B or equivalent.  
Elements of aerial warfare to include targets, different types of Air Force weapons and delivery aircraft. Leadership laboratory.

**21B. Second-Year Basic Air Science. (1½) I, II.** The Staff  
Prerequisite: course 21A or equivalent.  
Elements of aerial warfare to include air oceans, bases, and forces; careers in Air Force. Leadership laboratory.

## UPPER DIVISION COURSES

Students who have successfully completed, or are credited with, the basic course may apply for enrollment in the advanced course of Air Science. Students who have shown potentials for leadership and command and have demonstrated interest and aptitude of becoming an Air Force officer are selected within quota limitations for the advanced courses. First priority for acceptance in the advanced course is given to students who are physically qualified for flying and who desire to enter pilot or aircraft observer schools when called to active military service. Second priority for acceptance is given to students physically qualified for general service and who are majoring in engineering or a basic science in which the Air Force has a primary interest.

The advanced Air Science course comprises four hours of formal academic instruction and one hour of leadership laboratory per week for two academic years. The advanced course students organize and operate a typical Air Force training activity. Advanced students are expected to devote a part of their study time, in addition to scheduled instruction, to planning, administration, and management of the cadet organization and to logistical and social phases of the training activity. The advanced courses of Air Force R.O.T.C. include a summer camp of four or six weeks' duration, normally held following the Air Science III academic year.

Additional qualifications required for the formally enrolled advanced course students include:

1. Must not have reached his twenty-fifth birthday at the time of admission, and be able to graduate with four semesters of academic work, and must graduate in two academic years.

2. Make application to appear before a board of officers appointed for selecting students for the advanced course. This board normally meets during March and November of each year.

3. Successfully pass a physical examination prescribed for Air Force officers.

4. Execute a written agreement with the Air Force to complete the Air Force R.O.T.C. advanced courses, to attend the prescribed summer camp, and to accept a commission as an Air Force officer, if offered.

5. Advanced Air Force R.O.T.C. formally enrolled cadets may be enlisted members of the Air Force Reserve, and as such must retain their reserve status during the advanced course. They may not hold a commission in any of the Armed Forces in any capacity.

Formally enrolled advanced course Air Force R.O.T.C. students are issued Air Force officer-type blue uniforms, which they may be permitted to retain upon acceptance of a commission. These students receive a governmental commutation of ration allowance amounting to \$81 per quarter during the two advanced academic years, in addition to being supplied a major portion of the required Air Science texts and training equipment. Students attending summer camp are paid at the rate of \$78 a month, in addition to being given rations, quarters, and travel expenses.

**131A. First-Year Advanced Air Science. (4) I.**

The Staff

Prerequisite: course 21B or equivalent.

Introduction to Advanced Air Force R.O.T.C.: Air Force commander and staff; problem solving; communication processes; communication in military management; military correspondence; general semantics, role and capabilities of words; learning as a communication process; teaching methods; military law, courts and boards. Leadership laboratory.

**131B. First-Year Advanced Air Science. (4) II.**

The Staff

Prerequisite: courses 21B and 131A or equivalent.

Elements of aerial warfare; study of weapons and delivery aircraft; air oceans, bases, and forces. Leadership laboratory.

## AIR SCIENCE IV—GENERALIZED CURRICULUM

**141A. Second-Year Advanced Air Science. (4) I.** The Staff  
 Prerequisite: courses 131A and 131B or equivalent.  
 Elements of aerial warfare; study of weapons and delivery aircraft; air oceans, bases and forces. Leadership laboratory.

**141B. Second-Year Advanced Air Science. (4) II.** The Staff  
 Prerequisite: courses 131A and 131B or equivalent.  
 Air Force commander and staff; problem solving; communication processes; communication in military management; military correspondence; general semantics, role and capabilities of words; learning as a communication process; teaching methods; military law, courts and boards. Leadership laboratory.

All of the above Air Science courses are for undergraduates. Graduate students may make application for enrollment in the same courses under special conditions.

## SUMMER CAMP TRAINING

Summer camp training is required of all Air Force Advanced Course Cadets. Attendance at summer camp is normally accomplished during the summer months between the junior and senior years of College.

**139. Summer Camp. (3) 232 hours of four or six weeks' duration.**  
 Prerequisite: course 131A or equivalent. Summer Camp Staff  
 Processing in and out; physical training; individual weapons; familiarization of flying; field exercises; United States Air Force Base activity and equipment.  
 This course is held at selected Air Force Bases.

**ANTHROPOLOGY AND SOCIOLOGY**

Ralph L. Beals, Ph.D., *Professor of Anthropology.*

\*Leonard Broom, Ph.D., *Professor of Sociology.*

Harry Hoijer, Ph.D., *Professor of Anthropology (Acting Chairman of the Department):*

Svend Riemer, Ph.D., *Professor of Sociology.*

Constantine Panunzio, Ph.D., *Professor of Sociology, Emeritus.*

\*Joseph B. Birdsell, Ph.D., *Associate Professor of Anthropology.*

George Walton Brainerd, Ph.D., *Associate Professor of Anthropology.*

\*Walter R. Goldschmidt, Ph.D., *Associate Professor of Anthropology and Sociology.*

William S. Robinson, Ph.D., *Associate Professor of Sociology.*

Donald B. Cressey, Ph.D., *Assistant Professor of Sociology.*

Melville Dalton, Ph.D., *Assistant Professor of Sociology.*

William A. Lessa, Ph.D., *Assistant Professor of Anthropology.*

Richard T. Morris, Ph.D., *Assistant Professor of Sociology.*

Ralph H. Turner, Ph.D., *Assistant Professor of Sociology.*

Clement W. Meighan, Ph.D., *Instructor in Anthropology.*

\* Absent on leave, 1958-1954.

\*Ruth Riemer (Ruth Riemer Ellersieck), M.A., *Acting Instructor in Sociology.*  
Eshref Shevky, Ph.D., *Lecturer and Research Associate in Sociology.*



George C. Barker, Ph.D., *Research Associate in Anthropology.*

Mark Raymond Harrington, A.B., *Research Associate in Anthropology.*

Roy T. Simmons, M.A., *Research Associate in Anthropology.*

*Letters and Science List.*—All undergraduate courses in anthropology and sociology are included in the Letters and Science List of Courses. For regulations concerning this list, see page 6.

#### FIELD OF CONCENTRATION IN ANTHROPOLOGY

*Preparation.*—Required: Anthropology 1, 2, Sociology 1, a course in statistics approved by the department, 5 to 6 units chosen from a list of courses available at the departmental office, and fulfillment of the general requirements of the University and the College of Letters and Science.

*The Field of Concentration.*—Thirty upper division units distributed as follows:

1. Eighteen upper division units of anthropology, including courses 102, 103, 125, and 9 additional units selected from anthropology, and Linguistics and General Philology 170 and 171.

2. Six units chosen from Sociology 117, 118A–118B, 122, 124, 126, 128, 143, 144, 150, 166, 167, 168, 169, 170, 186, 189, 190.

3. Six additional upper division units, chosen in accordance with the student's special interest and approved by the adviser, from one of the following groups: sociology, geography, psychology, geology, zoölogy, history, Linguistics and General Philology 170 and 171.

#### FIELD OF CONCENTRATION IN SOCIOLOGY

*Preparation.*—Required: Sociology 1 or 101 and 2, Anthropology 1, 2, Psychology 1A–1B or 101, a course in statistics approved by the department, and fulfillment of the general requirements of the University and the College of Letters and Science. The student should consult a detailed statement of requirements and recommendations available at the departmental office.

*The Field of Concentration.*—Thirty upper division units distributed as follows:

1. Eighteen upper division units in sociology. Students planning any professional career in sociology should include course 118A–118B.

2. Six units chosen from Anthropology 102, 103, 105, 110, 124, 125, 130, 141, 147, 151, 162, 165.

3. Six additional upper division units selected with the approval of the adviser from one of the following groups: anthropology; economics; geography; history; philosophy; political science; psychology.

*Candidates for the General Secondary Credential.*—The undergraduate requirements for a teaching major in social science may be fulfilled by completing the preparation, and items 1 and 2 for the field of concentration in anthropology or items 1 and 2 for the field of concentration in sociology and in addition completing a year lower division course in history, and 6 upper division units in history selected from courses 111A–111B, 121A–121B, 142, 143, 144, 145, 153A–153B, 154, 157, 162A–162B, 171, 172, 173, 174.

*Graduate Work.*—Work leading toward the M.A. and Ph.D. degrees is offered with concentration in one discipline if desired. For details of requirements for the degrees consult the departmental adviser.

\* Absent on leave, 1953–1954.

*Social Welfare.*—Students whose primary interest is in social welfare should normally fulfill the requirements of the Curriculum in Presocial Welfare (see page 18). Students planning on graduate training in social welfare at this University should consult the announcement of the Department of Social Welfare (see page 304).

### ANTHROPOLOGY AND SOCIOLOGY

#### GRADUATE COURSE

274A–274B. Departmental Seminar. (1–1) Yr. Mr. Hoijer in charge  
Prerequisite: consent of the instructor.

### ANTHROPOLOGY

#### LOWER DIVISION COURSES

1. General Anthropology. (3) I, II. The Staff  
(Former number, 1A.)  
Human biology and physical anthropology; the relation of man and the animals; the origin and antiquity of man; fossil man; anthropometry; the criteria of race and racial classification; current racial theories; race problems.
2. General Anthropology. (3) I, II. The Staff  
(Former number, 1B.)  
Lectures, three hours; quiz, one hour. May be taken without Anthropology 1. The nature of culture; culture growth and history; a survey of the range of cultural phenomena, including material culture, social organization, religion, language, and other topics.

#### UPPER DIVISION COURSES

Courses 1, 2, or upper division standing are prerequisite to all upper division courses, except as otherwise stated.

102. Ethnology. (3) I. Mr. Lessa  
Major theories of culture; survey of principal culture types and their distribution; discussion of ethnological problems.
103. Culture History. (3) I. Mr. Brainerd  
A general survey of the origin and development of early civilizations of the Old World: Europe, Asia, Africa.
105. The American Indian. (3) I. Mr. Meighan  
An introductory survey of the Indians of North and South America; origins, languages, civilizations, and history.
106. Archaeology of North America. (3) II. Mr. Brainerd  
Prehistory of North American Indians; prehistoric culture areas; relations with historic Indians.
110. Language and Culture. (3) II. Mr. Hoijer  
Language as a cultural phenomenon; the relations of linguistic processes to cultural processes; language as a means of communication and as a system of symbols; the interrelations of language and culture. Knowledge of linguistics is not required.
- \*124. Comparative Religion. (3) II. Mr. Lessa  
The origins, elements, forms, and symbolism of religion; the role of religion in society.

\* Not to be given, 1953–1954.

**125. Comparative Society. (3) I, II.**

Prerequisite: upper division standing and Anthropology 2, or Sociology 1 or 101, or consent of the instructor.

The analytical study of organized social life in societies of varying degrees of complexity; group formation and function; the relation of value systems to organized interpersonal behavior; systems of status; economic institutions and the role of property; the problem of control and authority in society.

**127. Primitive Art. (3) II.**

Mr. Brainerd

Development and change of conventions in the visual art forms of various nonliterate peoples; effects of craftsmanship, materials, and local culture on primitive art.

**130. Literature of Preiterate Peoples. (3) II.**

Mr. Hoijer

Analysis and classification of literary forms found among preiterate peoples; the content of primitive literature in relation to other aspects of culture; the role of literature and the storyteller in preiterate societies.

**140. Ancient Civilizations of Mexico and Peru. (3) I.**

Mr. Brainerd

Aztecs, Mayas, Incas, and their predecessors; origins, archaeology, traditions, history; social and political systems; religion; art and architecture; intellectual achievements.

**\*141. Indians of Modern Mexico. (3) II.**

Mr. Beals

The contemporary Indian groups in Mexico; the present cultures and their derivations; the problem of the mixed culture; Indian influences on modern Mexican culture.

**147. Peoples of the Pacific. (3) II.**

Mr. Lessa

The aboriginal civilizations of Australia, Malaysia, Melanesia, Micronesia, and Polynesia in prehistoric and modern times; changes arising from European contact and colonization.

**150. Physical Anthropology. (3) I.**

Mr. Meighan

Lectures, three hours; laboratory, two hours.

Prerequisite: consent of the instructor.

A general survey of human osteology in terms of racial variations. The methodology of measurements and observations will require laboratory work.

**\*151. The Genetics of Race. (4) II.**

Mr. Birdsell

Prerequisite: Anthropology 1.

A general survey of the techniques and problems of racial classification. Emphasis is on the genetic approach; and the methods of modern classical genetics and population genetics are applied to human evolution.

**162. History of Anthropology. (3) I.**

Mr. Beals

Prerequisite: Anthropology 1 and 2, and senior standing.

A systematic survey of the development of anthropology as a scientific field, especially designed for majors in anthropology and sociology. Prerequisite to graduate work in the theory and method of anthropology.

**\*164. Basic Patterns of the American Culture. (8) II.**

Mr. Goldschmidt

Prerequisite: upper division standing.

A cultural analysis and description of the central elements in modern American society. The sources and the content of themes of individuation, mobility, competition, industriousness; the influence of these themes upon institutional aspects of society.



- \*165. Acculturation and Applied Anthropology.** (3) II. Mr. Goldschmidt  
Prerequisite: upper division standing and Anthropology 2 or Sociology 1 or 101. Recommended: Anthropology 125.  
The impact of Western civilization upon native societies; characteristic social and cultural adjustments to the impact; community disintegration and reintegration; anthropological problems in colonial and native administration.
- 195. Methods and Techniques of Field Archaeology.** (2) II. Mr. Meighan  
Lecture, one hour; laboratory, three hours. During part of the semester Saturday field work is substituted.  
Prerequisite: consent of the instructor.  
The organization of archaeological surveys and excavations, aims and working methods. Archaeological mapping, photography, and recording.
- 196. Methods and Techniques of Archaeology.** (2) I. Mr. Meighan  
Lecture, one hour; laboratory, three hours.  
Prerequisite: consent of the instructor.  
The interpretation and presentation of archaeological finds. Chronological sequencing; stylistic and statistical analysis; documentation, publication. Techniques of preservation, restoration and illustration of artifacts.
- 199A-199B. Special Problems in Anthropology.** (1-4; 1-4) Yr. The Staff  
Prerequisite: consent of the instructor.

## GRADUATE COURSES

- 250A-250B. Theory and Method of Anthropology.** (2-2) Yr. Mr. Lessa
- 256A-256B. Social Anthropology.** (2-2) Yr. Mr. Hoijer
- \*257A-257B. Problems in Cultural Anthropology.** (2-2) Yr. Mr. Beals
- \*260A-260B. Characteristics of American Culture.** (2-2) Yr. Mr. Goldschmidt
- 265A-265B. Cultures of Latin America.** (2-2) Yr. Mr. Beals
- 269A-269B. Problems in Archaeology.** (2-2) Yr. Mr. Brainerd
- 271A-271B. Linguistic Analysis.** (2-2) Yr. Mr. Hoijer
- \*273A-273B. Human Genetics.** (2-2) Yr. Mr. Birdsell
- \*274A-274B. Man and Environment in the Pleistocene.** (2-2) Yr. Mr. Birdsell in charge  
Prerequisite: consent of the instructor.
- 292A-292B. Research in American Indian Languages.** (1-6; 1-6) Yr. Mr. Hoijer  
Prerequisite: Linguistics and Philology 170, 171.
- 299A-299B. Research in Anthropology.** (1-6; 1-6) Yr. Mr. Lessa in charge

## RELATED COURSES IN ANOTHER DEPARTMENT (See page 213)

- Linguistics and Philology 170. Introduction to Linguistics.** (3) I. Mr. Hoijer
- Linguistics and Philology 171. Introduction to Phonetics.** (3) II. Mr. Hoijer

## SOCIOLOGY

## LOWER DIVISION COURSES

- 1. Introductory Sociology.** (3) I, II. The Staff  
Not open to students who have credit for course 1A or 3.  
Survey of the characteristics of social life, the processes of social interaction, and the tools of sociological investigation.

\* Not to be given, 1953-1954.

- 2. Sociological Analysis.** (3) I, II. The Staff  
Prerequisite: course 1 or 101. Required of majors. Not open to students who have credit for course 3.

Development and application of the basic tools and concepts of course 1 by means of an examination of selected monographic works.

#### UPPER DIVISION COURSES

Course 1 or 101, or the equivalent, is prerequisite to all upper division courses in sociology unless otherwise stated.

- 101. Principles of Sociology.** (3) I, II. The Staff  
For upper division students who have not taken Sociology 1 in this institution. An intensive introduction to sociology. May not be counted as fulfilling the requirements of the field of concentration.

- 117. Introduction to Sociological Research Methods.** (3) I. Mr. Robinson  
Prerequisite: course 1 or 101.  
A systematic treatment of the logic of qualitative and semiquantitative skills of use in sociological research, e.g., classification, questionnaire and schedule design, content analysis, critical analysis of studies, conceptual analysis of case material.

- 118A-118B. Quantitative Methods.** (3-3) Yr. Mr. Robinson  
Lectures, 2 hours; laboratory, 2 hours.  
Prerequisite: course 1 or 101, and Statistics 1, Economics 140, or consent of the instructor.  
A systematic course in the logic and practice of statistical methods of use to working sociologists.

- 120. Social Maladjustment.** (3) I, II. Mr. Cressey  
Prerequisite: course 1 or 101 and upper division standing.  
A survey of the forms and incidence of social maladjustment, and an inquiry into the social factors which generate maladjustment.

- 122. Social Change.** (3) I. \_\_\_\_\_  
Prerequisite: course 1 or 101.  
A study of patterns of social change, resistance to change, and change-producing agencies and processes.

- 124. Collective Behavior.** (3) I. Mr. Turner  
Characteristics of crowds, mobs, publics, social movements, and revolutions, their relation to social unrest and their role in developing and changing social organization.

- 126. Culture and Personality.** (3) II. Mr. Turner  
Prerequisite: Sociology 1 or 101 and upper division standing.  
Theories of the relation of variations in personality to culture and group life, in primitive and modern societies, and the influence of social role on behavior.

- 128. Formal Organizations.** (3) I. Mr. Dalton  
Prerequisite: course 1 or 101 and upper division standing.  
Institutional analysis of administrative structures and voluntary associations; informal organization, ideology, bureaucracy, decision-making, and morale.

- 131. Industry and Society.** (3) I. Mr. Dalton  
Prerequisite: upper division standing.  
A social and cultural analysis of industry. Attention given to occupational roles, status and social participation of workers.

- 142. Marriage and the Family. (3) I, II.** Mr. Riemer  
Prerequisite: upper division standing.  
The marriage-family system; development, modern functions, characteristics, and maladjustments.
- 143. Urban Sociology. (3) I.** Mr. Riemer  
Prerequisite: course 1 and upper division standing, or course 101.  
Urban and rural cultures; the characteristics of cities in Western civilization with emphasis on the American metropolis.
- 144. Rural Society. (3) I.** Mr. Shevky  
Prerequisite: course 1 and upper division standing, or course 101.  
The characteristics of rural social systems in contrast to urban; the nature of folk societies; development of major agricultural traditions in America with emphasis upon the effects of industrialization of rural life; problems in policy and administration of agriculture in modern America.
- 145. Community and Ecology. (3) II.** Mr. Shevky  
Prerequisite: course 1 and upper division standing, or course 101.  
Comparative studies of community structure and organization. Application of the ecologic, sociometric, and similar techniques to community research.
- 150. Latin American Societies. (3) II.** Mr. Beals  
Prerequisite: upper division standing.  
A descriptive survey of the major Latin American societies, emphasizing their historical backgrounds and their emergent characteristics, with special attention to the relations between rural and urban life.
- 160. Systematic Sociology. (3) II.** Mr. Morris  
Prerequisite: course 1 or 101 and upper division standing.  
An intensive survey of scientific sociology: the basic sociological theories; the bases of the superorganic order; the sociology of the individual; the group system and its processes; the institutional system and its processes; the sociology of societies and cultures.
- 161. Social Processes. (3) I.** Mr. Morris  
Systematic study of the genesis, formation, structure, functioning of groups; the associational and dissociational processes, their forms, means, functions, and products.
- 166. Population and Society in the Middle East. (3) I.** Mr. Shevky  
A survey of the Middle Eastern societies; their historic and environmental bases; the contemporary demographic and cultural situation.
- 167. Comparative Sociology of the Middle East. (3) II.** Mr. Shevky  
A review of the unity of Middle Eastern societies in Islam and their diversity exemplified by such nomadic peoples as the Bedouin, countries in process of rapid modernization such as Turkey and Israel, colonial situations as in Algeria and Morocco and underdeveloped areas as Iran and the Arabian countries.
- 168. Sociology and Social Thought. (3) I.** Mr. Dalton  
Survey of major attempts in the history of ideas to understand the nature of man and society; the relation of this intellectual background to the development of sociological theory.
- \*169. Ethical Problems of Social Organization. (3) I.** \_\_\_\_\_  
Prerequisite: upper division major in social science or philosophy, or consent of the instructor.  
Logical and sociological analysis of problems and conflicts in the functioning of social organizations.

\* Not to be given, 1953-1954.

- 170. Contemporary Sociological Theory. (3) II.** Mr. Morris  
Prerequisite: course 1 or 101 and upper division standing.  
An examination of current theoretical formulations; the place of logic, experimentation, key ideas, quantification, and frames of reference, and the relation of symbols to sense data in the development of modern sociological theory.
- 181. Sociopathic Behavior. (3) I, II.** \_\_\_\_\_  
Prerequisite: course 120 and upper division standing.  
Various types of sociopathic behavior analyzed from the standpoint of social isolation and social control.
- 182. Criminology. (3) I.** Mr. Cressey  
Prerequisite: course 120 and upper division standing.  
Theories of the genesis of crime; factors in the organization of criminal behavior from the points of view of the person and group; criminal behavior systems.
- 183. Social Control. (3) II.** \_\_\_\_\_  
Prerequisite: course 120 and upper division standing.  
Theories of social control; consideration of the agencies and means involved in the control of social deviation.
- 184. Control of Crime. (3) II.** Mr. Cressey  
Prerequisite: course 182.  
Theories of punishment; methods of dealing with convicts; police, courts, prisons, probation, and parole. Emphasis on California systems.
- 185. The Field of Social Welfare. (3) II.** Mr. Riemer  
Prerequisite: course 181.  
A sociological analysis of social work as an institution. Attention given to agency organization and functions.
- 186. Population. (3) I.** \_\_\_\_\_  
Prerequisite: course 1 or 101, and senior standing.  
Fundamental problems and techniques in interpreting population data and trends, and a systematic discussion of the more important generalizations which constitute the science of demography today.
- \*189. Ethnic and Status Groups. (3) II.** Mr. Broom  
Prerequisite: course 1 or 101, and upper division standing.  
A study in social stratification; the statuses of the chief minorities in the continental United States with comparisons drawn from Brazil, Hawaii, and other areas; the development, operation, and effects of such policies and doctrines as selective immigration, assimilationism, ethnic pluralism, and racism.
- \*190. American Ethnic Problems. (3) II.** Mr. Broom  
Prerequisite: course 1 or 101, and senior standing.  
A topical study, especially of Southern California. The characteristics of the "visible" ethnic groups, e.g., Japanese, Mexican, and Negro; their organization, acculturation, and differentiation. The operation of segregation, discrimination, and programs of counteraction and amelioration.
- 192. Studies in the Family. (3) II.** Mr. Turner  
Prerequisite: consent of instructor and senior standing.  
A survey of the range of sociological research on family structure and the individual; the intensive analysis of selected research and practice in the planning of research in this area.

\* Not to be given, 1953-1954.

199A-199B. **Special Problems in Sociology.** (1-4; 1-4) Yr.

Prerequisite: open to seniors who have had 6 units of upper division courses in sociology with grades of B or above, and consent of the instructor. Mr. Turner in charge

#### GRADUATE COURSES

236. <b>Social Change in the Middle East.</b> (2) II.	Mr. Shevky
250A-250B. <b>Methodological Problems.</b> (2-2) Yr.	Mr. Shevky
251. <b>Social Maladjustment.</b> (2) II.	_____
252. <b>Criminology.</b> (2) I.	_____
253A-253B. <b>Quantitative Methods in Sociology.</b> (2-2) Yr.	Mr. Robinson
254. <b>Penology.</b> (2) II.	Mr. Cressey
*256A-256B. <b>Demography.</b> (2-2) Yr.	_____
258. <b>Marriage and the Family.</b> (2) I.	Mr. Riemer
259A-259B. <b>Social Institutions.</b> (2-2) Yr.	Mr. Riemer
260. <b>Industry and Society.</b> (2) II.	Mr. Dalton
*261A-261B. <b>Ethnic Minorities.</b> (2-2) Yr.	Mr. Broom
268. <b>Historical and Interpretive Sociology.</b> (2) I.	Mr. Dalton
269. <b>Social Action.</b> (2) II.	Mr. Dalton
270. <b>Selected Problems in Socialization.</b> (2) II.	Mr. Turner
290A-290B. <b>Research in the Local Area.</b> (1-6; 1-6) Yr.	Mr. Shevky
299A-299B. <b>Research in Sociology.</b> (1-6; 1-6) Yr.	Mr. Robinson in charge

## ART

Gibson A. Danes, Ph.D., *Professor of Art (Chairman of the Department).*

Louise Pinkney Sooy, *Professor of Art.*

Frederick S. Wight, M.A., *Professor of Art and Director of Art Materials.*

Karl E. With, Ph.D., *Professor of Art.*

S. Macdonald Wright, *Professor of Art.*

Laura F. Andreson, M.A., *Associate Professor of Art.*

Annita Delano, *Associate Professor of Art.*

Archine Fetty, M.A., *Associate Professor of Art.*

Robert S. Hilpert, M.A., *Associate Professor of Art.*

Hudson B. Roysher, M.F.A., *Associate Professor of Art.*

† Carl D. Sheppard, Jr., Ph.D., *Associate Professor of Art.*

Helen Clark Chandler, *Associate Professor of Fine Arts, Emeritus.*

Clara Bartram Humphreys, M.A., *Associate Professor of Fine Arts, Emeritus.*

E. Clinton Adams, M.A., *Assistant Professor of Art.*

Dorothy Brown, A.B., *Assistant Professor of Art.*

\* Not to be given, 1953-1954.

† Absent on leave, 1953-1954.

- Warren G. Carter, A.B., *Assistant Professor of Art.*  
 Gordon Nunes, M.A., *Assistant Professor of Art.*  
 Josephine P. Reys, M.A., *Assistant Professor of Art.*  
 \*Margaret H. Riswold, B.E., *Assistant Professor of Art.*  
 Jack D. Stoops, M.A., *Assistant Professor of Art.*  
 Jan Stussy, M.A., *Assistant Professor of Art.*  
 Madeline Boyce Sunkees, B.E., *Assistant Professor of Art.*  
 Karl M. Birkmeyer, Ph.D., *Acting Assistant Professor of Art.*  
 Alice M. Everett, M.A., *Instructor in Art.*  
 John Paul Jones, M.F.A., *Instructor in Art.*  
 Marjorie Harriman Baker, B.E., *Lecturer in Art.*  
 Marybelle Olive Bigelow, M.A., *Lecturer in Art.*  
 Mary A. Holmes, M.A., *Lecturer in Art.*  
 Eli Karpel, M.A., *Lecturer in Art.*  
 Margaret T. Lecky, *Lecturer in Art.*  
 Annie C. B. McPhail, M.S., *Lecturer in Art.*  
 Bernard J. Rosenthal, A.B., *Lecturer in Art.*  
 Barbara Wade, M.A., *Lecturer in Art.*  
 James de Holden Stone, *Associate in Art.*  
 Kathryn S. Sutich, M.A., *Associate in Art.*

The student may select a major from among the eight majors offered in the College of Applied Arts or the major in the history of art in the College of Letters and Science; each of these majors leads to the degree of Bachelor of Arts. For information concerning teaching credentials, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

The department reserves the right to withhold student work for a specified time for purposes of exhibition.

### College of Applied Arts

*Preparation for the Major.*—Twenty-four units of lower division art courses including 1A, 1B, 2A-2B, 3A, 6A-6B, 7A and six additional units selected from lower division courses offered by the department, not more than four units in any of three areas—History of Art, Drawing and Painting, Design.

The Department of Art offers eight specializations of *thirty-six* units from upper division courses:

#### 1. History and Practice.

In art history the "A" part of a course is not prerequisite for the "B" part unless otherwise stated.

*The Major.*—16 units from 100A, 100B, 102A, 102B (or Classics 170A-170B), 103A, 103B, 104A, 104B, 108A, 108B, 119A, 119B, 120A, 120B; 4 units from 110A, 110B, 114A, 114B, 115, 124, Philosophy 136; and 12 units from not more than two of the following areas of specialization: Painting: 128A-128B, 130A-130B, 134A-134B; Advertising: 140A, 140B, 145A-145B, 148; Applied Design: 170A-170B, 173A-173B, 176A-176B; Costume Design: 160, 163A, 163B, 166; Interior Design: 150, 152A, 152B, 158A, 158B; and 4 units from upper division art courses.

Art 125A and 125B are recommended.

#### 2. Painting, Sculpture and Graphic Arts.

*The Major.*—Courses 126A, 126B, 127A, 128A-128B, 130A-130B, 134A, 137A, 180; 8 units from Group I; 8 units from upper division art courses.

\* Absent on leave, 1953-1954.

**3. Advertising Art.**

*The Major.*—Courses 108A, 108B, 125A, 125B, 128A–128B, 130A, 134A, 140A, 140B, 145A, 145B, 146, 147A, 147B, 148, and 6 units from upper division art courses.

**4. Interior Design.**

*The Major.*—Courses 150, 152A, 152B, 157A–157B, 158A, 158B, 170A, 176A, 180, 181A–181B; and 6 units from Group I, including 115; and 6 units from upper division art courses.

**5. Costume Design.**

*The Major.*—Courses 157A–157B, 160, 161, 163A, 163B, 166, 167, 169A–169B, 176A; and 8 units from Group I, including 115; and 6 units from upper division art courses.

**6. Applied Design.**

*The Major.*—Courses 137A, 152A, 170A, 173A, 176A, 177A, 180, 181A; and 8 units from Group I, including 115; 6 units from 152B, 157A–157B, 170B, 173B, 176B, 177B; and 6 units from upper division art courses.

**7. Industrial Design.**

*The Major.*—To be announced.

**8. Teaching of Art.**

*The Major.*—Courses 125A or 126A, 130A or 134A, 140A, 152A, 163A or 166, 170A, 173A or 176A or 177A, 190, 370A, 370B; 4 units from Group I and 12 or 13 units from upper division art courses.

**College of Letters and Science**

The Department of Art offers a major in the History of Art in the College of Letters and Science. In none of the courses is the "A" part considered a prerequisite for the "B" part unless otherwise stated.

*Preparation for the Major.*—Courses 1A, 1B and 5A, 5B; recommended: 4 units in any combination of the following: 2A–2B, 6A–6B, 12; and History 1A–1B, Philosophy 6A–6B or 20A–20B, Anthropology 1, 2, Psychology 1A–1B, and French, German, Spanish or Italian.

*The Major.*—Twenty-six units selected from 100A, 100B, 102A, 102B (or Classics 170A–170B), 103A, 103B, 104A, 104B, 108A, 108B, 119A, 119B, 120A, 120B, 124, 125A, 125B; and 4 units from 110A–110B, 114A, 114B, 115 and Philosophy 136.

*Letters and Science List.*—Courses 1A, 1B, 5A, 5B, 10, 12, 45A, 45B, 100A, 100B, 102A, 102B, 103A, 103B, 104A, 104B, 108A, 108B, 110A–110B, 114A, 114B, 115, 118A, 118B, 119A, 119B, 120A, 120B, 124, 190 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

**Graduate Division**

*Requirements for the Master's Degree.*—For the general requirements, see page 60. The Department of Art follows either Plan I, 20 units of graduate work and a thesis, or Plan II, 24 units of graduate work (including 4 units of an advanced project in the laboratory field as approved by the department) and a comprehensive examination. Additional requirements with regard to the several fields of concentration should be obtained from the departmental adviser.

**LOWER DIVISION COURSES****1A. Survey of Art History. (3) I, II.**

Mr. Birkmeyer.

(Former numbers, 11A, 11B.)

A general presentation of architecture, sculpture, and painting from the Prehistoric, Ancient Mediterranean, Classic and Mediaeval Periods of the Western and Eastern civilizations.

- 1B. Survey of Art History. (3) I, II.** Mr. Birkmeyer  
(Former numbers, 31A, 31B.)  
A general presentation of architecture, sculpture and painting from the Renaissance, Baroque, and Modern Periods of Western and Eastern civilizations.
- 2A-2B. Beginning Drawing and Painting. (2-2) Yr. beginning either semester.** Mr. Stussy, Mr. Adams
- 3A-3B. Intermediate Drawing and Painting. (2-2) Yr. Beginning either semester.** Mrs. Brown, Mr. Nunes
- 5A. Fundamentals of Art. (2-3) I, II.** \_\_\_\_\_  
Lecture, 2 hours; quiz, 1 hour. (Art majors may enroll in lecture for 2 units.)  
Definitions of art, terminology, types of approach, design and meaning, color theory, appreciation of art.
- 5B. Fundamentals of Art. (3) II.** \_\_\_\_\_  
Criteria for evaluation of works of art, evolution of forms in art, relation of styles to the cultural context.
- 6A-6B. Beginning Design. (2-2) Yr. Beginning either semester.** Mrs. Baker, Mr. Stoops  
Fundamental course in elements of art, and the principles involved in their use in creative design.
- 7A. Intermediate Design. (2) I, II.** Miss Everett  
Prerequisite: course 6B.  
Application of fundamental art principles to three-dimensional form through experimental and creative studies in a variety of materials and varied spatial constructions.
- 7B. Intermediate Design. (2) I, II.** Mrs. Sunkees  
Experimentation in the relationships of form, line, value, color, and texture as applied to plane surfaces.
- 10. Introduction to Art. (3) I, II.** Mr. Hilpert  
Lecture, 1 hour; studio, 6 hours.  
Not open to students whose major is Art.  
An exploratory course to develop an understanding and appreciation of art as an aspect of all activities of daily life.
- 12. Workshop in Basic Techniques. (2) II.** The Staff  
A study of the practices of design and crafts. Open only to students electing the Letters and Science major in Art History.
- 16. Descriptive Drawing and Rendering. (2) I, II.** Mr. Roysher  
Perspective and other systems of space description, rendering in various media.
- 21A. Apparel Analysis. (2) I, II.** Mrs. Beps  
No prerequisite.  
A discussion of clothing as an art form and as creative expression. Study of line, color, pattern and texture in relation to the individual pictorial and psychological composition.
- 21B. Home Furnishing. (2) I, II.** Miss Wade  
No prerequisite.  
Lecture, one hour; studio, two hours.  
Appreciative study of modern home furnishing.
- 24. Figure Drawing. (2) I, II.** Miss McPhail  
A basic study of the proportions of the human figure.



**27A-27B. Crafts Workshop. (2-2) Yr.**

A course designed to meet the needs of recreational workers, occupational therapists, social workers, and others interested in crafts.

**44. Life Drawing. (2) I, II.**

Mr. Stussy

Problems of anatomy and draftsmanship.

**\*45A. Scientific Illustration. (2) I.**

Recommended to students whose major is science.

Studies in the development of an ability to draw those forms relevant to the science course involved; and an understanding of various media for reproduction.

**\*45B. Scientific Illustration. (2) II.**

Study of a variety of techniques for the presentation of aspects of scientific materials with special emphasis on rendering in color.

## UPPER DIVISION COURSES

## I. History of Art

Courses 1A and 1B or consent of the instructor are prerequisite to all courses in Group I except 118A, 118B.

**100A. The Art of Prehistoric and Primitive Cultures. (2) I.** Mr. With

(Former number, 111A.)

Art, architecture, and industrial arts in prehistoric and primitive civilizations.

**100B. The Art of Early Historical Cultures. (2) II.** Mr. With

(Former number, 111B.)

Evolution of art and architecture in early historical cultures, including the Ancient and Near and Far East.

**\*102A. Classical Art. (2) I.**

(Former number, 151A.)

Art, architecture, and decorative arts of Early Mediterranean and Greek origin to the time of Alexander the Great.

**\*102B. Classical Art. (2) II.**

(Former number, 151B.)

Art, architecture, and decorative arts in Hellenistic and Roman civilizations, including the areas from Asia Minor to Gandhara.

**103A. Medieval Art. (2) I.**

(Former number, 171A.)

From the Early Christian to the Romanesque period.

**103B. Medieval Art. (2) II.**

(Former number, 171B.)

From the Early Gothic to the flamboyant style.

**104A. Renaissance and Baroque Art. (2) I.**

Mr. Birkmeyer

(Former number, 181A.)

Art and architecture from the Proto-Renaissance to end of the High Renaissance.

**104B. Renaissance and Baroque Art. (2) II.**

Mr. Birkmeyer

(Former number, 181B.)

Art and architecture from the formative stages of the Baroque style to the Rococo.

**108A. Modern Art. (2) I.**

Mr. Wight

(Former number, 191A.)

Art and architecture from the late 18th century to the latter part of the 19th century, including the early phases of Industrialization.

\* Not to be given, 1953-1954.

- 108B. Modern Art. (2) II.** Mr. Wight  
(Former number, 191B.)  
Post-Impressionism and the contemporary movements in art, architecture and the fields of domestic, industrial, and commercial art.
- \*110A-110B. Iconography. (2-2) Yr.** Mr. Wright  
A study of myth making, its universal application to the hero tale, legend and folklore; its physical symbols in literature, painting, sculpture, and architecture throughout the mature cultures, East and West.
- 114A. Art Analysis, Theory and Criticism. (2) I.** Mr. With  
(Former number, 130A.)  
Critical study of art theories and methods of approach.
- 114B. Art Analysis, Theory and Criticism. (2) II.** Mr. With  
(Former number, 130B.)  
Criteria of art analysis as a means to an objective evaluation of works of art.
- 115. Utilitarian and Domestic Art. (2) I.** Mr. With  
(Former number, 150.)  
A study of basic forms as determined by human needs, physical functions, esthetic appeal, and symbolic significance.
- 118A. History of Architecture and Sculpture. (2) I.** Mr. With  
(Former number, 131A.)  
Not open to students having credit for courses 1A-1B, 11A-11B, 31A-31B.  
Several outstanding monuments chosen to exemplify the architectural and sculptural characteristics of various epochs. Emphasis is laid upon the relationship between art and religion throughout the ages.
- 118B. History of Painting. (2) II.** Mr. With  
(Former number, 131B.)  
Not open to students having credit for courses 1A-1B, 11A-11B, 31A-31B.  
The works of leading personalities in Western painting are discussed with regard to subject matter, manner of representation, and pictorial organization, and are evaluated on the basis of their cultural and human significance in our time.
- 119A. Art of the Americas. (2) I.** Mr. Danes  
(Former number, 141A.)  
Pre-Columbian and Amerindian art.
- 119B. Art of the Americas. (2) II.** Mr. Danes  
(Former number, 141B.)  
From the seventeenth century to the present day.
- 120A. Oriental Art. (2) I.** Mr. Wright  
(Former number, 161A.)  
A review of the arts of China, Korea, and Japan.
- 120B. Oriental Art. (2) II.** Mr. Wright  
(Former number, 161B.)  
A review of the arts of India, Indonesia, Persia, and Central Asia.
- 124. Research Methods in Art History. (3) II.** Mr. Birkmeyer

\* Not to be given, 1953-1954.

### III. Advertising Art

Courses 6A, 6B and 7A are prerequisite to all courses in Group III.

- 140A. Advertising Art. (2) I, II.** Mr. Karpel  
(Former number, 105A.)  
Development of concepts of design in visual advertising; lettering for reproduction; typography and layout.
- 140B. Advertising Art. (2) I, II.** Mr. Karpel  
(Former number, 105B.)  
Preparation of creative design material employing graphic and photographic techniques for reproduction processes.
- 145A. Advanced Advertising Art. (2) I, II.** Mr. de Holden Stone  
(Former number, 165A.)  
Basic media of visual communication: newspaper, magazine, brochure.
- 145B. Advanced Advertising Art. (2) II.** Mr. de Holden Stone  
(Former number, 165B.)  
Development of professional ideas creatively interpreted for complete advertising campaigns through integration of design and technical experience in graphics, typography, photography, and reproduction.
- 146. Illustration. (2) I, II.** Miss McPhail  
(Former number, 135.)  
The illustrative approach to prose, poetry, drama, and the advertising text.
- 147A. Fashion Illustration. (2) I.** Mrs. Bigelow  
(Former number, 175A.)  
The development of individual expression for the presentation of fashion in advertising; historical and traditional considerations.
- 147B. Fashion Illustration. (2) II.** Mrs. Bigelow  
(Former number, 175B.)  
Prerequisite: courses 140A, 147A.  
Development of the relation between fashion illustration and the advertising media.
- 148. Graphic Communication. (2) I, II.** Mr. de Holden Stone  
(Former number, 155.)  
Intensive and specialized projects of graphic design.
- 149. Advanced Graphic Communication. (2) I, II.** The Staff  
Prerequisite: senior standing, a B average in the major, and consent of the instructor.  
Advanced creative projects in graphic design with emphasis upon the individual solution of problems relative to the field of advertising art.

### IV. Interior Design

Courses 6A, 6B and 7A are prerequisite to all courses in Group IV unless otherwise stated.

- 150. The Development of Furniture. (2) I.** Mrs. Sooy  
(Former number, 101A.)  
No prerequisites.  
Basic types of furniture; their changing forms as expressions of cultures from ancient to modern times.

## 299A-B-C. Advanced Study and Research. (2 to 6) I, II.

299A. Celestial Mechanics.

Mr. Herrick

299B. Astrophysics.

Mr. Popper, Mr. Kaplan

299C. Meteoritics.

Mr. Leonard

## INSTITUTE FOR NUMERICAL ANALYSIS

Attention is directed to the Institute for Numerical Analysis, National Bureau of Standards, the activities of which are described on page 224.

## BACTERIOLOGY

Anthony J. Salle, Ph.D., *Professor of Bacteriology (Chairman of the Department)*.

Meridian Ruth Ball, Sc.D., *Associate Professor of Bacteriology*.

M. J. Pickett, Ph.D., *Associate Professor of Bacteriology*.

Gregory J. Jann, Ph.D., *Assistant Professor of Bacteriology*.



Benjamin G. Fishkin, M.D., *Lecturer in Bacteriology*.

Gordon H. Ball, Ph.D., *Professor of Zoölogy*.

Orda A. Plunkett, Ph.D., *Professor of Botany*.

## COLLEGE OF LETTERS AND SCIENCE

*Letters and Science List.*—All undergraduate courses in bacteriology are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Bacteriology 1; Chemistry 1A-1B, 5A, 8, 9; Zoölogy 1A, 1B; Physics 2A-2B; a modern foreign language. Recommended: Zoölogy 4.

*The Major.*—Bacteriology 103, 105, 106; also 13 units of upper division work in related subjects, these to be selected from the following series: Bacteriology 104, 106C, 107, 108; Public Health 145, 162; Botany 119, 126, 191A, 191B; Zoölogy 101A, 111, 111C, 111H, 118A, 119, 180A; Chemistry 107, 108A, 108B, 108C, 108D, 109A, 109B; Entomology 126; Home Economics 114; Soil Science 110A. Courses are to be chosen with the approval of the department.

*Curriculum for Medical Technicians.*—Students who plan a career in public health laboratory work must have a bachelor's degree in Bacteriology. In addition to completing the requirements for the major, the student must take the following courses: Bacteriology 107, 108; Botany 126; Zoölogy 4, 111, 111C, 111H. A course in biochemistry is advisable.

For practicing in the clinical laboratory field in California it is desirable to have a bachelor's degree with a major in bacteriology. The same courses required of those entering the public health laboratory field must be taken.

Subsequent to graduation an apprenticeship in an approved laboratory is required for eligibility to take the State examination for a license.

## LOWER DIVISION COURSES

1. **Introductory Bacteriology and Microbiology.** (4) I, II.

Mr. Salle

Lectures and laboratory.

Prerequisite: Chemistry 1A or 2A. Students who have credit for course 6 will receive only three units for course 1.

A general introduction to microbiology. Designed for students majoring in bacteriology and related fields.

- 152A. Interior Design. (2) I, II.** Miss Wade  
(Former number, 156A.)  
Creative solutions to specific problems in interior design; a consideration of the home as a functional unit, including an analysis and application of current trends and materials and their uses.
- 152B. Interior Design. (2) I, II.** Mrs. Fetty  
(Former number, 156B.)  
Prerequisite: courses 150, 152A.  
Design experiences in creating room interiors in variations of character and mood to express the individuality of the occupants.
- 157A-157B. Studies in Surface Design. (2-2) Yr.** Mrs. Sunkees  
(Former number, 162A-162B.)  
Prerequisite: courses 152A-152B or 163A-163B, senior standing.  
Creative design applied to the enrichment of plane surfaces; emphasis on research and experiments in designing for textiles and wallpapers; laboratory work using various printing processes and techniques.
- 158A. Advanced Interior Design. (2) I.** Mrs. Fetty  
(Former number, 186A.)  
Prerequisite: course 152A-152B.  
The design of domestic and commercial interiors with limitations as to function, budget, and climate.
- 158B. Advanced Interior Design. (2) II.** Mrs. Fetty  
(Former number, 186B.)  
Prerequisite: course 158A.  
Design of interiors with emphasis on the use of fabrics and materials as developed from architectural specifications for both commercial and domestic interiors.
- 159A-159B. Interior Design Analysis—Theory and Practice. (2-2) Yr.** Mrs. Fetty  
Prerequisite: senior standing, a B average in the major, and consent of the instructor.  
Advanced creative work in the basic concepts of pictorial structure, experimental work in new forms, emphasis on color and structure and their relationship to space.

### V. Costume Design

Courses 6A, 6B and 7A are prerequisite to all courses in Group V unless otherwise stated.

- 160. The Evolution of Modern Costume. (2) II.** Mrs. Sooy  
(Former number, 101B.)  
No prerequisite.  
Developing forms and modes of costume as indicative of the social and economic life of the periods from ancient to modern.
- 161. Design and Structure of Apparel Accessories. (2) I, II.** \_\_\_\_\_  
(Former number, 187.)  
The design and structure of apparel accessories. A study of the historical development of the accessories of each period with emphasis upon the characteristic forms of modern design and the construction problems of various materials used in this field.
- 163A. Modern Costume Design. (2) I, II.** Miss Everett  
(Former number, 183A.)  
Integration of past experiences in art structure with new problems of clothing design; basic construction lines as fundamental; emphasis upon creative ideas within the limitations imposed by specific fabrics.

- 163B. Modern Costume Design.** (2) I, II. Mrs. Reps  
(Former number, 183B.)  
Prerequisite: course 163A.  
Adaptation of historic dress, national costume and general style tendencies to modern costume; the design in relation to the possibilities of production.
- 166. Costume of the Theater.** (2) I, II. Mrs. Baker  
(Former number, 173.)  
Design for stage costume, historical motifs, psychological implications, the visual composition.
- 167. Principles of Fashion Presentation.** (2) I, II. Mrs. Reps  
(Former number, 183C.)  
Prerequisite: course 163A.  
Relation of the designer to the industry: problems of custom and mass production, processes of manufacture, buying, and publicity.
- 169A-169B. Advanced Costume Design.** (2-2) Yr. Mrs. Sooy  
Prerequisite: senior standing, a B average in the major, and consent of the instructor.

### VI. Applied Design

Courses 6A, 6B and 7A are prerequisite to all courses in Group VI.

- 170A-170B. Ceramics.** (2-2) Yr. Beginning either semester. Miss Andreson  
(Former number, 117A-117B.)  
An analysis of form, function, and decoration in ceramics, with emphasis on materials and their use. Empirical method of glaze calculation and methods of vitrification.
- 171. Advanced Ceramics.** (2) II. Miss Andreson  
Prerequisite: senior standing, a B average in the major, and consent of the instructor.  
Individual creative and experimental design: experiments in reduction processes; calculation of glazes to fit original clay bodies.
- 173A-173B. Bookbinding.** (2-2) Yr. Beginning either semester. Mrs. Lecky  
(Former number, 127A-127B.)  
Fundamentals of the art of the book, including the history of writing, printing, and paper. Experience in binding of several types, using various materials and emphasizing design in relation to content.
- 176A-176B. Weaving.** (2-2) Yr. Beginning either semester. \_\_\_\_\_  
(Former number, 147A-147B.)  
Lectures, demonstrations, studio work, quiz, field trips.  
Relations of woven fabrics to world cultures: theory of creative design as applied to the woven fabric; research and experiments in weaving methods; study of fibers; fabric analysis.
- 177A-177B. Metalcraft.** (2-2) I, II. Mr. Carter  
Principles and methods of design for fine metal work with emphasis upon the application of three-dimensional design theory and the esthetic correlation of visual, practical and technical objectives.

### VII. Industrial Design

Courses 6A, 6B and 7A are prerequisite to all courses in Group VII.

- 180. Advanced Design in Three Dimensions.** (2) I, II. Mr. Carter  
Experimental work in three dimensions; theories of design; exploration of abstract principles of space and form.

- 181A-181B. **Design for Industry.** (2-2) Yr. Mr. Roysner  
 (Former number, 132A-132B.)  
 Design for production and use, review of graphic methods, appraisal of current trends.

### VIII. Teaching of Art

190. **Theory and Philosophy of Art Education.** (2) II. Mr. Hilpert  
 (Former number, 180.)  
 Open to majors in Teaching of Art, and to others with consent of the instructor.

### Ungrouped

- 199A-199B. **Special Studies in Art.** (1-4; 1-4) Yr. Beginning either semester. The Staff
- Section 1. History of Art.
  - Section 2. Painting, Sculpture and Graphic Arts.
  - Section 3. Advertising Art.
  - Section 4. Interior Design.
  - Section 5. Costume Design.
  - Section 6. Applied Design.
  - Section 7. Industrial Design.
  - Section 8. Teaching of Art.
- Prerequisite: senior standing, an average grade of B or higher in the student's specified major.  
 Advanced individual work upon specific problems connected with art and art education.

### GRADUATE COURSES

201. **Bibliography and Research Methods.** (2) I. The Staff
- \*231. **Problems in Art History.** (2) The Staff  
 Prerequisite: consent of the instructor.
241. **Advanced Art Criticism.** (2) I. The Staff  
 Prerequisite: consent of the instructor.
250. **Seminar in Art Education.** (2) I, II. The Staff  
 Prerequisite: consent of the instructor.
251. **Seminar in Art Analysis.** (2) I. The Staff  
 Prerequisite: consent of the instructor.
252. **Seminar in Advanced Design.** (2) I, II. The Staff  
 Prerequisite: consent of the instructor.
260. **Seminar in Contemporary Art.** (2) I, II. The Staff  
 Prerequisite: consent of the instructor.
270. **Seminar in Museology.** (2) II. The Staff  
 Prerequisite: consent of the instructor.
271. **Seminar in Comparative Art History.** (2) I. The Staff  
 Prerequisite: consent of the instructor.

\* Not to be given, 1953-1954.

**290. Research Projects in the Arts. (4) I, II.** The Staff  
Prerequisite: permission of the department. Specific requirements may be obtained from the departmental adviser.

Advanced creative work, a course designed for candidates for the degree of Master of Arts.

Section 1. Costume Design.

Section 2. Painting.

Section 3. Advertising Art.

Section 4. Interior Design.

Section 5. Ceramics.

**299A-299B. Special Studies for Graduate Students. (1-4; 1-4) Yr.**

Beginning either semester.

The Staff

#### PROFESSIONAL COURSES IN METHOD

**330. Industrial Arts for the Elementary Grades. (3) I, II.**

Prerequisite: senior standing and Art 10 or its equivalent.

Analysis of the aims, scope and psychology of the industrial arts program; experience in activities embodying the basic concepts of the program.

**370A. Principles of Art Education. (2) I, II.**

Mr. Hilpert

Prerequisite: junior standing. Open only to majors in Teaching of Art.

A study of objectives and general educational principles as related to art education.

**370B. Principles of Art Education. (2) I, II.**

Mr. Stoops

Prerequisite: course 370A. This course should be completed before practice teaching.

A study of method and the curriculum in art education.

#### UNIVERSITY ART GALLERIES

Located in the east wing of the Art Building are two large and well-equipped art galleries. The Willitts J. Hole Art Gallery is devoted to exhibition of the permanent art collections of the University; the other, the East Gallery, to special loan exhibitions which are presented on a regular schedule. Inquiries regarding the galleries should be addressed to the Chairman, Department of Art.

## ART HISTORY

For courses in Art History, see under Department of Art.

## ASTRONOMY

Samuel Herrick, Ph.D., *Professor of Astronomy.*

Frederick C. Leonard, Ph.D., *Professor of Astronomy.*

<sup>1</sup> Daniel M. Popper, Ph.D., *Associate Professor of Astronomy (Chairman of the Department).*



Joseph Kaplan, Ph.D., *Professor of Physics.*

Paul E. Wylie, C.E., *Lecturer in Astronomy.*

Everett C. Yowell, Ph.D., *Research Associate in Astronomy.*

*Letters and Science List.*—All undergraduate courses in astronomy are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

<sup>1</sup> In residence first semester only, 1952-1954.



*Preparation for the Major.*—Required: Astronomy 7, 4, and 2; Physics 1A-1B-1D-1C or, in exceptional cases, 2A-1D-1C or 2A-2B; Mathematics 1, 3A, 3B, and 4A, or 5A, 5B, and 6A. Recommended: English 106S, speech, and a reading knowledge of at least one modern foreign language.

*The Major.*—Twenty-four upper division units of astronomy, physics, and mathematics, of which at least 15 must be in astronomy and all 24 in courses approved by the department.

*Majors in Astronomy-Mathematics and Astronomy-Physics.*—Attention is directed to the curricula in Astronomy-Mathematics and Astronomy-Physics on page 11 of this bulletin.

#### LOWER DIVISION COURSES

- 1A. Elementary Astronomy. (3) I, II.** The Staff  
Lectures, three hours; discussion, one hour.  
An introductory survey course in the general principles and the fundamental facts of astronomy. Not open, except with the permission of the instructor, to students who are majoring, or preparing to major, in a physical science or mathematics and who have the prerequisites for Astronomy 7.
- 1B. Elementary Astronomy. (3) II.** Mr. Wylie  
Prerequisite: course 1A.  
An elementary course, including selected topics supplemental to the material of course 1A, with biweekly laboratory periods for constellation studies and telescopic observations of celestial objects.
- 2. Practice in Observing. (2) I.** Mr. Wylie  
Prerequisite: credit or registration in course 4 or 7; or credit in course 1A and consent of the instructor.  
Practical work for beginners, including constellation studies, telescopic observations of celestial objects, laboratory exercises cognate to the material of course 4 or 7, and regularly scheduled excursions to the neighboring observatories and planetarium. Required of students preparing to major in astronomy.
- 4. Spherical Astronomy. (3) I.** Mr. Leonard  
Prerequisite: plane trigonometry.  
The celestial sphere and its coordinate systems; time; spherical trigonometry and its astronomical applications. Required of students preparing to major in astronomy. Course 2 may be elected for observational and laboratory work in connection with this course.
- 7. General Astronomy. (3) I, II.** Mr. Leonard, Mr. Popper  
Open only to students majoring or preparing to major in a physical science or mathematics, and to others with similar prerequisites, who have credit for plane analytic geometry.  
A survey of the whole field of astronomy. Required of students preparing to major in astronomy. Course 2 may be elected for observational and laboratory work in connection with this course. Students who have credit for course 1A will receive only 1½ units of credit for course 7.
- \*9. Navigation. (3) I.** Mr. Wylie  
Navigational instruments, chart projections, compass correction and compensation, the sailings, dead reckoning, piloting, and radio navigation.
- 10. Celestial Navigation. (3) II.** Mr. Wylie  
Lectures, three hours.  
The determination of position and the solution of allied problems of celestial navigation, both at sea and in the air; the use of the *Air Almanac*, the *Nautical Almanac*, other modern tables and graphs, and the marine and bubble sextants; and the identification of the naked-eye stars and planets.

\* Not to be given, 1953-1954.

## UPPER DIVISION COURSES

Lower division courses in astronomy are not prerequisite to upper division courses unless specified.

**100. The Development of Astronomical Thought.** (3) I, II. Mr. Herrick  
Prerequisite: upper division standing. Not open to students who have credit for Astronomy 1A or 7.

A survey of astronomy, the historical development of its methods and ideas, and its relation to other fields of thought.

**102. Stellar Astronomy.** (3) II. Mr. Leonard

Prerequisite: course 7 or consent of the instructor.

A review of stellar astronomy, with special emphasis on the results of modern researches. Not open to students who have credit for Astronomy 117B.

**104. Practical Astronomy.** (3) I. Mr. Popper

Prerequisite: Astronomy 4, Physics 1D or 2B, and Mathematics 3B.

Fundamental stellar coordinates; time and latitude; star catalogs; telescopes; principles of photometric and spectrographic observations.

**107. The Reduction of Observations.** (3) II. Mr. Herrick

Prerequisite: Mathematics 3B-4A.

Astronomical photogrammetry and other techniques employed in the handling of observational data. The theory of errors and least squares.

**112. Rocket Navigation.** (3) I. Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The astronomical aspects of the rocket problem; celestial mechanics.

**115. The Determination of Orbits.** (3) II. Mr. Herrick

Prerequisite: Mathematics 3B-4A.

The theory and calculation of preliminary orbits and ephemerides of comets and minor planets.

**117A. Astrophysics.** (3) I. Mr. Popper

Prerequisite: Mathematics through 4A and Physics 1A-1B-1C-1D or their equivalents.

The physics of the Sun and stars.

**117B. Astrophysics.** (3) I. Mr. Popper

Prerequisite: credit or registration in course 117A. Courses 117A and 117B are being given concurrently in 1953-1954 only.

The nearby stars; interstellar matter; stellar systems.

**118. Meteoritics.** (3) II. Mr. Leonard

Open to students whose major subject is a physical science or mathematics.

The science of meteorites and meteors.

**199. Special Studies.** (1 to 4) I, II. The Staff

Prerequisite: consent of the instructor.

Investigation of special problems or presentation of selected topics chosen in accordance with the preparation and the requirements of the individual student.

## GRADUATE COURSES

**215. Advanced Orbit Theory.** (3) I. Mr. Herrick

Prerequisite: course 115.

**225A-225B. Celestial Mechanics.** (3-3) Yr. Mr. Herrick

Prerequisite: course 112.

- 6. General Bacteriology. (2) II.** Mr. Pickett  
Not open to students who have had course 1.  
A cultural course for nontechnical students.

**UPPER DIVISION COURSES**

- 103. Advanced Bacteriology. (5) I.** Mr. Pickett  
Lectures and laboratory.  
Prerequisite: course 1 and consent of the instructor.  
The more advanced principles of the life activities, growth, and morphology of bacteria. The etiology of disease.
- 104. Soil Bacteriology. (2) II.** Mr. Jann  
Lectures and laboratory.  
Prerequisite: course 1.  
The microscopic flora of soil: the morphology, function, and metabolism of soil bacteria.
- 105. Serology. (4) II.** Mrs. Ball  
Lecture, one hour; laboratory, nine hours. Prerequisite: course 103 and consent of the instructor. Limited to sixteen students per section.  
The theory and practice of serological methods.
- 106. Metabolism of Bacteria. (2) I.** Mr. Salle  
Lectures and discussions. Prerequisite: course 1 and Chemistry 8, 9.  
Chemical studies of fats, carbohydrates, proteins, and nucleic acids of bacteria; nutrition of bacteria; effect of vitamins on their growth; enzymes of bacteria and their reactions; respiration; respiratory enzymes; coenzymes; anaerobiosis; putrefactions; protein-sparing action; fermentations; bacterial photosynthesis; bacterial metabolic methods.
- 106C. Metabolism of Bacteria Laboratory. (2) II.** Mr. Jann  
Prerequisite: course 106.
- 107. Public Health Bacteriology. (4) I.** Mrs. Ball  
Lecture, one hour; laboratory, nine hours. Prerequisite: course 103. Designed for students who plan careers in the fields of public health and clinical bacteriology.  
A study of diagnostic procedures.
- 108. Hematology. (2) II.** Mr. Fishkin  
Lecture, one hour; laboratory, two hours.  
Prerequisite: senior standing and consent of the instructor.  
Diagnostic procedures used for the study of normal and pathological blood cells.
- 195. Proseminar. (2) I, II.** The Staff  
Prerequisite: course 103.  
Library problems.
- 199A-199B. Problems in Bacteriology. (2-2) Yr.** The Staff  
Prerequisite: consent of the instructor.

**MICROBIOLOGY****GRADUATE COURSES**

- 210. Advanced Bacterial Physiology. (3) I.** Mr. Salle  
Prerequisite: Bacteriology 106.  
Physiological activities of microorganisms in the light of more advanced principles.

251A-251B. Seminar in Microbiology. (1-1) Yr.

Mrs. Ball, Mr. Ball, Mr. Plunkett

293A-293B. Research in Microbiology. (2-5; 2-5) Yr.

The Staff

RELATED COURSE (See page 331)

Life Sciences 370. Methods and Materials for Teaching Life Science.

(3) II.

Mr. Cowles, Mr. Herbst

## BOTANY

Carl C. Epling, Ph.D., *Professor of Botany and Curator of the Herbarium.*

Karl C. Hamner, Ph.D., *Professor of Botany and Director of the Botanical Garden (Chairman of the Department).*

Arthur W. Haupt, Ph.D., *Professor of Botany.*

Orda A. Plunkett, Ph.D., *Professor of Botany.*

Flora Murray Scott, Ph.D., *Professor of Botany.*

Fredrick T. Addicott, Ph.D., *Associate Professor of Botany.*

Samuel G. Wildman, Ph.D., *Associate Professor of Botany.*

Anton Lang, Ph.D., *Assistant Professor of Botany.*

F. Harlan Lewis, Ph.D., *Assistant Professor of Botany.*

Bernard O. Phinney, Ph.D., *Assistant Professor of Botany.*

Henry J. Thompson, Ph.D., *Instructor in Botany.*

Mildred E. Mathias (Mildred Mathias Hassler), Ph.D., *Lecturer in Botany.*

*Preparation for the Major.*—Botany 1; Chemistry 1A-1B or the equivalent; and one or more of the following courses which are prerequisite to certain upper division courses in Botany: Botany 2, 3, 6; Chemistry 8.

*The Major.*—Twenty-four units of upper division botany, of which 8 units may be replaced by upper division courses in related fields with the approval of the Division.

*Requirements for Advanced Degrees.*—For students who expect to become candidates for advanced degrees in botany, the following courses or their equivalents are required: Botany 2, 3, 6, 107, 140. Depending upon the special field of interest of the candidate, one or more of the following courses may be required: Bacteriology 1; Chemistry 5A, 9, 108A-108B, 109A-109B; Floriculture 146, 148; Geography 118; Geology 2 and 3, or 5; Mathematics C, D, 1-3A, 5A; Horticulture 111; Zoölogy 1A-1B, 101A, 101C.

### LOWER DIVISION COURSES

1. General Botany. (5) I.

Mr. Hamner

Lectures, three hours; laboratory, six hours. No prerequisite.

An introduction to the plant sciences.

2. Plant Morphology. (4) II.

Mr. Haupt

Lectures, two hours; laboratory, six hours.

Prerequisite: course 1 or equivalent.

The evolution of the plant kingdom, dealing with the comparative morphology of all the great plant groups.

3. Field Botany. (4) II.

Mr. Lewis

Lectures, two hours; laboratory or field, six hours.

An introduction to the life habits, interrelationships, and classification of native and ornamental plants.

6. Plant Anatomy. (4) II.

Miss Scott

Lecture, two hours; laboratory, six hours.

Prerequisite: course 1 or equivalent.

The microscopic study of the structure and development of higher plants in relation to the functions of the tissues.

## UPPER DIVISION COURSES

Botany 1 or equivalent is prerequisite to all upper division courses, except 103.

**103. Botany of Economic Plants. (2) II.** Miss Scott  
Designed for students of economics, geography, agriculture, and botany. Biology 1 is recommended.

The general morphology, classification, ecology and geographic distribution, origin, and uses of economic plants.

**105A. Algae and Bryophytes. (4) I.** Mr. Haupt

Lectures, two hours; laboratory, six hours.

Prerequisite: courses 1 and 2, or the equivalent.

A study of the structure, development, and phylogenetic relationships of the principal orders of fresh-water and marine algae, and of liverworts and mosses.

**105B. Morphology of Vascular Plants. (4) II.** Mr. Haupt

Lectures, two hours; laboratory, six hours.

Prerequisite: courses 1 and 2, or equivalent.

Structure, development, and phylogenetic relationships of the principal groups of ferns, fern-allies, and seed plants.

**107. Introduction to Plant Physiology. (4) I.** Mr. Lang, Mr. Wildman

Lectures, two hours; laboratory, six hours.

Prerequisite: course 1 and Chemistry 1A-1B and 8, or equivalent. Course 6 desirable.

The fundamental aspects of water relations, mineral nutrition, photosynthesis, respiration, metabolism, and growth and development of higher plants, including biochemical mechanisms.

**\*111. Plant Cytology. (3) I.** Miss Scott

Lecture, one hour; laboratory, six hours.

Prerequisite: courses 1, 2, 6, and 107.

Structure and physiology of the cell.

**\*112. Experimental Plant Anatomy. (3) II.** Mr. Phinney

Lecture, one hour; laboratory, six hours.

Prerequisite: courses 1, 6, 107, and 140.

Quantitative aspects of development and differentiation in higher plants.

**113. Physiological Plant Anatomy. (3) I.** Miss Scott

Lecture, one hour; laboratory, six hours.

Prerequisite: courses 1, 6, and 107.

A survey of the tissues of the higher plants in relation to function.

Offered in alternate years.

**119. Mycology. (3) I.** Mr. Plunkett

Lecture, one hour; laboratory, six hours.

Prerequisite: courses 1 and 2, or equivalent.

Structure, development, and classifications of the important genera and species of fungi. For students in botany, bacteriology, agriculture, and forestry.

**126. Medical Mycology. (4) II.** Mr. Plunkett

Lecture, two hours; laboratory, six hours.

Prerequisite: courses 1, 2, and 119 or Bacteriology 1.

An introduction to the morphology, physiology, and taxonomy of the pathogenic fungi which cause disease in man and the domestic animals. This course is designed for students in bacteriology, parasitology, and medicine.

\* Offered in alternate years. Not to be given, 1953-1954.

- 131. Physiology of Fungi. (3) I.** Mr. Plunkett  
Lecture, one hour; laboratory, six hours.  
Prerequisite: courses 119 or 126 and Chemistry 8.  
A survey of the interrelation of fungi to their environment including factors influencing growth, nutrition, metabolism, and reproduction.
- 140. Plant Genetics. (4) I.** Mr. Phinney  
Lectures, three hours; laboratory, three hours.  
Prerequisite: course 1 or equivalent.  
Principles of heredity with special reference to plants. Laboratory work involving breeding experiments with plant and animal materials.
- 141. Plant Cytogenetics. (4) I.** Mr. Lewis  
Lectures, three hours; laboratory, three hours.  
Prerequisite: course 140 or Zoölogy 180.  
The fundamentals of cytogenetics. Heredity as related to cytogenetical phenomena, with special reference to plants.
- 151. Taxonomy of Seed Plants. (3) I.** Miss Mathias  
Lecture, one hour; laboratory, six hours.  
Prerequisite: courses 1 and 3, or equivalent.  
The fundamentals of systematic botany. A survey of the orders and families commonly met with in the native and cultivated floras.
- 152. Advanced Systematic Botany. (3) II.** Mr. Lewis  
Lecture, one hour; laboratory or field, six hours.  
Prerequisite: courses 1, 3, and 151, and consent of the instructor.  
Field and laboratory study of natural variation in relation to systematics.
- 153. Determinants of Evolution. (2) I.** Mr. Epling  
Lecture and discussion, two consecutive hours.  
Prerequisite: consent of the instructor.  
The processes of evolutionary change in natural populations. A student may concurrently initiate an experimental project as Botany 199 and continue it as part of Botany 154.
- 154. Experimental Evolution. (2) II.** Mr. Epling  
Discussion, one hour; laboratory and field work, two hours.  
Prerequisite: consent of the instructor.  
A laboratory and field course designed to acquaint a student with techniques employed.
- 160A\*-160B. Plant Physiology. (4-4) Yr.** Mr. Biale, Mr. Lang, Mr. Wildman  
Lectures and discussion, two hours; laboratory, six hours.  
Prerequisite: course 107 or equivalent, and consent of instructor. Chemistry 5A and 108A-108B recommended.  
An advanced course stressing quantitative laboratory methods. Designed for students expecting to enter graduate work in the botanical or horticultural sciences.
- 190. Research Methods in Morphology. (4) I.** Mr. Phinney  
Lecture, one hour; laboratory, nine hours.  
Prerequisite: consent of the instructor.  
The theory and methods of preparing plant tissues and materials for microscopic study.  
Offered in alternate years.

\* Not to be given, 1953-1954.

191A-191B. **Molecular Structure of Biological Materials.** (2-2) Yr.

Mr. Hamner

Prerequisite: senior standing, or consent of the instructor: Physics 2A-2B, Chemistry 8, and Botany 1, 2 or Zoölogy 1, 2, and in addition advanced courses in biological fields.

An adaptation of our knowledge of atomic and molecular structure to biological concepts of protoplasm and cell parts.

199A-199B. **Problems in Botany.** (2-4; 2-4) Yr.

The Staff

Prerequisite: senior standing.

#### GRADUATE COURSES

252A-252B. **Seminar in Principles and Theories of Botany.** (2-2) Yr.

Mr. Phinney

253A-253B. **Seminar in Plant Anatomy.** (1-1) Yr.

Miss Scott

254A-254B. **Seminar in Plant Physiology.** (1-1) Yr.

Mr. Wildman, Mr. Addicott, Mr. Appleman, Mr. Biale,  
Mr. Hamner, Mr. Lang

A thorough and critical survey of the entire field of plant physiology, covering a period of three consecutive years. Open to all students interested in plant physiology; may be entered any semester.

255A-255B. **Seminar in Systematics.** (1-1) Yr.

Mr. Epling

256A-256B. **Seminar in Plant Morphology.** (1-1) Yr.

Mr. Haupt

257A-257B. **Seminar in Mycology.** (1-1) Yr.

Mr. Plunkett

258A-258B. **Seminar in Genetics.** (1-1) Yr.

Mr. Lewis, Mr. Phinney

Special topics covering all aspects of genetics, differing each semester for three years. Students may enter in any semester.

278A-278B. **Research in Botany.** (2-6; 2-6) Yr.

The Staff

#### RELATED COURSES IN OTHER DEPARTMENTS OR DIVISIONS

Bacteriology 1. **Fundamental Bacteriology.**

Biology 1. **Fundamentals of Biology.**

Geology 120. **Paleobotany.**

Irrigation and Soils 110A. **Soil and Plant Interrelations.**

Floriculture and Ornamental Horticulture 131A-131B. **Taxonomy and Ecology of Ornamental Plants.**

Floriculture and Ornamental Horticulture 136. **General Floriculture.**

Floriculture and Ornamental Horticulture 139. **Advanced Floriculture.**

Floriculture and Ornamental Horticulture 146. **Plant Breeding.**

Life Sciences 370. **Methods and Materials for Teaching Life Science.**

Plant Pathology 120. **Plant Diseases.**

Subtropical Horticulture 100. **Systematic Pomology.**

Subtropical Horticulture 101. **Citriculture.**

Subtropical Horticulture 102. **Subtropical Fruits Other Than Citrus.**

Subtropical Horticulture 110. Plant Propagation.

Subtropical Horticulture 111. Respiration and Respiratory Enzymes.

Subtropical Horticulture 113. Fruit Physiology and Storage Problems.

Zoölogy 101A, B, C. General Physiology.

Zoölogy 130, 131. Genetics.

## BUSINESS ADMINISTRATION

Ralph M. Barnes, Ph.D., *Professor of Production Management and Professor of Engineering.*

Ralph Cassady, Jr., Ph.D., *Professor of Marketing.*

John C. Clendenin, Ph.D., *Professor of Finance.*

Ira N. Frisbee, M.B.A., C.P.A., *Professor of Accounting.*

Neil H. Jacoby, Ph.D., LL.D., *Professor of Business Economics and Policy (Chairman of the Department).*

Harold D. Koontz, Ph.D., *Professor of Business Policy and Transportation.*

Franklin G. Moore, Ph.D., *Visiting Professor of Production Management.*

Howard Scott Noble, M.B.A., C.P.A., LL.D., *Professor of Accounting.*

William F. Brown, Ph.D., *Associate Professor of Marketing.*

A. B. Carson, Ph.D., C.P.A., *Associate Professor of Accounting.*

Wilbert E. Karrenbroek, Ph.D., *Associate Professor of Accounting.*

Wayne L. McNaughton, Ph.D., *Associate Professor of Personnel Management and Industrial Relations.*

Philip Neff, Ph.D., *Associate Professor of Business Economics.*

Alfred Nicols, Ph.D., *Associate Professor of Business Economics.*

Cyril J. O'Donnell, Ph.D., *Associate Professor of Business Organisation and Policy.*

George W. Robbins, M.B.A., *Associate Professor of Marketing.*

Robert Tannenbaum, Ph.D., *Associate Professor of Personnel Management and Industrial Relations.*

J. Frederick Weston, Ph.D., *Associate Professor of Finance.*

Robert B. Buchele, Ph.D., *Assistant Professor of Personnel Management and Industrial Relations.*

Fred E. Case, M.B.A., D.C.S., *Assistant Professor of Real Estate and Urban Land Economics.*

C. Joseph Clawson, Ph.D., *Assistant Professor of Marketing.*

James M. Gillies, Ph.D., *Assistant Professor of Real Estate and Urban Land Economics.*

Paul Kircher, Ph.D., C.P.A., *Assistant Professor of Accounting.*

James E. McNulty, Jr., Ph.D., *Assistant Professor of Business Economics.*

Frank E. Norton, Ph.D., *Assistant Professor of Business Economics.*

Melvin E. Salvesson, Ph.D., *Assistant Professor of Production Management, and Research Associate.*

R. Clay Sprowls, Ph.D., *Assistant Professor of Business Statistics.*

John R. Van de Water, A.B., J.D., *Assistant Professor of Business Law.*

Irving R. Weschler, Ph.D., *Assistant Professor of Personnel Management and Industrial Relations.*

Robert M. Williams, Ph.D., *Assistant Professor of Business Economics and Statistics.*



John J. Schwarz, Ph.D., *Instructor in Business Administration and Instructor in Psychology.*

Erling A. Breckan, M.B.A., *Acting Instructor in Production Management.*

William Beranek, M.B.A., *Lecturer in Finance.*

Elwood S. Buffa, M.B.A., *Lecturer in Production Management.*

Robert Wendell Buttrey, A.B., C.P.A., *Lecturer in Accounting.*

John G. Carlson, M.B.A., *Lecturer in Production Management.*

Joseph D. Carrabino, M.B.A., *Lecturer in Production Management.*

George R. Hawkes, M.A., *Lecturer in Accounting.*

Richard M. Heins, M.B.A., *Lecturer in Insurance.*

Malcolm F. Heslip, Ph.D., *Lecturer in Marketing.*

Joseph Lazar, J.D., *Lecturer in Business Law.*

Ronald C. Roeschlaub, LL.B., M.A., *Lecturer in Business Law.*

Joseph C. Schabacker, M.B.A., *Lecturer in Accounting.*

Harry Simons, M.A., C.P.A., *Lecturer in Accounting.*

Leon C. Steres, B.S., C.P.A., *Lecturer in Accounting.*

Karl F. Venter, M.S., *Lecturer in Business Administration.*

### School of Business Administration

Curricula requirements for Bachelor of Science degree, Master of Business Administration degree, and Doctor of Philosophy degree are described on pages 46-50.

### College of Letters and Science

*Letters and Science List.*—Courses 3, 131, 133, 135, 160. For regulations governing this list, see page 6.

#### LOWER DIVISION COURSES

**1A-1B. Elementary Accounting.** (3-3) Beginning either semester.

Mr. Noble and Mr. Kircher in charge

Prerequisite: sophomore standing. This course consists of two one-hour lectures per week, one two-hour laboratory per week, and four one-hour examinations which are scheduled at 4:00 p.m. on the second Tuesday of each month during the semester. Attendance in all parts is compulsory for all students enrolled in the course. 1A is prerequisite to 1B.

**3. Fundamentals of Accounting.** (4) I, II.

Mr. Carson

Prerequisite: sophomore standing or higher. Not available for credit toward degrees of the School of Business Administration.

Treats the basic concepts and practices of accounting, with the object of developing a comprehension of, and ability to use, financial statements in personal business and civic affairs. Does not emphasize the procedures and techniques of accounting practice.

#### UPPER DIVISION COURSES

Business Administration 1A-1B (or Business Administration 3) and Economics 1A-1B are prerequisite to all upper division courses.

### I. Business Economics

**100. Theory of Business.** (3) I, II.

Mr. Norton, Mr. Nicols, Mr. Neff, Mr. McNulty

Effort of the enterprise to secure profits, nature of demand for its products. Costs and production. Allocation of resources through competition. Forms of market competition. Relation of size to efficiency. Markets for productive factors. Incentives and growth.

Required of all business administration students, to be taken in the student's first semester in residence.

**101. Business Fluctuations and Forecasting. (3) I, II.**

Mr. Nicola, Mr. Williams, Mr. Norton, Mr. Neff, Mr. McNulty

Prerequisite: courses 100, 115; and Economics 135 (may be taken concurrently).

How the enterprise reacts to general economic fluctuations and how its decisions, in turn, affect them. Important forces in past fluctuations. Behavior of indices of business activity. Appraisal of forecasting techniques. Entrepreneurial and public policies to mitigate business fluctuations.

Required of all business administration students, to be taken in the student's second semester in residence and immediately following course 100.

**II. Business Law****105A-105B. Business Law. (3-3) Beginning either semester.**

Mr. Roeschlaub, Mr. Lazar, Mr. Van de Water

Law in its relationship to business. Contracts, agency, and property are considered in the first semester; bailments, sales, negotiable instruments, and business organizations in the second semester. 105A is prerequisite to 105B.

Required of all business administration students. 105A shall be taken in the student's first semester in residence.

**106. General Laws Relating to Property. (3) I, II.**

Prerequisite: course 105A-105B.

Real and personal property; nature and kinds, types of ownership, methods of acquisition and disposal, rights of husband and wife, community and separate, intangibles, automobiles, security devices, rights and remedies of creditors, copyrights and patents, associated nonproperty relationships.

**107. The Law of Wills, Estates, and Trusts. (3) II.**

Prerequisite: course 105A-105B.

Testate and intestate succession; types, requirements, and revocation of wills; schemes of testamentary disposition; protection against disinheritance; probate and administration; nature, kinds, and formation of trusts; subject matter of trusts; trustee and beneficiary; trust administration.

**III. Business Communication and Office Management**

For courses in Business Communication and Office Management, see under Department of Business Education, page 109.

**IV. Business Statistics****115. Business Statistics. (8) I, II.**

Mr. Williams, Mr. Sprowls

Lectures, three hours; laboratory, two hours. Students who have credit for Economics 140 will receive no credit for this course.

Sources of statistical data; construction of tables, charts, and graphs; statistical distributions and their measurement; introduction to probability theory, market analysis, consumer sampling, and quality control; index numbers; correlation; time-series analysis: trend, seasonal, business cycles; business forecasting; statistics of national income.

Required of all business administration students, to be taken in the student's first semester in residence.

**116A-116B. Statistical Inference in Business. (3-3) Yr.**

Mr. Sprowls

Prerequisite: elementary statistics.

An intermediate course in the principles of statistical inference with emphasis upon fundamental ideas and applications to problems of a business and economic nature. Among the topics studied are probability theory; sampling distributions; estimating and testing hypotheses about means, propor-

tions and standard deviations; contingency tables; analysis of variance; simple and multiple regression and correlation; design of sampling surveys; sequential sampling; nonparametric tests.

**117. Index Numbers and Time Series. (3) I.** Mr. Williams

Prerequisite: course 115.

The theory of index number construction. Analysis of the important business indexes in current use. Methods of time series decomposition; secular trend, cyclical fluctuations, seasonal, and irregular variation.

**118. Business Research Methods. (3) II.** Mr. Williams

Prerequisite: course 115.

Research philosophy and methodology and the application of specific research techniques to actual business problems. These problems will be made possible by the cooperation of various concerns in Southern California.

### V. Accounting

**120. Intermediate Accounting. (3) I, II.**

Mr. Karrenbrock, Mr. Simons, Mr. Hawkes

Adjustments, working papers, statements from incomplete data, cash and receivables, inventories, investments, fixed assets, intangibles and deferred charges, liabilities, capital stock and surplus, installment accounting, statement analysis, and application of funds.

Required of all business administration students. Shall be taken in the student's first semester in residence.

**121. Advanced Accounting. (3) I, II.** Mr. Karrenbrock

Prerequisite: course 120.

Partnerships, joint ventures, agencies and branches, consolidated balance sheets, consolidated profit and loss statements, statements of affairs, receiverships, realization and liquidation statements, estates and trusts, and actuarial accounting problems.

**122. Cost Accounting. (3) I, II.** Mr. Carson, Mr. Noble

Prerequisite: course 120.

The nature, objectives, and procedures of cost accounting and cost control; job costing and process costing; theory and practice of accounting for manufacturing overhead; cost budgeting and control; cost reports; joint-product and by-product costing; distribution cost; standard costs; differential cost analysis; profit-volume relationships and break-even analysis.

**123. Auditing. (3) I, II.** Mr. Steres

Prerequisite: course 121.

Accounting investigations, balance sheet audits, and detailed audits performed by public accountants. Valuation, audit procedure, working papers, and audit reports.

**125. Municipal and Governmental Accounting. (3) I, II.** Mr. Carson

Prerequisite: course 121.

A study of fund accounting as applied to governmental accounting and nonprofit institutions. Includes problems of budgeting, tax levies, appropriations, and accounting for revenues and expenditures. The following funds are included: general, special revenue, bond sinking, working capital, special assessment, trust and agency, and utility. Special problems on nonprofit institutions.

**127. Federal Tax Accounting. (3) I, II.** Mr. Buttrey

Prerequisite: course 121.

A study of the current federal revenue acts as related to individual, partnership, and corporation income taxation, estate taxes, and gift taxes.

- 128. Advanced Accounting Problems.** (5) I, II. Mr. Simons  
 Prerequisite: courses 121, 122, 123, 127; 125 (may be taken concurrently).  
 Review of contemporary accounting theory with emphasis upon pronouncements of the American Institute of Accountants, American Accounting Association, and Securities and Exchange Commission. Application of such theory to advanced problems of the kind contained in examinations for C.P.A. certification.

### VI. Finance

Economics 135 is required of all students in the School of Business Administration.

- 131. Corporation Finance.** (3) I, II. Mr. Weston, Mr. Beranek  
 A study of the financial structures and financial problems of business corporations. The instruments and methods of financing a corporation will be considered in their social, legal, and economic effects as well as in their effects on the corporation and the shareholders.

- 132. Credit Management.** (3) I, II. Mr. Weston, Mr. Beranek  
 Prerequisite: course 131.  
 Problems and policies in the extension of business and personal credit, associated with both credit sales and cash loans by non-financial and financial institutions. Credit terms, credit agencies, credit policies and collection methods. Factoring, other specialized credit sources and developments in lending technology.

- 133. Investment Principles and Policies.** (3) I, II. Mr. Clendenin  
 Problems underlying investment analysis and policy; salient characteristics of governmental and corporate securities; policies of investment companies and investing institutions; relation of investment policy to money markets and business fluctuations; security price-making forces; construction of personal investment programs.

- 134. Investment Analysis.** (3) I, II. Mr. Beranek  
 Prerequisite: course 133.  
 Examination of specific industries, companies, and securities from an investment point of view; sources of information; techniques of analysis; measurement of risks, returns, and investment values; evaluation of corporate credit; preparation of reports. Annual report of business corporations, and current cases are studied.

### VII. Risk-Bearing and Insurance

- 135. Principles of Insurance.** (3) I, II. Mr. Heins  
 Basic principles of risk and insurance and their applications to business management and personal affairs. Analyses of concepts and methods of handling risks; insurance carriers, contracts, and underwriting; loss prevention and settlement; government insurance programs; economic functions of insurance.

- 136. Life Insurance.** (3) I, II. Mr. Heins  
 Prerequisite: course 135.  
 Studies of the nature, and of the business and personal uses of life insurance and annuities; contracts; policy conditions; selection of risks; types of carriers; mathematical bases; group, wholesale, and industrial insurance; organization, management, regulation, taxation, and investment policy of legal reserve companies.

**137. Property Insurance. (3) I.**

Mr. Heins

Prerequisite: course 135.

A study of fire, ocean marine, inland marine, and closely allied property insurance lines. A thorough analysis is made of insurable interest, policies, forms, endorsements, ratemaking, underwriting, loss prevention, and loss settlement.

**138. Casualty Insurance. (3) II.**

Mr. Heins

Prerequisite: course 135.

Studies of the principles and personal and business uses of casualty insurance. Workmen's compensation, liability, automobile, aviation, accident and health, theft, boiler and machinery, plate glass, credit and title insurance, and fidelity and surety bonding are analyzed.

**VIII. Production Management****140. Elements of Production Management. (3) I, II.**

Mr. Breckan, Mr. Carrabino, Mr. Carlson, Mr. Moore

Lectures, two hours; laboratory, two hours.

Principles, methods, and procedures related to the efficient utilization of resources in production. Specialization of process and labor; product and process analysis; production planning and control; materials procurement and control; methods improvement; time study; wage determination; selection of plant location; layout planning; production organization.

Required of all business administration students.

**141. Techniques of Production Management. (5) I, II.**

Mr. Buffa, Mr. Barnes, Mr. Venter

Prerequisite: course 140 or consent of the instructor.

Lectures, three hours; laboratory, four hours.

A study of the management techniques for improving and controlling manufacturing operations. Production and cost standards; job evaluation; wage systems and incentives; quality control; materials handling; plant and work place layout; manufacturing budgets.

**142. Production Planning and Control. (3) II.**

Mr. Buffa, Mr. Salvesson, Mr. Moore

Prerequisite: course 140 or consent of the instructor.

A study of the problems and methods of planning the efficient utilization of capital, labor, equipment, and materials. Sales forecasting; production planning; production control-scheduling, routing, dispatching, and expediting; labor layout; materials planning and control; capital budgets.

**143. Motion and Time Study. (4) I, II.**

Mr. Barnes

Prerequisite: course 140 or consent of the instructor.

Lectures, two hours; laboratory, four hours.

An analysis of motion and time study as a management tool. Work simplification and motion economy; analyzing operations; time standards and their calculation; rates and allowances; motion picture film analysis; the motion study report; for both management and nonmanagement students.

**144. Line-Production Methods. (3) II.**

Mr. Barnes, Mr. Buffa

Prerequisite: course 141 and consent of the instructor.

A study of the special problems and methods in line production. Equipment selection; material movement; balancing operations with the line; establishing the line; special considerations in production and material control; obtaining flexibility in the line; possible uses and variations in line production.

**145. Industrial Purchasing. (3) II.**

Mr. Buffa

Prerequisite: course 140 or consent of the instructor.

A study of purchasing and procurement in industry and government. Pur-

chasing policies and organization; coördination with production schedules and materials planning; optimum quantity and price; vendor relations; follow-up and expediting; receiving and inspection; purchasing research.

### IX. Personnel Management and Industrial Relations

#### 150. Elements of Personal Management. (3) I, II.

Mr. McNaughton, Mr. Schwarz, Mr. Weschler

A critical examination of the principles, methods, and procedures related to the effective utilization of human resources in organizations. Historical development and objectives of personnel management, individual differences, labor budgeting, job analysis, recruitment, selection, placement, training, transfer and promotion, wage and salary administration, hours of work, accident prevention, employee health, personnel services, motivation and morale, management-union relations.

Required of all business administration students.

#### 152. Leadership Principles and Practice. (3) I, II.

Lectures and laboratory, four hours. Mr. Tannenbaum, Mr. Weschler

Knowledge and skills leading to effectiveness in interpersonal relations. Understanding one's self as a leader, and others as individuals and as members of working groups. Understanding of group process, including group leadership. Practice in methods and procedures available to managers in effectively dealing with subordinates, peers, and superiors.

Required of all students specializing in personnel management and industrial relations.

#### 153. Managerial Adjustments to Labor Law. (3) I, II. Mr. Van de Water

Prerequisite: course 150.

History and consequences for business policy of (a) law governing collective relationships between employers, employees, and their representatives and (b) law concerned with employee welfare, including wages, hours, working conditions, and industrial accident compensation. Criteria for evaluating labor law, with special attention to the role of management in the improvement of legislation.

Required of all students specializing in personnel management and industrial relations.

#### \*154. Labor Markets and Wage Structures. (3) I, II. Mr. McNaughton

Prerequisite: courses 100 and 150.

The theory characteristics of labor markets and wage structures considered as a basis for managerial policies and procedures in wage and salary administration.

Required of all students specializing in personnel management and industrial relations.

### X. Marketing

#### 160. Elements of Marketing. (3) I, II.

Mr. Robbins, Mr. Clawson, Mr. McNulty, Mr. Heslip

A survey of the major marketing methods, institutions, and practices. The subjects of retailing, wholesaling, distribution channels, marketing legislation, advertising, coöperative marketing, pricing, marketing research, and marketing costs are treated from the standpoint of consumers, middlemen, and manufacturers.

Required of all business administration students.

\* Business Administration 154 will not be offered during 1953-1954. Students who are required to present course 154 as a part of the field of concentration in Personnel Management and Industrial Relations will substitute Economics 160 without special petition.

- 162. Retail Store Management.** (3) I, II. Mr. Cassady, Mr. Brown  
Prerequisite: course 160.  
A study of retailing from the standpoint of management. Includes the case-method treatment of such problems as buying, sales promotion, inventory planning and control, pricing, style merchandising, and general management problems.
- 163. Advertising Principles.** (3) I, II. Mr. Brown, Mr. Clawson  
Prerequisite: course 160.  
Lecture, two hours; laboratory, two hours.  
A survey of the field of advertising—its use, production, administration, and economic implications. Includes the study of advertising psychology, practice in the preparation of advertisements, consideration of methods of market research and copy testing, and analysis of advertising campaign planning and sales coördination.
- 165. Sales Management.** (3) I, II. Mr. Robbins, Mr. O'Donnell  
Prerequisite: course 160.  
A case-method study of sales strategy from the managerial viewpoint. Includes merchandising policies, distribution policies, forecasting and planning, sales method and campaigns, pricing, sales department organization, management of the sales force, and budgetary control of sales.
- 168. Advertising Policy.** (3) II. Mr. Brown  
Prerequisite: course 163 and consent of the instructor, to be granted on the basis of the applicant's training or experience in such fields as art, composition, psychology, and political science.  
Lecture, two hours; laboratory, two hours.  
Intended for students planning a career in advertising, this course emphasizes such management problems as the definition of advertising objectives, selection of campaign themes, determination of the budget, and use of research in planning the program and measuring its effectiveness.
- 169. Marketing Policies.** (3) I, II. Mr. Cassady, Mr. Brown  
Prerequisite: course 160, and senior standing.  
Lecture, two hours; laboratory, two hours.  
A course designed to analyze policies which are important in marketing management. Special attention is given to the use of research in solving marketing problems, the theory of pricing and price policies as related to marketing, and certain types of restrictive legislation as they affect the distribution of goods and services. Readings are assigned for background purposes. The case method is utilized as a basis for class discussion. Laboratory periods provide practice in the application of principles to the distribution of a selected commodity.

### **XI. Transportation and Traffic Management**

- 170. Transportation and Traffic Management.** (3) I, II. Mr. Koontz  
Prerequisite: Economics 173 or consent of instructor.  
Emphasizes principles governing the use by business managers of the services of air, surface (rail, truck, bus, pipeline), and water transportation. Treats problems of selection of transportation alternatives, traffic organization and management, and features of transportation services affecting business policies.
- 172. Rail Transport Management.** (3) I. Mr. Koontz  
Prerequisite: Economics 173 or consent of instructor.  
Application of management principles and techniques to such problems faced by railroad managements as traffic analysis, organization, service, operations, costs, rates, labor, financing, and intercarrier relationships.

**173. Air Transport Management. (3) II.**

Mr. Koontz

Prerequisite: Economics 173 or consent of instructor.

Application of management principles and techniques to such problems faced by air-line managements as traffic analysis, organization, facilities, acquisition, scheduling, operations, costs, rates, labor, financing, intercarrier relationships, and airport terminal management.

**XII. Real Estate and Urban Land Economics****180. Elements of Real Estate and Urban Land Economics. (3) I, II.**

Mr. Case, Mr. Gillies

Basic elements which influence managerial policy in the urban real estate field; an analysis of major influences affecting city location and growth; major elements of policy in appraising, managing, financing, marketing, developing, and subdividing urban property; the role of private and governmental institutions in influencing the use of urban land.

**181. Valuation of Real Property. (3) I, II.**

Mr. Case

Prerequisite: course 180 or consent of the instructor.

The character of land value; principles of land valuation and their relation to income, residential, and special-purpose properties. A discussion of the relationships of social, economic, and political influences to trends in property values; current appraisal theory.

**182. The Building Industry and Urban Land Use. (3) I.**

Mr. Gillies

Prerequisite: course 180 or consent of the instructor.

The structure and nature of the construction industry; the housing problem; the housing market; economic aspects of urbanization; industrial location and regional development; impact of the housing industry in an unstable economy.

**183. The Management of Urban Real Estate Operations. (3) II.**

Mr. Gillies

The initiation and development of managerial policy relating to the development of raw or improved land; the financing, building, developing, management, and marketing of urban real estate; the effects of private and governmental institutions on managerial operations in urban real estate.

**XIII. Business Organization and Policy****190. Organization and Management Theory. (3) I, II.**

Mr. Koontz, Mr. O'Donnell

Prerequisite: second semester senior standing.

A study of the principles of business management. Emphasis is placed upon the application of these principles to the general, as distinguished from the functional, management of enterprise by means of readings and case studies.

Required of all business administration students.

**199A-199B. Special Studies in Business Administration. (3-3) Yr.**

The Staff

Prerequisite: senior standing, 6 units of upper division courses in business administration, and consent of the instructor.

**GRADUATE COURSES****216. Advanced Statistical Inference in Business. (3) I.**

Mr. Sprowls

A course in sampling surveys. The planning of such surveys; estimation of population characteristics and their precision in simple random samples, stratified samples, systematic samples, and multi-stage samples.



- 217. Quantitative Methods of Business Forecasting. (3) II.** Mr. Williams  
Advanced study of time series. An intensive analysis of statistical and econometric methods of business forecasting.
- 218. Selected Topics in Business Statistics. (3) II.** Mr. Sprowls  
Special topics in statistical methods. Current developments in statistical theory and practice. Analysis of recent literature.
- 221A. Seminar in Accounting Problems I. (3) I.** Mr. Frisbee  
Consideration of basic problems in presenting balance sheets and income and surplus statements, particularly from the standpoint of the public accountant; studies in the accounting methods and problems of specific industries.
- 221B. Seminar in Accounting Problems II. (3) II.** Mr. Frisbee  
Advanced study of problems in federal and state income, franchise, gift, and estate taxes; aims to convey an understanding of source materials and research methods for ascertaining current rulings and trends in laws and regulations.
- 222. Seminar in Industrial Accounting. (3) II.** Mr. Karrenbrock  
Prerequisite: course 122.  
Aims to acquaint the student with practical aspects of industrial accounting. Current cost-accounting literature is examined; studies of systems in local industries are made; case reports are prepared.
- 229. Seminar in Accounting Theory. (3) I, II.** Mr. Noble  
A survey of accounting literature, with emphasis on the development of basic accounting concepts. An attempt is made to explain contemporary practice as it has evolved in accordance with basic theory and expanding demands for accounting information.
- 230. Seminar in Money Rates and Money Markets. (3) I.** Mr. Clendenin  
A study of American money markets. Sources of funds for bond investment, mortgage loans, stock financing, and small business financing; the demand for such funds; the interest rates and yields from investments which result from supply-demand relationships.
- 231. Seminar in Business Finance. (3) I, II.** Mr. Weston  
Discussion of current problems in the financing of business; critical review of special studies made by members of the class on topics relating to business finance.
- 233. Seminar in Investments. (3) II.** Mr. Clendenin  
Discussion of current problems faced by individual and institutional investors; critical review of special studies made by members of the class on topics relating to investment.
- 240A-240B. Seminar in Industrial Plant Management. (3-3) Yr.**  
Mr. Barnes, Mr. Salvesson  
A study of the problems and policy decisions encountered at the coordinating, or plant management level. Basic production policies and organization; determination of production methods; coordinating production activities; industrial risk and forecasting; business indicators; social aspects of production.
- 241A-241B. Seminar in the Dynamics of Industrial Technology. (3-3) Yr.**  
Mr. Barnes  
The managerial problems and policy decisions concerning technological research; budgeting for research; contributions of fundamental, engineering, and market research; management of research and development; research and industrial progress; social aspects of technological change; product diversification and standardization; annual models.

**249A-249B. Seminar in the Scientific Approach to Management. (3-3) Yr.**

Mr. Barnes

A study of the historical development of the scientific approach to management. Analysis of the contributions of the pioneers, Taylor, Gilbreth, Gantt, Cooke, Fayol, and others. Evaluation of current trends. Case studies in application to all fields of management.

**251. Seminar in the Management of Individual-Employee Relations. (3) I.**

Mr. McNaughton

Consideration, at an advanced level, of factors underlying the formation and execution of managerial policies relating to the selection, development, adjustment, and motivation of individual employees. Emphasis on independent investigations and presentations by students.

**252. Seminar in the Management of Employee-Group Relations. (3) II.**

Prerequisite: course 152.

Mr. Tannenbaum

Consideration, at an advanced level, of factors underlying the formation and execution of managerial policies relating to employee groups. Leadership and morale. Management-union relationships. Emphasis on independent investigations and presentations by students.

**261. Seminar in Marketing Institutions. (3) I.**

Mr. Cassady

Lays a ground work for sound investigative procedures in solving marketing problems. Intensively studies marketing institutions (chain store, wholesaler, market research agency, etc.), and the legal environment in which they operate (Sherman, Clayton, and Federal Trade Commission Acts, Fair Trade Laws, Unfair Practices Acts, etc.).

**262. Seminar in Price Policies. (3) II.**

Mr. Cassady

Relates economic theory and price policy. Rigorous consideration is given to such concepts as demand, theory of competition, market classification, price leadership, geographical pricing schemes, and price discrimination, followed by analysis of the price policies of individual firms in which these concepts are utilized. A firm grasp of economic theory is a prerequisite.

**280. Management of Real Estate Enterprises. (3) I.** Mr. Case, Mr. Gillies

Prerequisite: course 180, 181 and 182 or 183.

Advanced consideration of principles and policies applicable to the management of real estate enterprises, including the marketing, financing, evaluation and operation of urban space. Research reports required.

**282. Seminar in Urban Land Utilization. (3) II.** Mr. Case, Mr. Gillies

Prerequisite: course 180, 181 and 182 or 183.

Intensive study of forces affecting land use, with emphasis upon processes of city growth, nature of metropolitan structure; and problems of urban land use, including business location. Original land use, including business location. Original research on a selected problem required.

**298A. Seminar in Business Policies I. (3) I.**

Mr. Jacoby

Prerequisite: consent of the instructor.

Aims to develop a theory and philosophy of business organization, management, and leadership. Students prepare analytical reviews of leading works on these subjects for presentation in class and critical group discussion.

**298B. Seminar in Business Policies II. (3) II.**

Mr. Jacoby

Prerequisite: consent of the instructor.

Aims to develop capacity to solve the problems of organization, personnel, and policy formation encountered at and around the top levels of management. Students prepare reports on a series of complex business cases for analysis and discussion in class.

**299. Research in Business Administration. (1 to 4) I, II.**

The Staff

## BUSINESS EDUCATION

Samuel J. Wanous, Ph.D., *Professor of Office Management and Business Education (Chairman of the Department).*

Erwin M. Keithley, Ed.D., *Associate Professor of Office Management and Business Education.*

Woodrow W. Baldwin, Ed.D., *Assistant Professor of Office Management and Business Education.*

Lucille P. Irvine, M.Ed., *Lecturer in Office Management and Business Education.*

Lawrence W. Erickson, M.S., *Associate in Office Management and Business Education.*

The majors in business education are offered in the College of Applied Arts and provide specialization in secretarial training, bookkeeping and accounting, general business, and merchandising. These majors prepare students for teaching on high school and college levels. Students desiring to prepare for administrative secretarial positions should enroll for the major in office administration.

*Preparation for the Major.*—Courses 3A-3B, 5, Business Administration 1A-1B, Economics 1A-1B, Psychology 1A, 1B or 33, English 1A, Speech 1A, Geography 5A-5B, and 3 units of mathematics or natural science.

Business Administration 2 is required for the special secondary credential if it includes "Bookkeeping and Accounting."

Business Education 4A-4B, or equivalent, is required for the majors which include Office Administration.

*The Major.*—At least 36 units of coördinated upper division courses which may be taken in one of six areas of specialization.

### 1. Office Administration.

Courses 110, 111, 112, 113, 114, 370A, Business Administration 105A, 160, Economics 135, one course chosen from Business Administration 105B, 120, 135, 150, or 180, and electives approved by the departmental adviser to bring the total to 36 units. Prepares students for teaching and administrative secretarial positions.

### 2. Accounting.

Courses 110, 112, 113, 114, 370B, Business Administration 105A, 120, 160, Economics 135, one additional upper division accounting course, one course chosen from Business Administration 105B, 135, 150, 180, Business Education 111, and electives approved by the departmental adviser to bring the total to 36 units.

### 3. General Business.

Courses 110, 112, 113, 370B, Business Administration 105A, 120 (or Business Education 111), 160, Economics 135, one course chosen from Business Administration 105B, 150, Economics 150, 195, and electives approved by the departmental adviser to bring the total to 36 units.

### 4. Merchandising.

Courses 110, 112, 113, 370C, Business Administration 105A, 160, 162, 163, 165, Economics 135, Business Education 111 or Business Administration 120, and electives approved by the departmental adviser to bring the total to 36 units.

### 5. Office Administration, Accounting, and General Business.

Courses 110, 111, 112, 113, 114, 370A-370B, Business Administration 105A, 120, 160, Economics 135, one additional upper division accounting course, and one course chosen from Business Administration 105B, 150, Economics 150, 195.

**6. Accounting, General Business, and Merchandising.**

Courses 110, 112, 113, 370B-370C, Business Administration 105A, 120, 160, 162, 163, 165, Economics 135, one course chosen from Business Administration 105B, 150, Economics 150, 195, and one additional upper division accounting course.

*Graduate Division.*—Students in business education may earn the following graduate degrees: Master of Business Administration in the School of Business Administration; Master of Education, Master of Arts, or Doctor of Education in the School of Education. For further information see the announcements of the School of Business Administration, the School of Education, and the Graduate Division, Southern Section.

*Requirements for Teaching Credentials.*—Candidates for the special secondary credential in business education or for the general secondary credential with a major or minor in business education should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

**LOWER DIVISION COURSES****3A-3B. Secretarial Training. (2-2) Beginning either semester.**

Mr. Erickson, Mrs. Irvine

A study of typewriting in which the groundwork is laid for a thorough understanding of office management and business teaching problems. Principles of operating various kinds of typewriters, special adaptations of each, and bases of speed and accuracy development are included.

**4A-4B. Secretarial Training. (3-3) Beginning either semester.**

Mr. Baldwin, Mrs. Irvine

A study of shorthand in which the groundwork is laid for a thorough understanding of office management and business teaching problems. An analysis of various techniques used in mastery of technical vocabularies and speed in writing and reading shorthand from dictation is included.

**5. Introduction to Business Education. (3) II.**

Mr. Erickson

Orients students to the field of business and business education. Covers, in survey form, functions, characteristics, organization, and problems of business. Serves as a foundation for later specialized study, and directs the thinking of students to possible careers. Open only to lower division students.

**10. Personal Investments. (1) I, II.**

Mr. Clendenin

A study of personal investment policy, the nature and value of corporate stocks and bonds, the securities markets, investment companies, public bonds, and saving institutions. Not open for credit to Business Administration majors or students having credit for Home Economics 144.

**UPPER DIVISION COURSES****110. Business Communications. (3) I, II.**

Mr. Keithley, Mr. Baldwin

Prerequisite: course 3A or its equivalent.

Designed to give students an understanding of the services of written communications to business, training in the writing of communication forms in typical business situations, and a review of correct English usage in business writing.

**111. Applied Secretarial Practice. (3) I, II.**

Mr. Erickson

Prerequisite: courses 3A-3B, 4A-4B.

Study of stenographic office problems, including the development of expert skill and ability in transcription. A consideration of the principles underlying the editing of dictated letters and reports and of the requirements and standards of stenographic positions in civil service as well as in various types of private offices.

**112. Management of Office Services. (3) I, II.**

Mr. Erickson

Prerequisite: course 3A or its equivalent.

A study of procedures, standards, and methods of measurement related to office services. An introductory consideration of human relations problems in the office, and their solutions. The development of an understanding of the uses of various types of office machines.

**113. Office Organization and Management. (3) I, II.**

Mr. Keithley

Analysis of functions of various office departments, their organization and management. Methods used in selecting and training office personnel; office planning and layout; selection and care of office supplies and equipment; methods and devices used to improve operating efficiency; types and uses of office appliances; techniques for performing office duties.

**114. Business Report Writing. (2) I, II.**

Mr. Keithley

Prerequisite: course 3A, or equivalent, and course 110.

A study of the processes of investigation and presentation of business problems and their solutions. Training in methods of collecting, organizing, and interpreting data, with emphasis upon writing the elements of a final report.

**GRADUATE COURSES****210. Case Studies in Office Management. (2) II.**

Mr. Wanous

**299. Independent Study in Business Education. (2 to 4) I, II.** The Staff**PROFESSIONAL COURSES IN METHOD****370A. Methods of Teaching Secretarial Subjects. (2) I.**

Mr. Wanous

A survey and evaluation of the methods and materials used in teaching typewriting, shorthand, transcription, and office training to secondary school pupils. Also considered are achievement standards, grading plans, measurement devices, and procedures for adapting instruction to various levels of pupil ability.

**370B. Methods of Teaching Bookkeeping and the General Business Subjects**

(2) II.

Mr. Wanous

An analytical study of the devices, methods, and materials used in teaching bookkeeping, junior business training, business arithmetic, business law, commercial geography, and related business subjects. A consideration of course objectives, curricular placement, units of instruction, evaluation measures, and remedial procedures.

**370C. Methods of Teaching Merchandising. (2) I.**

Mr. Erickson

Prerequisite: Business Administration 162 or 165.

An application of the principles of best practice in teaching salesmanship, merchandising, marketing, and other subjects related to the merchandising field. Emphasis placed upon study of current practices, objectives, teaching aids, evaluation, and achievement of effective learning situations.

**CHEMISTRY**

Francis E. Blacet, Ph.D., *Professor of Chemistry (Chairman of the Department)*.

Max S. Dunn, Ph.D., *Professor of Chemistry.*

Clifford S. Garner, Ph.D., *Professor of Chemistry.*

Theodore A. Geissman, Ph.D., *Professor of Chemistry.*

Wendell H. Griffith, Ph.D., *Professor of Chemistry, and Professor of Physiological Chemistry in the School of Medicine.*

Thomas L. Jacobs, Ph.D., *Professor of Chemistry.*

- James D. McCullough, Ph.D., *Professor of Chemistry.*  
 James B. Ramsey, Ph.D., *Professor of Chemistry.*  
 G. Ross Robertson, Ph.D., *Professor of Chemistry and Director of the Chemical Laboratories.*  
 Hosmer W. Stone, Ph.D., *Professor of Chemistry.*  
 Saul Winstein, Ph.D., *Professor of Chemistry.*  
 William G. Young, Ph.D., *Professor of Chemistry.*  
 William R. Crowell, Ph.D., *Professor of Chemistry, Emeritus.*  
 Donald J. Cram, Ph.D., *Associate Professor of Chemistry.*  
 William G. McMillan, Jr., Ph.D., *Associate Professor of Chemistry.*  
 Daniel E. Atkinson, Ph.D., *Assistant Professor of Chemistry.*  
 Paul S. Farrington, Ph.D., *Assistant Professor of Chemistry.*  
 Ralph A. James, Ph.D., *Assistant Professor of Chemistry.*  
 Robert L. Pecsok, Ph.D., *Assistant Professor of Chemistry.*  
 Robert L. Scott, Ph.D., *Assistant Professor of Chemistry.*  
 Kenneth N. Trueblood, Ph.D., *Assistant Professor of Chemistry.*  
 Irving S. Bengelsdorf, Ph.D., *Instructor in Chemistry.*  
 Phillip S. Thayer, Ph.D., *Instructor in Chemistry.*  
 ♡ Charles A. West, Ph.D., *Instructor in Chemistry.*

*Admission to Courses in Chemistry.*—Regular and transfer students who have the prerequisites for the various courses are not thereby assured of admission to those courses. The department may deny admission to any course if a grade D was received in a course prerequisite to that course, or if in the opinion of the department the student shows other evidence of inadequate preparation.

*Letters and Science List.*—All undergraduate courses in chemistry are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Required: Chemistry 1A–1B, 5A, Physics 1A, † 1C, Trigonometry, Mathematics 1–3A, 3B, 4A (or the alternative sequence 5A–5B, 6A), English 1A, and a reading knowledge of German. § Recommended: an additional course in Chemistry.

Students should note that the lower division curriculum prescribed for the College of Chemistry at Berkeley differs from the curriculum leading to the degree of Associate in Arts in the College of Letters and Science at Los Angeles.

*The Major.*—The minimum requirement for the major in chemistry is Chemistry 5B (3), 110A–110B (6), 112A–112B (10), which courses should normally be completed by the end of the junior year, 111 (4), and two additional courses in chemistry, of which at least one must include laboratory work, selected from the following group: 103, 107, 108A or 108A and 108C, 108B or 108B and 108D, 121, 125, 126A, 126B, 130A, 130B, 131, 132, 137. Students who find their principal interest is organic chemistry should take Chemistry 126A–126B and Chemistry 103 in the senior year; if their principal interest is in physical chemistry, Chemistry 130A–130B and Chemistry 125 should be taken and advanced courses in physics and mathematics are recommended.

The following courses outside of chemistry are also required and should

♡ On leave for duty with the armed forces.

† Physics 2A may be substituted for 1A with consent of a departmental adviser. For students who combine a chemistry major and a premedical major, Physics 2A–2B may be substituted for the sequence 1A, 1C, 1D; consent of a departmental adviser required.

§ The equivalent of German 1, 2, and 3PS. German 3PS may be completed in the upper division.

be finished as early as possible (some may be taken in the lower division): English 106S,|| Mathematics 4B or 6B, Physics 1D.

Completion of the major in chemistry automatically meets the minimum requirements for eligibility to full membership in the American Chemical Society in the minimum time of two years after graduation.

**Transfer Students.**—Students who transfer to the University of California, Los Angeles, with a grade of C or better in the equivalent of Chemistry 8 and 9 will be accepted in Chemistry 112B. Such transfers who have already taken Chemistry 112A–112B or an equivalent course will be permitted to count this toward the major with the consent of a departmental upper division adviser.

**Upper Division Credit.**—Upper division credit will be allowed for not more than three courses from the group 5A, 5B, 8, 9, 112A and 112B, provided that such courses were taken by the student while in the upper division, and provided further that not more than two of these courses were in organic chemistry. This allowance of upper division credit is permissible in any University curriculum.

**Graduate Study.**—The Department of Chemistry offers programs of study and research leading to the M.S. and Ph.D. degrees in chemistry and to the M.S. and Ph.D. degrees in biological chemistry. Prospective candidates for advanced degrees in chemistry may specialize in any of the following fields: analytical, biological, inorganic, organic, or physical chemistry.

The general University requirements for the M.S. degree are given on page 60; the Department of Chemistry makes use of Plan I, the Thesis Plan. The general University requirements for the Ph.D. degree are given on page 62. The student is not required to earn the M.S. degree before undertaking work for the Ph.D. degree. More detailed information regarding admission to and requirements for graduate study may be found in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, or by writing to the Graduate Adviser, Department of Chemistry, University of California, Los Angeles 24, California.

#### LOWER DIVISION COURSES

Certain combinations of courses involve limitations of total credit, as follows: 2A and 1A, 9 units; 2 and 1A, 7 units; 8, 9, and 112A, 6 units; 8 and 112A, 5 units.

#### 1A. General Chemistry. (5) I, II.

Mr. McCullough, Mr. Stone

Lectures, three hours; laboratory and quiz, six hours.

Prerequisite: high school chemistry. (Chemistry 2A will be accepted in place of high school chemistry, and for outstanding students high school physics and three years of high school mathematics is another acceptable alternative.) Required in the colleges of Agriculture, Chemistry, and Engineering, and of pre dental, premedical, premining, prepharmacy, and pre-optometry students; also of majors in applied physics, bacteriology, chemistry, geology, and physics and of medical technicians, and of students in home economics (curriculum 4) in the College of Applied Arts.

A basic course in principles of chemistry with special emphasis on chemical calculations.

#### 1B. General Chemistry. (5) I, II.

Mr. Blacet, Mr. Garner, Mr. James

Lectures, three hours; laboratory and quiz, six hours. Prerequisite: course

1A. Required in the same curricula as course 1A.

Continuation of course 1A with special applications to the theory and technique of qualitative analysis; periodic system; structure of matter. A brief introduction to organic chemistry is included.

|| English 1B is acceptable in place of English 106S if (a) it was completed before September, 1951; or if (b) it was completed before transfer from another major or curriculum or before transfer from another institution.

**2. Introductory Chemistry. (3) I, II.**

Mr. Bengelsdorf, Mr. Cram, Mr. Trueblood

Lectures, three hours. An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry. The course may be taken for credit in physical science by students following curricula not requiring laboratory work in such field of study. Not open for credit to students who have credit for course 2A.

**2A. Introductory Chemistry. (5) I, II.**

Mr. Bengelsdorf, Mr. Cram, Mr. Trueblood

Lectures, three hours; laboratory and quiz, four hours. This course satisfies the chemistry requirements for nurses as prescribed by the California State Board of Nursing Examiners; it is required of certain home economics majors in the College of Applied Arts.

An introductory course emphasizing the principles of chemistry and including a brief introduction to elementary organic chemistry. Not open for full credit to students who have credit for course 2.

**5A. Quantitative Analysis. (3) I, II.**

Mr. Farrington, Mr. Pecos, Mr. Stone

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 1A-1B. Required of chemistry majors, economic geologists, petroleum engineers, public health, sanitary, and municipal engineers, medical technicians, and of premedical, College of Chemistry, metallurgy, and certain agriculture students.

Principles and technique involved in fundamental gravimetric and volumetric analyses.

**5B. Quantitative Analysis. (3) I, II.**

Mr. Farrington, Mr. Pecos

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 5A. Required of chemistry majors, economic geologists, and College of Chemistry students.

A continuation of course 5A but with greater emphasis on theory, analytical problems in acidimetry and alkalimetry, oxidimetry, electrolytic deposition, and semiquantitative procedures.

**8. Elementary Organic Chemistry. (3) I, II.**

Mr. Robertson

Prerequisite: course 1A-1B; concurrent enrollment in course 9 is advisable. This course is required of premedical and pre dental students, majors in petroleum engineering, sanitary and municipal engineering, home economics, public health, and some agriculture majors. Students in certain curricula which require only Chemistry 1A and 8 are warned that they will not be admitted to Chemistry 8 on the Los Angeles campus unless they have completed Chemistry 1B or equivalent.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.

**9. Methods of Organic Chemistry. (3) I, II.** Mr. Bengelsdorf, Mr. Robertson

Lectures and quizzes on principles of laboratory manipulation, two hours; laboratory, six hours. Prerequisite or concurrent: course 8. Required of premedical and pre dental students, and majors in petroleum engineering.

Laboratory work devoted principally to synthesis, partly to analysis.

**10. Organic and Food Chemistry. (4) I.**

Mr. Robertson

Prerequisite: courses 1A and 1B, or 2A. Lectures, three hours; laboratory, three hours. Arranged primarily for majors in home economics.

An introductory study of the compounds of carbon, including both aliphatic and aromatic derivatives.



## UPPER DIVISION COURSES

Certain combinations of courses carry limitations of total credit, as follows: 109A and 110A, 3 units; 109B and 110B, 3 units.

**103. Qualitative Organic Analysis.** (3) I, II. Mr. Young  
Lectures, discussions, and quizzes, two hours; laboratory, six hours.  
Prerequisite: courses 5A-5B, 8 and 9, or 112A-112B.  
Classification, reactions, and identification of organic compounds.

**107. Amino Acids and Proteins.** (3) I. Mr. Dunn  
Lectures, three hours. Prerequisite: courses 5A, 8 and 9, or 5A, 112A-112B.  
A detailed treatment of the chemistry and metabolism of amino acids, polypeptides and proteins.

**108A-108B. Principles of Biochemistry.** (3-3) Yr. Mr. Atkinson, Mr. Thayer  
Lectures, three hours. Prerequisite: courses 5A, 8 and 9 or 5A, 112A-112B.  
Discussion of the basic principles of the biochemistry of plants and animals with particular reference to chemical composition and physiological processes.

**108C-108D. Methods of Biochemistry.** (2-2) Yr. Mr. Atkinson, Mr. Thayer  
Quiz, one hour; laboratory, five hours. Prerequisite: courses 5A, 8 and 9 or 5A, 112A-112B. Concurrent or prerequisite: course 108A-108B.  
The preparation, analysis, and quantitative studies of metabolites in plants and animals, including amino acids, carbohydrates, enzymes, lipides, peptides, proteins, purines, pyrimidines, sterols, and vitamins.

**109A-109B. General Physical Chemistry.** (2-2) Yr. Mr. Garner, Mr. McCullough, Mr. Scott  
Lectures and demonstrations. Prerequisite: course 5A, Physics 2A-2B, Mathematics 1; recommended preparation, course 8, Mathematics 7. May not be offered as part of the major in chemistry.  
Chemical principles of particular importance in the life sciences and geology.

**110A. Physical Chemistry.** (3) I, II. Mr. Ramsey, Mr. Scott  
Prerequisite: course 5B, Physics 1C, and Mathematics 4A, with a minimum grade of C in each. Nonchemistry majors admitted without course 5B.  
Certain fundamental principles relating to matter and energy, including the first law of thermodynamics and thermochemistry; molecular and atomic theories regarding constitution of substances; gas laws and molecular kinetic theory; colligative properties of solutions of nonelectrolytes.

**110B. Physical Chemistry.** (3) I, II. Mr. James, Mr. McMillan, Mr. Ramsey  
Prerequisite: course 110A; Mathematics 4B (may be taken concurrently).  
The mass-action law of chemical equilibrium and the phase rule, thermodynamic derivations; electrical properties of solutions and ionic theory; electromotive force of voltaic cells, relations to free energy and entropy changes and to equilibrium constants; chemical kinetics.

**110G. Physical Chemistry.** (3) I. Mr. Ramsey, Mr. Scott  
Prerequisite: same as for course 110A. Open only by permission of the chairman of the department to graduate students who have not taken course 110A in this institution.

**110H. Physical Chemistry.** (3) I, II. Mr. James, Mr. McMillan, Mr. Ramsey  
Prerequisite: course 110A or 110G. Open only by permission of the chairman of the department to graduate students who have not taken course 110B in this institution.

**111. Methods of Physical Chemistry. (4) II.**

Mr. Garner, Mr. James, Mr. Scott

Lectures, two hours; laboratory, six hours. Prerequisite: course 110A; concurrent: course 110B.

Physicochemical measurements and laboratory experiments illustrating some of the important principles of physical chemistry.

**112A-112B. Organic Chemistry. (5-5) Yr. Beginning either semester.**

Mr. Cram, Mr. Geissman, Mr. Jacobs

Lectures, three hours; laboratory and quiz, six hours.

Prerequisite: course 1A-1B. Recommended: course 5A.

A beginning course designed primarily for chemistry majors, but open to other students who desire a more comprehensive course than Chemistry 8 and 9. Organic chemistry is presented with emphasis upon the application of modern principles to structure, reactivity, methods of synthesis, and physical properties of organic compounds. Students who have had Chemistry 8 and 9 or their equivalent may, with the consent of the instructor, take 112B without having had 112A. Such students are advised that such transfer is more readily effected into the Chemistry 112B which starts in the fall semester.

**121. Advanced Inorganic Chemistry. (3) I.**

Mr. Stone

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: course 5B.

Equilibrium and reaction rate; periodic classification. Laboratory work principally synthetic and analytic, involving special techniques.

**125. Instrumental Methods. (3) I, II.**

Mr. Trueblood

Lectures, discussions, and quizzes, two hours; laboratory, six hours. Prerequisite: courses 5B, 110B, 111 and Physics 1D. In the event that it is necessary to limit enrollment, admission will be based upon performance in the prerequisite courses, particularly 5B and 111.

Theory and application of instrumental methods in chemical problems. The laboratory work will include experiments in spectrophotometry, chemical microscopy, polarography, radioactivity, and various other modern techniques.

**126A-126B. Advanced Organic Chemistry. (3-3) Yr.**

Mr. Geissman, Mr. Jacobs, Mr. Winstein

Lectures, three hours. Prerequisite: Chemistry 112A-112B or its equivalent. Primarily for seniors and first-year graduate students. With the consent of the instructor, course 126B may be taken without 126A by capable students who have done well in the prerequisite course, but this is not encouraged.

A comprehensive course based upon modern concepts. Substitution, elimination and addition reactions, condensations, rearrangements, stereochemistry and free radical chemistry.

**130A. Advanced Physical Chemistry. (3) I.**

Mr. McMillan, Mr. Garner

Lectures, three hours. Prerequisite: Chemistry 110B; Mathematics 4B; Physics 1C, 1D. Primarily for seniors and first-year graduate students.

Selected topics in modern physical chemistry including quantum effects, nucleonics, interaction of matter with fields, intermolecular forces, chemical bond, molecular structure and the solid state.

**130B. Advanced Physical Chemistry. (3) II.**

Mr. Scott

Lectures, three hours. Prerequisite: Chemistry 110B; Mathematics 4B; Physics 1C, 1D. Chemistry 130A is prerequisite except with the permission of the instructor.

A continuation of Chemistry 130A. Selected topics in modern physical chemistry including probability and statistical methods, reaction kinetics, the imperfect gas and condensation, liquids and solutions, phase transitions, surface phenomena and high polymers.

- 131. Absorption Spectra and Photochemical Reactions.** (2) I. Mr. Blacet  
Prerequisite or concurrent: course 110A.  
The chemical interpretation of spectra and the study of chemical processes which are initiated by the absorption of visible and ultraviolet radiation.
- \*132. X Rays and Crystal Structure.** (2) II. Mr. McCullough  
Prerequisite: course 110A.  
Symmetry of crystals; use of X rays in the investigation of crystal structure.
- 137. Chemistry of Bacterial Nutrition.** (2) II. Mr. Dunn  
Lectures, two hours. Prerequisite: approved courses in bacteriology and biochemistry.  
Detailed studies of bacterial nutrition and metabolic products. Microbiological assays of vitamins and amino acids.
- \*\*199. Problems in Chemistry.** (3) I, II. The Staff  
Prerequisite: junior standing, a good scholastic record, and such special preparation as the problem may demand.

## GRADUATE COURSES

- 202. Chemical Kinetics.** (3) II. \_\_\_\_\_  
A critical consideration of all important classes of chemical reactions in gaseous and condensed phases and at interfaces between phases. Experimental methods, and application of theory. Recent advances in the theory of reaction rates.
- \*203. Chemical Thermodynamics.** (3) II. Mr. McMillan, Mr. Ramsey  
Derivation and application of thermodynamic relations of particular importance in chemistry; partial molar quantities and thermodynamic properties of solutions; the concepts, fugacity, activity, activity coefficient and osmotic coefficient, and their uses.
- 221. Physical Aspects of Organic Chemistry.** (3) II. Mr. Winstein  
A course stressing mechanism. Electronic interpretations, kinetics, and stereochemistry of organic reactions are treated. The emphasis in this course is, in some years, on ionic situations and, in other years, on free radical reactions.
- 222A\*-B\*-C\*-D\*-E-F. Naturally Occurring Organic Compounds.** (2) I, II. Mr. Cram, Mr. Geisman, Mr. Jacobs  
Theoretical and practical aspects of organic chemistry are discussed in terms of different classes of natural products, such as non-nitrogenous plant products, nitrogenous plant products, steroids, sugars, and fungi metabolites.
- 231. Nuclear Chemistry.** (3) I. Mr. Garner, Mr. James  
Introduction to natural and artificial radioactivity; interaction of radiations with matter; detection and measurement of nuclear radiations; methods for the preparation, concentration, isolation, and identification of radioisotopes, and their application to chemical problems.
- \*233. Statistical Mechanics.** (3) I. Mr. McMillan, Mr. Scott  
Prerequisite: course 130B; Mathematics 4B. Recommended: course 203; Physics 105; Mathematics 119A, 122A-122B.  
Derivation of the laws of molecular assemblies from the properties of the individual molecules, including: elementary kinetic theory of gases; thermodynamic functions for monatomic, diatomic, and polyatomic gases; chemical equilibrium; the crystalline state; theory of the general imperfect gas; condensation, and related topics.

\* Not to be given, 1953-1954.

\*\* To be given only if laboratory space is available.

**234. Quantum Chemistry. (3) II.**

Mr. McMillan

Prerequisite: course 130A; Physics 121; Mathematics 119B or 110B; or consent of the instructor. Recommended: course 131, Physics 105.

Elementary quantum mechanics with particular emphasis on chemical applications. Includes: classical mechanics; early quantum theory; wave-particle dualism; statistical interpretation; Schrödinger formulation; particle in a potential well, harmonic oscillator, and rigid rotator; hydrogen atom; periodic system; approximation methods; molecules; chemical bond types; and more advanced topics as time permits.

**238. Chemistry of Intermediary Metabolism. (3) I.**

Prerequisite: course 108A-108B.

Detailed consideration of the metabolic transformation of animals and plants and the experimental methods employed in this field.

**240. Chemistry of Enzyme Action. (3) II.**

Mr. Atkinson

Prerequisite: courses 108A-108B and 108C-108D, or consent of the instructor.

Physical and chemical characteristics, natural and synthetic substrates, activators and inhibitors of enzymes and coenzymes. Mechanisms and kinetics of enzyme and coenzyme action in digestion, respiration and the degradation and synthesis of proteins, carbohydrates, nucleic acids and other biological substances.

**260. Seminar in Chemistry. (1) I, II.** The Staff (Mr. Winstein in charge)

Oral reports by graduate students on important topics from the current literature in their field of chemistry. Each student taking this course must consult the instructor in charge before enrolling, and is expected to present a report.

**261. Seminar in Biochemistry. (1) I, II.**

Mr. Dunn

**280A-B-C-D. Research in Chemistry. (3 to 6) I, II.**

The Staff

**281A-B-C-D. Advanced Research in Chemistry. (3 to 6) I, II.** The Staff**CLASSICS**

Frederick Mason Carey, Ph.D., *Professor of Classics (Chairman of the Department)*.

Paul Friedlander, Ph.D., *Professor of Classics, Emeritus*.

Arthur Patch McKinlay, Ph.D., *Professor of Latin, Emeritus*.

Paul Augustus Clement, Ph.D., *Associate Professor of Classics and Classical Archaeology*.

Herbert Benno Hoffleit, Ph.D., *Associate Professor of Classics*.

Albert Hartman Travis, Ph.D., *Associate Professor of Classics*.

Helen Florence Caldwell, M.A., *Associate in Classics*.

*Letters and Science List.*—All undergraduate courses in Classics except 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

The student may take the major in Classics either in Latin or Greek.

**Preparation for the Major.**

**A. Latin.**—Required: four years of high school Latin or two years of high school Latin and courses 2 and 3; courses 5A-5B, 9A, 9B. Recommended: English, French, German, Greek, Italian, Spanish.

**B. Greek.**—Required: course 1-2 or two years of high school Greek; and 4A or 4B or any 2 units of 100A-B-C-D (which may be taken concurrently with courses 101 and 102). Recommended: English, French, German, Italian, Latin, Spanish.

*The Major.*

**A. Latin.**—Courses 102, 115, 146, 154, 157, 191, plus 6 units of upper division courses in Latin, English, French, German, Greek, Italian, Spanish, philosophy, ancient or medieval history, to be chosen with the approval of the department. (Latin 165A-B-C-D is required of students preparing for a teaching credential.)

**B. Greek.**—Courses 100A-B-C-D, 101, 102, 103, 104, 105, 114, plus 6 units of upper division courses in Latin, English, French, German, Italian, Spanish, philosophy, ancient or medieval history, to be chosen with the approval of the department.

*Requirements for Admission to Graduate Courses.*

A candidate for admission to graduate courses in Latin or in Greek must meet, in addition to the general University requirements, the minimum requirements for an undergraduate major in Latin or Greek. If the candidate is deficient in this prerequisite he must fulfill it by undergraduate work which is not counted toward his graduate residence.

*Requirements for Admission to Candidacy for the Master's Degree in Latin.*

1. A reading knowledge of French or German.
2. Completion of Greek 101.
3. Completion of Classics 200.
4. A comprehensive examination in Latin literature, Roman history, and Latin composition. The composition requirement may be met by passing Latin 165A-B-C-D with an average grade of B or better.

*Requirements for Admission to Candidacy for the Master's Degree in Greek.*

1. A reading knowledge of French or German.
2. Completion of Latin 5A or Latin 5B.
3. Completion of Classics 200.
4. A comprehensive examination in Greek literature, Greek history, and Greek composition. The composition requirements may be met by passing Greek 100A-B-C-D with an average grade of B or better.

*Requirements for Master's Degree.*

For the general requirements, see page 60. The department favors the Comprehensive Examination Plan.

**COURSES WHICH DO NOT REQUIRE A KNOWLEDGE OF GREEK OR LATIN**

Classics 113, 170A-170B.

Latin 40, 180A-180B.

Greek 40, 180A-180B.

**CLASSICS**

**UPPER DIVISION COURSES**

**113. Ancient Drama. (3) I.**

Mr. Travis

The major Greek and Latin dramas in translation, with a history of the theater and dramatic productions. A knowledge of Latin and Greek is not required.

**170A. Greek Archaeology. (2) I.**

Mr. Clement

A knowledge of Greek is not required.

A general archaeological survey of the Minoan-Mycenaean and the Greek societies from about 3000 B.C. to the end of the fourth century before Christ:

the history of selected excavations, the topography of selected sites, and a survey of the work of the societies, particularly in architecture, sculpture, and painting, based on the extant monuments and the related ancient literature (in English translation).

**170B. Roman Archaeology. (2) II.**

Mr. Clement

A knowledge of Latin is not required.

A general archaeological survey of the Hellenistic Greek and the Roman societies from the beginning of the third century before Christ to the end of the fifth century after Christ: the history of selected excavations, the topography of selected sites, and a survey of the work of the societies, particularly in architecture, sculpture, and painting, based on the extant monuments and the related ancient literature (in English translation).

**GRADUATE COURSE**

**200. History of Classical Scholarship, Bibliography, and Methodology.**

(3) I.

Mr. Carey

Required of all candidates for the master's degree in Latin or Greek.

**LATIN**

**LOWER DIVISION COURSES**

**1. Beginning Latin. (4) I, II.**

Sections meet five hours weekly.

**2. Latin Readings. (4) I, II.**

Mr. Clement,

Prerequisite: course 1 or two years of high school Latin.

Sections meet five hours weekly.

**GA. Latin Prose Composition. (1) I, II.**

Intended primarily for students entering with two years of high school Latin taken at least two years before matriculation in the University.

**GB. Latin Prose Composition. (1) I, II.**

Miss Caldwell

Prerequisite: course 2 or GA, or two or three years of high school Latin.

**3. Vergil. (4) I, II.**

Miss Caldwell

Prerequisite: course 2, or two or three years of high school Latin. Designed for students who have not studied Vergil in the high school.

**5A. A Survey of Latin Literature. (3) I.**

Miss Caldwell

Prerequisite: course 3, or four years of high school Latin.

**5B. Horace: Odes and Epodes. (3) II.**

Mr. Travis

Prerequisite: course 3, or four years of high school Latin.

**9A-9B. Latin Prose Composition. (2-2) Yr.**

Mr. Travis

Prerequisite: course 3, or three years of high school Latin.

**40. The Latin Element in English. (2) I, II.**

Mr. Carey, Miss Caldwell

A course in vocabulary building based on the study of the many groups of English words which are derived from the Latin. A knowledge of Latin is not required.

**UPPER DIVISION COURSES**

**102. Silver Latin. (3) I.**

Miss Caldwell

Prerequisite: courses 5A, 5B.

**†115. Ovid: Carmina Amatoria and Metamorphoses. (3) I.**

Mr. Carey

Prerequisite: course 102.

† Not to be given, 1953-1954; to be given, 1954-1955.

146. **Lucretius: Selections; Vergil: Eclogues and Georgics.** (3) II.  
Prerequisite: course 102. Mr. Carey
154. **Tacitus: Annals.** (3) II.  
Prerequisite: course 102. Miss Caldwell
- †157. **Roman Satire.** (3) II.  
Prerequisite: course 102. Mr. Travis
- 165A-165B. **Latin Composition.** (1-1) Yr.  
Prerequisite: course 9A-9B.  
Ciceronian prose. Mr. Carey
- †165C-165D. **Latin Composition.** (1-1) Yr.  
Prerequisite: course 9A-9B.  
Ciceronian prose. Mr. Carey
- \*\*180A-180B. **A Survey of Latin Literature in English.** (2-2) Yr.  
This course does not count on the major in Latin. Mr. Travis  
A study of the literature of Rome from Ennius to Apuleius with reading  
in English. A knowledge of Latin is not required.
191. **Cicero: Selections.** (3) I.  
Prerequisite: course 102. Mr. Hoffleit
- 199A-199B. **Special Studies in Latin.** (1-4; 1-4) Yr.  
Mr. Carey and the Staff  
Prerequisite: senior standing and at least 12 units of upper division Latin.  
Problems in classical philology.

## GRADUATE COURSES

- \*202. **Cicero's Philosophical Works.** (3) II. Mr. Clement
- \*203. **Roman Historians.** (3) II. \_\_\_\_\_
- \*204. **Roman Prose Writers.** (3) I. \_\_\_\_\_  
Cicero's moral and political essays.
- \*206. **The Roman Epic.** (3) II. Mr. Hoffleit  
The Roman epic from Ennius to Silius Italicus.
- \*208. **Livy.** (3) II. Mr. Clement
- \*210. **Vergil's Aeneid.** (3) II. Mr. Hoffleit
211. **Cicero's Rhetorical Works.** (3) I. Mr. Travis
- \*253. **Seminar in Latin Studies.** (3) II. Mr. Carey  
Textual criticism.
- \*254A-254B. **Seminar in Latin Studies.** (3-3) Yr. Mr. Carey  
Latin comedy.
- \*255. **Seminar in Latin Studies.** (3) I. Mr. Carey  
Roman elegy.
- \*256. **Seminar: Ovid.** (3) II. Mr. Carey
290. **Research in Latin.** (1-4) I, II. The Staff

\* Not to be given, 1953-1954.

\*\* Not to be given, 1954-1955. Latin 180A-180B is ordinarily given in alternation  
with Greek 180A-180B.

† Not to be given, 1953-1954; to be given, 1954-1955.

## PROFESSIONAL COURSE IN METHOD

**\*370. The Teaching of Latin. (3) II.**

Prerequisite: a foreign language minor.

## GREEK

## LOWER DIVISION COURSES

1-2. **Greek for Beginners, Attic Prose. (4-4) Yr.** Mr. Hoffleit  
Sections meet five hours weekly.

4A-4B. **Readings in Greek. (2-2) Yr.** Miss Caldwell

40. **The Greek Element in English. (2) I, II.** Mr. Clement  
A course in vocabulary building based on the study of the many groups of English words which are derived from the Greek. A knowledge of Greek is not required.

## UPPER DIVISION COURSES

100A-100B. **Prose Composition. (1-1) Yr.** Mr. Carey  
Prerequisite: course 1-2.

\*100C-100D. **Prose Composition. (1-1) Yr.** Mr. Carey  
Prerequisite: course 1-2.

101. **Homer: Odyssey; Herodotus: Selections. (3) I.** Mr. Carey  
Prerequisite: course 1-2.

102. **Plato: Apology and Crito; Lyric Poets. (3) II.** Mr. Carey  
Prerequisite: course 101.

103. **Greek Drama: Euripides and Aristophanes. (3) II.** Mr. Travis  
Prerequisite: courses 101, 102.

†104. **Historical Prose: Herodotus and Thucydides. (3) I.** Mr. Carey  
Prerequisite: courses 101, 102.

†105. **Greek Drama: Aeschylus and Sophocles. (3) II.** Mr. Travis  
Prerequisite: courses 101, 102.

114. **Plato: Republic. (3) I.** Mr. Clement  
Prerequisite: courses 101, 102.

117A-117B. **Greek New Testament. (2-2) Yr.** Mr. Hoffleit

‡180A-180B. **A Survey of Greek Literature in English. (2-2) Yr.**  
This course does not count on the major in Greek. Mr. Carey  
A study of the literature of Greece from Homer to Lucian with reading in English. A knowledge of Greek is not required.

199A-199B. **Special Studies in Greek. (1-4; 1-4) Yr.** Mr. Carey and the Staff  
Prerequisite: senior standing and at least 12 units of upper division Greek.

Problems in classical philology.

## GRADUATE COURSES

\*201A. **Homer: The Iliad. (3) I.** Mr. Carey

201B. **Homer: The Odyssey. (3) II.** Mr. Clement

\* Not to be given, 1953-1954.

† Not to be given, 1953-1954. Courses 103 and 114 are ordinarily given in alternation with courses 104 and 105, respectively.

‡ Not to be given, 1953-1954. Greek 180A-180B is ordinarily given in alternation with Latin 180A-180B.



*202. Sophocles. (3) II.	Mr. Hoffleit
*203. Thucydides. (3) II.	Mr. Carey
*204. Aristophanes. (3) I.	Mr. Travis
*205. Euripides. (3) I.	Mr. Travis
290. Research in Greek. (1-4) I, II.	The Staff

## RELATED COURSES IN OTHER DEPARTMENTS

History 111A-111B. History of the Ancient Mediterranean World. (3-3) Yr.	Mr. Brown
History 112A-112B. History of Ancient Greece. (3-3) Yr.	Mr. Brown
History 113A-113B. History of Rome. (3-3) Yr.	Mr. Brown
Linguistics 175. Introduction to Romance Linguistics. (3) II.	_____
Linguistics 195. Introduction to Indo-European Linguistics. (3) I.	_____

## ECONOMICS

Paul A. Dodd, Ph.D., LL.D., *Professor of Economics.*

Paul T. Homan, Ph.D., *Professor of Economics (Chairman of the Department).*

Earl J. Miller, Ph.D., LL.D., *Professor of Economics.*

Dudley F. Pegrum, Ph.D., *Professor of Economics.*

Warren C. Scoville, Ph.D., *Professor of Economics.*

Marvel M. Stockwell, Ph.D., *Professor of Economics.*

<sup>1</sup>Armen A. Alchian, Ph.D., *Associate Professor of Economics.*

George H. Hildebrand, Ph.D., *Associate Professor of Economics.*

William R. Allen, Ph.D., *Assistant Professor of Economics.*

Karl Brunner, Ph.D., *Assistant Professor of Economics.*

†Wytze Gorter, Ph.D., *Assistant Professor of Economics.*

John S. McGee, Ph.D., *Assistant Professor of Economics.*

Norman V. Breckner, M.A., *Acting Assistant Professor of Economics.*

Robert M. Macdonald, A.B., *Acting Assistant Professor of Economics.*

Edgar L. Warren, A.B., *Lecturer in Economics.*

*Letters and Science List.*—All undergraduate courses in economics are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Objective of the Major in Economics.*—The program for the student majoring in the field of economics is designed to provide a well-balanced and carefully integrated curriculum in liberal arts leading to the A.B. degree. The requirements for and offerings in the major are intended not only to provide a well-rounded education based on a broad foundation of economics and related subjects, but also to supply basic training for students who plan to enter the professional fields of high school and junior college teaching in the social sciences or business education, law, social work, or government service.

\* Not to be given, 1953-1954.

† Absent on leave, 1953-1954.

<sup>1</sup> In residence first semester only, 1953-1954.

Majors who envisage a business career are afforded the opportunity of following a plan of study that includes the courses which provide the basic training for such a career and the foundation for graduate work in schools of business administration.

Upper division programs are worked out for each student in consultation with a departmental adviser.

*Preparation for the Major.*—Required: Economics 1A–1B. Under special circumstances and by petition, a student may be permitted to substitute Economics 101 for Economics 1A–1B. This may be done only when the student is in upper division standing.

*Requirements for the Major.\**

- 1) Economics 100A and three units selected from 100B, 103, or 140;
- 2) One course in each of three fields in economics listed below other than the field of economic theory or Economics 140;
- 3) Twenty-four upper division units in courses offered by the Department of Economics.

*Recommended courses.*—Lower division students preparing for the major in economics are strongly recommended to include in their programs Economics 12 or 13 and Business Administration 1A or 3. Majors in economics should endeavor to include courses selected from the following departments in completing their upper division programs: anthropology-sociology, business administration, geography, history, philosophy, political science, psychology. The selection should be made on the basis of the student's proposed career and on the recommendation of his major adviser. Students who intend to pursue economics to the graduate level are encouraged to take work in mathematics at least through the first course in calculus. This applies especially to those who are interested in economic theory and statistics.

**Fields:**

Economic Theory (Courses 100A, 100B, 103, 105, 143).

Economics Institutions (Courses 106, 107, 108, 120).

Public Finance (Courses 131A, 131B, 133).

Money and Banking (Courses 135, 136, 137).

Statistics (Courses 140, 141A, 141B, 142).

Labor Economics (Courses 150, 152, 155, 156A, 156B, 158).

Government and Industry (Courses 170, 171, 173, 174).

International Economics (Courses 195, 196, 197).

**1A–1B. Principles of Economics.** (3–3) Yr. Beginning either semester.

Mr. Miller, Mr. Stockwell, Mr. Scoville, Mr. Allen, Mr. Breckner

Lectures, two hours; discussion, one hour.

An introduction to the basic characteristics of the American economy and the fundamental tools of economic analysis. Theories of price and income distribution.

**12. Evolution of Economic Institutions in Europe.** (3) I. Mr. Scoville  
(Former number, 10.)

Comparative evaluation of the rise of large-scale capitalistic industry in different countries, analysis of economic and institutional changes.

**13. Evolution of Economic Institutions in America.** (3) I, II. Mr. Scoville  
(Former number, 11.)

Rise of large-scale capitalistic methods of production, influence of technology, prices, politics, ideologies and wars.

\* Economics majors planning to graduate in or before June, 1954, should consult departmental advisers regarding the fulfillment of these requirements.

## UPPER DIVISION COURSES

Courses 1A-1B or 101 are prerequisite to all upper division courses in economics.

**100A. General Economic Theory. (3) I, II.**

Mr. Hildebrand

The laws of demand, supply, returns, and costs; price and output determination in different market situations. The implications of the pricing process for the optimum allocation of resources.

**100B. General Economic Theory. (3) II.**

Theory of employment and income; theory of factor pricing and income distribution; present state and prospects of capitalism in relation to welfare and economic progress.

**101. Economic Principles and Problems. (3) I, II.**

Mr. Allen, Mr. Miller, Mr. Alchian

Designed for non-economics majors. A one-semester course presenting the principles of economics with applications to current economic problems. Satisfies the prerequisite to all upper division courses in economics. Not open to students with credit for 1A-1B.

**103. History of Economic Theory. (3) I.**

Mr. Homan

An historical survey of the major systems of economic thought.

**105. Business Cycles. (3) I, II.**

Mr. Breckner

(Former number, 138.)

The measurement, causes, and control of economic fluctuations.

**106. Individualism and Collectivism. (3) II.**

Mr. Hildebrand

An examination of the economic assumptions and implications of the literature of liberalism, socialism, communism, and anarchism, from classical antiquity to the present, with special attention to conceptions of economic reform and organization, and to the place of the state in the economic scheme.

**107. Comparative Economic Systems. (3) I, II.**

Mr. Scoville, ———

An analysis of the rival economic doctrines of capitalism, socialism, communism, and fascism, with emphasis upon the problems and implications of systems of economic planning.

**108. Development of Economic Institutions. (3) I.**

Mr. Scoville

Development of institutions characteristic of a capitalistic economy; evolution of concepts of private property, individual enterprise, and competition. Critical survey of theories of economic progress.

**131A-131B. Public Finance. (3-3) Yr.**

Mr. Stockwell

Public expenditures; causes and significance of their increase; sources of public revenue; governmental budgets; financial administration; the public debt; fiscal policy.

**133. Federal Finance. (3) II.**

Mr. Breckner

Prerequisite: course 135.

An analysis of the federal tax structure, federal expenditures, and the federal debt structure, and their relationship to the level of employment and income, resource allocation, and the distribution of income.

**135. Money and Banking. (3) I, II.**

Mr. Brunner, Mr. Clendenin, Mr. Miller, Mr. Allen, Mr. Breckner

The principles and history of money and banking, with principal reference to the experience and problems of the United States.

- 136. Techniques of Monetary Control. (3) I.** Mr. Brunner  
Prerequisite: course 135.  
The nature of monetary controls; monetary developments as related to prices, production, and national income; monetary policies in the interwar and postwar periods; monetary policy and domestic economic stabilization.
- \*137. Comparative Banking Systems. (3) II.** \_\_\_\_\_  
(Former number, 136B.)  
Prerequisite: course 135.  
Comparative study of the banking systems in the principal financial centers of the world.
- 140. Introduction to Statistical Methods. (3) I.** Mr. Alchian  
Principles and methods of utilizing statistical data; presentation and statistics of a given set of data; probability; methods of statistical inference with economic applications; bivariate correlation, time series and index numbers.
- †141A-141B. Statistical Methods. (3-3) Yr.** Mr. Alchian  
Prerequisite: course 140, or the equivalent.  
Emphasis on ability to perform statistical studies and specific applicability of the results. Probability, multisamples, correlation, time series, and sampling procedures.
- \*142. Quantitative Economic Analysis. (3) II.** Mr. Alchian  
Prerequisite: course 140, or the equivalent.  
Quantitative aspects of the main economic magnitudes and their relationships. Implications of extent of quantitative knowledge on validity of economic theory.
- 143. Introduction to Mathematical Economics. (3) II.** Mr. Brunner  
Basic concepts and operations of mathematical logic and their application to economic analysis. Differentiation of functions, maximum and minimum problems in economics. Linear systems in economics, matrices, vectors and determinants and their elementary properties.
- 150. Labor Economics. (3) I, II.** Mr. Hildebrand  
Economic analysis of trade union philosophies and practices; theoretical exploration of basic influences affecting real wages and employment, with examination of the relevant statistical record; internal wage policies of the firm; union-management relations and the public economy.
- 152. Social Insurance. (3) II.** Mr. Macdonald  
Basis of the social security program; unemployment insurance, workmen's compensation, old age pensions, insurance against sickness.
- \*155. History and Problems of the Labor Movement. (2) I.** \_\_\_\_\_  
The origin and development of trade-unionism in the United States; theory of collective bargaining, methods and practices of contemporary unionism; the legal status of unionism.
- 156A-\*156B. Labor Law and Legislation. (3-3) Yr.** Mr. Macdonald  
Prerequisite: course 150.  
The law regulating industrial relationships; the legal status of unions and concerted activities under federal and state laws; wage-hours, antistrike, and other labor legislation; administrative agencies.

\* Not to be given, 1953-1954.

† Not to be given in 1953-1954; however, students may enroll in Business Administration 116A-116B (Sprowls) and receive credit for work toward the Economics major.

- 158. Collective Bargaining.** (3) I, II. Mr. Warren  
Prerequisite: course 150.  
Theory and practice of collective bargaining; mediation and arbitration of industrial disputes; grievance procedure and administration of labor-management agreements; government intervention in collective bargaining.
- 170. Economics of Industrial Control.** (3) I, II. Mr. Pegrum  
The institutional patterns of regulation; the economics of industrial production and pricing; the control of competitive enterprise, combinations and monopolies and their control; governmental regulation and economic planning.
- 171. Public Utilities.** (3) I, II. Mr. Pegrum  
The economics of public service corporations; the economic problems of regulation; state and national problems arising from the development of public utilities; public ownership.
- 173. Economics of Transportation.** (3) I. Mr. Pegrum  
The economic characteristics of transport; the functions of the different transportation agencies; rate structures; problems of state and federal regulation; coördination of facilities. The current transportation problem.
- 174. Ocean Transportation.** (3) II. \_\_\_\_\_  
Historical development of ships and shipping; trade routes; principles of ocean transportation; rates and documentation; ports and terminals; subsidies; American Merchant Marine; coördination of transportation.
- 195. Principles of International Trade.** (3) I, II. Mr. Allen  
An introduction to the principles and mechanisms of international trade; foreign exchange, the balance of payments, comparative costs, the exchange of goods and services and the gain from trade. Effects of trade restrictions. Analysis of selected current international economic problems and policies in the light of the principles presented.
- \*196. International Trade Policies.** (3) II. Mr. Gorter  
Prerequisite: course 195, or consent of the instructor.  
Governmental regulations of international transactions. Bilateral and multilateral trade agreements. Import quotas. Dumping and international cartels. International commodity agreements. The international trade of planned economies. The development of United States foreign trade policy and its impact upon the world economy. The General Agreement on Tariffs and Trade.
- 197. International Finance.** (3) I. Mr. Allen  
Prerequisite: course 135 or 195.  
The mechanics of international capital movements. International investment and national welfare. The problem of loan repayment. The International Monetary Fund, the Export-Import Bank, and the International Bank for Reconstruction and Development.
- 199. Special Problems in Economics.** (1-3) I, II. The Staff  
Admission by special arrangement with the appropriate instructor and the chairman of the department.

## GRADUATE COURSES

- 250. History of Economic Thought. Seminar.** (3) Mr. Homan  
Prerequisite: Economics 103 or consent of the instructor.
- \*\*251A-251B. Price and Distribution Theory. Seminar.** (3-3) Yr. Mr. Alchian, Mr. Homan

\* Not to be given, 1953-1954.

\*\* This course and Economics 255 constitute the basic core of economic theory for graduate students.

252. **Recent Trends in Economic Thought. Seminar. (3)** Mr. Homan
253. **Economic Policy. Seminar. (3)** Mr. Homan and Staff  
Students may repeat this course for credit with consent of the instructor.
254. **Economic Fluctuations and Growth. Seminar. (3)** Mr. Brunner
255. **Macro-Economics: Theory of Employment, Income and Money. Seminar. (3)** Mr. Brunner
- \*256. **Statistical Economics. Seminar. (3)** Mr. Alchian
- \*257. **Analytical Methods and Concepts. Seminar. (3)** Mr. Alchian
258. **Monetary Policy. Seminar. (3)** \_\_\_\_\_
- 260A-260B. **Industrial Organization, Price Policies and Regulation. Seminar. (3-3) Yr.** Mr. Pegrum  
Students may repeat 260B for credit with consent of the instructor.
261. **Public Finance. Seminar. (3)** Mr. Stockwell
262. **Evolution of Economic Institutions in the United States. Seminar. (3)** Mr. Scoville
263. **Evolution of Economic Institutions in Western Europe. Seminar. (3)** Mr. Scoville
- \*264. **Economics of Welfare. Seminar. (3)** \_\_\_\_\_
- \*265. **Theories and Problems of Economic Planning. Seminar. (3)** \_\_\_\_\_
- \*266. **International Economics. Seminar. (3)** Mr. Gorter
- \*270A-270B. **History and Problems of Organized Labor. Seminar. (2-2) Yr.** \_\_\_\_\_
- 271A-271B. **Wage Theory and Wage Policies. Seminar. (3-3) Yr.** Mr. Hildebrand
- \*272. **Industrial Relations. Seminar. (3)** \_\_\_\_\_
- \*273. **Social Insurance. Seminar. (2)** \_\_\_\_\_
290. **Special Problems. (1-6 units each semester) I, II.** The Staff

## EDUCATION

- Francis L. Bacon, M.A., L.H.D., LL.D., *Visiting Professor of Education.*
- Jesse A. Bond, Ed.D., *Professor of Education and Director of Training.*
- William S. Briscoe, Ed.D., *Professor of Education.*
- John A. Hockett, Ph.D., *Professor of Education and Associate Director of Elementary Training.*
- David F. Jackey, Ph.D., *Professor of Education and Director of Vocational Education.*
- B. Lamar Johnson, Ph.D., *Professor of Education and Assistant Director of Training.*
- Edwin A. Lee, Ph.D., *Professor of Education (Chairman of the Department).*

\* Not to be given, 1953-1954.

- Malcolm S. MacLean, Ph.D., *Professor of Education.*  
 Lloyd N. Morrisett, Ph.D., *Professor of Education.*  
 David G. Ryans, Ph.D., *Professor of Education.*  
 May V. Seago, Ph.D., *Professor of Education.*  
 Paul H. Sheats, Ph.D., *Professor of Education.*  
 Lawrence E. Vredevoe, Ph.D., *Professor of Education.*  
 Samuel J. Wanous, Ph.D., *Professor of Business Education and Office Management.*  
 Fredric P. Woellner, Ph.D., *Professor of Education.*  
 Fland C. Wooton, Ph.D., *Professor of Education.*  
 Katherine L. McLaughlin, Ph.D., *Professor of Education, Emeritus.*  
 Junius L. Meriam, Ph.D., *Professor of Education, Emeritus.*  
 Ernest Carroll Moore, Ph.D., LL.D., *Professor of Education and Philosophy, Emeritus.*  
 William A. Smith, Ph.D., *Professor of Education, Emeritus.*  
 Charles Wilken Waddell, Ph.D., *Professor of Education, Emeritus.*  
 \_\_\_\_\_, *Associate Professor of Education.*  
 Melvin L. Barlow, Ed.D., *Associate Professor of Education.*  
 Clarence Fielstra, Ph.D., *Associate Professor of Education.*  
 George F. Kneller, Ph.D., *Visiting Associate Professor of Education.*  
 F. Dean McClusky, Ph.D., *Associate Professor of Education.*  
 Ethel I. Salisbury, M.A., *Associate Professor of Elementary Education and Supervisor of Training.*  
 Corinne A. Seeds, M.A., *Associate Professor of Elementary Education and Principal of the University Elementary School.*  
 Lorraine M. Sherer, Ed.D., *Associate Professor of Education.*  
 Harvey L. Eby, Ph.D., *Associate Professor of Education, Emeritus.*  
 Aubrey L. Berry, Ed.D., *Assistant Professor of Education.*  
 Wilbur H. Dutton, Ed.D., *Assistant Professor of Education and Associate Director of Secondary Training.*  
 Evan R. Keislar, Ph.D., *Assistant Professor of Education.*  
 A. Garth Sorenson, Ph.D., *Assistant Professor of Education.*



- Attilio Bissiri, Ed.D., *Lecturer in Education, Physical Sciences.*  
 Howard A. Campion, Ed.D., *Lecturer in Education.*  
 Helen Christianson, Ph.D., *Lecturer in Education and Supervisor of Early Childhood Education.*  
 Robert B. Haas, Ed.D., *Lecturer in Education.*  
 Lyle Herbst, M.A., *Lecturer in Education, Life Sciences.*  
 Abbott Kaplan, Ph.D., *Lecturer in Education.*  
 Sybil K. Richardson, Ed.D., *Lecturer in Education.*

### Training Department

- Jesse A. Bond, Ed.D., *Director of Training.*  
 John A. Hockett, Ph.D., *Associate Director of Elementary Training.*  
 Wilbur H. Dutton, Ed.D., *Associate Director of Secondary Training.*  
 B. Lamar Johnson, Ph.D., *Assistant Director of Junior College Training.*

<sup>1</sup> In residence first semester only, 1953-1954.

<sup>2</sup> In residence second semester only, 1953-1954.

### Supervisors of Training

- Elizabeth K. Cooper, Ed.D., *Elementary*.  
 Mary Dempsey Van Duzer, M.A., *Elementary*.  
 Ruth H. Drewes, M.A., *Elementary*.  
 Ethel I. Salisbury, M.A., *Elementary*.  
 Alma H. Stevenson, A.B., *Elementary*.  
 Winifred von Boenigk, A.B., *Elementary*.



- Freeman Ambrose, M.A., *Secondary, Social Studies*.  
 Attilio Bissiri, Ed.D., *Secondary, Mathematics and Science*.  
 ———, *Secondary, English*.  
 Helen Chute Dill, M.A., *Secondary, Music*.  
 Donald T. Handy, Ed.D., *Secondary, Physical Education for Men*.  
 Cecelia Irvine, Ph.D., *Secondary, Social Studies*.  
 Oscar M. Jiminez, A.B., *Secondary, Foreign Languages*.  
 Ethel M. Martin, Ed.B., *Secondary, Home Economics*.  
 Ralph A. Masteller, M.A., *Secondary, Business Education*.  
 Ellen C. Millisor, Ed.D., *Secondary, Physical Education for Women*.  
 Gladys G. Wilson, M.A., *Secondary, Art*.  
 ———, *Secondary, ———*.

### UNIVERSITY ELEMENTARY SCHOOL

- Corinne A. Seeds, M.A., *Principal of the University Elementary School*.  
 Helen Sue Read, B.S., *Supervisor*.  
 Helen Christianson, Ph.D., *Supervisor of Early Childhood Education*.  
 Sam C. Franco, A.B., *Counselor*.  
 Diana W. Anderson, M.A., *Special Supervisor, Physical Education*.  
 Sandra R. Bernstein, A.B., *Supervisor, Third Grade*.  
 Lola C. Binney, B.S., *Demonstration Teacher, Third Grade*.  
 Cynthiana Brown, M.A., *Demonstration Teacher, First Grade*.  
 Elenore Cornberg, A.B., *Demonstration Teacher, Kindergarten*.  
 Charlotte A. Crahtree, A.B., *Demonstration Teacher, Fifth Grade*.  
 Janet B. Eeki, A.B., *Supervisor, Second Grade*.  
 ———, *Supervisor, Art*.  
 Marjorie F. Kluth, M.A., *Supervisor, Music*.  
 Dolores A. Litsinger, A.B., *Supervisor, Fourth Grade*.  
 Blanche Ludlum, M.A., *Supervisor, Nursery School*.  
 Gertrude C. Maloney, M.A., *Supervisor, Sixth Grade*.  
 Roberta Mikules, A.B., *Supervisor, Second Grade*.  
 Penrod Moss, A.B., *Supervisor, Sixth Grade*.  
 Robert W. Reynolds, A.B., *Demonstration Teacher, Fifth Grade*.  
 Frances S. Stiles, Ph.D., *Demonstration Teacher, Nursery School*.  
 Jane Bernhardt Stryker, M.A., *Supervisor, Kindergarten*.  
 Dorothy Tait, A.B., *Supervisor, Fourth Grade*.  
 Margaret F. Tougaw, B.Ed., *Demonstration Teacher, First Grade*.  
 Ruth S. White, M.A., *Assistant in the Elementary School*.



## City Training Schools

### ELEMENTARY SCHOOLS

Alice B. Armstrong, A.B., *Principal, Brockton Avenue Elementary School.*  
 George F. Grimes, M.S., *Principal, Nora Sterry Elementary School.*  
 Genevieve L. McMahon, A.B., *Principal, Fairburn Avenue Elementary School.*  
 Amber Mildred Wilson, B.S., *Principal, Warner Avenue Elementary School.*

Training teachers and demonstration teachers in these schools are carefully chosen for their ability as teachers and as supervisors by the University supervisory staff and approved by the public school authorities. The personnel varies from year to year.

### JUNIOR AND SENIOR HIGH SCHOOLS

Everett B. Chaffee, M.A., *Principal, University High School.*  
 Helen M. Darsie, M.A., *Vice-Principal, University High School.*  
 Carroll O. Lockridge, M.A., *Vice-Principal, University High School.*  
 ————, *Principal, Emerson Junior High School.*  
 Jane Davidson, M.A., *Vice-Principal, Emerson Junior High School.*  
 Jotty Falvo, M.A., *Vice-Principal, Emerson Junior High School.*  
 Paul E. Webb, Ph.D., *Principal, Los Angeles High School.*  
 James W. Lloyd, M.A., *Principal, Burroughs Junior High School.*  
 Frances C. Brooks, A.B., *Counselor, University High School.*  
 Margaret A. Ruenitz, M.A., *Counselor, Emerson Junior High School.*

The secondary training staff consists of about one hundred public school teachers carefully chosen for their ability as teachers and as supervisors by the University supervisory staff and approved for such service by the public school authorities. Each ordinarily assumes responsibility for the training of not more than three student teachers at any one time.

*Letters and Science List.*—Courses 101, 102, 106, 110, 111, 170, and 197 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*The Major.*—An undergraduate major is not offered in the Department of Education at Los Angeles. Students desiring to qualify for certificates of completion leading to teaching and administration credentials should consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

### UPPER DIVISION COURSES

Junior standing is prerequisite to all courses in education except course 106, which is open to high sophomores.

#### *History and Theory of Education*

101. *History of Education.* (3) I. Mr. Wooton  
 The development of educational thought and practice viewed as a phase of the history of Western civilization.
102. *History of Education in the United States.* (3) II. Mr. Wooton  
 The development of significant educational movements in the United States as a basis for the analysis of present-day problems.
106. *The Principles of Education.* (3) I, II. Mr. Kneller, Mr. MacLean  
 A critical analysis of the assumptions underlying education in a democratic social order.

*Educational Psychology*

Psychology 1A, and either 1B or 33, or the equivalent, are prerequisite to all courses in educational psychology.

110. **The Conditions of Learning.** (3) I, II.

Miss Seagoe

Speech, writing, number, literature, science considered as social institutions evolved through cooperative intellectual effort. Analysis of the conditions under which the child attains most effective mastery of these skills and knowledges.

111. **Growth and Development of the Child.** (3) I, II.

Mrs. Sherer, Mr. Sorenson

A study of physical, mental, emotional, and social development during childhood and adolescence. Particular attention is given to problems of mental hygiene during critical growth periods. Four periods of observation of children are required during the course in addition to regular class meetings.

112. **Adolescence.** (3) I, II.

Mr. Keislar

Physical, mental, and social development during adolescence, personality formation and the learning process in relation to the secondary school.

114. **Educational Statistics.** (2) I, II.

Mr. Ryans

Elementary descriptive statistical procedures and sampling error theory applicable to educational problems.

This course is a prerequisite for course 200A-200B, which is required of all candidates for the M.A. and Ed.D. degree.

116. **The Education of Exceptional Children.** (3) I, II.

Mr. Keislar

Prerequisite: course 111 or 112 or equivalent.

The characteristics of and educational provisions for exceptional children including the mentally and physically handicapped, the gifted, and the delinquent.

117A-117B. **Principles of Guidance.** (2-2) Yr. Mr. Barlow, Mr. Sorenson

The philosophy, techniques, and present practices of guidance as applied to the problems of pupil personnel and counseling in the public schools.

The emphasis will be upon educational guidance in 117A; upon vocational guidance in 117B.

119. **Educational Measurement.** (3) I, II.

Mr. Ryans

Prerequisite: course 114 required.

Introduction to achievement test construction, elementary theory of measurement, survey of measurement techniques, critical study of typical tests and inventories used for estimating aptitude, achievement, attitudes, temperaments, and interests.

*Early Childhood Education*123. **Social Backgrounds of Child Development.** (3) I. Miss Christianson

Prerequisite: Psychology 1A and either 1B or 33.

A study of the factors conditioning growth, development, and learning in early childhood.

124. **Arts in Childhood Education.** (3) II.

Miss Christianson

Prerequisite: course 111.

The functional values of music, speech, rhythm, and dramatic play in early child development.

128A. **Kindergarten-Primary Education.** (3) II.

Mrs. Sherer

Prerequisite: course 111.

Organization, curricula, and procedures in the kindergarten and primary grades. Includes audio-visual laboratory work, and classroom observations and/or participation in teaching. One period each week in addition to class meetings is required for these experiences.

**128B. Kindergarten-Primary Education. (3) I.**

Mrs. Sherer

Prerequisite: courses 111, 128A.

Deals with childrens' literature, and with reading from a developmental standpoint from pre-reading experiences through the early stages of reading. One hour per week in addition to regular class meetings should be allowed for work-type experiences, including observation and participation in teaching.

**135. Curriculum for Mentally Retarded Children. (3) II.**

Prerequisite: course 116; 111 or 112.

Organization, curricula, and procedures in classes for the mentally retarded.

**139. The Elementary Curriculum. (4) I, II.** Mr. Dutton, Miss Salisbury

Prerequisite: courses 111, 110, and senior standing.

Current conceptions of the content and organization of the elementary school curriculum with emphasis upon the place of the skills in the total school program.

*Educational Administration and Supervision***140. The Teacher and Administration. (2) I, II.**

Mr. Berry

The teacher considered as a part of the educational system, and his responsibilities to the organization.

**141. Administration of City School Systems. (2) I, II.**

Mr. Briscoe

Prerequisite: one year of teaching experience.

The principles of efficient school administration as exemplified in the practices of progressive cities.

**142. State and County School Administration. (2) I, II.**

Prerequisite: consent of the instructor.

The organization and administration of state school systems with special reference to the interrelation of federal, state, and county support and organization.

**145. Problems in Public School Finance and Business Administration.**

(2) I, II.

Prerequisite: consent of the instructor.

Methods and problems of financing public education, including a study of the principles of public school business administration, preferred practice, and procedure.

**147. Audio-Visual Education. (2) I, II.**

Mr. McClusky, \_\_\_\_\_

A course designed to acquaint teachers with the theories and methods of visual instruction and to furnish experience in the utilization of audio-visual aids. Required of all candidates for teaching credentials.

**148. Legal Bases of Public Education in California. (2) I, II.**

Prerequisite: consent of the instructor.

Organization and administration of the California school system, as given in the school law of the State and as interpreted by the rulings of the State Superintendent of Public Instruction and the Attorney General.

**149. Field Work in Administration and Supervision. (2) II.** Mr. Morrisett

To be taken concurrently with or subsequent to elementary or secondary school administration.

*Vocational Education***160. Vocational Education. (2) I, II.**

Mr. Jackey

A course designed to develop understanding and appreciation of the economic and social significance of vocational education in a democracy.

165. **Business Education.** (3) I, II. Mr. Wanous  
The organization, administration, and teaching of business education in secondary schools.

*Secondary Education*

170. **Secondary Education.** (3) I, II. Mr. Vredevoe  
Prerequisite: Psychology 1A and either 1B or 33.  
A study of secondary education in the United States, with special reference to the needs of junior and senior high school teachers.

*Social and Adult Education*

180. **Social Foundations of Education.** (3) I, II. Mr. Woellner  
Education as a factor in social evolution. Analysis of current educational practices in the light of modern social needs.

181. **Adult Education.** (2) I, II. Mr. Woellner  
An analysis of the adult education movement to ascertain principles for organizing and conducting special and evening classes for mature students. Problems and methods of citizenship, Americanization, and vocational and liberal education will be considered.

194. **Principles of Guidance in the Elementary School.** (2) I.  
Prerequisite: courses 111 and 119. Mrs. Richardson  
This course includes the study of the functions of guidance personnel, the organization and administration of effective guidance programs, application of evaluation techniques, school records, techniques of child study, the in-service training of teachers, and parent education.

197. **Comparative Education.** (2) I, II. Mr. Kneller  
A study of educational ideas and practices in the major countries of the world with special emphasis on such trends as indicate postwar developments in national systems of education.

*Special Studies in Education*

Open to senior and graduate students with the consent of the instructor.

- 199A. **Studies in Business Education.** (2 to 4) I, II. Mr. Wanous

- 199B. **Studies in Curriculum.** (2 to 4) I, II.  
Mr. Dutton, Mr. Fielstra, Mr. Hockett, Mrs. Sherer

- 199C. **Studies in Educational Psychology.** (2 to 4) I, II.  
Mr. Keislar, Mr. Ryans, Miss Seagoe

- 199D. **Studies in History of Education.** (2-4) I, II. Mr. Wooton

- 199E. **Studies in Administration.** (2 to 4) I, II.  
Mr. Briscoe, Mr. Hockett, Mr. Morrisett, Mr. Vredevoe

- 199F. **Studies in Guidance.** (2 to 4) I, II.  
Mr. Lee, Mr. MacLean, Miss Seagoe

- 199G. **Studies in Elementary School Supervision.** (2-4) I, II.  
Mr. Fielstra, Mr. Hockett, Miss Seeds

- 199H. **Studies in Audio-Visual Education.** (2-4) I, II.  
Mr. McClusky, ———

- 199I. **Studies in Adult Education.** (2-4) I, II. Mr. Kaplan, Mr. Sheats

- 199J. **Studies of Nursery-Kindergarten Education.** (2-4) I, II.  
Miss Christianson

- 199K. Studies in Vocational Education. (2-4) I, II.**  
Mr. Barlow, Mr. Campion
- 199L. Studies in Junior College Education. (2-4) I, II.**  
Mr. Johnson, Mr. MacLean

## GRADUATE COURSES

- 200A-200B. Fundamentals of Educational Research. (2-2) Yr. Mr. Ryans**  
Prerequisite: course 114 or Psychology 105A, or equivalent. Required of all candidates for the M.A. and Ed.D. degrees.  
200A considers research reporting, including-bibliographical techniques, presentation of data, etc.  
200B deals with the application of scientific method to educational research, including theory of research, experimental design, techniques for gathering data, and interpretation of results.
- 201. History of Education. (2) I.** Mr. Wooton  
A survey of educational ideas and practices in the history of Western civilization. In general, not open to students with credit for Education 101.
- 202. History of Education in the United States. (2) II.** Mr. Wooton  
A survey of educational ideas and practices in the history of the United States. In general, not open to students with credit for Education 102.
- 206A-206B. Principles of Education. Advanced. (2-2) Yr. Mr. Kneller**  
Prerequisite: course 206A is prerequisite to course 206B.  
A critical study and appraisal of educational theory, historical and current, the objective of which is to formulate a philosophy of education suited to modern demands.
- 208A-208B. Social and Civic Foundations of Education. (2-2) Yr.**  
Prerequisite: courses 106 and 180. Mr. Kaplan  
Analysis of educational policies and procedures as they are affected by political and economic trends in American life.
- 209A-209B. The Junior College. (2-2) Yr. Mr. Johnson**  
A study of the history, function, organization, and program of the junior or community college, and of the technical institute. For students interested in or completing teaching in the junior college.
- 210A-210B. Advanced Educational Psychology. (2-2) Yr. Mr. Keislar**  
Prerequisite: course 110 or Psychology 110, or the equivalent.  
Exploration and critical study of current literature and research in educational psychology.
- 217A-217B. Principles of Guidance. Advanced. (2-2) Yr.**  
Prerequisite: courses 110, 117A, 119. Mr. Sorenson, Mr. MacLean  
The philosophy, organization, and operation of student personnel work. Designed as a part of special preparation for students intending to make counseling their profession. Admission on consultation with the instructor.
- 226A-226B. Business Education. (2-2) Yr. Mr. Wanous**  
For teachers and students of graduate standing interested in problems related to the organization and supervision of business training on high school and junior college levels. Admission on consultation with the instructor.

**240A-240B. Organization and Administration of Education. (2-2) Yr.**

Mr. Briscoe, Mr. Morrisett

Prerequisite: course 141 and 145 or equivalent. 240A is prerequisite to 240B.

An advanced course in the organization and administration of public education in the United States. Required of all candidates for the doctorate in education. Open to teachers of experience who wish to qualify for the administration credentials. Course 240A is prerequisite to 240B.

**241A-241B. School Surveys. (2-2) Yr.**

Mr. Morrisett, ———

A critical study of the techniques and findings of school surveys combined with practice in making studies of school systems. Admission on consultation with the instructor. Not open for credit to students who have credit for Education 241C-241D.

**\*241C-241D. School Surveys. (2-2) Yr.**

Mr. Barlow

A critical study of the techniques and findings of vocational education surveys for school systems. The emphasis will be upon techniques and practice in 241C; upon evaluation, follow-up, supervision, and administrative implication in 241D.

**243A-243B. Administration of Secondary Education. (2-2) Yr.**

Mr. Vredevoe

For teachers of experience who desire to qualify for the secondary school supervision or secondary school administration credential. Admission on consultation with the instructor.

**246. Administration of Elementary Education. (2) I.**

Mr. Hockett

For teachers of experience who desire to qualify for the elementary school supervision or elementary school administration credential. Problems in organization and administration of the modern elementary school. Admission on consultation with the instructor.

**247A-247B. Audio-Visual Education. Advanced Course. (2-2) Yr.**

Mr. McClusky, ———

For supervisors and administrators dealing with the problems involved in developing programs of visual education on the various levels in public school education. Admission on consultation with the instructor.

**250A-250B. History of Education. Seminar. (2-2) Yr.**

Mr. Wooton

Prerequisite: courses 101 and 102, or 201 and 202, or their equivalent. Limited to candidates for advanced degrees.

Specialized studies in the history of education.

**251A-251B. Supervision of Instruction and Curriculum. Seminar.**

(2-2) Yr.

Mr. Fielstra

Open to superintendents, principals, supervisors, training teachers, and other students of graduate standing interested in the intensive study of the organization, administration, practices and current problems of supervision of instruction. Admission on consultation with the instructor.

**253A-253B. Early Childhood Education. Seminar. (2-2) Yr.**

Mrs. Sherer

For graduate students whose major interest is in the nursery school, kindergarten, or primary education. Admission on consultation with the instructor.

**254A-254B. Experimental Education. Seminar. (2-2) Yr.**

Mr. Ryans

Prerequisite: courses 110, 114, 119. (210A-210B is desirable.)

A course designed to consider the planning of experimental and differential research. Students will participate in group experiments and carry out individual research projects.

\* Not to be given, 1953-1954.

- \*254C-254D. Experimental Education. Seminar. (2-2) Yr.** Mr. Ryans  
Prerequisite: courses 110, 114, 119. (210A-210B is desirable.)  
A course dealing with the construction of aptitude tests, achievement tests, questionnaires, rating devices, and attitude scales.
- 255A-255B. School Administration. Seminar. (2-2) Yr.** Mr. Briscoe, Mr. Morrisett  
Prerequisite: a teaching credential and course 141 or the equivalent. Limited to candidates for the master's or doctor's degree whose major interest is school administration.
- 256A-256B. Principles of Education. Seminar. (2-2) Yr.** Mr. Kneller, Mr. Lee  
Prerequisite: course 106 or the equivalent; 206A-206B or the equivalent. Limited to candidates for advanced degrees whose major interest is theory or philosophy of education. Admission on consultation with instructor.
- 257A-257B. Audio-Visual Education. Seminar. (2-2) Yr.** Mr. McClusky, \_\_\_\_\_  
Prerequisite: course 147 or the equivalent. Limited to candidates for advanced degrees whose major interest is audio-visual education and to students desiring to carry on research in this area.
- 260A-260B. Educational Psychology. Seminar. (2-2) Yr.** Miss Seagoe  
Prerequisite: course 210A-210B or the equivalent. Limited to candidates for the master's or doctor's degree whose major interest is educational psychology and to students desiring to carry on research in this area.
- 262A-262B. The Elementary School Curriculum. Seminar. (2-2) Yr.** Mr. Hockett  
Prerequisite: course 139 or the equivalent. For teachers, curriculum workers, administrators and other graduate students interested in the intensive study of curriculum problems in the elementary school. Admission on consultation with the instructor.
- 266A-266B. Vocational Education and Guidance. Seminar. (2-2) Yr.** Mr. Campion  
For graduate students whose major interest is in vocational education, vocational guidance, or closely related problems. Admission on consultation with the instructor.
- 267. Research Problems in Education. Seminar. (2) II.** Mr. Ryans  
Prerequisite: courses 254A-B-C-D, or equivalent. Limited to graduate students whose major interest is in educational research.  
The course content is different in alternate years. In even-numbered years the problems studied and the procedures employed in collegiate bureaus of educational research will be considered. In odd-numbered years the seminar will deal with the problems investigated and methodologies employed in public school research. Admission for one or both years on consultation with the instructor.
- 270A-270B. Secondary Education. Seminar. (2-2) Yr.** Mr. Vredevoe  
Prerequisite: course 170. Limited to candidates for the master's or doctor's degree whose major interest is in secondary education, and to students desiring to pursue research in this area.
- 275A-275B. The Secondary School Curriculum. Seminar. (2-2) Yr.** Mr. Fielstra  
Prerequisite: course 170 or the equivalent. For teachers, curriculum workers, administrators, and other graduate students interested in the intensive study of curriculum development on the secondary school level, with emphasis on current problems and trends.

**276A-276B. Research in Curriculum. (1-4; 1-4) Yr.** Mr. Fielstra  
For graduate students who desire to pursue independent research in the curriculum.

**279A-279B. The Junior College. Seminar. (2-2) Yr.** Mr. Johnson, Mr. MacLean  
Prerequisite: course 209A-209B or equivalent.

For graduate students whose major interest is higher education. In 1953-1954 the emphasis will be upon college and university problems. In 1954-1955 the emphasis will be upon the junior college, the technical institute, or closely related areas of study. Admission for one or both years on consultation with instructor.

**281A-281B. Adult Education. Seminar. (2-2) Yr.** Mr. Sheats  
Prerequisite: course 181 or the equivalent. For teachers, supervisors, and administrators interested in adult education, university extension, evening schools, or related problems.

**292A-292B. Research in Educational Administration. (1-4; 1-4) Yr.** Mr. Briscoe, Mr. Morrisett  
Prerequisite: teaching experience in elementary or secondary schools.

**298A-298B. Research in Education. (2-6; 2-6) Yr.** The Staff  
Limited to candidates for the Doctor of Education degree who have been advanced to candidacy.

#### COURSES PREPARATORY TO SUPERVISED TEACHING

**330. Teaching in Elementary Schools. (4) I, II.** Miss Seeds  
Prerequisite: courses 110, 111, and a C average or better for all work taken in the University of California.

Teaching and learning in the elementary school. Preparation of curriculum materials; study of procedures and methods, including the evaluation of outcomes. Prerequisite to all supervised teaching for the Kindergarten-Primary or General Elementary credentials. The course prepares for and leads to definite placement in supervised teaching. Only 2 units of credit given if Education 131A has been completed previously.

**370. Teaching in Secondary Schools. (3) I, II.** Mr. Bond  
Prerequisite: senior standing, Education 170 and one course selected from the following courses: 101, 102, 106, 112, 140 and 180.

Teaching and learning in the secondary school. Preparation of curriculum materials; study of procedures and methods, including the evaluation of outcomes. Prerequisite to all supervised teaching for the General Secondary or Junior College credentials. The course prepares for and leads to definite placement in supervised teaching.



Other courses in teaching methods in special subjects will be found listed in the 300 series, Professional Courses in Method, in the offerings of the various departments, and in the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

#### SUPERVISED TEACHING

All candidates for supervised teaching must secure approval of Selection and Counseling Service at least one semester prior to application for assignment.

Supervised teaching is provided in (1) the University Elementary School, comprising a nursery school, kindergarten, and the elementary grades; (2) Nora Sterry and Brockton Avenue Elementary Schools of Los Angeles City;



(3) University High School and Emerson Junior High School of Los Angeles City; (4) other schools of Los Angeles and Santa Monica, as requirements demand. The Fairburn Avenue and the Warner Avenue Elementary Schools serve as demonstration schools.

The work in supervised teaching is organized and administered by the directors of training and a corps of supervisors and training teachers, chosen by the University authorities.

All candidates for supervised teaching must obtain the recommendation of a university physician prior to assignment. Formal application for assignment must be made at the Office of the Director of Training about the middle of the semester preceding that in which such teaching is to be done.

Undergraduate candidates for kindergarten-primary, elementary and special secondary teaching must have maintained at least a C average in all courses in education, in all courses comprising the major, and in all work completed at the University of California.

*For Permit to Serve in Child Care Centers*

**N334. Supervised Care of Preschool Children. (2 to 4) I, II.**

May satisfy requirement for permit to serve in child-care centers; does not meet the requirement in supervised teaching for kindergarten-primary or general elementary credentials.

Observation of and participation in the supervision and care of children two to five years of age.

*For Kindergarten-Primary and General Elementary Credentials*

**K335A-K335B. Supervised Teaching: Kindergarten-Primary. (4-4) I, II.**

Prerequisite: senior standing, Education 128A, 128B, and 330, Art 330, Music 330, Physical Education 330.

Required of all candidates for the kindergarten-primary credential. One of the teaching assignments must be in the kindergarten and the other in grades 1, 2, or 3.

**K336. Supervised Teaching: Kindergarten-Primary. (1 to 4) I, II.**

Supplementary teaching which may be elected by the student or, in certain cases, required by the department.

**E335A-E335B. Supervised Teaching: General Elementary. (4-4) I, II.**

Prerequisite: senior standing, Education 139 and 330, Art 330, Music 330, Physical Education 330.

Required of all candidates for the general elementary credential. One of the assignments will be in the upper elementary grades and the other in a lower elementary grade.

**E336. Supervised Teaching: General Elementary. (1 to 4) I, II.**

Supplementary teaching which may be elected by the student or, in certain cases, required by the department.

*For Special Secondary Credentials*

**Art**—A year sequence of 3 units per semester (total of 6 units) is required as follows:

**A375. Supervised Teaching in Art. (3) I, II.**

Prerequisite: senior standing, Education 170, Art 370A, approval of the Department of Art, and the Director of Training.

*and*

**A376. Supervised Teaching in Art. (3) I, II.**

Prerequisite: senior standing, Education 170, Art 370A-370B, Art 375, approval of the Department of Art and the Director of Training.

**Business Education**—A year sequence of 3 units per semester (total of 6 units) is required as follows:

**B375 and B376. Supervised Teaching in Business Education.** (3-3) I, II.

Prerequisite: senior standing, course 170, 4 units from Business Education 370A, 370B, 370C, 370D, 208, which may be taken concurrently with Education B375, approval of the Department of Business Education, and the Director of Training.

**Home Economics**—A year sequence of 3 units per semester (total of 6 units) is required as follows:

**H375. Supervised Teaching in Home Economics.** (3) I, II.

Prerequisite: senior standing, Education 170, Home Economics 370, approval of the Department of Home Economics, and the Director of Training.

*and*

**H376. Supervised Teaching in Home Economics.** (1-3) I, II.

Prerequisite: senior standing, Education 170, Home Economics 370, approval of the Department of Home Economics and the Director of Training.

**Music**—A year sequence of 3 units per semester (total of 6 units) is required as follows:

**M375. Supervised Teaching in Music.** (3) I, II.

Prerequisite: high junior standing, Music 369, approval of the Department of Music, and the Director of Training.

*and*

**M376. Supervised Teaching in Music.** (3) I, II.

Prerequisite: senior standing, course 170, Music 369, 370, M375, approval of the Department of Music, and the Director of Training.

**Mentally Retarded**—

**MR376. Supervised Teaching: Mentally Retarded.** (3) I, II.

Prerequisite: Education 135; and at least 8 units of supervised teaching for the general elementary credential or 6 units for the general secondary credential.

MR376 does not displace any portion of the required 8 units of student teaching for the general elementary credential or 6 units for the general secondary credential.

**Physical Education**—A year sequence of 3 units per semester (total of 6 units) is required as follows:

**P375 and P376. Supervised Teaching in Physical Education.** (3-3) I, II.

Prerequisite: senior standing, course 170, Physical Education for Men 354 or Physical Education for Women 326A-326B and 327A-327B. Approval of the Department of Physical Education, and the Director of Training.

**Speech Correction**—

**SC376. Supervised Teaching: Speech Correction.** (2) I, II.

Prerequisite: Speech 142A-142B; and at least 8 units of supervised teaching for the general elementary credential or 6 units for the general secondary credential.

SC376 does not displace any portion of the required 8 units of student teaching for the general elementary credential or 6 units for the general secondary credential.

*For the General Secondary Credential*

A year sequence of 3 units per semester (total of 6 units) is required as follows:

*Required for the University-Recommended General Secondary Credential*

**GS77—Supervised Teaching, Major; and GS78—Supervised Teaching, Minor: General Secondary. (3-3) I, II.**

General prerequisites: regular graduate status, Education 170, 370.

Special methods courses in majors as follows: Art: 370A, 370B; Business Education: 4 units chosen from Business Education 370A, 370B, 370C, 370D, 2 units of which may be taken concurrently with supervised teaching; English and Speech: English 370; French: 370; Health Education: 145B; Home Economics: 370; Mathematics: 370; Music: 370; Physical Education (Men): 354, 145B; Physical Education (Women): 326, 327; Spanish: 370 (or may be taken concurrently); Speech and English: Speech 370.

Approval of the department of the undergraduate major subject, and consent of the Director of Training.

*Required for the General Secondary Credential for Students in Unclassified Graduate Status*

**384A—Supervised Teaching, Major; and 384B—Supervised Teaching, Minor: General Secondary. (3-3) I, II.**

General prerequisites: unclassified graduate status, course 170, 370.

Special methods courses in major as follows: Art: 370A, 370B; Business Education: 5 units from Business Education 370A, 370B, 370C, 370D, 2 units of which may be taken concurrently with supervised teaching; English and Speech: English 370; French: 370; Health Education: 145B; Home Economics: 370; Mathematics: 370; Music: 370; Physical Education (Men): 354, 145B; Physical Education (Women): 326, 327; Spanish: 370 (or may be taken concurrently); Speech and English: Speech 370.

Scholarship averages:

1) 1.5 or better in all courses comprising the undergraduate college major subject

2) 1.5 or better in all upper division courses

3) 1.5 or better in all courses subsequent to the bachelor's degree.

Approval of the department of the undergraduate major subject and consent of the Director of Training.

*Supplementary Teaching*

**383. Supervised Teaching. Supplementary teaching in any secondary field. (1 to 6) I, II.**

Prerequisite: previous student teaching or regular public school teaching experience, course 170, 370 or its equivalent and consent of the Director of Training.

*For School Psychologist Credential*

**SP376. Supervised Teaching: School Psychologist. (2 to 4) I, II.**

Prerequisite: at least 4 units of supervised teaching for the general elementary credential or 3 units of supervised teaching for the general secondary credential, and Psychology 167A.

*For the Junior College Credential*

**GS79. Supervised Teaching: Junior College. (4) I, II.**

Prerequisite: regular graduate status, course 170 or 279, 370, approval of the department concerned and consent of the Director of Training. Restricted to candidates for the junior college credential alone, who are teaching classes in the University or in a junior college.

*For the Junior High School Credential***J374. Supervised Teaching: General Junior High School. (2 to 6) I, II.**

Prerequisite: course E335A-E335B or a minimum of 6 units of teaching in a special field.

*Supervised Teaching for More Than One Credential*

- ‡1. **Kindergarten-Primary and General Elementary Credentials:**  
Education K335A-K335B, and E335A; or E335A-E335B, and K335A.
2. **General Elementary and General Junior High School Credentials:**  
E335A-E335B, and J374 (in a minor field).
- ‡3. **General Elementary and Special Secondary Credentials:**  
A minimum of 6 units of teaching in the special field, and E335A.
4. **General Elementary and General Secondary Credentials:**  
E335A-E335B, and G377 or G378; or G377, G378, and E335A.
- ‡5. **Special Secondary and General Junior High School Credentials:**  
A minimum of 6 units of teaching in the special field, and J374 (in a minor field).
6. **Special Secondary and General Secondary Credentials:**  
A minimum of 6 units of teaching in the special field, and G378.
7. **Junior College and General Secondary Credentials:**  
G379, and G377 or G378.

**ENGINEERING**

- \* John Landes Barnes, Ph.D., *Professor of Engineering.*
- Ralph M. Barnes, Ph.D., *Professor of Engineering and Professor of Production Management.*
- L. M. K. Boelter, M.S., *Professor of Engineering (Chairman of the Department).*
- William Bollay, Ph.D., *Visiting Professor of Engineering.*
- George Brown, Ph.D., *Visiting Professor of Engineering and Visiting Professor of Mathematics.*
- ‡ Harry W. Case, Ph.D., *Professor of Engineering and Professor of Psychology.*
- W. Kenneth Davis, M.S., *Professor of Engineering.*
- William D. Hershberger, Ph.D., *Professor of Engineering.*
- Walter C. Hurty, M.S., *Professor of Engineering.*
- W. Julian King, M.E., *Professor of Engineering.*
- Wendell E. Mason, M.S., M.E., *Professor of Engineering.*
- John H. Mathewson, M.S., *Professor of Engineering.*
- \* Wesley L. Orr, B.S., *Professor of Engineering.*
- ‡ Louis A. Pipes, Ph.D., *Professor of Engineering.*
- Louis Ridenour, Jr., Ph.D., *Visiting Professor of Engineering.*
- Thomas A. Rogers, Ph.D., *Professor of Engineering.*
- Daniel Rosenthal, Ph.D., *Professor of Engineering.*
- William F. Seyer, Ph.D., *Professor of Engineering.*
- Francis R. Shanley, B.S., *Professor of Engineering.*

\* Absent on leave, 1953-1954.

‡ The combinations marked with the double dagger are in greatest demand.

‡ In residence spring semester only, 1953-1954.

- Craig L. Taylor, Ph.D., *Professor of Engineering.*  
 William T. Thomson, Ph.D., *Professor of Engineering.*  
 Baldwin M. Woods, Ph.D., *Professor of Engineering.*  
 Samuel Terrill Yuster, Ph.D., *Professor of Engineering.*  
 Joseph S. Beggs, M.S., *Associate Professor of Engineering.*  
 Charles T. Boehnlein, Ph.D., *Associate Professor of Engineering.*  
 John Brahtz, Ph.D., *Associate Professor of Engineering.*  
 Robert Bromberg, Ph.D., *Associate Professor of Engineering.*  
 Bonham Campbell, M.S., *Associate Professor of Engineering.*  
 C. Martin Duke, M.S., *Associate Professor of Engineering.*  
 John M. English, Ph.D., *Associate Professor of Engineering.*  
 Alan E. Flanigan, Ph.D., *Associate Professor of Engineering.*  
 H. Kurt Forster, Ph.D., *Associate Professor of Engineering.*  
 Louis L. Grandi, M.S., *Associate Professor of Engineering.*  
 John C. Harper, D.Sc., *Associate Professor of Engineering.*  
 Ellis F. King, M.S., E.E., *Associate Professor of Engineering.*  
 William J. Knapp, D.Sc., *Associate Professor of Engineering.*  
 \* Joseph F. Manildi, Ph.D., *Associate Professor of Engineering.*  
 John W. Miles, Ph.D., *Associate Professor of Engineering.*  
 John R. Moore, B.S., *Visiting Associate Professor of Engineering.*  
 Frederick W. Schott, Ph.D., *Associate Professor of Engineering.*  
 Edward H. Taylor, M.S., *Associate Professor of Engineering.*  
 Harold W. Mansfield, *Associate Professor of Engineering, Emeritus.*  
 Albert F. Bush, M.S., *Assistant Professor of Engineering.*  
 Thomas J. Connolly, M.S., Ch.E., *Assistant Professor of Engineering.*  
 \* John H. Lyman, Ph.D., *Assistant Professor of Engineering.*  
 Bruce R. Mead, Ph.D., *Assistant Professor of Engineering.*  
 George E. Mount, Ph.D., *Assistant Professor of Engineering and Assistant Professor of Psychology.*  
 \* Carl Sonnenschein, M.S., *Assistant Professor of Engineering.*  
 DeForest L. Trautman, Ph.D., *Assistant Professor of Engineering.*  
 \* Myron Tribus, Ph.D., *Assistant Professor of Engineering.*  
 \* William D. Van Vorst, M.S., *Assistant Professor of Engineering.*  
 Louis G. Walters, Ph.D., *Assistant Professor of Engineering.*  
 George A. Zizicas, Ph.D., *Assistant Professor of Engineering.*  
 \_\_\_\_\_, *Assistant Professor of Engineering.*  
 Murray Kaufman, M.S., *Instructor in Engineering.*  
 \_\_\_\_\_, *Instructor in Engineering.*  
 \_\_\_\_\_, *Instructor in Engineering.*  
 Allan V. Collister, B.D., *Acting Instructor in Engineering.*  
 Shirli C. Allen, M.S., *Lecturer in Engineering.*  
 Miles H. Anderson, Ed.D., *Lecturer in Engineering and Assistant Supervisor of Vocational Education.*  
 Fred H. Blanchard, *Lecturer in Engineering.*  
 Alfred C. Blaschke, M.S., *Lecturer in Engineering.*  
 Harry Buehberg, B.S., *Lecturer in Engineering.*  
 John C. Dillon, B.S., *Lecturer in Engineering.*  
 John Dinning, B.S., *Lecturer in Engineering.*  
 Henry Dreyfuss, *Visiting Lecturer in Engineering.*

\* Absent on leave, 1953-1954.

\* In residence spring semester only, 1953-1954.

- Warren L. Flock, M.S., E.E., *Lecturer in Engineering.*  
 Henry C. Froula, M.A., M.S., *Lecturer in Engineering.*  
 William E. Frye, Ph.D., *Lecturer in Engineering.*  
 Lynn Grasshof, M.S., *Lecturer in Engineering.*  
 Richard H. Haase, B.S., M.B.A., *Lecturer in Engineering.*  
 Gerald L. Hassler, Ph.D., *Lecturer in Engineering.*  
 Earl Janssen, M.S., *Lecturer in Engineering.*  
 Paul Jeffers, A.B., *Lecturer in Engineering.*  
 Richard D. Johnston, B.S., *Lecturer in Engineering.*  
 Adrian Deboe Keller, M.A., *Lecturer in Engineering.*  
 Joseph W. McCutchan, M.S., *Lecturer in Engineering.*  
 Stewart F. Mulford, B.S., *Lecturer in Engineering.*  
 Russell R. O'Neill, M.S., *Lecturer in Engineering.*  
 John Rex, A.B., *Lecturer in Engineering.*  
 Edward K. Rice, M.S., *Lecturer in Engineering.*  
 Fred E. Romie, B.S., *Lecturer in Engineering.*  
 Allen B. Rosenstein, M.S., *Lecturer in Engineering.*  
 Michael V. Smirnoff, M.S., C.E., *Lecturer in Engineering.*  
 George J. Tauxe, M.S., *Lecturer in Engineering.*  
 \*Vernon N. Tramontini, M.E., *Lecturer in Engineering.*  
 \*Walter P. Wallace, B.S., *Lecturer in Engineering.*  
 Paul A. Wylie, C.E., *Lecturer in Engineering.*  
 Robert Brenner, M.S., *Associate in Engineering.*  
 James E. Mahlmeister, M.S., *Associate in Engineering.*  
 Adin E. Mathews, M.S., *Associate in Engineering.*  
 Gerhard Paskusz, M.S., *Associate in Engineering.*  
 Harry C. Showman, B.S., *Associate in Engineering.*  
 Peter Weiser, M.S., *Associate in Engineering.*



- Martin R. Huberty, Engr., *Professor of Irrigation.*  
 Arthur F. Pillsbury, Engr., *Professor of Irrigation.*

*Letters and Science List.*—Courses 1LA-1LB, 1FA, 2, 15A-15B, 15AB, 102B, 102C, 155A.

#### LOWER DIVISION COURSES

**1LA-1LB. Surveying Lectures.** (2-2) Yr. Beginning either semester.

Mr. Smirnoff in charge

1LA, prerequisite: trigonometry and geometric drawing.

Principles of measurement of distances, directions, and elevations. Construction and use of common surveying instruments, such as tape, compass, level, transit. Problems in elementary surveying.

1LB, prerequisite: courses 1LA, 1FA.

Plane and geodetic surveys; triangulation; precise leveling; engineering astronomy; use of plane table and alidade; hydrographic surveys.

**1FA-1FB. Surveying Field Practice.** (1-1) Yr. Beginning either semester.

Field work, three hours per week. Mr. Smirnoff in charge

1FA, prerequisite: course 1LA (recommended be taken concurrently).

Practice in measurement of distances, directions and elevations, using common surveying instruments such as tape, compass, level, and transit.

\* Absent on leave, 1953-1954.

1FB, prerequisite: course 1LB (recommended be taken concurrently).

Field practice in surveying including construction surveys and use of plane table and alidade.

**2. Descriptive Geometry. (3) I, II.**

Mr. McCutchan in charge

Lecture, one hour; laboratory, five hours.

Prerequisite: one year of high school drafting, plane geometry. Recommended: solid geometry.

The principles of descriptive geometry and their application to the solution of engineering problems.

**6. Engineering Drawing. (3) I, II.**

Mr. McCutchan in charge

Lecture, one hour; laboratory, five hours.

Prerequisite: course 2.

An advanced course, based on A.S.A. standards of drawing and drafting room practice, correlating technical sketching and drafting with engineering design and production.

**8. Properties of Materials. (2) I, II.**

Mr. Knapp in charge

Prerequisite: Chemistry 1A.

The properties of materials; applications to engineering systems; dependency of properties on internal structure; structures and properties of metals and alloys and their response to thermal and mechanical treatments; structures and properties of nonmetallic materials.

**10B. Processing of Engineering Materials. (2) I, II.**

Lecture, one hour; laboratory, three hours. Mr. McCutchan in charge

Prerequisite: course 8, Chemistry 1B.

Study of modern manufacturing processes; casting, cutting, plastic working, fastening (welding, riveting), finishing, gaging, introductory quality-control; emphasis in laboratory on mechanical and physical properties as functions of processing variables, and on reporting the results of laboratory investigations orally, by letter, and by formal report.

**\*12. Survey and Problems in Agricultural Engineering. (2).**

Prerequisite: sophomore standing.

Mr. E. H. Taylor

Historical and modern applications of engineering to farm life. Study of hydrology in relation to agricultural engineering; soil and soil erosion; farm machinery and structure; elementary problems in agricultural power applications and mechanics.

**15A-15B. Elementary Mechanics. (3-3) Yr. Beginning either semester.**

Mr. E. H. Taylor in charge

Lecture, two hours; laboratory, three hours.

This is a unified course covering elementary topics of analytical mechanics and strength of materials.

15A, prerequisite: course 8; Physics 1A, Mathematics 4A or 6A (may be taken concurrently).

Composition and resolution of coplanar force systems, equilibrium of coplanar force systems, states of stress, simple stress calculations, frames, continuously distributed loads, moments of areas, torsion, beam stresses. Algebraic and graphic methods will be employed.

15B, prerequisite: course 15A, Mathematics 4B or 6B (may be taken concurrently).

Composition and resolution of noncoplanar force systems, equilibrium of noncoplanar force systems, friction, deflection of beams, statically indeterminate beams, combined axial and bending loads, eccentric loads, columns, cables.

\* To be given when there is sufficient demand.

**15AB. Elementary Mechanics.** (6) I, II. Mr. E. H. Taylor in charge  
Prerequisite: course 8, Physics 1A, Mathematics 4B or 6B (may be taken concurrently).

Lecture, three hours; laboratory, six hours.  
Combination of courses 15A and 15B.

**30. Elementary Biotechnology.** (3) I, II. Mr. C. L. Taylor  
Prerequisite: Chemistry 1A, Physics 1A, Mathematics 5A.

Definitions, concepts, and facts of human biology selected as related to engineering and industry. An introduction to the use of anatomical, physiological, and psychological information and methods of analysis in engineering planning, design, and operations.

**48. The Anatomy of Engineering.** (1) I, II. Mr. Boelter

Designed for students entering the College of Engineering.

The philosophical basis of engineering and the present scope of the profession. Biographies of eminent engineers and the organization of engineering in industry. Reading assignments.

**97. Elementary Analysis of Engineering Practice.** (3) I, II.

Mr. E. F. King in charge

Prerequisite: satisfactory completion of one semester's work in residence in the College of Engineering, Los Angeles, and participation in coöperative work-study program in Engineering.

Orientation problems; required attributes in industry; responsibilities to the profession, to the employer, to the college and to society. Role of the engineer in safety, economic and biotechnological areas. Analysis of the physical operation and plant of representative industries or agencies. Written and oral reports required.

#### UPPER DIVISION COURSES

Satisfactory completion of the Engineering Examination, Upper Division, is prerequisite to all upper division courses.

**100A. Circuit Analysis.** (3) I, II. Mr. Schott in charge

Prerequisite: Mathematics 110AB or 110C (may be taken concurrently).

Elements of electrical circuit analysis with emphasis on solutions of circuit problems; analogues and duals; applications of steady state and transient analysis to linear electrical, mechanical, and thermal systems.

**100B. Electrical Machines.** (3) I, II. Mr. Mathews in charge

Prerequisite: course 100A, 104A.

Principles and applications of the important basic electrical machines and equipment. Occasional field trips to electric plants and installations.

**100C. Electrical Power Operation and Distribution.** (3) I. Mr. Grandi

Prerequisite: courses 100A-100B, 104A-104B.

Electrical power generation and distribution systems are considered from the viewpoint of equipment, operations, transmission and distribution, and system economics. Occasional field trips will be scheduled.

**\*101. Irrigation Institutions and Economics.** (2) Mr. E. H. Taylor

Water rights, irrigation institutions, and organizations.

**102B. Engineering Dynamics.** (3) I, II. Mr. Thomson in charge

Prerequisite: course 15B; Mathematics 110AB or 110C (may be taken concurrently).

Fundamental ideas of dynamics; kinematics and kinetics of rectilinear motion, two-dimensional motion, plane motion, and motion relative to moving reference frames; work-energy and impulse-momentum relationships; an introduction to oscillatory motion. Vector analysis methods are used in the treatment of most of these subjects.

\* To be given when there is sufficient demand.



- †102C. **Advanced Engineering Dynamics.** (3) II. Mr. Thomson  
Prerequisite: course 102B; Mathematics 110C or equivalent.  
Continuation of Engineering 102B, with special reference to the dynamics of rigid bodies such as the gyroscope, vibrations of systems having several degrees of freedom, use of Lagrange's equations, vibration of elastic systems.
- 103A. **Elementary Fluid Mechanics.** (3) I, II. Mr. E. H. Taylor in charge  
Prerequisite: course 102B; course 105B (may be taken concurrently).  
An introductory course dealing with the application of the principles of mechanics to the flow of compressible and incompressible fluids. Includes hydraulic problems of flow in closed and open conduits. Occasional field trips may be scheduled.
- 103B. **Intermediate Fluid Mechanics.** (3) I. Mr. E. H. Taylor  
Prerequisite: courses 103A, 105B.  
The dynamics of nonviscous and viscous fluids; potential motion, vortex motion, Navier-Stokes equation, boundary layers, turbulence, compressibility. Emphasis is placed on the applications of theory to various practical systems which involve fluid motion.
- 104A. **Junior Engineering Laboratory.** (3) I, II. Mr. E. F. King in charge  
Prerequisite: course 100A (may be taken concurrently).  
Laboratory, 6 hours per week. Additional 3 hours required for preparation, calculations and reports. Introductory experiments illustrating the properties of engineering materials. Applications of circuit theory to electrical, mechanical, thermal, acoustical and fluid systems. Measurements and instrumentation. Occasional field trips will be scheduled.
- 104B. **Junior Engineering Laboratory.** (3) I, II. Mr. E. F. King in charge  
Prerequisite: courses 100A, 104A, 108B.  
Prerequisite or concurrent: courses 100B, 103A, 105A.  
Laboratory, 6 hours per week, additional 3 hours required for preparation, calculations, and reports. Introductory experiments on the operation and application of machines, and on the behavior of engineering structures. Measurements and instrumentation. Occasional field trips will be scheduled.
- 104C-104D. **Senior Engineering Laboratory.** (4-4) Yr. Beginning either semester. Mr. E. F. King in charge  
Lecture and demonstration, 2 hours; laboratory, 6 hours.  
Additional 4 hours required in preparation of reports.  
Prerequisite: completion of all required freshman, sophomore, and junior courses.  
A year laboratory course containing a group of integrated experiments common to all engineering fields and a group of elective experiments particularly applicable to the several fields of engineering. Occasional field trips will be scheduled.
- 105A. **Heat Transfer and Thermodynamics.** (3) I, II. Mr. Harper in charge  
Prerequisite: Mathematics 110AB or 110C (may be taken concurrently).  
Concepts of temperature, heat, and work. First and second laws of thermodynamics. Properties of perfect and real gases. Thermodynamic properties of fluids. Elements of heat transfer, covering conduction, convection, radiation, and combined systems.
- 105B. **Heat Transfer and Thermodynamics.** (3) I, II. Mr. Harper in charge  
Prerequisite: course 105A; course 103A (may be taken concurrently).  
Applications of thermodynamic principles to flow of fluids, compression and expansion processes, vapor and gas power cycles, refrigeration. Relation-

† To be given if a sufficient number of students enroll.

ships among thermodynamic functions and applications to properties of gases, liquids, and solids. Mixtures of gases and vapors, psychrometric principles, thermochemistry and chemical equilibrium, the third law.

†105C. **Intermediate Thermodynamics.** (3) II. Mr. Harper in charge  
Prerequisite: Engineering 105B.

General treatment of first and second laws, including open systems and availability concepts. Mathematical relationships, with applications to properties of materials and to non-chemical systems. The phase rule and physical and chemical equilibrium. The third law, with applications to low-temperature phenomena and to chemical equilibrium.

106A. **Machine Design.** (4) I. Mr. Mason in charge

Lecture, two hours; laboratory, six hours.

Prerequisite: courses 6 and 102B.

Application of the principles of mechanics, physical properties of materials, and shop processes to the design of machine part: empirical and rational methods are employed; lectures, problems, and projects.

106B. **Product Design.** (3) II. Mr. Mason in charge

Lecture, one hour; laboratory, six hours.

Prerequisite: course 106A or 106C.

Engineering and economic calculations involved in the design and manufacture of industrial products; design for function, safety, and appearance; sketching and rendering.

106C. **Structural Design.** (3) II. Mr. Duke in charge

Lecture, two hours; laboratory, three hours.

Prerequisite: course 108B; course 107A recommended.

Design methods and standards for member, connections, and simple structures of reinforced concrete, steel, and timber. General procedures in engineering design. Individual structural design projects.

107A. **Analysis of Framed Structures.** (3) I. Mr. English in charge

Prerequisite: course 108B.

Analysis of beams and framed structures—simple, compound, and complex; applications of superposition and influence lines; deflections of beams and framed structures. Introduction to analysis of indeterminate beams and framed structures by superposition, energy of strain, slope deflection, and moment distribution methods.

107B. **Advanced Analysis of Framed Structures.** (3) II.

Prerequisite: course 107A.

Mr. English in charge

Extension of principles covered in Engineering 107A to the general solution of more complicated determinate and indeterminate framed structures. Principles of limit analysis of frames and trusses. Analysis of rings and arches including those with variable moment of inertia. Influence lines for indeterminate structures. Safety of structures.

107G. **Analysis of Airplane Structures.** (3) I.

Mr. Shanley

Prerequisite: course 108B.

External loads, internal loads, allowable loads, load factors, load distribution. Shell analysis for shear, bending, torsion. Buckling of columns, plates, and shells. Properties of aircraft materials. Analysis of space frameworks and joints.

107H. **Elasticity and Plasticity.** (3) II.

Mr. Rosenthal

Prerequisite: course 108B; Mathematics 110AB or 110C (may be taken concurrently).

Advanced strength of materials. Experimental and analytical solutions

† To be given if a sufficient number of students enroll.

of plane state of stress (strain gage technique, photoelasticity, X-ray stress analysis, etc.). Elements of plasticity. Criteria of flow and fracture.

**107J. Advanced Aircraft Structural Analysis.** (3) II. Mr. Shanley  
Prerequisite: course 107G.

Analysis of loads and stresses in shell types of structures stiffened and unstiffened (monocoque), including frames, bulkheads, cutouts, general instability, pressure loading, allowable stresses, applied buckling theory.

**108A. Strength of Materials.** (3) I, II. Mr. E. H. Taylor in charge  
Prerequisite: course 8 (may be taken concurrently); a course in analytical mechanics-statics (equivalent to Engineering 35, Berkeley campus); Mathematics 4B or 6B (may be taken concurrently).

Stress, strain, and elasticity; thin shells, welded and riveted joints; shafts and helical springs; beams, shear, moment, flexural stress, shearing stress, deflection, unsymmetrical loading; column-theory; combined stresses. Not open for credit to students who have had courses 15A or 15B.

**108B. Strength of Materials.** (2) I, II. Mr. Shanley in charge  
Prerequisite: Physics 1A, 1C, 1D; Mathematics 4B or 6B.

Review of stress-strain relationships, including inelastic behavior, strain energy, combined stresses; stress concentration and fatigue; bending theory, including curved beams, inelastic behavior, composite beams, unsymmetrical loading; shear flow theory, including shear center, torsion of thin shells, deflections; inelastic buckling of columns, plates, and shells; energy methods of deflection analysis; introduction to analysis of statically indeterminate structures and relaxation methods.

**108C. Properties of Ceramic Materials.** (3) I. Mr. Knapp  
Prerequisite: senior standing in engineering.

Structure of some ceramic materials in the crystalline and glassy states, and relation to certain physical and chemical properties. Equilibria of ceramic mixtures and certain thermodynamic applications.

**108D. Properties of Art Ceramic Materials.** (3) I. Mr. Knapp  
Prerequisite: Art 117A.

Composition of ceramic materials and products. Properties of ceramic bodies and glazes, and calculation methods for compounding. Occasional field trips will be scheduled. (For students in Applied Arts.)

**108G. Introduction to Physical Metallurgy.** (3) I, II. Mr. Flanigan  
Lecture, two hours; laboratory, three hours.

Prerequisite: upper division standing in engineering.  
A fundamental study of metals and alloys, the dependency of properties on structure, and the influence of mechanical and thermal treatments on structure and properties. Metal crystals. Plastic deformation, work hardening and recrystallization. The role of alloying elements. Alloy diagrams. Precipitation hardening. Transformations in alloys of iron and carbon. Commercial treatments and processes.

**108J. Principles of Soil Mechanics.** (3) I. Mr. Duke  
Prerequisite: courses 103A, 108B; Geology 5 recommended.

Soil as a foundation for structures and as a material of construction. Soil formation, properties, classification, tests. Shear failure and earth pressures. Compaction. Consolidation. Bearing capacity. Stresses in earth masses. Field techniques for exploration and design.

**109. Irrigation Engineering.** (3) II. Mr. E. H. Taylor  
Prerequisite: course 103A (may be taken concurrently).

Use of irrigation water, hydrology of irrigation water supplies; design, operation, and maintenance of irrigation and drainage systems.

**110A. Route Surveying. (3) I.**

Mr. Smirnoff

Lecture, two hours; field work, three hours.

Prerequisite: courses 1LB and 1FB.

Simple, compound, and transition curves; reconnaissance, preliminary, and location surveys; calculations of earthwork and other quantities, field work.

**110B. Geodesy and Photogrammetry. (3) II.**

Mr. Smirnoff

Prerequisite: upper division standing in engineering or equivalent.

Properties of the spheroid, geodetic formulas, field methods of observation, criteria and tests of acceptable field data, calculations of spherical excess, eccentricity, least squares adjustment of triangulation, computation of lengths and geodetic positions, measurement of base-line and traverse lengths, computations of coördinates on the Lambert Grid. Fundamental principles of aerial photogrammetry, description of equipment and apparatus used in mapping from photographs.

**112A. Basic Electronics. (3) I, II.**

Mr. E. F. King

Prerequisite: course 100A. Not open for credit to those who have had Physics 116A.

Atomic structure of solids, work function, thermionic and photoelectric emission, secondary emission. Motion of charges in electric and magnetic fields. Physical structure of electron tubes. Characteristic curves. Equivalent circuits, methods of analysis of circuits employing electron tubes. Theory of operation of rectifiers, amplifiers, and oscillators. Application of electron tubes to engineering devices and systems. Occasional field trips will be scheduled.

**112B. The Communication of Information. (3) II.**

Mr. Hershberger

Prerequisite: course 112A.

Delineation of the fundamental problem of communication between human beings with emphasis on factors common to all systems. The course includes a study of information theory, signals and their spectra, and the factors that determine system performance as distortion, element variation, and band width; noise, and the characteristics of the human voice and sense organs. Illustrative material is drawn from telephony, radar, television, computers, and automatic control systems.

**112C. Applied Electromagnetic Theory. (3) I.**

Mr. Hershberger

Prerequisite: senior standing in engineering.

Application of electromagnetic theory to engineering problems, including treatment of transmission lines, electromagnetic waves, wave guides, antennas, and cavities.

**112D. Nonlinear Electronics. (3) I.**

Mr. E. F. King in charge

Prerequisite: courses 100A, 112A.

A second course in engineering electronics, with emphasis on electronic circuits. The basic circuits common to all fields of electronics are studied. Course content includes tuned, untuned, small and large signal amplifiers; an introduction to feedback amplifiers; sinusoidal and nonsinusoidal wave generators (oscillators) and an introduction to modulation and demodulation circuits. The elements of magnetic amplifiers are studied.

**\*113A-113B. The Engineer and His Professional Duties. (2-2) Yr.**

Mr. Boelter in charge

Enrollment limited to twenty students per section.

Prerequisite: senior standing in engineering.

Oral and written reports on various subdivisions of knowledge with em-

\* 113A to be given fall and spring semesters; 113B to be given when there is sufficient demand.

phasis on the sociohumanistic periphery of engineering. Class meetings will be devoted to the subjects of the history of technology, business organization, personal efficiency, professional codes and ethics, industrial procedures, and engineering-report writing. The course serves as training in the professional duties of the engineer.

**120. Principles of Engineering Investment and Economy. (3) I, II.**

Prerequisite: courses 100B, 103A, 105B.

Mr. English in charge

Derivation of formulas used in investment theory; analysis of financial statements and cost accounting methods; analysis of original and alternative investments; equipment replacement problems; influence of personnel factors; quality control; studies in the economy of governmental projects.

**121. Engineering Aerodynamics. (3) I, II.**

Mr. Hurty

Prerequisite: course 103A (may be taken concurrently); Mathematics 110AB or 110C.

Physical properties of air, Bernoulli's theorem, aeronautical nomenclature, experimental methods, airfoil characteristics, induced angle of attack, induced drag, aspect ratio effects, scale effect, compressibility effects, airfoil selection, high lift devices, aircraft engines and propellers from the viewpoint of airplane performance, static stability and control.

**130A. Environmental Biotechnology. (3) I.** Mr. C. L. Taylor in charge

Prerequisite: course 105A (may be taken concurrently); Physics 1D; Mathematics 6B.

Physical, physiological, and psychological phases of the interaction between man and thermal, atmospheric, radiant, and mechanical agents and energies in the environment. Emphasis is laid upon the requirements for adequate environmental control by engineering means.

**130B. Machine and Systems Biotechnology. (3) II.**

Mr. C. L. Taylor in charge

Prerequisite: junior standing in engineering.

Introduction to the methods and results pertinent to engineering design which involve the man-machine relationship. Discussion of modes of analysis and representative applications to visual, auditory, and other sensory displays. Limits of human capacity for correlating and applying information as functional links in engineering systems. Occasional field trips may be scheduled.

**131A. Industrial Sanitary Engineering. (3) I.**

Mr. Bush

Prerequisite: course 130A and senior standing in engineering.

Consideration of industrial environment, evaluation of atmospheric contaminants, sampling methods and analysis, control measures, ventilation systems (hoods, local exhaust principles, exhausters and collectors), airflow measurements, industrial atmospheric pollution regulations and fundamental problems of evaluation, consideration of disposal of liquid and solid waste. Occasional field trips may be scheduled.

**132. Survey of Engineering Services for Public Health. (2) I.**

Mr. Bush, ———

Prerequisite: Public Health 110, and senior standing.

A descriptive treatment of the engineering program relating to water supply, sewage disposal, accident prevention, air pollution, industrial waste disposal, and industrial environmental control. For students in Public Health.

**143A. Oil Field Development. (3) I.**

Mr. Yuster

Prerequisite: course 103A; course 105B (may be taken concurrently).

Origin, accumulation, and properties of petroleum; petroleum reservoirs, exploration methods, drilling methods, mud technology, well completion, logging methods, and core analysis. Field trips will be made.

**143B. Oil and Gas Production. (3) II.**

Mr. Yuster

Prerequisite: course 143A or consent of the instructor.

Oil and gas production mechanisms; internal gas drive, water drive, gravity drainage, recycling; flowing of production, gas lift, pumping; storage and transportation; well treatment, secondary recovery; oil mining and oil shale. Occasional field trips will be scheduled.

**145. Tool Engineering. (3) II.**

Mr. Wilkerson

Lecture, two hours; laboratory, two hours.

Prerequisite: course 106A (may be taken concurrently).

The selection of tooling for production; design of tools, jigs, fixtures, dies, and production-type gages; design of tooling for automatic machines, design of assembly tooling. Field trips will be scheduled.

**148A. Elements of Construction. (3) I.**

Mr. Duke

Lecture, 2 hours; laboratory and field trips, 3 hours.

Prerequisite: senior standing in engineering.

Anatomy of the industry, contracts, costs and economics, equipment and materials, construction methods, field engineering techniques, engineering analysis of current construction projects in the vicinity.

**151A. Industrial Heat Transfer. (3) I.**

Mr. Romie

Prerequisite: course 105B; Mathematics 110AB or equivalent.

The study of the basic principles of heat transfer and their application to the design of industrial equipment. Steady state and transient problems of conduction by analytical and numerical methods. Free and forced convection. Transfer of radiant energy.

**152A. Industrial Mass Transfer. (3) I.**

Mr. Harper

Prerequisite: courses 105A-105B.

Physical and thermal properties of fluids; basic principles of unit operations; molecular and eddy diffusion; mass, heat, and momentum transfer; application to evaporation and psychrometric unit operation, cooling towers, etc.

**†152B. Industrial Mass Transfer. (3) II.**

Mr. Harper

Prerequisite: course 152A or the consent of the instructor.

Study of unit operations involving principles of mass transfer as well as heat and momentum transfer; distillation, absorption, extraction, adsorption, drying, evaporation, etc. Occasional field trips may be scheduled.

**153. Thermal and Luminous Radiation. (3) II.**

Mr. Bromberg

Prerequisite: course 105B.

The spectral characteristics of sources and receptors of ultraviolet, visible, and infrared radiation; the spectral behavior of transmitters, reflectors, and absorbers; gaseous radiation; geometry of radiant systems; measurement of radiation; analysis of heat transfer systems involving radiation; illumination.

**155A. Engineering Aspects of Nuclear Processes. (3) I.**

Mr. Connolly

Prerequisite: senior standing in engineering, physics, or chemistry.

Introduction to the basic engineering principles involved in the design of nuclear reactors. Will include a review of basic physics required for engineering applications, diffusion of neutrons, reactor mechanics, and heat transfer problems in reactor design. The atomic energy program and its influence in various fields of engineering will be discussed.

† To be given if a sufficient number of students enroll.

- 156. Aircraft Propulsion and Power. (3) II.** Mr. W. J. King  
Prerequisite: courses 105B, 103A.  
A survey of theory, practice, limitations, and trends of future developments in the field of aircraft propulsion, including all types of primary and auxiliary power plant, but with particular emphasis upon gas turbines and jet propulsion.
- 170. Sales Engineering. (3) I.** Mr. Case  
Lecture, three hours. Field trips may be arranged.  
Prerequisite: senior standing in engineering.  
The principles of engineering sales will be illustrated by the case method. The selection and assembly of prefabricated components in the solution of a production and construction problem. Presentation of the service function as it is related to sales engineering.
- 171. Engineering Organization and Administration. (3) II.** Mr. Case  
Prerequisite: senior standing in engineering.  
The principles of organization and administration as applied to engineering in industry will be considered. Special problems pertaining to the use of organization charts, the assignment of administrative responsibility, the engineering use of job descriptions, job evaluation, job analysis, and efficiency surveys as well as problems pertaining to the selection, training, and supervision of technical employees will be discussed.
- 172. Principles of Industrial Safety. (3) II.** Mr. Mathewson  
Prerequisite: junior standing in engineering.  
Delineation of the over-all accident prevention problem with emphasis on industrial concepts. Analysis and synthesis of all major elements, e.g., statistical methods, plant layout, machine and process control devices and safeguards, applicable laws and codes, nuclear radiation and other occupational health hazards, engineering and medical controls, explosion and fire prevention and protection, industrial traffic and safety organization.
- 174. Fundamentals of Traffic Engineering. (3) I.** Mr. Mathewson  
Prerequisite: junior standing in engineering.  
Fundamental aspects of streets and highways as transportation facilities; planning, financing, location, economics, geometric design and physical characteristics. Traffic surveys and instrumentation; traffic control and related devices; applications of statistical techniques to traffic problems.
- 180. Advanced Kinematics of Mechanisms. (3) II.** Mr. Beggs  
Prerequisite: course 102B.  
Analysis and synthesis of fundamental types of mechanisms, including electric, magnetic, pneumatic, and hydraulic links. Both graphical and analytical methods are used. Applications will be considered to such devices as instruments, servomechanisms, calculating machines, conveyors, and printing presses. A field trip will be scheduled during the spring recess.
- 181A. Linear System Solutions by Transform Methods. (3) I, II.** Mr. Schott in charge  
Prerequisite: courses 100A, 102B, 104A; Mathematics 110C.  
Formulation and solution of equations of behavior of lumped linear invariant electrical, rigid and fluid-mechanical, and thermal systems by the Laplace-transformation method. Not open for credit to students who have had course 182.

**181B. Mechanical, Electrical, and Electromechanical System Dynamics.**

(3) II.

Mr. Schott in charge

Prerequisite: course 181A.

Small oscillations of conservative and nonconservative systems; four-terminal structures; free and forced oscillations of electrodynamical systems; oscillations of beams; approximate methods for computing frequencies and modes of oscillation; simple nonlinear systems. Not open for credit to students who have had course 181.

**181C. Analysis of Servomechanisms. (3) I, II.**

Mr. Walters in charge

Prerequisite: course 181A.

The fundamentals of servomechanisms including: the theory of dynamic stability, analysis of servomechanisms on the transient-time-response and frequency-response bases, with applications to airplane dynamics, autopilots and computers; nonlinear elements. Not open for credit to students who have had course 165.

**181D. Analogue Computations. (3) I, II.**

Mr. Rogers

Lecture, 2 hours; laboratory, 3 hours.

Prerequisite: Mathematics 110C or equivalent; courses 112A, 181A recommended.

A detailed study of the theory, operation, and application of analogue computing devices such as the mechanical differential analyzer, thermal analyzer, network analyzer, and electronic computers and simulators. Engineering problems will be used to illustrate the operation and limits of accuracy of each device.

**183A-183B. Engineering Statistics. (3-3) Yr.**

Mr. Boelter in charge

Prerequisite: junior standing in engineering, Mathematics 110AB.

Fundamental concepts of probability and statistics. Emphasis upon the importance of understanding and distinguishing between system (population) and sample, parameter and statistic, statistical hypotheses and statistical estimation, producer's risk and consumer's risk. Efficient methods of computation. Statistical methods of decision and their operating characteristics. Statistical methods of point and interval estimation. Unbiased and efficient estimates, large and small sample considerations. Illustrations and examples of engineering interest. Applications to quality, production and process control; experimentation, design, and development.

**197. Advanced Analysis of Engineering Practice. (3) I, II.**

Mr. E. F. King in charge

Prerequisite: junior standing and participation in the coöperative work-study program in engineering.

Orientation problems; required attributes in industry; responsibilities to the profession, to the employer, to the college, and to society. Role of the engineer in safety, economic, and biotechnological areas. Analysis and synthesis of engineering systems, including prediction of performance and costs. Written and oral reports required.

**198. Directed Group Studies for Upper Division Students. (1-5) I, II.**

Mr. Boelter in charge

Prerequisite: senior standing in engineering; enrollment subject to approval of instructor in charge.

Group study of selected topics. Study groups may be organized in advanced engineering subjects upon approval of instructor in charge. Occasional field trips may be arranged.



**199. Special Studies or Research for Advanced Undergraduates. (1-5) I, II.**  
Mr. Boelter in charge

Prerequisite: senior standing in engineering; enrollment subject to approval of instructor in charge.

Individual study and/or research on a problem normally chosen from a restricted departmental list. Enrollment is subject to the scholarship requirements imposed by the instructor concerned. Occasional field trips may be arranged.

**GRADUATE COURSES**

Courses will be offered only if there is sufficient demand.

**200A-200B. Analytical Methods of Engineering. (3-3) Yr.**

Mr. Forster in charge

Prerequisite: Mathematics 110D or the equivalent.

Application of mathematical methods to engineering problems; basic problems in the fields of fluid dynamics, heat conduction, and electromagnetic theory will be discussed.

**210A-210B. Properties of Engineering Materials. (3-3) Yr.**

Mr. Rosenthal in charge

Prerequisite: graduate standing in engineering.

The purpose of this course is to derive the usable properties of engineering materials from the more fundamental properties of matter. Among the topics considered are: elasticity, thermal and electrical conductivities, semi-conductors, thermionic emission, and magnetism. The first term (fall) will be concerned with an exposition of the principles on which the course material will be based. The second term (spring) will be devoted to the specific topics listed above.

**229A-229B. Advanced Theory of Servomechanisms. (3-3) Yr.**

229A, prerequisite: course 181C or equivalent. I. Mr. Walters

Review of linear differential equations and of servocomponents. Methods of describing servoperformance; analysis of block diagrams; stability criteria; polar plots; series and parallel equalizer design; internal feedback loops; effect of disturbances; autopilot design.

229B, prerequisite: course 229A. II.

Advanced methods of analysis; conformal mapping; method of root determination; root-locus methods of servosynthesis; synthesis with predetermined damping; random noise in linear systems; nonlinear systems; multiple-coupled systems; computers; variable-parameter systems; combination open-cycle and closed-cycle systems.

**298. Seminar in Engineering. (1-5) I, II.**

Mr. Boelter in charge

Seminars may be organized in advanced technical fields. Course may be repeated provided no duplication exists. Occasional field trips may be arranged.



The following seminars will be made available during the Fall Semester, 1953, and the Spring Semester, 1954:

*Fall Semester, 1953*

**Optimum Structural Design, I. (2 units)**

Mr. Shanley

Prerequisite: course 108B and either 107G or 107A.

Determination of the type of structure which will provide a certain strength or stiffness at minimum weight; effects of size, loading, and material properties are analyzed; both civil (framed) and aeronautical (shell) structures are included.

**Hydrodynamics. (3 units)**

Mr. Miles

Prerequisite: course 103B or equivalent; Mathematics 110C.  
Potential flow of an ideal fluid.

**Jet Propulsion and Gas Turbines. (2 units)** Mr. W. J. King, Mr. Manildi

Prerequisite: course 103A, 105B.

A theoretical and practical study of the basic types of gas turbines, thermal jets and rockets; analysis and performance of components such as compressors, turbines, nozzles and combustors.

**Thermodynamics. (3 units)**

Mr. Seyer

Prerequisite: course 105C.

Rigid statements of I, II, and III laws. Statistical foundations, applications to irreversible processes, distribution phenomena.

**Microwave Studies on Materials. (3 units)**

Mr. Hershberger

Prerequisite: course 112C and consent of instructor.

Paramagnetic resonance in solids; studies on ferrites, faraday rotations, and low loss dielectrics.

**Advanced Biotechnology. (3 units)**

Mr. C. L. Taylor, Mr. Lyman

Prerequisite: course 130A-130B or consent of instructor.

Analysis and synthesis of biotechnical aspects of engineering design and planning. Rationale and procedures for evaluating and solving of environmental and man-machine problems of technology.

**Advanced Engineering Statistics. (2 units)**

Mr. Brown

The application of advanced statistical methods to Engineering systems, extensions and additions to standard techniques covered in courses 183A-183B.

*Spring Semester, 1954***Optimum Structural Design, II. (2 units)**

Mr. Shanley

Prerequisite: Optimum Structural Design, I.

Continuation of Optimum Structural Design, I, to include more advanced problems, such as optimum distribution of material for minimum weight, use of optimum design principles in predicting weight of structures, effects of elevated temperatures, creep buckling, theory of fatigue.

**Dynamics of Elastic Structures. (2 units)**

Mr. Hurty, Mr. Thomson

Prerequisite: course 181A.

Determination of normal modes and frequencies of rods, beams, frames, etc. Methods of energy, influence coefficients, matrix iteration, tabular analysis. Transient response due to impulsive loads, dynamic load factor, structural damping.

**Topics on Applied Electromagnetic Theory. (3 units)**

Mr. Hershberger

Prerequisite: course 112C or equivalent.

Wave guides, cavity resonators, horns, antennas; radiation and diffraction of electromagnetic waves; interactions between waves and materials.

**Aerodynamics of Transient Flow. (3 units)**

Mr. Miles

Prerequisite: course 103B and 181A or equivalent.

The calculations of the force acting on wings and bodies in unsteady flow with application to flutter analysis and dynamic stability. Topics in unsteady flow and aero-elasticity.

**Heat and Mass Transfer. (3 units)**

Mr. Harper

Prerequisite: consent of the instructor.

Derivation of equations describing heat, mass and momentum transfer in fluid fields. Analytical solutions for heat convection; principles of diffusion, analogies among heat, mass and momentum transfer in turbulent flow; systems with combined heat and mass transfer.

**Network Theory.**

A seminar will probably be arranged in network theory and its application to a variety of engineering systems.

**299. Research in Engineering. (1-5) I, II.**

Mr. Boelter in charge

Investigation of advanced technical problems. Occasional field trips may be arranged.

**PROFESSIONAL COURSE****400. Principles and Techniques of Electron Microscopy. (1) I.**

Mr. Froula

Prerequisite: Physics 1C, 1D, or 2B, or 10 and upper division standing; or consent of the instructor.

Fundamental principles of electron microscopy. Design and use of electron microscopes and supplementary equipment. Techniques and problems of specimen preparation. Interpretation of micrographs. Application of electron microscopy in various fields. Occasional visits to electron microscopy laboratory. Not open for credit to students who have had course X148AB.

**INSTITUTE FOR NUMERICAL ANALYSIS**

Attention is directed to the Institute for Numerical Analysis, National Bureau of Standards, the activities of which are described on page 223.

**ENGLISH**Hugh Gilchrist Dick, Ph.D., *Professor of English.*Majl Ewing, Ph.D., *Professor of English (Chairman of the Department).*Earl Leslie Griggs, Ph.D., *Professor of English.*Edward Niles Hooker, Ph.D., *Professor of English.*Leon Howard, Ph.D., *Professor of English.*Wesley Lewis, Ph.D., *Professor of Speech.*Alfred Edwin Longueil, Ph.D., *Professor of English.*William Matthews, Ph.D., *Professor of English.*Franklin Prescott Rolfe, Ph.D., *Professor of English.*Hugh Thomas Swendenberg, Jr., Ph.D., *Professor of English.*Lily Bess Campbell, Ph.D., *Professor of English, Emeritus.*Sigurd Bernhard Hustvedt, Ph.D., *Professor of English, Emeritus.*Martin Perry Andersen, Ph.D., *Associate Professor of Speech.*Bradford Allen Booth, Ph.D., *Associate Professor of English.*Llewellyn Morgan Buell, Ph.D., *Associate Professor of English.*John Jenkins Espey, B.Litt., M.A. (Oxon.), *Associate Professor of English.*Claude Jones, Ph.D., *Associate Professor of English.*Harrison Manly Karr, Ph.D., *Associate Professor of Speech.*<sup>1</sup>Charles Wyatt Lomas, Ph.D., *Associate Professor of Speech.*James Emerson Phillips, Jr., Ph.D., *Associate Professor of English.*Clifford Holmes Prator, Ph.D., *Associate Professor of English.*John Frederic Ross, Ph.D., *Associate Professor of English.*

<sup>1</sup> In residence first semester only, 1952-1954.

- John Harrington Smith, Ph.D., *Associate Professor of English.*  
 Margaret Sprague Carhart, Ph.D., *Associate Professor of English, Emeritus.*  
 Carl Sawyer Downes, Ph.D., *Associate Professor of English, Emeritus.*  
 Harriet Margaret MacKenzie, Ph.D., *Associate Professor of English, Emeritus.*  
 Donald Arthur Bird, Ph.D., *Assistant Professor of English.*  
 Ralph Cohen, Ph.D., *Assistant Professor of English.*  
 Vinton Adams Dearing, Ph.D., *Assistant Professor of English.*  
 Robert Paul Falk, Ph.D., *Assistant Professor of English.*  
 Elise Stearns Hahn, Ph.D., *Assistant Professor of Speech.*  
 \*Donald Erwin Hargis, Ph.D., *Assistant Professor of Speech.*  
 \*Paul Alfred Jorgensen, Ph.D., *Assistant Professor of English.*  
 Robert Starr Kinsman, Ph.D., *Assistant Professor of English.*  
 Mitchell Marcus, Ph.D., *Assistant Professor of English.*  
 Ada Blanche Nisbet, Ph.D., *Assistant Professor of English.*  
 Gerald Dennis Meyer, Ph.D., *Assistant Professor of English.*  
 John Paul Moncur, Ph.D., *Assistant Professor of Speech.*  
 \*Blake Reynolds Nevius, Ph.D., *Assistant Professor of English.*  
 Waldo Woodson Phelps, Ph.D., *Assistant Professor of Speech.*  
 Ralph Richardson, Ph.D., *Assistant Professor of English.*  
 Daniel Vandraegen, Ph.D., *Assistant Professor of Speech.*  
 Frank Whittemore Wadsworth, Ph.D., *Assistant Professor of English.*  
 Earl Richard Cain, Ph.D., *Instructor in Speech.*  
 Robert William Dent, Ph.D., *Instructor in English.*  
 Philip Calvin Durham, Ph.D., *Instructor in English.*  
 Robert Roland Raymo, M.A., *Acting Instructor in English.*  
 Arnold T. Schwab, Ph.D., *Instructor in English.*  
 Lawrence Delbert Stewart, Ph.D., *Instructor in English.*  
 Edwin Ray Coulson, M.A., *Lecturer in English.*  
 James Murray, Ed.D., *Lecturer in Speech.*  
 Audrey Louise Wright, M.A., *Associate in English.*



- George M. Savage, Ph.D., *Associate Professor of Theater Arts.*  
 \*Robert M. Stevenson, Ph.D., *Assistant Professor of Music.*  
 Joseph Sheehan, Ph.D., *Assistant Professor of Psychology.*  
 Winifred Root Vaughan, A.B., B.L.A., *Librarian, University Elementary School.*

Students must have passed Subject A (either examination or course) before taking any course in English. Regulations concerning Subject A will be found on page 28C of this bulletin.

*Letters and Science List.*—All undergraduate courses in English except 2 and 370 and all undergraduate courses in speech except 140, 142A, 142B, and 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Courses 1A-1B and 46A-46B or the equivalent, with an average grade of C or higher; History 5A-5B or the equivalent (except for English-speech majors).

\* Absent on leave, 1953-1954.

<sup>1</sup> In residence first semester only, 1953-1954.

<sup>2</sup> In residence second semester only, 1953-1954.

Recommended: Ancient and modern foreign languages. A reading knowledge of French or German is required for the M.A. degree. For the Ph.D. degree a reading knowledge of both French and German is required; a reading knowledge of Latin is essential for work in some fields.

*The Major.*—Plan I. For the general undergraduate: 24 units of English, including (1) English 117J; (2) one of the Type courses (6 units); (3) three of the Age courses (not more than two courses in adjacent ages); (4) at least 3 units of American Literature.

Plan II. For the undergraduate expecting to proceed to the M.A. or Ph.D. degree in English: the student must present, in the first half of the junior year, a program to be examined and approved by the departmental adviser to upper division students. (1) The program must comprise, at a minimum, 24 units of upper division courses in English, including (a) English 117J, to be taken in the junior year; (b) one of the Type courses (6 units); (c) three of the Age courses (not more than two courses in adjacent ages); (d) at least 3 units of American Literature; (e) English 151L, to be taken in the senior year. (2) At the end of the senior year the student must complete the Comprehensive Final Examination. If he fails this examination he may still receive the bachelor's degree, but in order to be approved for graduate study in English, he must pass it with a grade of A or B.

Plan III. The field major in English and speech for the student taking the General Secondary Credential.

- (a) The completion of the following: (1) English 1A-1B, 46A-46B; (2) Speech 1A, 1B or 3A, 3B; (3) English 31 or 106L; 117J; 190A-190B or 4 units from †130A, †130B, †130C; 115 or 153; (4) 6 units from English 114A-114B, 122A-122B, 125C-125D, 125G-125H; (5) 6 units from English 156, 157, 158, 167, 177, 187; (6) 3 units from Speech 106, 107, 110A, 111A, 111B, 122, 140; (7) Theater Arts 103.
- (b) The passing of the Senior Comprehensive Final Examination with a grade of C or better. (The Bachelor's degree may still be granted with a grade of less than C.)
- (c) The following courses, ordinarily to be taken in the graduate year, complete the English requirements for the General Secondary Credential: English 370, taken prerequisite to or concurrent with Education 370; six units from English 221, 222, 223A, 223B, 224, 225, 226, or their equivalent.

The field minor in English and speech for the General Secondary Credential will consist of the following courses: (1) English 1A-1B, 46A-46B; (2) 3 units from Speech 1A, 3A; (3) English 106L or 31; (4) 6 units from English 114A-114B, 115, 117J, 125C-125D, †130A, †130B, †130C, 153, 190A, 190B. (Not more than 4 units may be offered from the 130 sequence.)

† Not to be given after 1952-1954. The following changes in the American Literature program will be put into effect in 1954-1955.

30A. American Literature of the Pre-Civil War Period. (2) I, II.

Prerequisite: course 1A.

30B. American Literature of the Post-Civil War Period. (2) I, II.

Prerequisite: course 1A.

130. American Literature of the Colonial and Early National Periods. (2) I, II.

Prerequisites: courses 1A-1B, 46A-46B.

131. American Literature of the Nineteenth Century. (3) I.

Prerequisite: courses 1A-1B, 46A-46B.

132. American Literature of the Twentieth Century. (3) II.

Prerequisite: courses 1A-1B, 46A-46B.

Requirement (3) under (a)—Field major in English and Speech:

8 units from 181, 182.

Requirement (3) under (a)—Field major in Speech and English:

8 units from 181, 182.

*Requirements for Admission to Graduate Courses.*

The requirement is ordinarily the undergraduate major in English or its equivalent. No graduate student may take a graduate course in English who has fewer than 12 units in upper division major courses in English. This requirement is prerequisite to the 24 units demanded for the master's degree. If the candidate is deficient in this prerequisite, he must fulfill it by work undertaken as a graduate student.

*Requirements for the Master's Degree.*

1. For the general requirements, see page 60. The department follows Plan II, as described on page 61. The Master's Comprehensive Examination consists of four written examinations, each one and one-half hours long. These examinations are given toward the end of the semester.

2. Departmental requirements: (a) Students are required to take the reading test in French or German at the beginning of the first semester of residence.

(b) They must complete at least 24 units including the following courses in English: course 200; one course chosen from 110, 111, 211, 212, 213; four courses chosen from 221, 222, 223A, 223B, 224, 225, 226; one graduate seminar (250-270).

*Requirements for the Doctor's Degree.*

1. For the general requirements, see page 62.

2. Departmental requirements: (a) On entering the department the candidate will present to the chairman a written statement of his preparation in French, German, and Latin. He must take the reading test in one of the two required modern foreign languages (French and German) at the beginning of the first semester of residence, the test in the other not later than the beginning of the third semester of residence. For work in some fields a reading knowledge of Latin is necessary. (b) In the first year (normally two semesters) of graduate study, the candidate will complete the requirements for the master's degree. At the end of that year, however, he will take, not the Master's Comprehensive Examination, but Part I of the Qualifying Examinations for the doctor's degree, passing which will entitle him to the master's degree. Part I of the Qualifying Examinations will consist of four written examinations, each one and one-half hours long, and a two-hour oral examination. If the candidate does well in these examinations, he will be encouraged to proceed further with graduate study. (c) Normally the candidate will devote a second year to the completion of the language requirement (211, 212, 213) and the taking of graduate seminars in English or suitable courses in other departments, after which he will take Part II of the Qualifying Examinations and be advanced to candidacy. Of course this period may be curtailed or extended according to circumstances. Part II of the Qualifying Examinations will consist of three three-hour written examinations and a two-hour oral examination in the candidate's special field and in two other fields to be chosen in consultation with his adviser. No special examination in linguistics is required, but questions on the language will appear at appropriate points in the examinations on literature. (d) A final year (which under the University rules may not be curtailed) will normally be devoted by the candidate chiefly to the preparation of his dissertation, after which he will take his final oral examination. During this year the candidate may satisfy the residence requirement either by taking additional seminars or by registering in English 290.

If a student has allowed seven years or more to elapse since taking a course or examination to meet the requirements for a graduate degree, it will be necessary to have such a course or examination validated by the department before he can proceed toward completion of the requirements.

## LOWER DIVISION COURSES

*Freshman Courses*

- 1A-1B. First-Year Reading and Composition. (3-3) Beginning each semester. Mr. Jorgensen in charge  
Open to all students who have received a passing grade in Subject A.
2. Introduction to Journalism. (3) I, II. \_\_\_\_\_
- \*4A. Great Books: Dramatic Comedy. (1) I. \_\_\_\_\_
- \*4B. Great Books: Dramatic Tragedy. (1) II. \_\_\_\_\_
- 4C. Great Books: the English Novel. (1) I. Mr. Kinsman in charge
- 4D. Great Books: the Continental Novel. (1) II. Mr. Kinsman in charge
- \*4E. Great Books: Lyric Poetry. (1) I. \_\_\_\_\_
- \*4F. Great Books: Narrative Poetry. (1) II. \_\_\_\_\_
- \*4G. Great Books: Famous Utopias. (1) I. \_\_\_\_\_
- \*4H. Great Books: Great Satirists. (1) II. \_\_\_\_\_
- 33A. English for Foreign Students. (4) I, II. Miss Wright  
For foreign students only. Speaking, reading, and writing of English; intensified work in grammar; composition, conversation, vocabulary building, speech laboratory. Required for those who fail to pass the examination in English and who are not qualified to take course 33B.
- 33B. English for Foreign Students. (4) I, II. Mr. Prator  
Continuation of course 33A. Required of those who complete course 33A.

*Sophomore Courses*

Course 1A-1B is prerequisite to all sophomore courses in English.

31. Intermediate Composition. (2) I, II. Mr. Buell in charge
- 46A-46B. Survey of English Literature. (3-3) Yr. Beginning each semester. Mr. Espey in charge

## UPPER DIVISION COURSES

Courses 1A-1B and 46A-46B are prerequisite to all upper division courses in English, except 106S, 110, 111, 115, 116, 117J, 118, 125C-125D, †130A, †130B, †130C, 133, 135, 136, 190A, 190B, for which only 1A is prerequisite, and 150, for which 1A and 1B are prerequisite. Theater Arts students may substitute Humanities 1A-1B for course 46A-46B as a prerequisite for 113, 114C, 114D, 114E. Students who have not passed English 31 will be admitted to 106C and 106F only upon a test given by the instructor. Upper division standing is required for all upper division courses in English.

A. *The Junior Course*: Course 117J. Required of juniors whose major is English.

B. *The Type Courses*: Courses 114A-114B, 122A-122B, 125C-125D, and 125G-125H. It is understood that major students in English will take one of these year courses.

C. *The Age Courses*: Courses 156, 157, 158, 167, 177, and 187. It is understood that major students in English under Plans I and II will take three of these courses.

\* Not to be given, 1953-1954.

† See dagger (†) footnote on page 159.

D. *Courses in American Literature*: Courses †130A, †130B, †130C, 131, 133, 135, and 136. It is understood that major students in English under Plans I and II will take at least 3 units of these courses.

E. *The Senior Course*: Course 151L. Required of seniors whose major subject is English under Plan II.

- 106A. **The Short Story.** (2) I, II. Mr. Espey  
Prerequisite: consent of the instructor.
- \*106B. **Verse Writing.** (3) I. Mr. Jones  
Prerequisite: course 153 or consent of the instructor.
- 106C. **Critical Writing.** (2) I, II. Mr. Jorgensen
- 106D-106E. **Fundamentals of Dramatic Writing.** (3-3) Yr. Mr. Savage  
For admission to this course, candidates should submit to the instructor an original one-act play or one act of a full-length play by September 15, 1953.
- 106F. **Exposition.** (2) I, II. Mr. Espey
- 106L. **Advanced Composition for Teachers.** (2) I, II. Mr. Marcus, Mr. Jorgensen  
Designed primarily for candidates for the general secondary teaching credential.
- 106S. **Advanced Composition for Majors in the Physical and Life Sciences.** (3) I, II. Mr. Marcus, Mr. Durham
110. **Introduction to the English Language.** (3) I. Mr. Bird, Mr. Matthews
111. **The English Language in America.** (3) II. Mr. Bird, Mr. Matthews
113. **Chief European Dramatists before 1850.** (2) II. Mr. Smith
- 114A-114B. **English Drama from the Beginning to 1900.** (3-3) Yr. Mr. Dick, Mr. Smith
- 114C. **Contemporary Drama.** (2) II. Mr. Smith
- 114D-114E. **English Plays and Playwrights.** (3-3) Yr. Mr. Smith  
Prerequisite: English 46A-46B or Humanities 1A-1B.  
Designed primarily for students in the Theater Arts. The course will not satisfy the Type requirements for the English major. Students will not receive credit for both 114A-114B and 114D-114E.
115. **Primitive Literature.** (3) II. Mr. Buell, Mr. Jones  
The study of primitive types, such as the fable, folk tale, myth, legend, ballad, and hero tales, as to characteristics and theories of origin and diffusion. The comparative study of typical stories, and the work of collectors and adapters.
116. **The English Bible as Literature.** (2) II. Mr. Dearing
- 117J. **Shakespeare.** (3) I, II. The Staff  
A survey of from twelve to fifteen plays, with special emphasis on one chronicle, one comedy, and one tragedy.
118. **Children's Literature.** (3) II. Mrs. Vaughan
- 122A-122B. **English Poetry from the Beginning to the Present.** (3-3) Yr. Mr. Longueil

\* Not to be given, 1953-1954.

† See dagger (†) footnote on page 159.



- 125C-125D. **The English Novel from the Beginning to the Present.** (3-3) Yr.  
Mr. Booth, Mr. Jones
- 125G-125H. **English Prose from the Beginning to the Present.** (3-3) Yr.  
Mr. Buell, Mr. Ewing
- †130A. **Survey of American Literature.** (2) I, II. The Staff  
From the beginning through Poe.
- †130B. **Survey of American Literature.** (2) I, II. The Staff  
Emerson through Whitman.
- †130C. **Survey of American Literature.** (2) I, II. The Staff  
Mark Twain to the present.
- †131. **American Literature: the Flourishing of New England.** (3) I.  
Prerequisite: course 130A or consent of the instructor. Mr. Falk  
The study of such figures as Emerson, Hawthorne, Thoreau, Prescott, Longfellow, Lowell, and Holmes, with particular emphasis on the interaction between American and European literature and thought in the period.
133. **American Life in American Letters.** (3) I. Mr. Howard, Mr. Falk  
The main currents of thought in American life as reflected in literature.
135. **American Fiction.** (3) II. Mr. Booth  
The history of the American novel and short story from the beginning to the present day.
136. **American Humor and Satire.** (3) I. Mr. Ross  
From the colonial period to the twentieth century.
150. **Medieval Great Books.** (3) II. Mr. Matthews  
The study of some fifteen representative books of the period in translation, chosen for their historical importance and aesthetic value.
- 151L. **Chaucer.** (3) I, II. Mr. Longueil, Mr. Matthews
153. **Introduction to the Study of Poetry.** (3) I, II. Miss Nisbet
155. **Literary Criticism.** (3) II. Mr. Griggs
156. **The Age of Elizabeth.** (3) I, II. Mr. Kinsman, Mr. Dick, Mr. Phillips
157. **The Age of Milton.** (3) I. Mr. Meyer, Mr. Swedenberg
158. **The Age of Dryden.** (3) II. Mr. Hooker, Mr. Swedenberg
167. **The Age of Pope and Johnson.** (3) I, II. Mr. Hooker, Mr. Marcus
177. **The Romantic Age: 1784-1832.** (3) I, II. Mr. Longueil, Mr. Griggs
187. **The Victorian Age: 1832-1892** (3) I, II. Mr. Rolfe, Miss Nisbet
- 190A. **Literature in English from 1900.** (2) I. Mr. Ewing  
Criticism; the novel.
- 190B. **Literature in English from 1900.** (2) II. Mr. Ewing, Mr. Espey  
Poetry.

† See dagger (†) footnote on page 159.

## 197. Senior Survey. (3) II.

Mr. Phillips, Mr. Ewing

An integrated survey of English literature designed for the general student who is majoring in English but who has no professional interest in the subject and is not therefore required to take the comprehensive examination.

## \*199. Special Studies in English. (1-3) I, II.

Limited to seniors; may be taken only once for credit.

## COMPREHENSIVE FINAL EXAMINATION

The Comprehensive Final Examination is taken at the end of the senior year by majors working under Plan II and by English-speech majors. It will consist of one two-hour paper and one three-hour paper. The examination will cover English literature from the beginning to the present. The papers will be set by the examining committee of the department. The student's preparation for this examination will presumably extend throughout the entire college course. A portion of the examination will be based on the required section of the departmental reading list. Upon his passing the examination the grade assigned by the department will be recorded. The examination is given each semester—first semester December 8, 9; second semester May 11, 12.

Mr. Longueil in charge

## GRADUATE COURSES

## 200. Bibliography. (3) I, II.

Mr. Dearing, Mr. Dick, Mr. Phillips

## 211. Old English. (3) I.

Mr. Bird, Mr. Matthews

## 212. Middle English. (3) II.

Mr. Bird, Mr. Matthews

Prerequisite: course 211.

## 213. The Development of Modern English. (3) I.

Mr. Matthews

Prerequisite: course 212.

## 221. Medievalism. (3) II.

Mr. Matthews

## 222. The Renaissance. (3) II.

Mr. Dick

## 223A. Jacobean and Caroline Literature. (3) II.

Mr. Hooker

## 223B. Neo-Classicism. (3) I.

Mr. Swedenberg

## 224. Romanticism. (3) II.

Mr. Griggs

## 225. Victorianism. (3) I.

Mr. Griggs, Mr. Rolfe

## 226. American Literature. (3) I, II.

Mr. Falk, Mr. Howard, Mr. Ross

## 252A-252B. History of Literary Criticism. Seminar. (3-3) Yr. Mr. Griggs

## 260A, B, C. Studies in Old and Middle English. Seminar.

260A. Old English Poetry. (3) II.

Mr. Matthews

\*260B. Medieval English Poetry. (3) I.

Mr. Matthews

260C. Chaucer and His Contemporaries. (3) II.

Mr. Matthews

## 261. Studies in Fifteenth-Century and Early Tudor Literature. Seminar.

(3)

Mr. Kinsman

## 262A, B, C, D, E, F. Studies in Elizabethan Literature. Seminar.

262A. Shakespeare. (3) I.

Mr. Phillips, Mr. Smith

262B. Shakespeare. (3) II.

Mr. Phillips, Mr. Smith

\* Not to be given, 1953-1954.

- \*262C. Spenser. (3) II. Mr. Phillips  
 \*262D. Studies in Elizabethan and Jacobean Drama. (3) I. Mr. Smith  
 \*262E. Elizabethan Prose. (3) I. Mr. Buell  
 \*262F. Elizabethan Poetry. (3) II. Mr. Dick
- 263A, B, C, D, E, F. Studies in Seventeenth-Century Literature. Seminar.  
 \*263A. Trends in Seventeenth-Century Prose. (3) I. Mr. Hooker  
 \*263B. Trends in Seventeenth-Century Poetry. (3) II. Mr. Hooker  
 \*263C. Studies in Drama, 1660-1790. (3) I. Mr. Smith  
 263D. The Theory of Fiction, 1600-1700. (3) II. Mr. Rolfe  
 \*263E. Milton. (3) I. Mr. Swedenberg  
 263F. Dryden and His Contemporaries. (3) I. Mr. Hooker, Mr. Swedenberg
- 264A, B. Studies in Eighteenth-Century Literature. Seminar.  
 264A. Pope and His Contemporaries. (3) II. Mr. Hooker  
 \*264B. Studies in the English Novel. (3) I. Mr. Jones  
 \*264C. Johnson and His Contemporaries. (3) I. Mr. Hooker
- 265A, B, C, D. Studies in Nineteenth-Century Literature. Seminar.  
 \*265A. Coleridge and His Contemporaries. (3) II. Mr. Griggs  
 \*265B. Studies in Victorian Prose. (3) I. Mr. Griggs  
 \*265C. Studies in Victorian Poetry. (3) II. Mr. Griggs  
 265D. Studies in the English Novel. (3) II. Mr. Booth
- 266A, B. Studies in Contemporary Literature. Seminar.  
 266A. (3) I. Mr. Espey  
 266B. (3) II. Mr. Ewing
- 270A, B, C, D, E, F. Studies in American Literature. Seminar.  
 \*270A. American and European Literary Relations. (3) I. Mr. Howard  
 \*270B. American and European Literary Relations. (3) II. Mr. Howard  
 \*270C. American Literature and Its Intellectual Background. (3) I. Mr. Howard  
 \*270D. American Literature and Its Intellectual Background. (3) II. Mr. Howard  
 270E. American Literature and History. (3) I. Mr. Howard  
 270F. American Literature and History. (3) II. Mr. Howard
290. Special Problems. (1-6) I, II. The Staff

#### PROFESSIONAL COURSE IN METHOD

370. The Teaching of English. (3) I, II. Mr. Coulson  
 May be counted as part of the 18 units in education required for the secondary credential. Required of candidates for the general secondary credential with the field major in English and speech.

#### SPEECH

Students must have passed Subject A (either examination or course) before taking any course in speech. Regulations concerning Subject A will be found on page 28C of this bulletin.

*Preparation for the Major.*—Speech 1A, 1B, 3A, 3B with an average grade of C or higher; English 1A-1B, 46A-46B; History 7A-7B or 8A-8B; Psychology 1A, 1B.

*The Major.*—Plan I. For the general undergraduate: the program must include (a) Speech 106, 107, 110A, 111A; 135 or 137; (b) 9 units of electives in upper division courses in speech; (c) 6 units of electives in upper division

\* Not to be given, 1953-1954.

courses in each of two of the departments of Anthropology-Sociology, Economics, English, Linguistics and General Philology (170 and 171), History, Philosophy, Political Science, and Psychology, the courses to be approved by the departmental adviser.

**Plan II**—The field major in speech and English for the student taking the General Secondary Credential.

- (a) The completion of the following: (1) Speech 1A-1B, 3A-3B; (2) English 1A-1B, 46A-46B, History 7A-7B or 8A-8B, English 31 or 106L; English 117J; (3) 4 units from English †130A, †130B, †130C, 190A, 190B; (4) Speech 140; (5) 12 units selected, in consultation with the departmental adviser, from Speech 103, 106, 107, 110A (or 110B), 111A (or 111B), 122, 135 (or 137), 142A, 142B; (6) Theater Arts 103.
- (b) The attainment of a satisfactory level of skill in oral reading and public speaking.
- (c) The following courses, ordinarily to be taken in graduate year, complete the Speech requirements for the General Secondary Credential: Speech 370; 6 units from Speech 211, 260, 270.

The field minor in speech and English for the General Secondary Credential will consist of the following courses: (1) Speech 1A-1B, 3A, 3B; (2) English 1A-1B; (3) 6 units in speech from one of the following sequences: (a) 106, 107, 110A, (b) 111A, 111B, 122, (c) 103, 140, 141, 142A, 142B.

For the field major and the field minor in English and speech, see page 159.

#### *Requirements for the Special Secondary Credential in Speech Correction.*

1. For general requirements see the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

2. Specific course requirements: Speech 103, 140, 142A, 142B; Psychology 161 (or 169), 162; Education SC 376.

#### *Requirements for Admission to Graduate Courses.*

A bachelor's degree with a major consisting of at least 24 upper division units in Speech or Speech and English or Speech and Drama. (No graduate student may take a graduate course in Speech who has to his credit fewer than 12 units in Speech or the above combinations.) This requirement is prerequisite to the 24 units demanded for the master's degree. If the candidate is deficient in this prerequisite, he must fulfill it by work undertaken as a graduate student.

#### *Requirements for the General Secondary Credential.*

Consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

#### *Requirements for the Master's Degree.*

1. For the general requirements, see page 60. The department follows Plans I and II as described on page 61. The Master's Comprehensive Examination consists of four written examinations, each one hour and a half long. These examinations are given toward the end of each semester.

2. Departmental requirements. (a) Students are required to take the reading test in one foreign language in the first semester of residence and a speech proficiency examination. Graduates of this university will be allowed to meet the second requirement by showing a "B" grade in both Speech 110A (or 110B) and Speech 111A (or 111B). (b) They must complete the requirements under either Plan I or Plan II as outlined below. *Plan I*: 9 units of graduate speech courses selected from two fields; 5 units of speech courses, either graduate or upper division; 6 units in related courses, other than speech, either graduate or upper division, chosen in consultation with graduate adviser; thesis.

† See dagger (†) footnote on page 159.

**Plan II:** 9 units of graduate speech courses selected from two speech fields; 3 units of speech 280; 6 units of speech courses, either graduate or upper division; 6 units in related courses, other than speech, either graduate or upper division, chosen in consultation with the graduate adviser; comprehensive examination.

If a student has allowed seven years or more to elapse since taking a course or examination to meet the requirements for a graduate degree, it will be necessary to have such a course or examination validated by the department before he can proceed toward completion of the requirements.

*Requirements for the Special Secondary Credential in Speech Correction.*

1. For general requirements see the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION.
2. Specific course requirements: Speech 103, 140, 142A, 142B; Psychology 161 (or 169), 162; Education SC375.

#### LOWER DIVISION COURSES

- 1A. Elements of Public Speaking.** (3) I, II. The Staff  
The principles and practice of effective speech composition and delivery.
- 1B. Elements of Public Speaking.** (3) I, II. The Staff  
Prerequisite: course 1A.  
Application of the principles of effective speech composition and delivery to group discussion and public address.
- 3A. Basic Voice Training.** (3) I, II. The Staff  
Voice physiology, phonetics, and voice drills.
- 3B. Elementary Interpretation.** (3) I, II. The Staff  
Prerequisite: course 3A.  
Development of the student's ability to communicate prose and poetry orally with understanding and appreciation.

#### UPPER DIVISION COURSES

- 103. Phonetics.** (3) II. Mr. Hargis  
Prerequisite: consent of the instructor.  
A study of the physical production and acoustic characteristics of the sounds of American English; modifications of the sounds in connected speech; extensive practice in phonetic recording of general American speech and its deviate forms.
- 106. Principles and Types of Public Discussion.** (3) I. Mr. Andersen  
Prerequisite: course 1B or consent of the instructor.  
Analysis of the purposes, principles, and types of public discussion. Practice in organizing group discussion.
- 107. Principles of Argumentation.** (3) II. Mr. Lewis  
Prerequisite: course 1B or consent of the instructor.  
Analysis of propositions, tests of evidence, briefing. Study of hindrances to clear thinking, of ambiguity of terms, or prejudice.
- 110A. Problems of Audience Analysis.** (3) I. Mr. Lewis, Mr. Lomas  
Prerequisite: course 1B or the equivalent.  
Theory of audience analysis and adaptation. Preparation and delivery of the occasional speech.
- 110B. Analysis of Style in Speech Composition.** (3) II. Mr. Lewis, Mr. Lomas  
Prerequisite: course 1B or the equivalent (course 110A is not prerequisite).  
Preparation and delivery of special forms of public address.

- 111A. Theories and Techniques of Interpretation.** (3) I, II. Mr. Hargis, Mr. Vandraegen  
Prerequisite: course 3A-3B or the equivalent.  
A study of the schools, principles, and techniques of oral interpretation.
- 111B. Oral Interpretation of Literature.** (3) I, II. Mr. Vandraegen  
Prerequisite: course 3B or the equivalent, and consent of the instructor.  
The understanding and appreciation of literature through training in the oral communication of various literary forms.
- 122. Diction and Voice.** (3) I, II. Mr. Karr  
Prerequisite: courses 1A and 3A, or the equivalent.  
Advanced studies in breath control, tone production, voice projection, articulation, and pronunciation.
- 135. History of British Public Address.** (3) I. Mr. Lomas  
Critical study of speeches by leading British orators from the eighteenth century to the present time. Relationship of speakers to issues and social movements of their day.
- 137. History of American Public Address.** (3) II. Mr. Lomas, Mr. Richardson  
Critical study of speeches by leading American orators from the colonial period to the present time. Relationship of speakers to issues and social movements of their day.
- 140. Principles of Speech Correction.** (2) I, II. Mrs. Hahn  
Problems and methods of correcting speech defects; required course for Special Secondary Credential in Speech Correction.
- 141. Speech Correction for the Deaf.** (2) II. Mr. Lewis  
Experiments with techniques calculated to promote in the deaf intelligible and natural vocal control.
- 142A. Methods of Speech Correction.** (2) I, II. Mrs. Hahn  
Prerequisite: Speech 140, Psychology 162; the latter course may be taken concurrently.  
Observation of methods in the Speech Clinic of the Psychological Clinic.
- 142B. Methods of Speech Correction.** (2) I, II. Mrs. Hahn, Mr. Sheehan  
Prerequisite: Speech 142A.  
Practice in methods in the Speech Clinic of the Psychological Clinic.
- 170. Introduction to Oratory.** (3) II. Mr. Lewis, Mr. Lomas  
Study of ancient oratory.
- 190A-190B. Forensics.** (1-1) Yr. Mr. Lewis, Mr. Murray  
Prerequisite: consent of the instructor.
- GRADUATE COURSES**
- 204. The Development of Speech in the Child.** (3) I. Mrs. Hahn
- 207. Forms and Methods of Argumentation.** (3) II. Mr. Lewis
- 211. Backgrounds and Theories of Oral Interpretation.** (3) I. Mr. Hargis, Mr. Vandraegen  
Analysis of traditional theories of oral interpretation from Quintilian to the present time; their relation to contemporary theories; special problems in interpretation.
- 250. Problems in Analysis of Materials for Oral Interpretation.** (3) II. Mr. Hargis, Mr. Vandraegen
- 260. Problems in Analysis and Criticism of Speeches. Seminar.** (3) I. Mr. Lomas

270. Problems in Speech Correction. Seminar. (3) II.

Mrs. Hahn

## PROFESSIONAL COURSES IN METHOD

290. Individual Directed Research. (3) I, II.

The Staff

370. The Teaching of Speech. (3) I, II.

Mr. Phelps

May be counted as part of the 18 units in education required for the secondary credential. Required of candidates for the general secondary credential with the field major in speech and English.

## ENTOMOLOGY

John N. Belkin, Ph.D., *Associate Professor of Entomology.*Walter Ebeling, Ph.D., *Associate Professor of Entomology (Vice-Chairman of the Department).*Roland N. Jefferson, Ph.D., *Associate Professor of Entomology.*Leland R. Brown, Ph.D., *Assistant Professor of Entomology.*

*The Major.*—The major is offered on the Berkeley and Davis campuses. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in agriculture.

## UPPER DIVISION COURSES

100. General Entomology. (4) II.

Mr. Belkin

Lectures, two hours; laboratory, six hours.

The classification, life history, structure, and physiology of insects.

112A. Systematic Entomology. (3) I.

Mr. Belkin

Lectures, three hours.

History and principles of classification; taxonomic categories and procedure; nomenclature, bibliographical methods; museum practices. Offered in alternate years.

126. Medical Entomology. (4) II.

Mr. Belkin

Lectures, two hours; laboratory, six hours.

The role of insects and other arthropods in the transmission and causation of diseases of humans and other warm-blooded vertebrates; their structure, classification, and life history. Principles of vector control.

134. Insects Affecting Subtropical Fruit Plants. (4) II.

Mr. Ebeling

Lectures, two hours; laboratory, six hours. Weekly field trips during the last half of the course.

Biology, economic importance, and control of insects affecting citrus and other subtropical fruit plants. Insecticides; spraying, dusting, and fumigating methods and equipment.

\*144. Insects Affecting Ornamental Plants and Flower Crops. (4) II.

Mr. Jefferson, Mr. Brown

Lectures, three hours; laboratory, three hours. Several field trips.

Biology, economic importance, and control of insects affecting field flower crops, greenhouse and nursery plants, and ornamental trees and shrubs. Insecticides; spraying, dusting, and fumigating methods and equipment.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

The Staff

Prerequisite: senior standing and consent of the instructor.

## GRADUATE COURSE

283A-283B. Research in Entomology. (2-6; 2-6) Yr.

The Staff

\* Not to be given, 1953-1954.

**FLORICULTURE AND ORNAMENTAL HORTICULTURE**

Vernon T. Stoutemyer, Ph.D., *Professor of Ornamental Horticulture and Assistant Director of the Botanical Garden (Chairman of the Department).*

B. Lennart Johnson, Ph.D., *Associate Professor of Ornamental Horticulture.*  
 \_\_\_\_\_, *Assistant Professor of Floriculture.*

Anton M. Kofranek, Ph.D., *Assistant Professor of Floriculture.*

*Preparation for the Major.*—Required courses, or the equivalent: Chemistry 1A, 1B, 8; Botany 1, 107; Entomology 144; Irrigation and Soils 126 and 105 or 110A.

Recommended courses, or the equivalent: Botany 3 or 151; Plant Pathology 140; Agricultural Economics 101A; Subtropical Horticulture 2, 110.

*The Major.*—Twelve units of upper division courses in the major, including Floriculture and Ornamental Horticulture 131A or 131B, 136, and 139.

**UPPER DIVISION COURSES**

**131A–131B. Taxonomic Classification and Ecology of Ornamental Plants.**

(3–3) Yr.

Mr. Stoutemyer

Lectures, two hours; laboratory, three hours; several field trips. Prerequisite: Botany 1 or equivalent.

The botanical classification, relationships, and identification of the more important ornamental plants in southern California with special emphasis on their environmental requirements and adaptations.

**136. General Floriculture. (4) II.**

Mr. Kofranek

Lectures, two hours; laboratory, six hours; several field trips. Prerequisite: Subtropical Horticulture 2 and Botany 107, or the equivalent.

Principles and practices of general floriculture, with special reference to the more important flower crops grown in California.

**\*139. Advanced Floriculture. (4) I.**

Lectures, two hours; laboratory, six hours. Prerequisite: course 136 or the equivalent.

The basic practices in floricultural crop production from an experimental and physiological standpoint, including photoperiod, temperature, nutrition, and water relations.

**\*146. Plant Breeding. (3) II.**

Mr. Johnson

Lectures, two hours; laboratory, three hours. Prerequisite: Botany 140 or the equivalent.

Applications of genetics and cytogenetics to the breeding of horticultural plants.

**148. Design and Analysis of Horticultural Experiments. (3) II.**

Mr. Johnson

Lectures, two hours; laboratory, three hours. Prerequisite: Statistics 1 or the equivalent.

Principles of experimental design including tests of significance, analysis of variance and covariance; types of designs, including randomized blocks, Latin squares, factorial and other designs.

**199A–199B. Special Study for Advanced Undergraduates. (2–4; 2–4) Yr.**

Prerequisite: senior standing and consent of the instructor. The Staff

\* Not to be given, 1953–1954.



GRADUATE COURSES

- 260A-260B. Seminar in Floriculture. (2-2) Yr. The Staff  
 266A-266B. Research in Ornamental Horticulture. (2-6; 2-6) Yr. The Staff

**FOLKLORE**

Wayland D. Hand, Ph.D., *Professor of German and Folklore.*

*Letters and Science List.*—Course 145 is included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

UPPER DIVISION COURSE

145. Introduction to Folklore. (3) II. Mr. Hand  
 Prerequisite: 6 units of upper division work in anthropology, English, French, German, Italian, or Spanish. A reading knowledge of a foreign language is desirable, but not prerequisite to the course.  
 The various fields of folklore, their literature, and problems.

GRADUATE COURSE

- \*245. The Folk Tale. (2) II. Mr. Hand  
 Prerequisite: course 145 or its equivalent.

RELATED COURSES IN OTHER DEPARTMENTS

- Anthropology 127. Primitive Art. (3) I. Mr. Brainerd  
 Anthropology 130. Literature of Pre-literate Peoples. (3) II. Mr. Hoijer  
 English 115. Primitive Literature. (3) II. Mr. Buell  
 German 147. German Folk Song. (2) II. Mr. Arlt  
 Music 136. Folk Music. (2) I. Mr. Petran  
 Music 264. Seminar in Comparative Musicology. (2) II. Mr. Petran  
 Physical Education 155. Folk Festivals. (2) I. Miss Jacobs  
 Spanish 108. The Folk Song in Spain and Spanish America. (1) I. Mr. Corbató, Mr. Crow

**FOREIGN LITERATURE IN TRANSLATION**

The following courses offered in the departments of language and literature do not require a reading knowledge of any foreign language:

- Classics* Classics 113. Ancient Drama. (3) I.  
 \*Greek 180A-180B. A Survey of Greek Literature in English. (2-2)  
 Latin 180A-180B. A Survey of Latin Literature in English. (2-2)  
*English* \*4A. Great Books: Dramatic Comedy. (1)  
 \*4B. Great Books: Dramatic Tragedy. (1)  
 4C. Great Books: The English Novel. (1)  
 4D. Great Books: The Continental Novel. (1)  
 \*4E. Great Books: Lyric Poetry. (1)  
 \*4F. Great Books: Narrative Poetry. (1)  
 \*4G. Great Books: Famous Utopias. (1)

\* Not to be given, 1953-1954.

- \*4H. Great Books: Great Satirists.  
 \*113. Chief European Dramatists before 1850. (2)  
 150. Medieval Great Books. (3)  
*French* 109M-109N. A Survey of French Literature and Culture. (3-3)  
 110. Nineteenth-Century French Novel in Translation. (2) I.  
*German* 121A-121B. German Literature in Translation. (2-2)  
*Humanities* 1A-1B. World Literature. (3-3)  
*Italian* \*152A-152B. English Approach to Italian Literature. (3-3)  
*Oriental Languages* 112. Chinese Literature in Translation. (2)  
 132. History of Japanese Literature. (2)  
*Scandinavian* 141A-141B. Scandinavian Literature in English Translation  
 (2-2)  
*Slavic Languages* 130. Survey of Russian Literature to 1917. (3)  
 132. Russian Literature Since 1917. (3)  
 \*137. The Russian Drama. (3)  
 143A-143B. Russian Novelists of the Nineteenth Century.  
 (2-2)  
 \*145. Tolstoy. (3)

## FRENCH

- Gabriel Bonno, Docteur ès Lettres, Professor of French (*Acting Chairman of the Department, fall semester*).  
 Francis J. Crowley, Ph.D., Professor of French.  
 William A. Nitzze, Ph.D., L.H.D., Professor of French, Emeritus.  
 \* Myron Irving Barker, Ph.D., Associate Professor of French (*Chairman of the Department*).  
 Alexander Green Fite, Ph.D., Associate Professor of French.  
 \* Clinton C. Humiston, Ph.D., Associate Professor of French.  
 L. Gardner Miller, Docteur de l'Université de Strasbourg, Associate Professor of French.  
 Marius Ignace Biencourt, Docteur de l'Université de Paris, Assistant Professor of French.  
 Oreste F. Pucciani, Ph.D., Assistant Professor of French.  
 Walter Staaks, Ph.D., Assistant Professor of French.  
 Leland J. Thielemann, Ph.D., Assistant Professor of French.  
 Kernan B. Whitworth, Jr., Ph.D., Assistant Professor of French.  
 Harry F. Williams, Ph.D., Assistant Professor of French.  
 James Rush Beeler, M.A., Associate in French.  
 Madeleine Letessier, A.B., Associate in French.

*Letters and Science List.*—All undergraduate courses in French except 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—French 1, 2, 3, and 4 or 25A-25B, 42A-42B, or their equivalents. Prospective candidates for the M.A. degree or for a teaching credential must have completed Latin 2 or its equivalent before receiving the A.B. degree. Courses in European history, literature, and philosophy, and in an additional foreign language, are strongly recommended.

*The Major.*—Required: 24 units of upper division French, including courses 101A-101B, 109A-109B, 112A-112B or 113A-113B, and at least one other year course in literature (except 112A-112B and 113A-113B).

\* Not to be given, 1958-1954.

<sup>1</sup> In residence fall semester only, 1958-1954.

<sup>2</sup> In residence spring semester only, 1958-1954.

Any of the remaining upper division courses except those so designated may be applied on the major. With the permission of the department 4 units of the 24 may be satisfied by appropriate upper division courses in English, German, Greek, Latin, Spanish, Italian.

Students intending majors in French must consult a departmental counselor before registering for French courses in the upper division.

#### LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or such students may be transferred to a more advanced course by recommendation of the instructor.

1. **Elementary French.** (4) I, II. Mr. Humiston in charge  
Sections meet five hours weekly.

1G. **Reading Course for Graduate Students.** (No credit) I, II.  
Mr. Williams in charge

2. **Elementary French.** (4) I, II. Mr. Humiston in charge  
Sections meet five hours weekly.  
Prerequisite: course 1 or two years of high school French.

3. **Intermediate French.** (4) I, II. Mr. Humiston in charge  
Sections meet five hours weekly.  
Prerequisite: course 2 or three years of high school French.

4. **Intermediate French.** (4) I, II. Mr. Crowley in charge  
Sections meet four hours weekly.  
Prerequisite: course 3 or four years of high school French.

8A-8B-8C-8D. **French Conversation.** (1-1) Beginning each semester.  
Miss Letessier in charge

The class meets two hours weekly. Open to students who have completed course 2 or its equivalent with grade A or B.

25A-25B. **Advanced French.** (3-3) Yr. Mr. Miller  
Prerequisite: course 3 or 4.

42A-42B. **French Civilization.** (2-2) Yr. Mr. Whitworth  
Historical, economic, geographic, cultural and other elements of civilization as developed in France from the beginnings to the present time.

#### UPPER DIVISION COURSES

The prerequisite to all upper division courses except 109M, 109N, and 110 is 16 units in the lower division, including course 4, or 25A-25B.

Courses 42A-42B, 101A-101B, 109A and 109B are ordinarily prerequisite to other upper division courses; but a student whose major is not French may be admitted to any upper division course by permission of the instructor.

All upper division courses, except where so designated, are conducted mainly in French.

101A-101B. **Composition, Oral and Written.** (3-3) Yr. Beginning either semester.  
Mr. Biencourt in charge

Introduction to stylistic elements of French, further training in pronunciation and practice in oral and written French.

107A-107B. **French Phonetics.** (2-2) Yr. Mr. Pucciani  
Prerequisite: consent of the instructor.

French pronunciation, diction, intonation in theory and practice; phonetic transcription, phonetic evolution of the modern language; remedial exercises; recordings.

- 109A. Survey of French Literature and Culture. (3) I.** Mr. Biencourt  
Open to majors in Romance Languages, and others sufficiently prepared, with the consent of the instructor. Not open to students who have taken or are taking courses 109M, 109N.  
The Middle Ages, the Renaissance, and the seventeenth century.
- 109B. Survey of French Literature and Culture. (3) II.** Mr. Biencourt  
Prerequisite: course 109A.  
The eighteenth, nineteenth, and twentieth centuries.
- 109M. A Survey of French Literature and Culture. (3) I.** Mr. Humiston  
Given in English; does not count on the major in French. Not open to French majors or to students who have taken or are taking course 109A-109B.  
The Middle Ages, the Renaissance, and the seventeenth century.
- 109N. A Survey of French Literature and Culture. (3) II.** Mr. Barker  
Prerequisite: course 109M.  
The eighteenth, nineteenth, and twentieth centuries.
- \*110. Nineteenth-Century French Novel in English Translation. (2) I.** Mr. Barker  
Readings in Stendhal, Balzac, Flaubert, Maupassant, Zola, etc. Knowledge of French not required. Not open to French majors.
- 112A-112B. The Nineteenth Century. (2-2) Yr.** Mr. Miller  
Lyric poetry, the short story, literary criticism, social movements, and philosophy in the nineteenth century.
- \*113A. The Nineteenth-Century French Theater. (2) I.** Mr. Staaks  
Lectures and readings in the romantic and realist drama and the comedy.
- \*113B. The Nineteenth-Century French Novel. (2) II.** Mr. Barker  
Lectures and readings in the romantic, realist and naturalist novel.
- 114A-114B. Contemporary French Literature. (2-2) Yr.** Mr. Pucciani  
The French novel, poetry, and essay since 1885. Symbolism, surrealism, existentialism. Bourget, Barrès, Rimbaud, Mallarmé, Gide, Proust, Apollinaire, Valéry, Cocteau, Romain, Giraudoux, Mauriac, Malraux, Sartre, and others.
- 115A-115B. Modern French Drama. (2-2) Yr.** Mr. Fite  
Outstanding plays of the last half-century. *Le Théâtre d'idées en France*, Porto-Riche, Maeterlinck, Claudel, Romain, Lenormand, Raynal, Sarment, Sartre, and others.
- 118A-\*118B. The Renaissance. (2-2) Yr.** Mr. Humiston  
Evolution of thought in the sixteenth century as represented by Rabelais, Marot, Calvin, Marguerite de Navarre, the *Pléiade*, Montaigne, and others.
- 120A-120B. The Seventeenth Century. (2-2) Yr.** Mr. Bonno  
The classical ideal. The study of human nature, reason, will, passions in the literature of the seventeenth century.
- 121A-121B. The Eighteenth Century. (2-2) Yr.** Mr. Crowley  
121A. Readings and discussions of the outstanding works of the literature and thought of the period (1680-1789) omitting Voltaire and Rousseau.  
121B. Limited to study of Voltaire and Rousseau.
- \*124. Readings in the Works of Rousseau. (2) I.** Mr. Thielemann  
Study of the principal literary and philosophical writings with special emphasis on the background of Rousseau's thought.

\* Not to be given, 1953-1954.

\*125. **Gustave Flaubert, the Romantic and the Realist. (2) II.** Mr. Miller  
Readings and discussions of the author's early writings and of *Madame Bovary*, *Salammbô*, *L'Education Sentimentale*, *La Tentation de St. Antoine* and *Bouvard et Pecuchet*.

130A-130B. **Grammar, Composition, and Style. (3-3) Yr.** Mr. Fite  
Prerequisite: an average grade of C or better in French courses. This course is required of all candidates for the certificate of completion of the teacher-training curriculum, or for the degree of Master of Arts.

Cours de Style. Study of phonetics, morphology, and syntax of the modern French language. Historical development of certain elements of modern grammar. Original composition and oral practice.

199A-199B. **Special Studies in French. (2-2) Yr.** The Staff  
Prerequisite: consent of the instructor. Guided readings and reports.

## GRADUATE COURSES

Prerequisite for candidates for the M.A. degree or a teaching credential: the bachelor's degree in French, including a year of college Latin, or its equivalent.

204A-204B. **Studies in Voltaire. (2-2) Yr.** Mr. Crowley  
A study of various phases of Voltaire—the dramatist, the poet, the social reformer, the thinker, the historian, the iconoclast, etc. Investigation of related problems.

206A-206B. **Old French Readings. (2-2) Yr.** Mr. Williams  
*Roland*, *Marie de France*, *Chrétien de Troyes*, *Aucassin et Nicolette*.

218A-218B. **French Classicism. (2-2) Yr.** Mr. Bonno

219A. **Studies in Romanticism. (2) II.** Mr. Barker  
Studies in the origins and development of the various facets of Romanticism with particular reference to the works of Stendhal and the liberals.

†219B. **Studies in Romanticism and Realism. (2)** Mr. Barker  
Studies in the decline of the romantic ideal and the rise of realism with particular reference to the works of Balzac.

\*219C. **Studies in Realism. (2)** Mr. Barker  
Studies in the evolution of realism as represented in the works of Monnier, Duranty, Champfleury, et al., but with particular reference to the works of Flaubert.

220. **Explication de Textes. (2) I.** Mr. Bonno

228A-228B. **French Poetry from Baudelaire to the Present. (2-2) Yr.** Mr. Pucciani

235. **Methods of Literary Research with Special Reference to Bibliography. (1) II.** Mr. Bonno

256A-\*256B. **Sixteenth-Century French Poetry. (2-2) Yr.** Mr. Humiston

\*257A-257B. **The Sources of French Tragedy. (2-2) Yr.** Mr. Humiston  
Greek, Latin, and Italian theoreticians of tragedy and their influence on the writers of tragedy in the sixteenth century.

290. **Research in French. (1-6) I, II.** The Staff  
Prerequisite: consent of the instructor.

\* Not to be given, 1953-1954.

† Not to be given, 1953-1954; to be given, 1954-1955.

- 298A-298B. **Problems of Literary Criticism.** (2-2) Yr. Mr. Fite  
Intensive study and analysis of a single author in the modern field of French literature. Examination of sources and influences.

PROFESSIONAL COURSE IN METHOD

370. **The Teaching of French.** (3) I. Mr. Miller  
Prerequisite: courses 101A-101B and 109A-109B, the latter being permitted concurrently. Required of all candidates for the certificate of completion in French; should be completed before practice teaching.

RELATED COURSES IN ANOTHER DEPARTMENT (See page 302)

- Romance Languages and Literature 201A-201B. French Historical Grammar and Methodology of Romance Linguistics.** (2-2) Yr. Mr. Williams  
**Romance Languages and Literature 203A-203B. Old Provençal: Reading of Texts.** (2-2) Yr. Mr. Williams

## GEOGRAPHY

- Ruth Emily Baugh, Ph.D., *Professor of Geography.*  
†Robert M. Glendinning, Ph.D., *Professor of Geography.*  
Joseph E. Spencer, Ph.D., *Professor of Geography (Chairman of the Department).*  
Frank E. Williams, Ph.D., *Visiting Professor of Geography.*  
Clifford M. Zierer, Ph.D., *Professor of Geography.*  
George McCutchen McBride, Ph.D., *Professor of Geography, Emeritus.*  
Henry J. Bruman, Ph.D., *Associate Professor of Geography.*  
\*Clifford H. MacFadden, Ph.D., *Associate Professor of Geography.*  
Harry P. Bailey, Ph.D., *Assistant Professor of Geography.*  
John F. Gaines, Ph.D., *Assistant Professor of Geography.*  
H. Louis Kostanick, Ph.D., *Assistant Professor of Geography.*  
Richard F. Logan, Ph.D., *Assistant Professor of Geography.*  
Howard J. Nelson, Ph.D., *Assistant Professor of Geography.*  
\*Benjamin E. Thomas, Ph.D., *Assistant Professor of Geography.*  
Myrta L. McClellan, M.A., *Assistant Professor of Geography, Emeritus.*

*Letters and Science List.*—All undergraduate courses in geography are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

Two principal objectives may be recognized for those who select geography as a major: (1) *professional* training in the subject and preparation for graduate study, and (2) *semiprofessional* training for the student who wishes to gain a broad understanding of the world and its people. Most courses in the department are designed to meet the needs of both groups of students but some are offered primarily to meet the special requirements of students who plan to make professional use of geography.

*Preparation for the Major.*—Geography 1A-1B, 3, and 4 are required of all majors. In addition, Geology 2, or 5, or 101 is required of professional majors. Introductory courses in anthropology, botany, economics, geology, history, political science, and the modern foreign languages are recommended for all majors.

*The Major.*—The minimum requirement for all majors is 30 units of upper division work in geography.

\* Absent on leave, 1953-1954.

† Sabbatical leave in residence, 1953-1954.

*Professional majors* are required to take as Group I: Geography 101, 105, 115, 175; and three courses from Group II: Geography 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 126, 131; plus three courses from Group III: Geography 113, 118, 141, 142, 155, 161, 165, 171, 173, 181.

*Semiprofessional majors* are required to take as Group I: Geography 115 and 175; and normally four courses from Group II: Geography 121, 122A, 122B, 123A, 123B, 124A, 124B, 125, 126, 131; plus four courses from Group III: Geography 101, 105, 113, 118, 141, 142, 155, 161, 165, 171, 173, 181.

A list of upper division courses in other departments recommended for geography majors may be secured from the departmental advisers. The development of some competence in an allied subject is recommended for professional majors.

LOWER DIVISION COURSES

1A. Introduction to Geography: Physical Elements. (3) I, II.

Mr. Bailey, Mr. Gaines, Mr. Kostanick

Students who have had course 5A or 100 will receive only half credit for course 1A.

A study of the basic physical elements of geography (especially climate, land forms, soils, and natural vegetation), and their integrated patterns of world distribution.

1B. Introduction to Geography: Cultural Elements. (3) I, II.

Mr. Bruman, Mr. Kostanick, Mr. Nelson

Prerequisite: course 1A or 5A. Students who have had course 5B or 100 will receive only half credit for course 1B.

A study of the basic cultural elements of geography (population distribution, general land-use patterns, and trade) and their correlation with the physical elements. Delimitation of the major geographic regions of the world.

3. Introduction to Climate and Weather. (3) I, II.

Mr. Bailey

A survey of the earth's atmospheric phenomena, with special reference to the causes and regional distribution of climate and weather.

4. Map Reading and Interpretation. (2) I, II.

Mr. Gaines

Lecture, one hour; laboratory, two hours.

A study of maps in the light of present-day needs, with special emphasis on the geographic interpretation of relationships between the natural and cultural phenomena in representative areas. Includes history of maps, map projections, aerial photographs, and practice in the reading of selected domestic and foreign maps.

5A. Economic Geography. (3) I, II.

Mr. Nelson

Not open to students who have credit for course 1A-1B. Students who have credit for course 1A or 100 will receive only 1½ units of credit for course 5A.

A study of those physical and cultural elements of the environment essential to the geographic interpretation of economic activities.

5B. Economic Geography. (3) I, II.

Mr. Nelson

Prerequisite: course 1A, or 5A, or 100. Students who have credit for course 1B will receive only half credit for course 5B.

The principles of economic geography as developed through studies of representative occupations, commodities, and trade.

UPPER DIVISION COURSES

100. Principles of Geography. (3) I, II.

Mr. Bailey

Prerequisite: senior standing, or candidacy for a teaching credential. Not open to those who have credit for course 1A-1B or 5A-5B; may not be counted on the major in geography.

A brief survey of the fundamental physical and cultural elements of geography and their integration on a world-wide regional basis.

*Technique Courses*

- 101. Fundamentals of Geographic Field Work.** (3) I, II. Mr. Logan  
 Tuesday and Thursday afternoons in the fall semester, and Saturdays in the spring semester. Prerequisite: course 1A-1B or 5A-5B, and consent of the instructor. To be taken by major students normally in the junior year.  
 Selected field studies in the Los Angeles area. The course affords training in field mapping of rural and urban types and in techniques of area analysis.
- 105. Cartography.** (3) I, II. Mr. Gaines  
 Prerequisite: course 4 and one of the following: 1A-1B, or 5A-5B, or 100, or consent of the instructor.  
 Practical map drawing and graphic representation of geographic data.

*Physical Geography*

- 113. General Climatology.** (3) II. Mr. Logan  
 Prerequisite: course 3 and one of the following: 1A-1B or 5A-5B, or 100, or consent of the instructor. To be taken by major students normally in the junior year.  
 A study of the causes of climatic phenomena and of the larger features which characterize the climates of the earth.
- 115. Physical Bases of Geography.** (3) I, II. Mr. Glendinning  
 Prerequisite: course 1A-1B or 5A-5B. One or two field trips may be required. To be taken by major students in the junior year; by others in either the junior or senior year.  
 A study of the basic physical factors existing in each of the major geographic realms, with special emphasis on the interrelationships of climates, land forms, soils, drainage, and natural vegetation.
- 118. Plant Geography.** (3) II. Mr. Gaines  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 Character, distribution, and environmental relationships of the principal vegetation regions of the world.

*Regional Courses*

- 121. The Geography of Anglo-America.** (3) I. Mr. Zierer  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 Delimitation and analysis of the principal economic geographic divisions of the United States, Canada, and Alaska.
- 122A. The Geography of Middle America.** (3) I. Mr. Bruman  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of Middle America and of the contemporary economic and social geography of Mexico and the countries of Central America and the West Indies.
- 122B. The Geography of South America.** (3) II. Mr. Bruman  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 A study of the geographic factors, physical and cultural, that are basic to an understanding of the historical development of South America and of the contemporary economic and social geography of the individual South American countries.
- 123A. The Geography of Western Europe.** (3) I. Miss Baugh  
 Prerequisite: course 1A-1B, or 5A-5B, or 100.  
 A study of geographic conditions and their relation to economic, social, and political problems in the Atlantic states of Europe. Emphasis on France, Germany, the British Isles, Scandinavia, and the Benelux Countries.



- 123B. The Geography of Eastern and Southern Europe. (3) II.** Miss Baugh  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
A study of geographic conditions and their relation to economic, social, and political problems in eastern and southern Europe. Emphasis in the European area of the U.S.S.R., the Danubian Basin, Balkan Peninsula, and Italy.
- \*124A. The Geography of Southern Asia. (3) I.** Mr. MacFadden  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
A regional survey of the physical and cultural features which characterize the economic, social, and political geography of southern Asia (India through the East Indies) during historic and modern times.
- 124B. The Geography of Eastern Asia. (3) II.** Mr. Spencer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
A regional survey of the physical and cultural features which characterize the economic, social, and political geography of eastern Asia (China, Korea, and Japan).
- \*125. The Geography of Australia and Oceania. (3) II.** Mr. Zierer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
A regional synthesis of the physical and human features which characterize Australia and New Zealand, Hawaii, and the islands of the South Pacific.
- \*126. The Geography of Africa. (3) II.** Mr. Thomas  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
The regions of Africa in terms of physical features, human settlement, economic production, and political patterns.
- 131. The Geography of California. (3) I, II.** Miss Baugh  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
An analysis of geographic conditions in the seven major provinces of California. Utilization of resources, routes of communication, location of settlements, and distribution of population in their geographical and historical aspects.
- Cultural Geography*
- 141. Commercial Geography. (3) I.** Mr. Nelson  
Prerequisite: course 1A-1B, or 5A-5B, or 100, or consent of the instructor.  
Analysis of the geographic distribution of basic raw materials in relation to world trade centers and trade routes.
- 142. Industrial Geography. (3) II.** Mr. Nelson  
Prerequisite: course 1A-1B, or 5A-5B, or 100, or consent of the instructor.  
Analysis of the distribution of the manufacturing industries.
- 155. Urban Geography. (3) II.** Mr. Nelson  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
A study of the location, form, and functional evolution of cities.
- 161. The Conservation of Natural Resources. (3) I.** Mr. Zierer  
Prerequisite: course 1A-1B, or 5A-5B, or 100, or the consent of the instructor.  
The general principles of conservation and their application, especially in the United States.
- \*165. Geographical Aspects of Land Planning. (3) I.** Mr. Glendinning  
Prerequisite: course 1A-1B, or 5A-5B, and consent of the instructor.  
Normally limited to ten students.  
A study of the role of geographic discipline in land-planning activities.

\* Not to be given, 1953-1954.

- 171. Historical Geography of Anglo-America. (3) II.** Mr. Zierer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
The geography of the major divisions of the United States and Canada at selected times in the past.
- \*173. The Historical Geography of the Mediterranean Region. (3) II.**  
Prerequisite: course 1A-1B, or 5A-5B, or 100. Miss Baugh  
A study of the geographic factors operative in the Mediterranean lands from ancient to modern times.
- 175. The Cultural Bases of Geography. (3) I, II.** Mr. Bruman, Mr. Spencer  
Prerequisite: course 1A-1B, or 5A-5B, or 100.  
The geographic factor in the evolution of primitive cultures and of advanced civilizations.
- 181. Political Geography. (3) I, II.** Mr. Kostanick  
Prerequisite: course 1A-1B, or 5A-5B, or 100, or consent of the instructor.  
The principles of political geography as developed through regional studies of political phenomena throughout the world. Current problems in domestic and international affairs will be considered.

*Research*

- 199. Problems in Geography. (3) I, II.** The Staff  
Open to seniors and graduate students who have the necessary preparation for undertaking semi-independent study of a problem. Registration only after conference with the instructor in whose field the problem lies.

## GRADUATE COURSES‡

- \*205. Advanced Cartography. (3) II.** Mr. MacFadden  
Prerequisite: course 105 or the equivalent, and consent of the instructor.
- 250. The Growth of Geographic Thought. Seminar. (3) I.** Mr. Spencer  
Prerequisite: consent of the instructor.  
Normally the first seminar to be taken by graduate students in geography.
- 255. Seminar in the Geography of Asia. (3) I.** Mr. Spencer  
Prerequisite: course 124A, or 124B, or the equivalent, and consent of the instructor.
- 256. Seminar in the Geography of Anglo-America. (3) II.** Mr. Zierer  
Prerequisite: course 121 or the equivalent, and consent of the instructor.
- 257. Seminar in the Geography of Latin America. (3) II.** Mr. Bruman  
Prerequisite: course 122A, or 122B, or the equivalent, and consent of the instructor.
- 258. Seminar in California Geography. (3) II.** Miss Baugh  
Prerequisite: consent of the instructor.
- \*259. Seminar in the Geography of Australia and Oceania. (3) II.**  
Mr. Zierer  
Prerequisite: course 125 or the equivalent and consent of the instructor.

\* Not to be given, 1958-1954.

‡ Requirements for the master's degree in geography may be met by either Plan I or Plan II.

Plan I, required of those preparing for advanced professional positions, must include at least three courses (one from each of three of the following groups): 250; 255, or 256 or 257 or 258 or 259; 261 or 262; 270; 271; 275 or 280 or 290; and a thesis.

Plan II, required (unless the student elects Plan I) of those preparing for positions below the junior college level, must include at least four courses (normally one from each of the following groups): 250; 255 or 256 or 257 or 258 or 259; 261 or 262; 270; 271; 275 or 280 or 290; and a comprehensive examination.

The general requirements for the Ph.D. degree in geography are described on page 62 of this bulletin.

261. **Seminar in Climatology. (3) II.** Mr. Bailey  
Prerequisite: course 113 or the equivalent, and consent of the instructor.
- \*262. **Land Forms and Their Geographic Significance. Seminar. (3) II.** Mr. Glendinning  
Prerequisite: course 115 or the equivalent, and consent of the instructor.
270. **Seminar in Economic Geography. (3) I.** Mr. Williams  
Prerequisite: course 141 or 142, or the equivalent, and consent of the instructor.
271. **Seminar in Political Geography. (3) II.** Mr. Kostanick  
Prerequisite: course 181 or the equivalent, and consent of the instructor.
275. **Advanced Field Problems in Local Geography. (3) I.** Mr. Logan  
Prerequisite: course 101 or the equivalent, and consent of the instructor.
280. **Geographic Writing—Research Techniques and Reports. (3) I.**  
Prerequisite: consent of the instructor. Miss Baugh
290. **Research in Geography. (4 to 6) I, II.** The Staff  
Prerequisite: consent of the instructor.  
Investigation subsequent to, and growing out of, any of the above seminars.

## GEOLOGY

- Daniel I. Axelrod, Ph.D., *Professor of Geology.*  
Cordell Durrell, Ph.D., *Professor of Geology.*  
U. S. Grant, Ph.D., *Professor of Geology.*  
Joseph Murdoch, Ph.D., *Professor of Geology.*  
William C. Putnam, Ph.D., *Professor of Geology (Chairman of the Department).*  
George Tunell, Ph.D., *Professor of Geology.*  
Kenneth de Pencier Watson, Ph.D., *Professor of Geology.*  
William John Miller, Ph.D., Sc.D., *Professor of Geology, Emeritus.*  
Willis P. Popenoe, Ph.D., *Associate Professor of Geology.*  
Donald Carlisle, Ph.D., *Assistant Professor of Geology.*  
† John C. Crowell, Ph.D., *Assistant Professor of Geology.*  
Clemens A. Nelson, Ph.D., *Assistant Professor of Geology.*  
———, *Assistant Professor of Geology.*  
Edward L. Winterer, M.A., *Acting Assistant Professor of Geology.*  
Hugh Hunter, B.S., *Acting Instructor in Geology.*



- David T. Griggs, *Professor of Geophysics.*  
Louis B. Slichter, Ph.D., *Professor of Geophysics and Director of the Institute of Geophysics.*  
———, *Assistant Professor of Geophysics.*

## GEOLOGY

*Letters and Science List.*—All undergraduate courses in geology, mineralogy, and paleontology are included in the Letters and Science List of Courses. For regulations governing this list see page 6.

\* Not to be given, 1953–1954.

† Absent on leave, 1953–1954.

*Preparation for the Major.*—Geology 3, 5; Mineralogy 6; Chemistry 1A-1B; Physics 2A-2B; Engineering 1LA-1FA; Mathematics D or 1, C, and 3A; a reading knowledge of any modern foreign language; English 106S.

*The Major.*—At least 26 units of upper division courses, including Geology 102A-102B, 103, 107, 116 and 118 or 199 (6 units), and Paleontology 111. Each major program must be approved by the department.

Differential and integral calculus, physical chemistry, and analytic mechanics are recommended for students whose chief interest is physical geology. Advanced zoology courses are recommended for students concerned chiefly with paleontology and stratigraphy.

Students interested in mining geology are recommended to take such courses as mineral exploration, mineral economics, mineral exploitation, and mineral dressing at Berkeley.

### GEOPHYSICS

For the interdepartmental curriculum in geophysics, see page 12.

### GEOLOGY

#### LOWER DIVISION COURSES

- 2. General Geology—Physical.** (3) I, II Mr. Grant  
Not open to students who have taken or are taking Geology 5.  
An elementary course in the principles of physical geology.
- 3. General Geology—Historical.** (3) I, II. Mr. Nelson  
Prerequisite: course 2 or 5.  
The geologic history of the earth and its inhabitants.
- 5. Physical Geology.** (4) I, II. Mr. Hunter, Mr. Axelrod  
Lectures, three hours; laboratory, three hours. Field trips are taken during laboratory periods. Prerequisite: elementary chemistry. Not open to students who have taken or are taking Geology 2.  
*A beginning course in physical geology for science majors and engineers.*

#### UPPER DIVISION COURSES

- 101. Principles of Geology.** (3) I. Mr. Carlisle  
Prerequisite: junior standing. Not open to students who have taken Geology 2, 3, or 5.  
A survey of the principles of physical and historical geology.
- 102A-102B. Field Geology.** (3-3) Yr. Mr. Carlisle, Mr. Hunter, Mr. Nelson, Mr. Winterer  
Lecture, one hour; field work, Saturdays. Prerequisite: course 3; Engineering 1LA-1FA; 103 (may be taken concurrently with 102A); 102A prerequisite to 102B.  
Principles and methods of geologic mapping.
- 103. Petrology.** (4) I, II. Mr. Durrell, Mr. Watson  
Lectures, two hours; laboratory, six hours. Prerequisite: Mineralogy 6; Chemistry 1B (may be taken concurrently).  
Origins and characteristics of rocks. Laboratory determination with the hand lens.
- 107. Geology of North America.** (2) II. Mr. Nelson  
Prerequisite: course 3.  
A regional study of North American geology.
- 110. Economic Geology.** (3) II. Mr. Tunell  
Prerequisite: course 103.  
Origin and occurrence of the important metallic and nonmetallic mineral deposits.  
Lectures, two hours; laboratory, three hours.

111. **Petroleum Geology. (3) I.** \_\_\_\_\_  
 Prerequisite: courses 102A, 116.  
 Geology applied to the exploration and production of petroleum; techniques of surface and subsurface geology; petroleum engineering problems of concern to geologists.
116. **Structural Geology. (3) II.** \_\_\_\_\_  
 Lectures, two hours; laboratory, three hours.  
 Prerequisite: course 102A and 103. A knowledge of descriptive geometry (e.g., Engineering 2) is desirable.  
 Fracture, folding, and flow of rocks. Graphic solution of structural problems.
117. **Geomorphology. (3) I.** Mr. Putnam  
 Prerequisite: course 2, or 5, or 101.  
 Principles of geomorphology.
118. **Advanced Field Geology. (6)** The Staff  
 Eight weeks, commencing with Summer Session. Prerequisite: Geology 102B, or equivalent; Geology 116.  
 Preparation of a map and report concerning the detailed geology of a region.
199. **Special Studies in Geology. (1 to 6) I, II.**  
 Open only to seniors. The Staff (Mr. Nelson, Mr. Crowell in charge)

## GRADUATE COURSES

- 214A-214B. **Advanced Petrographic Laboratory. (2-5; 2-5) Yr.**  
 Mr. Watson  
 Prerequisite: Mineralogy 109B. Recommended: course 251. Offered in alternate years.  
 Igneous rocks.
- \*215A-215B. **Advanced Petrographic Laboratory. (2-5; 2-5) Yr.**  
 Mr. Durrell  
 Prerequisite: Mineralogy 109B. Offered in alternate years.  
 Metamorphic rocks.
236. **Physical Geology of California. (3) I.** Mr. Durrell
251. **Seminar in Chemical Petrology. (3) I.** Mr. Tunell  
 Prerequisite: Mineralogy 109B.
252. **Seminar in Geomorphology. (3) II.** Mr. Putnam
255. **Seminar in Dynamical Geology. (3) I.** Mr. Grant  
 Prerequisite: consent of the instructor; calculus recommended.
258. **Seminar in Stratigraphy. (3) I.** Mr. Nelson
259. **Field Investigations in Geology. (2) II.** The Staff  
 Prerequisite: graduate standing and consent of the instructor.  
 Preparatory seminars on a selected field problem, followed by a field trip to the region during spring recess, with a report required.
- \*260A-260B. **Seminar in Structural Geology. (3-3) Yr.** Mr. Crowell  
 The second semester of this course may be taken without the first.

\* Not to be given, 1953-1954.

**263A-263B. Seminar in Economic Geology.** (3-3) Yr. Mr. Carlisle  
 Prerequisite: course 110 and consent of the instructor. Mineralogy 109A and 281 are recommended. The second semester of this course may be taken without the first.

Seminar, 2 hours; laboratory, three hours. Occasional field trips during the course.

**299. Research in Geology.** (1 to 6) I, II.  
 The Staff (Mr. Nelson, Mr. Crowell in charge)

### MINERALOGY

#### LOWER DIVISION COURSE

**6. Introduction to Mineralogy.** (4) I, II. Mr. Murdoch  
 Lectures, two hours; laboratory, six hours. Two or more one-day field trips required. Prerequisite: elementary chemistry.

Determination of common rock-forming minerals; origin, relationships, and properties; study of simple crystals; use of blowpipe and chemical tests for minerals.

#### UPPER DIVISION COURSES

**101. Paragenesis of Minerals.** (2) I. Mr. Murdoch  
 Prerequisite: course 6, and one year of college chemistry.

**102. Advanced Mineralogy.** (3) II. Mr. Tunell  
 Lecture, one hour; laboratory, six hours. Prerequisite: course 6 or equivalent.

Crystallography with study of models and natural crystals; determination with fuller treatment of nonsilicate minerals.

**109A. Optical Mineralogy and Petrography.** (2) I. Mr. Durrell  
 Laboratory, six hours. Prerequisite: course 6; Geology 103 (may be taken concurrently).

Optical properties of minerals; determination of minerals and rocks with the petrographic microscope.

**109B. Optical Mineralogy and Petrography.** (4) II. Mr. Watson  
 Lecture, one hour; laboratory, nine hours. Prerequisite: course 109A.  
 A continuation of course 109A.

**110. Petrology of Sedimentary Rocks.** (3) II. Mr. Winterer  
 Lecture, one hour; laboratory, six hours. Prerequisite: course 109A.  
 Characteristics and origin of sedimentary rocks, physical and mineralogical analysis of sediments, determination of minerals by immersion methods.

#### GRADUATE COURSES

**274. Seminar in Structural Crystallography.** (2 to 5) I. Mr. Tunell  
 Seminar, two hours; laboratory, optional. Prerequisite: consent of the instructor.

Advanced crystallography and the atomic structure of crystals.

**281. Problems in Mineralography.** (2 to 4) I. Mr. Murdoch

**282. Problems in Goniometry.** (2 to 4) II. Mr. Murdoch

**299. Research in Mineralogy.** (1 to 6) I, II. Mr. Murdoch, Mr. Tunell

### PALEONTOLOGY

#### UPPER DIVISION COURSES

**101. Principles of Paleontology.** (3) II. Mr. Axelrod, Mr. Popenoe  
 Prerequisite: junior standing.

A survey of the principles governing the evolution and distribution of fossil plants and animals.

111. **Systematic Invertebrate Paleontology.** (4) I, II. Mr. Popenoe  
Lectures, two hours; laboratory, six hours. Prerequisite: Geology 3.  
The study of invertebrate fossils.
114. **Micropaleontology.** (3) I. Mr. Winterer  
Lecture, one hour; laboratory, six hours. Prerequisite: course 111 and  
Geology 102B.  
Study of the microfossils important in stratigraphic work.
120. **Paleobotany.** (3) II. Mr. Axelrod  
Lectures, two hours; laboratory, three hours. Prerequisite: Geology 3,  
Botany 2; or consent of the instructor. Offered in alternate years.  
Vegetation of the earth during geologic time.
136. **Paleontology and Stratigraphy of the Paleozoic and Mesozoic.** (3) I. Mr. Popenoe  
Lecture, one hour; laboratory, six hours. Prerequisite: course 111 and  
Geology 102A.
137. **Paleontology and Stratigraphy of the Cenozoic.** (3) II. Mr. Grant  
Lecture, two hours; laboratory, three hours. Prerequisite: course 111 and  
Geology 102A.

## GRADUATE COURSES

215. **Systematic Conchology and Echinology.** (3) I. Mr. Grant  
Lecture, one hour; laboratory, six hours. Prerequisite: course 111.  
Classification of west-American Cenozoic mollusca and echinoidea.
258. **Seminar in Paleontology.** (2) I. Mr. Popenoe  
Prerequisite: course 111.  
Review of current and classic paleontologic works with emphasis on  
principles of paleontology.
290. **Research in Biogeography.** (1-4) I, II. Mr. Axelrod  
Prerequisite: graduate standing in biological science; consent of the  
instructor.  
Application of geological and paleontological data to a solution of modern  
biogeographical problems.
299. **Research in Paleontology.** (1 to 6) I, II. Mr. Popenoe, Mr. Grant

## GEOPHYSICS

## UPPER DIVISION COURSE

122. **Geophysical Prospecting.** (3) II. \_\_\_\_\_  
Prerequisite: consent of the instructor.  
The principles of geophysical prospecting for ores, petroleum, and other  
economic minerals.

## GRADUATE COURSES

250. **Seminar in Geophysics.** (3) I. Mr. Slichter  
Fundamental problems in physics of the solid earth.  
The content will vary from year to year.
260. **Experimental Geology.** (3 to 6) II. Mr. Griggs  
Seminar, two hours; laboratory optional. Prerequisite: consent of the  
instructor.  
The mechanics of rock deformation. Dimensional analysis and model  
theory applied to geological problems.
290. **Research in Geophysics.** (1-6) I, II. The Staff (Mr. Griggs in charge)

## GERMANIC LANGUAGES

Gustave Otto Arlt, Ph.D., *Professor of German.*

Alfred Karl Dolch, Ph.D., *Professor of German.*

Wayland D. Hand, Ph.D., *Professor of German and Folklore.*

Frank H. Reinsch, Ph.D., *Professor of German, Emeritus.*

Carl William Hagge, Ph.D., *Associate Professor of German (Chairman of the Department).*

William J. Mulloy, Ph.D., *Associate Professor of German.*

\*Victor A. Oswald, Jr., Ph.D., *Associate Professor of German.*

Vern W. Robinson, Ph.D., *Associate Professor of German.*

Erik Wahlgren, Ph.D., *Associate Professor of Scandinavian and German.*

William F. Roertgen, Ph.D., *Assistant Professor of German.*

Eli Sobel, Ph.D., *Assistant Professor of German.*

Christel B. Schomaker, M.A., *Assistant Professor of German, Emeritus.*

Robert Livingston Beare, Ph.D., *Instructor in German.*

Terence Harrison Wilbur, M.A., *Acting Instructor in German.*

Edith A. Schulz, M.A., *Associate in German.*



William Melnitz, Ph.D., *Assistant Professor of Theater Arts.*

*Letters and Science List.*—All undergraduate courses in German and Scandinavian languages except German 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Required: course 1, 2, 3 (3LS, 3PS, 3SS), 4, 6, and 42A–42B, or their equivalents. Recommended: History 1A–1B; English 1A–1B, 46A–46B; Philosophy 20A–20B.

*The Major in German.*—At least 24 units in upper division courses, including 106A, 106B, 107A, 107B, 109B, 118A, 118B, and one course for each of the following groups: (1) 105, 108, 109A, 119, 147; (2) 104A, 104B, 110, 111; (3) 114A, 114B. Students looking forward to the secondary credential should take also 106C–106D. Students desiring a purely literary or philological major, not looking toward secondary teaching, should consult the departmental adviser regarding permissible substitutions of courses.

### *Requirements for Admission to Graduate Courses.*

A candidate for admission to graduate courses in Germanic languages and literatures must meet, in addition to the general University requirements, the minimum requirements for an undergraduate major in this department. If the candidate is deficient in this prerequisite he must fulfill it by undergraduate courses taken as a graduate student.

All entering graduate students must take a placement examination in German language and may be required to take an examination in German literature before enrolling in courses.

### *Requirements for the Master's Degree.*

For the general requirements, see page 60. The Department of Germanic Languages favors the Comprehensive Examination Plan. For specific departmental requirements, see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

### *Requirements for the Ph.D. Degree.*

For the general requirements, see page 62. For specific departmental re-

\* Absent on leave, 1953–1954.



quirements, see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

## GERMAN

## LOWER DIVISION COURSES

The ordinary prerequisites for each of the lower division courses are listed under the description of these courses. Students who have had special advantages in preparation may, upon examination, be permitted a more advanced program; or such students may be transferred to a more advanced course on recommendation of the instructor.

1. **Elementary German.** (4) I, II. Mr. Roertgen in charge  
This course corresponds to the first two years of high school German.
- \*1-2. **Elementary German. Intensive Course.** (8) I, II.  
Two hours daily, four times a week. Mr. Oswald in charge  
This course stresses the oral-aural approach, and is equivalent to German 1 and German 2.
- 1G. **Elementary German for Graduate Students.** (No credit) I, II.  
Four hours a week. Miss Schulz in charge
2. **Elementary German.** (4) I, II. Mr. Roertgen in charge  
Prerequisite: course 1 or two years of high school German.
- ‡3. **Intermediate German.** (4) I, II. Mr. Hagge in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in literary German.
- ‡3LS. **Intermediate German.** (4) I, II. Miss Schulz in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in the life sciences.
- ‡3PS. **Intermediate German.** (4) I, II. Miss Schulz in charge  
Prerequisite: course 2 or three years of high school German.  
Readings in the physical sciences.
4. **Intermediate German.** (4) I, II. Mr. Hagge in charge  
Prerequisite: any one of courses 3, 3LS, 3PS, or 3SS, or four years of high school German.  
Advanced readings in literary German.
6. **Review of Grammar, Composition, and Conversation.** (2) I, II. Mr. Dolch in charge  
Prerequisite: course 2 or three years of high school German.  
Required for the major in German.
- 8A-8B. **German Conversation.** (1-1) Beginning each semester. Mr. Roertgen in charge  
The class meets two hours weekly. Open to students who have completed course 2 or its equivalent. Course 8A is normally prerequisite to 8B.
- 42A-42B. **German Civilization.** (2-2) Yr. Mr. Sobel  
Lectures and reports. Conducted in English. No knowledge of German required.  
A general survey of the development of German civilization in its more important cultural manifestations. Required for the major in German.

\* Not to be given, 1958-1954.

‡ Any two of the courses numbered 3, 3LS, 3PS, 3SS, may be taken for credit. It is recommended that German 3 be taken before the specialized courses.

## UPPER DIVISION COURSES

The prerequisite for all upper division courses is course 4 or the equivalent.

- 104A-104B. **Readings in the Drama of the Nineteenth Century.** (3-3) Yr.  
Selected readings from nineteenth-century authors. Mr. Robinson
105. **Lessing's Life and Works.** (3) I. Mr. Hagge  
Lectures and reading of selected texts.
- 106A-106B. **Grammar, Composition, and Conversation.** (2-2) Yr.  
Mr. Roertgen
- 106C-106D. **Grammar, Composition, and Conversation.** (2-2) Yr.  
Prerequisite: course 106A-106B. Mr. Roertgen
- \*107A-107B. **Phonetics of the German Language.** (1-1) Yr. Mr. Oswald  
Lecture, one hour; laboratory, two hours.  
107A. Articulatory and acoustic basis of German phonetics; training in transcription and reading of transcriptions.  
107B. Applied phonetics; relation of *Bühnenaussprache* to general problems of orthoëpy.
108. **Schiller's Life and Works.** (3) II. Mr. Hagge  
Lectures and reading of selected texts.
- 109A. **Introduction to Goethe.** (3) I. Mr. Hagge  
Goethe's prose.
- 109B. **Goethe's Dramas.** (3) II. \_\_\_\_\_
110. **The German Lyric.** (3) II. Mr. Mulloy  
Lectures in German. Prerequisite: 6 units of upper division German, or consent of the instructor.  
A survey from 1750 to 1880.
111. **German Narrative Prose.** (3) I. Mr. Mulloy  
Lectures in German. Prerequisite: 6 units of upper division German, or consent of the instructor.  
A survey from 1750 to 1880, with special reference to the *Novelle*.
- \*114A. **German Literature from 1875 to the Present.** (3) I. Mr. Hand  
Prerequisite: 6 units of upper division German, or consent of the instructor.  
Dramatic literature.
- 114B. **German Literature from 1875 to the Present.** (3) II. Mr. Oswald  
Prerequisite: 6 units of upper division German, or consent of the instructor.  
Prose and poetry.
117. **History of the German Language.** (3) II. Mr. Sobel  
Prerequisite: course 106A-106B, 107A-107B, or consent of the instructor.
- 118A. **History of German Literature.** (3) I. Mr. Sobel  
Prerequisite: 6 units of upper division German, or consent of the instructor.  
Lectures in German.  
The Middle Ages to 1624.
- 118B. **History of German Literature.** (3) II. Mr. Arlt  
Prerequisite: 6 units of upper division German, or consent of the instructor.  
Lectures in German.  
From 1624 to 1850.

\* Not to be given, 1953-1954.

119. **Middle High German.** (3) I. Mr. Doleh  
 Prerequisite: course 117 and 118A.  
 Outline of grammar; selection from Middle High German poetry.
- 121A. **German Literature in Translation.** (2) I. The Staff  
 Prerequisite: junior standing. Not accepted as part of the major in German.  
 Readings and lectures on Lessing, Schiller, and Goethe.
- 121B. **German Literature in Translation.** (2) II. The Staff  
 Prerequisite: junior standing. Not accepted as part of the major in German.  
 Readings and lectures on selected modern authors.
- \*147. **German Folk Song.** (2) II. Mr. Arlt  
 A survey of German folk song from its beginnings to the present.
- 199A-199B. **Special Study for Advanced Undergraduates.** (1 to 3) I, II. The Staff  
 Topic selected with the approval of the department and studied under the direction of one of the staff.

GRADUATE COURSES

201. **Bibliography and Methods of Literary History.** (2) I. Mr. Arlt  
 Required for the M.A. and Ph.D. degrees.
208. **The Sixteenth and Seventeenth Centuries.** (3) I. Mr. Arlt
- \*210. **The Age of Goethe.** (3) I. ———
212. **German Romanticism.** (3) II. Mr. Mulloy
- \*213. **The Enlightenment and Pre-Romanticism.** (3) II. Mr. Hagge
222. **Goethe's Faust.** (2) II. Mr. Hagge
- \*225. **The Nineteenth-Century Drama.** (3) I. Mr. Robinson
226. **Naturalism.** (3) I. Mr. Hand
- \*228. **German Literature after 1890.** (3) I. Mr. Oswald
- \*229. **Expressionism.** (2) II. Mr. Melnitz
230. **Survey of Germanic Philology.** (3) I. Mr. Doleh
231. **Gothic.** (3) I. Mr. Doleh
232. **Old High German.** (3) II. Mr. Doleh
- \*233. **Old Saxon.** (3) II. ———
239. **Readings in Middle High German Literature.** (3) II. Mr. Dolch  
 Prerequisite: course 119 or the equivalent.  
 Required for the M.A. degree.
- \*251. **Seminar on the Age of Goethe.** (3) II. ———
- \*253. **Seminar in Nineteenth-Century Literature.** (3) II. Mr. Mulloy  
 Seminar: C. F. Meyer.

\* Not to be given, 1953-1954.

256. Seminar in Literature after 1875. (3) II. Mr. Hand, Mr. Oswald  
 257. Seminar in Sixteenth- and Seventeenth-Century Literature. (3) II.  
 Prerequisite: course 208. Mr. Arlt  
 \*259. Seminar in Germanic Linguistics. (1 to 3) II. Mr. Dolch  
 Prerequisite: course 230 and one dialect or the equivalent.  
 298A-298B. Special Studies. (1-6; 1-6) Yr. The Staff

#### PROFESSIONAL COURSE IN METHOD

370. The Teaching of German. (3) I.  
 Prerequisite: graduate standing in the Department of Germanic Languages. Required of all candidates for the general secondary credential in German. To be taken concurrently with Education 370.

#### SCANDINAVIAN LANGUAGES

##### LOWER DIVISION COURSES

1. Elementary Swedish. (4) I. Mr. Wahlgren  
 2. Intermediate Swedish. (4) II. Mr. Wahlgren  
 Prerequisite: course 1 or the equivalent.  
 \*11. Elementary Danish and Norwegian. (4) I. Mr. Wahlgren  
 \*12. Intermediate Danish and Norwegian. (4) II. Mr. Wahlgren  
 Prerequisite: course 11 or the equivalent.

##### UPPER DIVISION COURSES

- 141A. Scandinavian Literature in English Translation. (2) I.  
 No prerequisite; open to all upper division students. Mr. Wahlgren  
 From earliest times to 1750.  
 141B. Scandinavian Literature in English Translation. (2) II.  
 No prerequisite; open to all upper division students. Mr. Wahlgren  
 From 1750 to the present.

##### GRADUATE COURSES

- \*243. Old Icelandic. (3) I. Mr. Wahlgren  
 \*244. Old Norse-Icelandic Prose and Poetry. (2) II. Mr. Wahlgren

##### RELATED COURSES (See page 171)

#### Folklore

145. Introduction to Folklore. (3) I. Mr. Hand  
 \*245. The Folk Tale. (2) II. Mr. Hand

## HISTORY

- David K. Bjork, Ph.D., *Professor of History.*  
 John W. Caughey, Ph.D., *Professor of History.*  
 Brainerd Dyer, Ph.D., *Professor of History.*  
 Leo Gershoy, Ph.D., *Visiting Professor of History.*  
 Clinton N. Howard, Ph.D., *Professor of History.*  
 Roland D. Hussey, Ph.D., *Professor of History (Chairman of the Department).*

\* Not to be given, 1953-1954.

George E. Mowry, Ph.D., *Professor of History.*  
 Frank J. Klingberg, Ph.D., *Professor of History, Emeritus.*  
 Waldemar Westergaard, Ph.D., *Professor of History, Emeritus.*  
 Truesdell S. Brown, Ph.D., *Associate Professor of History.*  
 Raymond H. Fisher, Ph.D., *Associate Professor of History.*  
 John S. Galbraith, Ph.D., *Associate Professor of History.*  
 Yu-Shan Hsiao, Ph.D., *Associate Professor of History.*  
 Theodore A. Saloutos, Ph.D., *Associate Professor of History.*  
 Robert N. Burr, Ph.D., *Assistant Professor of History.*  
 Mark H. Curtis, Ph.D., *Assistant Professor of History.*  
 John Higham, Ph.D., *Assistant Professor of History.*  
 William R. Hitchcock, Ph.D., *Assistant Professor of History.*  
 Jere C. King, Ph.D., *Assistant Professor of History.*  
 Andrew Losaky, Ph.D., *Assistant Professor of History.*  
 Charles Page Smith, Ph.D., *Assistant Professor of History.*  
 Robert Wilson, Ph.D., *Assistant Professor of History.*  
 Lucy M. Gaines, M.A., *Assistant Professor of History, Emeritus.*  
 Bradford Perkins, Ph.D., *Instructor in History.*  
 Trygve R. Tholfsen, Ph.D., *Instructor in History.*

*Letters and Science List.*—All undergraduate courses in history are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Required: (1) course 1A-1B, to be taken in the freshman year, and (2) course 5A-5B or 7A-7B or 8A-8B, to be taken in the sophomore year, or equivalent preparation for students transferring from other departments or other institutions. History majors whose lower division program does not include course 7A-7B must take 6 units of United States history in upper division. Recommended: Political Science 1, 2, Economics 1A-1B, Geography 1A-1B, and Philosophy 20A-20B. One of these recommended courses may be substituted for one of the required history courses, with approval of the department.

Recommended: French, German, Latin, Spanish, Italian, or a Scandinavian language. For upper division work in history, a reading knowledge of one of these is usually essential. For language requirements for graduate work, see ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

### *The Major.*

- (1) Twenty-four units of upper division work in history, including
  - a. A 6-unit combination of broad scope in Old World history. Approved combinations are courses 111A-111B; 121A-121B; 140A-140B; 142, 143; 143, 144, 145; 145, 147; 149A-149B; 152A-152B; 153A-153B; 154, 155; 155, 156; 156, 157; 158A-158B.
  - b. A 6-unit combination of broad scope in New World History. Approved combinations are courses 162A-162B; 171, 172; 172, 173; 173, 174; 175, 176; 176, 178; 176, 179; 177, 178; 177, 179; 178, 179; 178, 181; 181, 188.
  - c. Course 197 or 198.
  - d. Course 199 in a field for which preparation has been made in the junior year. Course 199 may be taken before or after 197 or 198.

(2) Six units of approved upper division courses in an allied field. Allied fields include anthropology, art history, economics, geography, philosophy, political science, sociology, and a national literature of the field of the student's emphasis, e.g., English literature in combination with an English history emphasis.

*Honors in History.*—Inquiries regarding honors may be directed to the Chairman of the Department.

*Graduate Work in History.*—See the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, and the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

#### LOWER DIVISION COURSES

##### 1A-1B. Introduction to Western Civilization. (3-3) Yr.

Mr. Fisher, Mr. Tholfsen

Lectures, two hours; discussion section, two hours.

A broad, historical study of major elements in the western heritage from the world of the Greeks to that of the twentieth century, designed to further the beginning student's general education, introduce him to the ideas, attitudes, and institutions basic to western civilization, and to acquaint him, through reading and critical discussion, with representative contemporary documents and writings of enduring interest.

##### 5A-5B. History of England and Greater Britain. (3-3) Yr.

Mr. Howard, Mr. Tholfsen

Lectures, two hours; quiz section, one hour.

The political, economic, and cultural development of the British Isles and the Empire from the earliest times to the present.

##### 7A-7B. Political and Social History of the United States. (3-3) Yr.

Beginning either semester.

Mr. Dyer, Mr. Mowry, Mr. Higham, Mr. Saloutos

Lectures, two hours; quiz section, one hour.

This course is designed for students in the social sciences who want a thorough survey of the political and social development of the United States as a background for their major work and for students in other departments who desire to increase their understanding of the rise of American civilization.

##### 8A-8B. History of the Americas. (3-3) Yr.

Mr. Hussey, Mr. Burr

Lectures, two hours; quiz section, one hour.

A study of the development of the Western Hemisphere from the discovery to the present. Attention in the first semester to exploration and settlement, colonial growth, imperial rivalries, and the achievement of independence. In the second semester, emphasis upon the evolution of the American nations and people in the nineteenth and twentieth centuries.

##### \*39. Pacific Coast History. (2) I, II.

Mr. Caughey

##### \*49A. Great Personalities: United States. (2) I.

Mr. Dyer

(Former number, 9A.)

##### \*49B. Great Personalities: Latin America. (2) II.

Mr. Hussey

(Former number, 9B.)

##### \*49C. Great Personalities: Modern Europe and England. (2) II.

(Former number, 9C.)

Mr. Howard

##### \*49D. Great Personalities: Ancient and Medieval Continental Europe.

(2) I.

(Former number, 9D.)

#### UPPER DIVISION COURSES

The prerequisite for course 101 is upper division standing. The prerequisite for all other upper division courses is upper division standing and course 1A-1B, or 5A-5B, or 7A-7B, or 8A-8B, or other preparation satisfactory to the instructor.

\* Not to be given, 1953-1954.

**101. Main Currents in American History. (2) I, II.**

Mr. Dyer, Mr. Higham, Mr. Perkins

A one-semester survey of United States history, with emphasis upon the growth and development of American principles and ideals. Not open to students who have credit for course 7A, 7B, or 8B. Not to be counted toward the major.

**111A-111B. History of the Ancient Mediterranean World. (3-3) Yr.**

Mr. Brown

A survey of the history of the ancient Mediterranean world from earliest times to the reign of Constantine. The work of the first semester ends with the death of Alexander.

**112A-112B. History of Ancient Greece. (3-3) Yr.**

Mr. Brown

112A. The Greek city-state. The emphasis will be on the period between the Persian Wars and the rise of Macedon.

112B. The Hellenistic Period. A consideration of the new patterns in government, social life, science, and the arts that appeared between the Macedonian conquest and the decisive intervention of Rome.

**\*113A-113B. History of Rome. (3-3) Yr.**

Mr. Brown

113A. To the death of Caesar. Emphasis will be placed on the development of imperialism and on the constitutional and social struggles of the late Republic.

113B. From the death of Caesar to the time of Constantine. The early empire will be treated in more detail supplemented by a survey of the social and economic changes in the third century.

**\*114. History of the Founding of Christianity. (2)****121A. The Early Middle Ages. (3) I.**

Mr. Bjork

Prerequisite: course 1A-1B or 5A-5B, or consent of the instructor.

A survey of the main events of European history from the fall of the Roman Empire to about 1150 A.D.

**121B. The Civilization of the Later Middle Ages. (3) II.**

Mr. Bjork

Prerequisite: course 1A-1B or 5A-5B, or consent of the instructor.

A survey of European history, 1150-1450, with emphasis upon social, cultural, religious, and economic foundations of Western Europe.

**140A-140B. History of Modern Europe, 1500-1914. (3-3) Yr.**

Mr. Fisher, Mr. Lossky

Not open to students who have credit for History 1B or 4B. Students who have credit for History 142 will not receive credit for 140A; those who have credit for History 143 or 144 or 145 will not receive credit for 140B.

A general survey of European History, 1500-1914.

**141A-141B. Europe in Transition, 1450-1610. (2-2) Yr.**

Mr. Hitchcock

141A. The Renaissance.

141B. The Reformation.

**142. Europe in the Seventeenth Century, 1610-1715. (3) I.**

Mr. Lossky

European culture, institutions, and politics from the Thirty Years' War to the death of Louis XIV.

Students who have credit for History 140A may not take this course for credit.

\* Not to be given, 1953-1954.

**143. Europe in the Eighteenth Century, 1715-1815. (3) II.**

Mr. Lossky, Mr. Gershoy

European culture, institutions, and politics from the death of Louis XIV to the collapse of the Napoleonic Empire.

Students who have credit for History 140B may not take this course for credit.

**144. Europe, 1815-1870. (3) I.**

Mr. King, Mr. Hitchcock

The history of Europe from the decline of Napoleon to the end of the Franco-Prussian War; a survey covering international relations and internal conditions of the major European countries, with special stress on the rise of nationalism and liberalism.

Students who have credit for History 140B may not take this course for credit.

**145. Europe, 1870-1914. (3) I, II.** Mr. Fisher, Mr. King, Mr. Hitchcock

The history of Europe from the end of the Franco-Prussian War to the eve of the First World War. A survey covering internal conditions of the major European countries, nationalism, neoimperialism, the rise of socialism, the spread of the industrial revolution, and the diplomatic background of the First World War.

Students who have credit for History 140B may not take this course for credit.

**147. Europe since 1914. (3) II.**

Mr. King

Political, economic, and cultural developments since the outbreak of the First World War.

**148A-148B. European Diplomacy and Imperialism. (3-3) Yr.**

Mr. Hitchcock

A study of European international rivalries primarily in the nineteenth and twentieth centuries.

**149A-149B. History of Russia. (3-3) Yr.**

Mr. Fisher, Mr. Lossky

**149A. History of Russia to 1801.**

Political, economic, and social developments and the foreign relations of Russia in the Kievan, Muscovite, and imperial periods.

**149B. History of Russia since 1801.**

The agrarian problem, the great reforms, the radical movement, the revolutions of 1905 and 1917, and the Soviet state; Russia in international politics, especially the Near Eastern question.

**149C. France since the Founding of the Third Republic. (3) I.** Mr. King

Recommended preparation: course 1A-1B.

An intensive study of modern France, emphasizing the nation's search for political and economic stability and for military security in the twentieth century.

**152A-152B. Constitutional History of England. (3-3) Yr.** Mr. Howard

Prerequisite: course 5A-5B or consent of the instructor.

A study of the growth of the institutions of British government.

**153A-153B. History of the British People in Modern Times. (3-3) Yr.**

Mr. Howard, Mr. Tholfsen

History 153A is not open to students who have had course 154 or 155; History 153B is not open to students who have had course 156.

A study of the main currents in the thought, culture, and social progress of the British people from Henry VIII to the death of Victoria.



- 154. Renaissance England. (3) I.** Mr. Howard, Mr. Curtis  
Not open to students who have had 153A.  
A study of the intellectual forces and the social, economic, and political conditions in England in the age of the Renaissance. The Reformation, the Elizabethan era, and the Puritan revolution will receive attention.
- 155. Great Britain in the Eighteenth Century (1688-1783). (3) II.** Mr. Howard  
Not open to students who have had 153A.  
The structure of the British government, society, and economic life under Hanoverians.
- 156. Great Britain in the Nineteenth Century. (3) I.** Mr. Tholfsen  
Not open to students who have had History 153B.  
British culture, institutions, and politics in the Great Century from the French Revolution to the death of Victoria.
- 157. Great Britain in the Twentieth Century. (3) II.** Mr. Tholfsen  
The changing British scene in war and peace from the accession of Edward VII to the present.
- 158A-158B. The British Empire Since 1783. (3-3) Yr.** Mr. Galbraith  
The political and economic development of the British Empire, including the evolution of colonial nationalism, the development of the commonwealth idea, and changes in British colonial policy. The work of the first semester covers to 1900.
- 159. History of Canada. (3) I.** Mr. Galbraith  
A survey of the growth of Canada from its beginnings under the French and British colonial empires into a modern nation-state.
- \*160. History of the Caribbean. (3) I.** Mr. Hussey
- \*161. History of Spain and Portugal. (3) I.** Mr. Hussey  
The history of Spain from early times to the present.
- 162A-162B. Hispanic America from the Discovery to the Present. (3-3) Yr.** Mr. Hussey, Mr. Burr
- 166A-166B. History of Mexico. (2-2) Yr.** Mr. Burr  
The development of the viceroyalty of New Spain and the Mexican nation, with emphasis upon the problems of the period since Díaz.
- 169. History of Inter-American Relations. (3) I.** Mr. Burr  
Emphasizes the historical development of a distinctive system of international relations among the nations of the Western Hemisphere, from 1808 to the present.
- 171. The United States: Colonial Period. (3) I.** Mr. Smith  
Political and social history of the Thirteen Colonies and their neighbors; European background, settlement and westward expansion, intercolonial conflicts, beginnings of culture, colonial opposition to imperial authority.
- 172. The United States: The New Nation. (3) II.** Mr. Perkins, Mr. Smith  
Political and social history of the American nation from 1750 to 1815, with emphasis upon the rise of the New West; revolution, confederation, and union; the fathers of the Constitution; the New Nationalism.
- 173. The United States: Civil War and Reconstruction. (3) I.** Mr. Dyer  
The topics studied will include: the rise of sectionalism, the anti-slavery crusade; the formation of the Confederate States; the war years; political and social reconstruction.

\* Not to be given, 1953-1954.

**174. The United States: The Twentieth Century. (3) II.**

Mr. Mowry, Mr. Higham

A general survey of political, economic, and cultural aspects of American democracy in recent years.

**175. Economic History of the United States Since the Civil War. (3) I.**

Mr. Saloutos

Recommended preparation: courses 7A-7B and Economics 11.

A study of the rise of capitalism and industrialism and of the resultant problems in agriculture, labor, business, and government.

**176. American Reform Movements and Reformers. (3) II.** Mr. Saloutos

A study of educational, monetary, labor, and agrarian reforms advocated in the nineteenth and twentieth centuries.

**177. Intellectual History of the United States Since 1776. (3) I, II.**

Mr. Higham

Changing patterns of ideas and sentiments in relation to their social environment and their cultural expression.

**178. History of the Foreign Relations of the United States. (3) I.**

Mr. Perkins

A general survey of American diplomacy from the Revolution to the Paris Peace Conference of 1919.

**179. Constitutional History of the United States. (3) II.** Mr. Dyer

Prerequisite: 6 units of United States history or government, or consent of the instructor.

A study of the Federal Constitution from the historical point of view with emphasis upon the constitutional convention and the constitutional controversies of the nineteenth century.

**181. The American West. (3) I.**

Mr. Caughey, Mr. Mowry

Recommended preparation: course 8A-8B.

A study of the West as frontier and as region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

**188. History of California. (3) II.**

Mr. Caughey

Recommended preparation: course 8A-8B or 39.

The economic, social, intellectual, and political development of California from the earliest times to the present.

**190. History of the Pacific Area. (3) I.**

Mr. Wilson

Exploration, trade, international rivalries, and social evolution in the Pacific Ocean and in the lands immediately tributary thereto, from the first European contacts to the present. Emphasis on the role of the United States.

**191A. History of the Far East. (3) I.**

Mr. Han, Mr. Wilson

China and Japan from the earliest times to the beginning of Westernization.

**191B. History of the Far East. (3) II.**

Mr. Han, Mr. Wilson

Transformation of the Far East in modern times under the impact of Western civilization.

**192A-192B. The Twentieth-Century Far East. (2-2) Yr.**

Mr. Han

A study of the social, economic, and political development of the Far Eastern countries since 1898, with special attention to the changes in ideas and institutions after a century of Western impact.

**194A-194B. History of Modern China. (3-3) Yr.**

Mr. Han

Final consolidation of the Tunghus peoples in Manchuria and their rule over China; social, economic, political, and literary achievements; movements for modernization toward the end of the nineteenth century; the founding of the Republic.

**195A-195B. History of Modern Japan. (2-2) Yr.**

Mr. Wilson

The political, economic, and cultural development of Japan since the establishment of the Tokugawa Shogunate in 1603.

**\*196A. History of India Prior to 1526. (3) I.**

Mr. Han

A survey of the literature and civilization of the Vedic and the Brahmanic periods; the rise of Jainism and Buddhism; the Magadha and the Kushan Empires; the Gupta period; Mohammedan invasions and conquest to the establishment of the Mogul Empire.

**\*196B. India and the Indies Since 1505. (3) II.**

Mr. Han

A survey of European expansion into India and the Indies, the decline of the Mogul Empire, and the rise of native leadership. Special attention will be given to India under British administration, including the rise of nationalism and the establishment of the Dominions of Pakistan and Hindustan.

**197. Aids to Historical Research. (3) I.**

Mr. Bjork

Study of the auxiliary sciences. A senior course.

**198. History and Historians. (3) I, II.**

The Staff

A study of historiography, including the intellectual processes by which history is written, the results of these processes, and the sources and development of history. Attention also to representative historians. A senior course.

**199. Special Studies in History. (3) I, II.**

The Staff

An introduction to historical method, followed by individual investigation of selected topics.

Required of all history majors. To be taken in the senior year in a field for which specific preparation has been made in the junior year. Assignment to sections is made only by the departmental coördinator for registration in this course. Sections 1, 2, 9, 10, and 12 are rarely given more than once each year.

Section 1. Ancient History.

Mr. Brown

Section 2. Medieval History.

Mr. Bjork

Section 3. European History.

Mr. Hitchcock

Section 4. European History.

Mr. King

Section 5. English History.

Mr. Howard, Mr. Tholfsen

Section 6. American Colonial History.

Mr. Smith

Section 7. United States History.

Mr. Perkins

Section 8. Recent United States History.

Mr. Higham

Section 9. Hispanic-American History.

Mr. Burr

Section 10. Pacific Coast History.

Mr. Caughey

Section 11. The British Empire.

Mr. Galbraith

Section 12. The Far East.

Mr. Han, Mr. Wilson

\* Not to be given, 1953-1954.

## GRADUATE COURSES

- \*201. **Historiography and Bibliography.** (3) I. Mr. Hussey
- 251A-251B. **Seminar in Ancient History.** (3-3) Yr. Mr. Brown
- 254A-254B. **Seminar in Medieval History.** (3-3) Yr. Mr. Bjork
- 256A-256B. **Seminar in Early Modern European History.** (3-3) Yr. Mr. Lossky  
 Studies in European political and cultural history of the seventeenth and eighteenth centuries.
- 256C-256D. **Seminar: Age of the French Revolution.** (3-3) Yr. Mr. Gershoy
- 257A-257B. **Seminar in Late Modern European History.** (3-3) Yr. Mr. King  
 Studies in continental European history since the earlier nineteenth century.
- \*258A-258B. **Seminar in European Intellectual History.** (3-3) Yr. ———  
 Readings in the intellectual history of the seventeenth and eighteenth centuries.
- 259A-259B. **Seminar in Slavic History.** (3-3) Yr. Mr. Fisher  
 Prerequisite: the student should have a reading knowledge of at least one European language.  
 Studies in the history of Russia and other Slavic countries.
- 260A-260B. **Seminar in English History.** (3-3) Yr. Mr. Howard  
 Studies in the Stuart period.
- 261A-261B. **Seminar in British Empire History.** (3-3) Yr. Mr. Galbraith  
 Studies in nineteenth- and twentieth-century imperial history.
- \*262A-262B. **Seminar in English History.** (3-3) Yr. ———  
 Studies in the late nineteenth century and the twentieth century.
- 265A-265B. **Seminar in Hispanic-American History.** (3-3) Yr. Mr. Hussey  
 Studies in the colonial and early national periods.
- 269A-269B. **Seminar in United States History.** (3-3) Yr. Mr. Smith  
 Studies in the colonial period.
- 270A-270B. **Seminar in United States History.** (3-3) Yr. Mr. Mowry  
 Studies in the American West and the recent United States.
- 271A-271B. **Seminar in United States History.** (3-3) Yr. Mr. Saloutos, Mr. Higham  
 Studies in recent United States history.
- 272A-272B. **Seminar in United States History.** (3-3) Yr. Mr. Dyer  
 Studies in political and social problems of the middle nineteenth century.
- 274A-274B. **Seminar in American History.** (3-3) Yr. Mr. Caughey  
 Studies of the American West.
- 279A-279B. **Seminar in Far Eastern History.** (3-3) Yr. Mr. Han  
 In 1953-1954 the seminar will be devoted to studies in the history of China.
290. **Research in History.** (1 to 6) I, II. The Staff  
 Open only to students who have passed the qualifying examinations for the doctor's degree.

\* Not to be given, 1953-1954.

## HOME ECONOMICS

Dorothy Leahy, Ed.D., *Professor of Home Economics (Chairman of the Department)*.

Helen B. Thompson, Ph.D., *Professor of Home Economics, Emeritus.*

Marguerite G. Mallon, Ph.D., *Associate Professor of Home Economics.*

Greta Gray, Ph.D., *Associate Professor of Home Economics, Emeritus.*

Olive Hall, Ph.D., *Assistant Professor of Home Economics.*

Clarice H. Lindsey, M.S., *Assistant Professor of Home Economics.*

Edna B. Southmayd, Ph.D., *Assistant Professor of Home Economics.*

Lois C. Blackwood, M.S., *Acting Assistant Professor of Home Economics.*

Edward L. Bada, M.S., *Acting Assistant Professor of Family and Consumer Economics.*

George Fitzelle, Ph.D., *Instructor in Home Economics.*

Shirley Walker, M.A., *Instructor in Home Economics.*

Florence C. McGucken, M.S., *Lecturer in Home Economics.*

Frances Obst, M.S., *Lecturer in Home Economics.*

Frances Tacionis, M.A., *Lecturer in Home Economics.*

Theodora Corey, M.A., *Associate in Home Economics.*

Donovan Hester, M.S., *Associate in Home Economics.*

Mary Rogers, M.S., *Associate in Home Economics.*



Ethel M. Martin, Ed.B., *Lecturer in Home Economics.*

Stefania Przeworska, *Lecturer in Home Economics.*

### College of Applied Arts

All students intending to major in home economics must submit the results of diagnostic tests given by the University. Students may contact the Dean of Students Office or Department of Home Economics for schedule as to when the tests will be given.

The Department of Home Economics offers the following specializations:

1. **General Home Economics.** This major is for students who wish home economics as a background for everyday living and homemaking. (Students desiring to work toward the general elementary teaching credential may select this major.)

*Preparation for the Major.*—Courses 9, 11, 12, 14, 15, 16; Art 6A, 21A; Chemistry 2A.

*The Major.*—Courses 102, 134, 135, 138, 143, 144, 145, 146, 154, 155, 161, 172; Psychology 112; and additional upper division home economics courses to total 36 units.

2. **Home Economics Teacher Education.**

*Preparation for the Major.*—Courses 9, 11, 12, 14, 15, 16; Art 6A, 21A; Chemistry 2A and 10 or 1A-1B and 8; Psychology 1A-1B; Zoölogy 15.

*The Major.*—Courses 102, 113 (4 units), 134, 135, 138, 144, 145, 146, 155, 172, 181, 370, and 4 units selected from 162, 175, 176A, 177A to total 36 units.

3. **Foods and Nutrition.** This major is for students preparing for dietetic internships, institutional management, and promotional work in foods.

*Preparation for the Major.*—Courses 9, 11, 12, 14, 15, 16; Bacteriology 1;

Business Administration 1A; Chemistry 2A and 10 or 1A-1B and 8; Economics 1A-1B; English 1A-1B or Speech 1A-1B; Psychology 1A-1B; Zoölogy 15.

*The Major.*—Courses 100, 101, 102, 105, 113 (4 units), 114, 116, 121, 122, and electives selected from 145, 146, 370, Business Administration 150, 160 or Agricultural Economics 130 to total 36 units.

**4. Food Technology.** This major is for students preparing to be food technicians in food industries and for graduate work or research positions in foods.

*Preparation for the Major.*—Courses 9, 11, 12, 14, 15, 16; Bacteriology 1; Chemistry 2A and 10, or 1A-1B and 8; Economics 1A-1B; Physics 2A, or 10 and 21; Psychology 1A-1B, Zoölogy 15. Recommended: Mathematics D or E.

*The Major.*—Courses 100, 101, 102, 105, 113 (4 units), 114, 116, 145, 146; Bacteriology 106; Education 147; at least 2 units selected from other upper division home economics courses, and electives selected from Botany 103, Chemistry 5A\*, 107, 108A-B-C-D, Education 114, Public Health 162, Statistics 131A to total 36 units.

**5. Clothing and Textiles.**

*Preparation for the Major.*—Courses 9, 11, 12, 14, 15, 16; Art 6A-6B, 7A-7B, 21A; Chemistry 2A and 10 or 1A-1B and 8; Economics 1A-1B.

*The Major.*—Courses 144, 155, 161, 162, 163, 170, 172, 175, 176A, 177A; Art 160, 163A; and additional courses chosen from Home Economics 134, 135, 138, 143, 145, 146, 171A, 181, 199 to total 36 units.

For courses required in the curriculum in apparel merchandising and in the curriculum in apparel design, see pages 38, 39.

### College of Letters and Science

*Letters and Science List.*—Courses 113, 114, 143, 154, and 170 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

#### LOWER DIVISION COURSES

- 9. Introduction to Home Economics.** (2) I, II. Miss Hall  
Lecture, two hours; field trips, two hours.  
A study of the history and scope of home economics and the professional opportunities in this field.
- 11. Introduction to Nutrition and Foods.** (3) I, II. Mrs. Southmayd  
Lecture, one hour; laboratory, six hours.  
A study of the basic principles of nutrition and their relationship to the selection, preparation and service of meals.
- 12. Introduction to Family Living.** (2) I, II. Mr. Fitzelle  
A study of the activities of the family and the functions of the home-maker in modern society. Emphasis on understanding the contribution of family members to successful family living.
- 14. Management in Daily Living.** (2) I, II. Miss Hester  
A study of the management of time, energy and material resources and their contribution to personal and family living.
- 15. Selection of House Furnishings.** (3) I, II. Miss Obst  
Lecture, two hours; laboratory, four hours.  
Prerequisite: Art 6A recommended.  
A study of floor plans, furniture selection and arrangement, suitable materials for floor coverings, wall decorations, curtains, draperies, and upholstery, table linens, china, glass, and silver.

\* Upper division major credit for Chemistry 5A allowed only if course taken in upper division.

**16. Introduction to Clothing and Textiles. (3) I, II.**

Lecture, one hour; laboratory, six hours. Miss Corey, Miss Walker

A study of the fundamental principles of clothing construction including a study of textiles in relation to their selection and use.

**UPPER DIVISION COURSES****Food and Nutrition****100. Food Economics. (2) I.**

Mrs. McGucken

Lecture, one hour; laboratory, three hours.

Prerequisite: course 11. Recommended: Economics 1A, 1B.

The production and distribution of food; grades and standards; legal controls; the cost to consumers and the relations to nutritive values.

**101. Food Analysis. (3) I.**

Lecture, one hour; laboratory, six hours. Prerequisite or concurrent: course 113. The application of quantitative methods to the study of foods.

**102. Advanced Foods. (3) I, II.**

Mrs. Southmayd, Miss Blackwood

Lecture, one hour; laboratory, six hours. Prerequisite: course 11, Chemistry 2A.

The application of science in the study of fundamental principles and practices of food preparation.

**105. Experimental Cookery. (3) II.**

Mrs. Southmayd

Prerequisite: course 102; Chemistry 8 or 10.

Qualitative and quantitative methods in food preparation under controlled conditions.

**111. Principles of Nutrition. (2) I, II.** Mrs. McGucken, Miss Blackwood

A survey of the principles of nutrition and their application in normal conditions of growth and development. Food habits in relation to nutritive requirements and health. (Not open to majors who have had Home Economics 11.)

**112. Nutrition in Family Health Service. (2) I, II.**

Mrs. McGucken

Lecture, one hour; laboratory, two hours; additional field work. Prerequisite: 111 or equivalent and consent of the instructor.

A study of food service for family groups at moderate and low income levels, considering persons of various ages within the family group. Also special consideration to be given to special dietary problems, food purchasing, protective food legislation, and the adaptation of foreign food habits to good nutrition. (This course is designed particularly for public health nurses and nutritionists in social agencies.)

**113. Advanced Nutrition. (3 or 4) I, II.**

Miss Mallon

Lecture, three hours; laboratory, three hours. Prerequisite: Chemistry 8 or 10, Zoölogy 15. (The lectures may be taken separately with credit value of 3 units.)

A chemical study of carbohydrates, fats, proteins, minerals, and vitamins in relation to human nutrition. Qualitative laboratory studies upon the components of food. Computation of normal diets for infants, children and adults.

**114. Metabolism Methods. (4) II.**

Lecture, two hours; laboratory, six hours. Prerequisite: course 101 or the equivalent.

Observations of the influence of special diets upon various phases of metabolism; practice in the methods of determining blood constituents, basal metabolic rate, and nitrogen and mineral excretions.

116. **Diet in Health and Disease.** (2) I, II. Miss Mallon  
Lecture, one hour; laboratory, three hours.  
Prerequisite: courses 102, 113 (4 units).  
Modification of the normal diet for specific diseases; dietary calculations.

### Institutional Management

121. **Quantity Food Study.** (4) I. Mrs. McGucken  
Lecture, three hours; laboratory, four hours. Prerequisite: course 102.  
Recommended: Economics 1A-1B.  
A study of economic principles and problems involved in the purchase and preparation of foods in quantity.
122. **Institutional Organization and Management.** (4) II. Mrs. McGucken  
Lecture, three hours; laboratory, four hours. Prerequisite: course 102.  
Recommended: Economics 1A-1B.  
A study of organization and administration as applied to institutional households such as residence halls, hotels, hospitals, school cafeterias, etc.

### Family Relations

134. **Child Care and Guidance.** (3) II. Mr. Fitzelle  
Prerequisite: Psychology 112.  
Application of the principles of growth and development to the care and guidance of young children in the home.
135. **Laboratory in Child Study.** (2) I, II. Mrs. Rogers  
Prerequisite: course 134 and Psychology 112, or consent of the instructor.  
Further study of the growth and development of children with emphasis on the preschool period. Observation and participation in the nursery school with discussion on nursery school theory and practice.
138. **Family Relationships.** (3) I, II. Mr. Fitzelle  
Recommended: course 12.  
A study of the modern family and its relationships. Emphasis on personal adjustment of the individual, problems concerning marriage relations, parenthood and family administration.

### Family Economics and Home Management

- \*140. **Family Meal Service.** (2) II. Mrs. McGucken  
Lecture, one hour; laboratory, six hours. Prerequisite: courses 102, 111 or 113; Chemistry 2A.  
Organization and management of family food service at different economic levels. Emphasis is placed on standard products, meal service, efficient kitchen planning, use and care of kitchen and dining equipment.
143. **The Economic Problems of Families.** (2) I, II. Mr. Rada  
Prerequisite: course 14 or consent of the instructor.  
Distribution of families as to size, composition, domicile, income, and expenditures. Economic and social developments which have influenced the activities of the members of the household and brought about changes in the family's economic problems and standards of living.
144. **Management of Individual and Family Finances.** (3) I, II.  
Prerequisite: course 14 or consent of the instructor. Mr. Rada  
Management of family income, consumer credit, personal investment, home ownership, and life insurance. Consideration of taxation in relation to family expenditure.

\* Not to be given, 1953-1954.



- 145. Home Management Problems.** (3) I, II. Miss Hester  
Lecture, two hours; laboratory and demonstration, two hours. Prerequisite: course 14, and consent of the instructor.  
A study of the management of the various resources available to the family with a view to promoting family well-being and satisfaction.
- 146. Home Management Laboratory.** (2) I, II. Miss Hester  
Laboratory: six hours. Prerequisite: course 145 (may be taken concurrently).  
Experience in group living for five weeks in the home management house with the guidance of an instructor.
- 154. Housing.** (3) I, II. Mr. Rada  
The contemporary housing situation, essentials of healthful housing, improvement in housing, and municipal, state, and federal activities.

### Clothing, Textiles, and Related Arts

- 155. House Planning and Furnishings.** (2) II. Miss Obst  
Lecture, one hour; laboratory, three hours. Prerequisite: course 15; Art 6A.  
Planning the home with reference to livability, selection of furnishings and equipment, arrangements for minimizing work, and adaptation to the needs of families of varying positions and incomes.
- 160. Fundamentals of Textiles.** (2) II. Mrs. Lindsey  
Lecture, two hours.  
The study of textile fabrics, fibers and the processes used in their manufacture as a basis for selection and use. Not open to those who have taken course 16.
- 161. Decorative Textiles.** (2) I, II. Miss Obst  
Prerequisite: course 16 or 160.  
Studies in the appreciation of the construction and historical background of woven, printed, and embroidered textiles; handmade laces; the damasks, brocades, and prints of China, Persia, and India; French tapestries; oriental rugs; French and English prints, and early American textiles.
- 162. Textiles.** (2) I, II. Mrs. Lindsey  
Laboratory: six hours. Prerequisite: course 16 or 160.  
A study of the sources and properties of textile fibers, and fabric characteristics as related to selection, use, care.
- 163. Advanced Textiles.** (3) II. \_\_\_\_\_  
Lecture, two hours; laboratory, three hours. Prerequisite: courses 16, 162; Chemistry 2A and 10, or 1A-1B and 8.  
An intensive study of textile materials with special emphasis on the nature of the raw material and quantitative methods in textile analysis.
- 170. History and Development of the Clothing Industry.** (3) I, II. Miss Tacionis  
A study of the growth, location, influences of technological advances, designers, legislation, organizations, publications, fashions and problems of production, promotion and distribution of ready-to-wear upon the clothing and textile industry.
- 171A-171B. Millinery.** (2-2) Yr. Mme. Przeworska  
Lecture, one hour; laboratory, three hours. Prerequisite: course 16.  
The development of head covering as a part of apparel design. Study of design and construction of the modern hat and its relation to various types of individuals and styles of clothing. Experience in construction of hats.

- 172. Advanced Clothing.** (3) I, II. Miss Corey, Miss Walker  
Lecture, one hour; laboratory, six hours. Prerequisite: course 16.  
Problems of clothing construction, including the adaptation of commercial patterns and the selection, care and use of equipment.
- 175. Tailoring Problems.** (3) I, II. Miss Corey, Mrs. Lindsey, Miss Tacionis  
Lecture, two hours; laboratory, four hours. Prerequisite: course 172, Art 21A.  
The design, fashion, construction, and economic factors involved in selecting and in making tailored garments.
- 176A-\*176B. Advanced Dress Design.** (3-3) Yr. Miss Tacionis  
Lecture, two hours; laboratory, four hours. Prerequisite: course 172; Art 21A.  
Creation of original designs through French draping and flat pattern. Selection, and manipulation of fabrics.
- 177A-\*177B. Pattern Analysis.** (3-3) Yr. \_\_\_\_\_  
Lecture, two hours; laboratory, four hours. Prerequisite: course 176A.  
A study of pattern drafting and grading in relation to the problem of design with consideration of personal and industrial needs. Standardization of size and relationship to problems of production and consumption.

### Home Economics Teacher Education

- 181. Problems in Home Economics.** (2) II. Miss Leahy  
Prerequisite: course 370.  
A study of special problems in the teaching of homemaking selected in accordance with the needs of the student. Emphasis is placed on the contribution of homemaking to school and community life.

### Special Study Course for All Majors

- 199A-199B. Special Studies in Home Economics.** (2-4; 2-4) Yr. The Staff  
Prerequisite: a B average in home economics courses and senior standing.  
Assigned problems for individual investigation, to be directed by the instructor in whose field of work the problem lies.

### GRADUATE COURSES

- 227. Physical Analysis of Textiles.** (3) I. \_\_\_\_\_  
Lecture, one hour; laboratory, six hours.  
Prerequisite: courses 16, 162, 163, or equivalent.  
Investigations into the physical and microscopic characteristics of fibers, yarns, and fabric structure in relation to fabric performance.
- 228. Chemical Analysis of Textiles.** (3) II. \_\_\_\_\_  
Lecture, one hour; laboratory, six hours. Prerequisite: courses 16, 162, 163, or equivalent.  
Chemical analysis and research related to the natural and synthetic textile fibers and finishes used for clothing and furnishings. Investigations made of the chemical changes occurring during the use, maintenance, and storage of fabrics.
- 229. Methods of Research in Home Economics.** (2) I. Miss Hall  
A study of the methods of research applicable to the various areas of home economics. Individual guidance in research in a selected problem. Assistance in the statistical treatment of data.

\* Not to be given, 1953-1954.

250. **Seminar in Family Life.** (2) I. Mr. Fitzelle  
A critical discussion of research literature concerning the problems of modern family living.
251. **Seminar in Nutrition.** (2) I. \_\_\_\_\_  
Recent advances in the science of nutrition and in the dietetic treatment of disease.
255. **Food Technology Seminar.** (2) II. Mrs. Southmayd  
Review of recent and current developments in food study and cookery.
282. **Personal and Family Economics Seminar.** (2) I, II. Mr. Rada  
Review of budget studies representative of various levels of living and of those based on quantity budgets.
283. **Seminar in Textiles and Clothing.** (1) II. \_\_\_\_\_  
Readings and discussion of recent developments in textiles and clothing.
271. **Seminar in Home Economics Education.** (2) I, II. Miss Hall  
Review of recent and current developments in the teaching of home economics.
272. **Seminar in the Supervision of Home Economics.** (2) II. Miss Leahy  
Prerequisite: teaching experience.  
Individual investigation of the nature and function of supervision of home economics at all school levels.
273. **Seminar in the Organization and Administration of Home Economics.** (2) I. Miss Leahy  
A review of the literature, and intensive individual study of problems concerned with the organization and administration of home economics at all school levels.
- 282A-282B. **Selected Problems.** (2-4; 2-4) Yr. The Staff  
Laboratory or field investigation in a specialized area of home economics.

**PROFESSIONAL COURSE IN METHOD**

370. **Principles of Home Economics Teaching.** (3) I, II. Miss Leahy, Mrs. Martin  
Prerequisite: 12 units of upper division course work in home economics.  
A survey and evaluation of methods and materials used in teaching home-making in the secondary school.

**HUMANITIES**

Pier-Maria Pasinetti, Ph.D., *Associate Professor of Italian.*

*Letters and Science List.*—Course 1A-1B is included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

- 1A-1B. **World Literature.** (3-3) Yr. Mr. Pasinetti  
A course in world literature for the general student. Recommended as a course to satisfy requirement (G) (1) in the College of Letters and Science.

**IRRIGATION AND SOILS**

David Appleman, Ph.D., *Professor of Plant Nutrition.*

Martin R. Huberty, Engr., *Professor of Irrigation (Chairman of the Department).*

Arthur F. Pillsbury, Engr., *Professor of Irrigation.*

Owen R. Lunt, Ph.D., *Assistant Professor of Soils.*

*The Major.*—The curriculum in irrigation science is offered only on the Davis campus and the soil science curriculum only on the Berkeley campus. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate advisers.

## UPPER DIVISION COURSES

- 105. Principles of Irrigation.** (4) II. Mr. Pillsbury  
Lectures, three hours; laboratory, three hours. Prerequisite: Physics 2A-2B, or the equivalent.  
Irrigation as a factor in agriculture; soil-plant water relations; hydraulics of farm irrigation systems.
- 110A. The Soil as a Medium for Plant Growth.** (3) II. Mr. Appleman  
Lectures, three hours. Prerequisite: Chemistry 1A-1B and 8, or the equivalent.  
Nutritional requirements of plants; studies of the absorption of mineral elements by plants, and related processes; chemical composition of soils; current views of the soil solution and of base exchange; factors determining productivity of soils; soil and plant interrelations.
- 126. Development and Characteristics of Soils.** (3) I. Mr. Lunt  
Lectures, three hours. Prerequisite: introductory college chemistry and physics; geology recommended.  
An introduction to the origin, classification, and utilization of soils; and to their physical and chemical properties.
- 127. Soil Chemistry and Physics Laboratory.** (2) I. Mr. Appleman, Mr. Lunt  
Laboratory, six hours. Prerequisite: course 110A, or 126 (may be taken concurrently).  
Laboratory exercises designed to teach students the principles and techniques used in experimental work dealing with soils, plants, and their relationships.
- 199A-199B. Special Study for Advanced Undergraduates.** (2-4; 2-4) Yr.  
Prerequisite: senior standing and consent of the instructor. The Staff

## GRADUATE COURSE

- 280A-280B. Research in Irrigation and Soils.** (2-6; 2-6) Yr.  
The Staff (Mr. Huberty in charge)

## ITALIAN

Charles Speroni, Ph.D., *Professor of Italian (Chairman of the Department)*.  
Pier-Maria Pasinetti, Ph.D., *Associate Professor of Italian*.  
Carlo L. Golino, Ph.D., *Assistant Professor of Italian*.

*Letters and Science List.*—All undergraduate courses in Italian are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Italian 1, 2, 3, 4, 42A-42B, or the equivalent to be tested by examination; Latin 1 or two years of high school Latin. Recommended: History 1A-1B; Philosophy 6A-6B, and an additional foreign language.

*The Major.*—Twenty-four units of upper division courses, of which at least 20 must be in Italian. Four units may be taken in French, German, Greek, Latin, Portuguese, or Spanish literature.

As electives the department recommends courses in (1) European history, anthropology, geography, political institutions, and international relations, particularly as they relate to Italy; (2) English literature; (3) French, German, Greek, Latin, Portuguese, and Spanish language and literature.

*Requirements for Admission to Graduate Courses.*—Students who have completed the undergraduate major in Italian, or the equivalent, will be recommended for graduate work in Italian provided they meet the general requirements for admission to regular graduate status.

*Requirements for the Master's Degree.*—For the general requirements see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. Two years of high school Latin, or the equivalent, are a departmental prerequisite for the master's degree in Italian. The department follows Plan I: twenty units of upper division and graduate courses approved by the department. At least 8 units must be in strictly graduate courses in Italian.

#### LOWER DIVISION COURSES

1. **Elementary Italian—Beginning.** (4) I, II. \_\_\_\_\_  
This course corresponds to the first two years of high school Italian.
2. **Elementary Italian—Continued.** (4) I, II. \_\_\_\_\_  
Prerequisite: course 1, or two years of high school Italian.
3. **Intermediate Italian.** (4) I, II. Mr. Golino  
Prerequisite: course 2, or three years of high school Italian.
4. **Intermediate Italian—Continued.** (4) I, II. Mr. Golino  
Prerequisite: course 3, or four years of high school Italian.
- 8A–8B. **Italian Conversation.** (1–1) Yr. \_\_\_\_\_  
The class meets two hours weekly. Open to students who have completed course 3. Those with grade A or B in course 2 may be admitted.
30. **Readings in the Italian Recitative.** (2) I. Mr. Golino  
No prerequisite. Designed primarily for music and voice students. Elements of grammar, reading, extensive drill in correct diction. Readings and translations from Italian libretti.
- 42A–42B. **Italian Civilization.** (2–2) Yr. Mr. Golino  
A study in the growth and development of Italian culture in the various fields. There are no prerequisites for this course. Lectures in English, reading in Italian or English.

#### UPPER DIVISION COURSES

Sixteen units of lower division courses in Italian, or the equivalent, are required for admission to any upper division course. All upper division courses, with the exception of 109A–109B, and 152A–152B, are conducted mainly in Italian.

- 101A–101B. **Composition, Oral and Written.** (3–3) Yr. Mr. Speroni
- 103A–103B. **Survey of Italian Literature.** (3–3) Yr. Mr. Speroni
- \*104A–104B. **Italian Literature of the Nineteenth and Twentieth Centuries.** (2–2) Yr. Mr. Golino
- \*109A–109B. **Dante's Divina Commedia.** (3–3) Yr. Mr. Speroni  
With the consent of the instructor this course may also be taken by students who have a thorough preparation in French, Spanish, or Portuguese.

\* Not to be given, 1953–1954.

- \*130A-130B. **Advanced Grammar and Composition.** (2-2) Yr. \_\_\_\_\_  
Prerequisite: course 101A-101B.
- 152A-152B. **English Approach to Italian Literature.** (3-3) Yr. Mr. Pasinetti  
Given in English. A study of Italian literature with special emphasis on the English-Italian and American-Italian literary exchange from Dante to Hemingway. Individual topics assigned. Italian texts read either in the original or in English translations of some literary interest.
- 199A-199B. **Special Studies in Italian.** (1-3; 1-3) Yr. The Staff  
Prerequisite: senior standing, and at least nine units of upper division Italian.
- GRADUATE COURSES
- 222A-222B. **The Renaissance.** (3-3) Yr. Mr. Speroni
- \*225. **The Italian Epic: Ariosto and Tasso.** (3) I. Mr. Speroni
- \*228. **Studies in Eighteenth-Century Italian Literature.** (3) II. Mr. Pasinetti
- 230A-230B. **Modern Italian Literature.** (2-2) Yr. Mr. Pasinetti
290. **Research in Italian.** (1-6) I, II. The Staff  
Prerequisite: consent of the Department.

## JOURNALISM

- Joseph A. Brandt, M.A., B.Litt., LL.D., *Professor of Journalism (Chairman of Department)*.  
Robert E. G. Harris, M.A., *Professor of Journalism*.  
Harva Sprager Hachten, M.S., *Assistant Professor of Journalism*.  
\_\_\_\_\_, *Instructor in Journalism*.



- George M. Lacks, *Lecturer in Journalism*.  
Irving Ramsdell, *Lecturer in Journalism*.  
Adela Rogers St. Johns, *Lecturer in Feature Writing*.  
George F. Wasson, Jr., J.D., *Lecturer in Journalism*.



- Franklin Fearing, Ph.D., *Professor of Psychology*.

The Graduate Department of Journalism offers a one-year program leading to the Master of Arts or Master of Science degree. Applicants for admission must meet all requirements of the Graduate Division of the University as outlined in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. In addition, all prospective students must complete a departmental application form which may be obtained by writing to the Chairman, Graduate Department of Journalism. Personal interviews will be arranged at the request of the faculty.

The Graduate Department of Journalism offers either Plan I or Plan II; work in either plan starts in the fall semester only and must be completed within one year (two semesters).

\* Not to be given, 1953-1954.

Plan I is for students who have had an adequate undergraduate preparation in Journalism or a sufficient period of professional experience to warrant their being excused, at the discretion of the faculty, from a part of News Communication for the first semester. Such students will be required to write a publishable dissertation, although actual publication will not be required.

Plan II requires students to take the prescribed program of courses as determined by the department.

Students may enroll in the program at the beginning of the fall semester only and, since there are approximately forty hours of class work each week, must be prepared to devote full time to their studies. Because of limited space and facilities, the enrollment each year is limited.

## GRADUATE COURSES

- |   |                          |
|---|--------------------------|
| 202. Law of Libel in Communications. (1) I.             | Mr. Wasson               |
| 204. The Ethics and Obligations of Journalism. (1) II.  | Mr. Brandt, Mrs. Hachten |
| 218. Radio and Television News Communication. (1) II.   | Mrs. Hachten             |
| 250. News Communication. (4) I.                         | Mr. Brandt and the Staff |
| 251. News Communication and Production. (5) II.         | Mr. Brandt and the Staff |
| 252. Editing the Newspaper. (1) I.                      | Mr. Brandt               |
| 260A-260B. Ideas That Changed History. (3-3) Yr.        | Mr. Brandt, Mrs. Hachten |
| *262A-262B. Theory and Practice of the Press. (1-1) Yr. | Mr. Harris               |
| 265. Interpretation of Public Affairs. (1) II.          | Mr. Harris               |
| 268A-268B. The Reporter and Society. (3-3) Yr.          | Mr. Harris               |

## RELATED COURSE IN ANOTHER DEPARTMENT

- Psychology 267. Mass Communications as a Social Force. (2) I.  
Mr. Fearing

## LAW

- L. Dale Coffman, A.B., J.D., LL.M., S.J.D., *Dean of the School of Law and Professor of Law.*  
 James H. Chadbourn, A.B., J.D., *Connell Professor of Law.*  
 Richard C. Maxwell, B.S.L., LL.B., *Professor of Law.*  
 Rollin M. Perkins, A.B., J.D., S.J.D., *Connell Professor of Law.*  
 Ralph S. Rice, B.S., LL.B., LL.M., *Professor of Law.*  
 Arvo Van Alstyne, A.B., LL.B., *Visiting Professor of Law.*  
 Harold E. Verrall, M.A., LL.B., J.S.D., *Professor of Law.*  
 Kenneth H. York, A.B., LL.B., *Professor of Law.*  
 James D. Sumner, Jr., A.B., LL.B., LL.M., *Associate Professor of Law.*  
 Edgar A. Jones, Jr., A.B., LL.B., *Assistant Professor of Law.*  
 Allan H. McCoid, B.S., LL.B., *Assistant Professor of Law.*  
 William C. Mathes, A.B., LL.B., *Lecturer on Trial Practice and Judge of the Practice Court.*  
 Louis Piacenza, *Law Librarian.*

\* Not to be given, 1953-1954.

## FIRST YEAR

- 200. Contracts. (6) Yr.** Mr. Sumner  
A study of the basic rights and duties and the availability of legal remedies as between contracting parties. Mutual assent, consideration, formal contracts, third-party beneficiaries, assignments, specific performance, illegal bargains, methods of discharge, Statute of Frauds.
- 202. Criminal Law and Procedure. (6) Yr.** Mr. Perkins  
A study of the characteristics of particular crimes, the general principles of liability to punishment, and some of the basic problems in criminal law enforcement.
- 203. Agency. (2) II.** Mr. York  
Master and servant and vicarious liability, the agency relationship, authority, parties, unauthorized transactions, ratification and restitution.
- 204. Introduction to Procedure. (3) I.** Mr. Chadbourn  
An introduction to federal and state court organization, jurisdiction and procedure; the historical development of common law actions; an introduction to the study of law and the legal profession.
- 208. Property. (6) Yr.** Mr. Verrall  
Development of the law of property in personalty and in land. Consideration of possession of unappropriated or lost chattels, bailments, liens, gifts, accession, confusion, judgments, fixtures, emblements, adverse possession, prescription, possessory estates in land, concurrent interests, and an introductory consideration of remainders, reversions, executory interests, and powers.
- 212. Torts. (6) Yr.** Mr. Coffman  
Legal liability for wrongful interference with tangible property, real and personal, intangible interests, and advantageous relations.

## SECOND YEAR

- 222. Business Associations. (4) II.** Mr. York  
The law of private corporations, partnerships, joint stock companies, and business trusts.
- 224. Constitutional Law. (3) I.** Mr. Sumner  
A study of the federal system under the Constitution of the United States. The doctrine of judicial review in constitutional cases; division of powers as between the states and the national government, and within the national government; the powers of Congress; the powers of the President; limitations on the powers of state and national governments for the protection of life, liberty, and property; national and state citizenship.
- 226. Evidence. (4) II.** Mr. Chadbourn  
The law of evidence in trials at common law and in equity, including examination, competency and privileges of witnesses, judicial notice, burden of proof and presumptions, functions of judge and jury, common law and statutory rules and principles of admissibility, exclusion, and selection.
- 228. Sales. (3) II.** Mr. Perkins  
A study of the rules and principles applicable in sales transactions; transfer of property rights; ascertained and unascertained goods, fungibles, goods potentially possessed; appropriation; documents of title; financing methods; security; conditional sales; trust receipts; rights, liabilities, and remedies of the buyer and the seller.



- 230. Commercial Paper. (3) I.** Mr. Perkins  
The law of bills of exchange, promissory notes, checks and certificates of deposit with special reference to the Negotiable Instruments Law.
- 232. Procedure. (3) I.** Mr. Chadbourn  
Pleading and procedure in civil actions under modern codes, State and Federal.
- 234. Conveyances. (2) I.** Mr. Maxwell  
A study of the law relating to the transfer of interests in land. Consideration of the execution and delivery of deeds of conveyance, description of land conveyed, incorporeal interests, covenants running with the land, estoppel by deed, and recording.
- 236. Trusts. (3) II.** Mr. Jones  
Origin of trust; its parties; its subject matter; its creation, including intention, conveyance, wills acts, Statute of Frauds; incidents of trust relationship; classification of trusts; problems of administration, including investments, capital and income accounts, contracts of trustee, torts of trustee, alteration of trust, termination; remedies available for the enforcement of trusts.
- 238. Equity. (3) I.** Mr. York  
Nature of equitable relief, specific performance of contracts, specific reparation and prevention of torts, cancellation and reformation of instruments, interpleader, bills of peace, quieting title, protection of personalty.

## THIRD YEAR

- 301. Oil and Gas. (3) I.** Mr. Maxwell  
Nature of landowner's interest in oil and gas and extent of its legal protection, construction and effect of the oil and gas lease and other instruments affecting interests in oil and gas, governmental regulation of drilling and production.
- 302. Administrative Law. (3) I.** Mr. Van Alstyne  
Characteristics of administrative tribunals, procedure before them and judicial control of their actions.
- \*304. Bankruptcy. (3) I.**  
Jurisdiction, persons subject to bankruptcy, procedure, acts of bankruptcy, assets of the estate, claims and distribution.
- 306. Community Property. (2) I.** Mr. Verrall  
Community property defined; nature of the interests of the husband and wife; management and control; disposition on dissolution of the marriage.
- 308. Conflict of Laws. (3) II.** Mr. Sumner  
A study of the special problems which arise when the significant facts of a case are connected with more than one jurisdiction. Recognition and effect of foreign judgments; choice of law; federal courts and conflict of laws; the United States Constitution and conflict of laws.
- 309. Damages. (2) II.** Mr. Maxwell  
Rules and standards applicable generally to damages, measure of damages in tort and contract actions, compensation for property taken by the public, procedural problems in assessment of damages.
- \*310. Family Law. (2) I.**  
The creation and dissolution of the marital status; the relations of husband and wife; parent and child; legitimacy; custody; and adoption.

\* Not to be given, 1958-1954.

- 312. Federal Jurisdiction. (2) II.** Mr. Chadbourn  
Jurisdiction and procedure of the United States courts in civil actions.
- 314. Future Interests. (3) II.** Mr. Verrall  
A study of the problems arising out of the creation of successive interests in land and personalty. Included is a consideration of the variety of future interests, of the devices employed to create future interests, and of the problems of construction of language often used in conveyances creating future interests.
- 316. Income Taxation. (3) I.** Mr. Rice  
Administration of the Federal income tax; taxpayers' remedies; nature of taxable income; statutory exclusions, deductions and credits relating to taxable income; accounting problems; capital gains and losses; problems arising from capital distributions and reorganizations.
- \*318. Insurance. (2) II.** \_\_\_\_\_  
Risks covered by the insurance contract, their selection and control; making construction and enforcement of the contract; governmental supervision.
- 320. Labor Law. (3) I.** Mr. Jones  
A study of the legal relations of workingmen and their employers as reflected in the common law and by federal and state statutes.
- 322. Mortgages. (3) II.** Mr. Maxwell  
Theory of mortgages, the mortgage, redemption in equity and after foreclosure sale, discharge and equitable reinstatement, transfer of mortgagor's interest, priorities, assignment of mortgages, marshaling.
- 323. Local Government Law. (3) II.** Mr. Van Alstyne  
The general nature and rights and liabilities of public corporations.
- 324. Practice Court. (2) II.** Mr. Mathes  
The preparation and trial of cases.
- 325. Problems in Federal Taxation. (2) II.** Mr. Rice  
Contemporary problems arising from Federal income, estate, gift and excise taxes. At some meetings problems will be prepared and presented by practitioners in the tax field, in cooperation with the professor. Open to students who have completed the courses in Federal Income Taxation and Federal Estate and Gift Taxation.
- 328. Restitution. (3) I.** Mr. York  
Relief against unjust enrichment. Equitable and quasi-contractual remedies to recover benefits conferred in the performance of contracts, or those acquired by tort or as the result of mistake (including misrepresentation) or compulsion.
- \*329. State Taxation. (2) I.** Mr. Rice  
Comparison of California tax structures with those of other jurisdictions; problems of assessment, classification, levy and collection of taxes on real and personal property and intangibles; survey of excise (including sales, use, inheritance and corporation franchise) taxes and legal problems relating thereto.
- 330. Suretyship. (2) II.** Mr. Perkins  
A study of transactions involving borrowing and lending of money and purchase and sale of property on credit in which the principal debtor is backed by the obligation of a third person. The tripartite relation of suretyship; the Statute of Frauds; the surety's rights; subrogation, indemnity, contribution, exonerations; the surety's defenses.

\* Not to be given, 1953-1954.

- 332. Federal Estate and Gift Taxation. (2) I.** Mr. Rice  
Items includable in gross estates of decedents, valuation, deductions and credits; computation; special tax and other problems in planning of estates.
- 334. Trade Regulation. (3) I.** Mr. Jones  
Regulation of business combinations, trade practices and competition; federal anti-trust legislation; fair trade acts; the Federal Trade Commission.
- 336. Wills and Administration of Estates. (2) II.** Mr. Jones  
Intestate succession (descent and distribution); testamentary disposition of property; probate proceedings; and the administration, distribution and settlement of decedents' estates.
- 338. Trial Practice. (2) I.** Mr. Mathes, Mr. Van Alstyne  
A study of the procedures and techniques in the trial of a case.

## LINGUISTICS AND PHILOLOGY

Harry Hoijer, Ph.D., *Professor of Anthropology.*

### UPPER DIVISION COURSES

- 170. Introduction to Linguistics. (3) I.** Mr. Hoijer  
An introduction to the fundamentals of general and historical linguistics, including phonetics; linguistic elements; grammatical categories; linguistic change; dialect geography; language, race, and culture.
- \*171. Introduction to Phonetics. (3) II.** Mr. Hoijer  
The speech sound and the phoneme; phonetic transcription; types of phonemes; phonetic forms; practice in recording English and other languages phonetically.
- 175. Introduction to Romance Linguistics. (3) II.** \_\_\_\_\_  
Linguistic evolution from Latin to French, Italian, Spanish, and other contemporary Romance languages. Emphasis on what is interesting from the point of view of general and structural linguistics. Reading of poetry and prose.
- \*195. Introduction to Indo-European Linguistics. (3) I.** \_\_\_\_\_  
Relationship and evolution of Indo-European languages. Linguistic change in sounds, forms, and meanings. Emphasis on elements in English and other modern languages from the point of view of general and structural linguistics. Music, song, verse. Examples will be selected to meet special needs of students.

### GRADUATE COURSE

- 250A-250B. Seminar in Linguistic Science. (3-3) Yr.** \_\_\_\_\_  
Theory and application of structural linguistic analysis and description of languages. Modern trends in European and American linguistics.

### RELATED COURSES IN OTHER DEPARTMENTS

#### LOWER DIVISION COURSES

- Greek 40. The Greek Element in English. (2) II.** Miss Caldwell
- Latin 40. The Latin Element in English. (2) I.** Miss Caldwell

\* Not to be given, 1953-1954.

## UPPER DIVISION COURSES

- Anthropology 110. Language and Culture. (3) II. Mr. Hoijer
- English 110. Introduction to English Language. (3) I.  
Mr. Matthews, Mr. Bird
- English 111. The English Language in America. (3) II.  
Mr. Matthews, Mr. Bird
- German 107A-107B. Phonetics of the German Language. (1-1) Yr.  
Mr. Oswald
- German 117. History of the German Language. (3) II. Mr. Sobel
- German 119. Middle High German. (3) I. Mr. Dolch
- Spanish 171. Contemporary Spanish Linguistics. (3) II. Mr. Bull

## GRADUATE COURSES

- \*Anthropology 271A-271B. Linguistic Analysis. (2-2) Yr. Mr. Hoijer
- Anthropology 292A-292B. Research in American Indian Languages.  
(1-6; 1-6) Yr. Mr. Hoijer
- English 211. Old English. (3) I. Mr. Matthews, Mr. Bird
- English 212. Middle English. (3) II. Mr. Matthews
- English 213. The Development of Modern English. (3) I. Mr. Matthews
- English 250. History of the English Language. Seminar. (3)  
Mr. Matthews
- English 260A-260B-260C. Studies in Old and Middle English. Seminar.  
Mr. Matthews
- German 230. Survey of Germanic Philology. (3) I. Mr. Dolch
- German 231. Gothic. (3) I. Mr. Dolch
- German 232. Old High German. (3) II. Mr. Dolch
- \*German 233. Old Saxon. (3) II. Mr. Oswald
- \*German 259. Seminar in Germanic Linguistics. (1 to 3) II. Mr. Dolch
- Romance Languages 201A-201B. French Historical Grammar and Method-  
ology of Romance Linguistics. (2-2) Yr. Mr. Williams
- Romance Languages 203A-203B. Old Provençal: Reading Texts. (2-2) Yr.  
Mr. Williams
- \*Scandinavian 243. Old Icelandic. (3) I. Mr. Wahlgren
- \*Scandinavian 244. Old Norse-Icelandic Prose and Poetry. (2) II.  
Mr. Wahlgren
- Spanish 212A-212B. Historical Grammar and Old Spanish Readings. (2-2)  
Yr. Mr. Zeitlin

\* Not to be given, 1953-1954.

## MATHEMATICS

- Edwin F. Beckenbach, Ph.D., *Professor of Mathematics.*  
 Clifford Bell, Ph.D., *Professor of Mathematics.*  
 Paul H. Daus, Ph.D., *Professor of Mathematics.*  
 Magnus R. Hestenes, Ph.D., *Professor of Mathematics (Chairman of the Department).*
- † Paul G. Hoel, Ph.D., *Professor of Mathematics.*  
 I. S. Sokolnikoff, Ph.D., *Professor of Mathematics.*  
 Angus E. Taylor, Ph.D., *Professor of Mathematics.*  
 George E. F. Sherwood, Ph.D., *Professor of Mathematics, Emeritus.*
- † Richard Arens, Ph.D., *Associate Professor of Mathematics.*  
 John W. Green, Ph.D., *Associate Professor of Mathematics.*  
 Philip G. Hodge, Jr., Ph.D., *Associate Professor of Mathematics.*  
 William T. Puckett, Jr., Ph.D., *Associate Professor of Mathematics.*  
 Robert H. Sorgenfrey, Ph.D., *Associate Professor of Mathematics.*  
 Frederick A. Valentine, Ph.D., *Associate Professor of Mathematics.*  
 Glenn James, Ph.D., *Associate Professor of Mathematics, Emeritus.*  
 Earl A. Coddington, Ph.D., *Assistant Professor of Mathematics.*  
 Alfred Horn, Ph.D., *Assistant Professor of Mathematics.*  
 Barrett O'Neill, Ph.D., *Assistant Professor of Mathematics.*
- † Lowell J. Paige, Ph.D., *Assistant Professor of Mathematics.*  
 Raymond M. Redheffer, Ph.D., *Assistant Professor of Mathematics.*  
 Isadore M. Singer, Ph.D., *Assistant Professor of Mathematics.*  
 Robert Steinberg, Ph.D., *Assistant Professor of Mathematics.*  
 Ernst G. Straus, Ph.D., *Assistant Professor of Mathematics.*  
 J. Dean Swift, Ph.D., *Assistant Professor of Mathematics.*  
 Harriet E. Glazier, M.A., *Assistant Professor of Mathematics, Emeritus.*  
 Guy H. Hunt, C.E., *Assistant Professor of Applied Mathematics, Emeritus.*  
 Euphemia R. Worthington, Ph.D., *Assistant Professor of Mathematics, Emeritus.*
- Robert M. Hayes, Ph.D., *Acting Instructor in Mathematics.*  
 L. J. Adams, M.A., *Lecturer in Mathematics.*  
 Clela Hammond, M.A., *Lecturer in Mathematics.*  
 Robert Herrera, M.A., *Lecturer in Mathematics.*  
 Harry D. Huskey, Ph.D., *Lecturer in Mathematics.*  
 L. Clark Lay, M.A., *Lecturer in Mathematics.*  
 Myron J. Mendelson, M.A., *Lecturer in Mathematics.*  
 Lewis E. Ward, Ph.D., *Lecturer in Mathematics.*



- Thomas Southard, Ph.D., *Research Mathematician, Institute for Numerical Analysis.*  
 Charles B. Tompkins, Ph.D., *Research Mathematician, Institute for Numerical Analysis.*



- George W. Brown, Ph.D., *Visiting Professor of Mathematical Statistics.*  
 Alexander M. Mood, Ph.D., *Visiting Professor of Mathematical Statistics.*

*Letters and Science List.*—All undergraduate courses in mathematics and statistics except Mathematics 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

† Absent on leave, 1958–1954.

**Preparation for the Major.**—Required: courses C (or the equivalent), 1-3A, 3B, 4A, 4B, with an average grade of C or higher, except that students who have completed two years of high school algebra and also trigonometry may be excused, upon examination, from course 1. Recommended: physics, astronomy, and a reading knowledge of French and German.

**The Majors.**—Courses 108, 112A, and 119A, together with enough additional upper division units, approved by the upper division adviser, to total 24 units taken while in the upper division. At most 3 of these units may be taken in related courses in other departments, provided approval has been obtained in advance from a departmental adviser. Candidates for a teaching credential must include Mathematics 370 in the required 24 units. The student must maintain an average grade of at least C in upper division courses in mathematics.

Students who are preparing to teach mathematics in high school are advised to elect course 100.

Students who expect to continue with graduate study are advised to elect courses 111A and 122A-122B.

**Teaching Minor.**—Mathematics 370 and not less than 20 units in the Department of Mathematics, including Mathematics 370 and two 3-unit courses in the one hundred sequence.\*

**Business Administration.**—Freshmen preparing for this School are required to take courses E and 2 or course 2E.

**Engineering.**—Lower division students in this College are required to take courses 5A, 5B, 6A, 6B.

#### LOWER DIVISION COURSES

##### C. Trigonometry. (3) I, II.

Mr. Puckett in charge

Prerequisite: plane geometry and one and one-half years of high school algebra or course D. Students with one and one-half years of high school algebra may enroll in course C concurrently with course D.

Plane trigonometry and spherical right triangles, with special emphasis on trigonometric analysis.

Two units of credit will be allowed to students who have had trigonometry in high school.

##### D. Intermediate Algebra. (3) I, II.

Mr. Horn in charge

Prerequisite: at least one year of high school algebra. Not open for credit to students who have received credit for two years of high school algebra; one and one-half years of high school algebra and trigonometry; course E, 1, or 3A. Students who need extra review and drill will be required to attend the class four times a week.

Simultaneous linear and quadratic equations, binomial theorem, progressions and logarithms.

##### E. Commercial Algebra. (3) I, II.

Mr. Sorgenfrey in charge

Prerequisite: at least one year of high school algebra. Not open for credit to students who have credit for course D, 1, or 2. Recommended for students planning to enter the School of Business Administration. Students who need extra review and drill will be required to attend the class four times a week.

Simple interest and discount, logarithms, progressions, binomial theorem, probability, elementary statistics, and curve fitting.

##### 1. College Algebra. (3) I, II.

Mr. Coddington in charge

Prerequisite: at least one and one-half years of high school algebra and trigonometry, or two years of high school algebra and course C concurrently. Not open for credit to students who have received credit for course D, E, or 3A.

The topics in course D and determinants, inequalities, complex numbers, theory of equations, permutations, combinations and probability.

\* Mathematics 4B may apply toward the teaching minor in lieu of an upper division course in the 100 series.

**1-3A. College Algebra and Plane Analytic Geometry. (5) I, II.**

Mr. Bell in charge

Prerequisite: two years of high school algebra and also trigonometry.

A combination of courses 1 and 3A. Students who have received credit in course D, E, or 1 will receive only 3 units of credit for this course.

**2. Mathematics of Finance and Business. (3) I, II.**

Mr. Bell in charge

Prerequisite: course D, E, or 1.

Students who have had two years of high school algebra and trigonometry may be excused from course E by examination. This examination will be given the Tuesday afternoon before the start of classes. Applicants for this examination must make previous arrangements with the secretary of the department.

Compound interest, annuities with applications, life annuities and insurance.

**2E. Commercial Algebra and Mathematics of Finance. (5) I.**

Mr. Bell in charge

Prerequisite: at least one and one-half years of high school algebra.

A combination of courses E and 2. Students who have received credit in course D, E, or 1 will receive only 3 units for this course.

**3A. Plane Analytic Geometry. (3) I, II.**

Mr. O'Neill in charge

Prerequisite: course C or high school trigonometry, and course D or 1.

Students who have had two years of high school algebra and trigonometry may be excused from course 1 by examination. This examination will be given the Tuesday afternoon before the start of classes. Applicants for this examination must make previous arrangements with the secretary of the department.

A study of the straight line, the conics and higher plane curves, by means of rectangular and polar coordinates and parametric representation.

**3B. First Course in Calculus. (3) I, II.**

Mr. Taylor in charge

Prerequisite: course 3A.

Differentiation of algebraic and transcendental functions with applications.

**4A. Second Course in Calculus. (3) I, II.**

Mr. Valentine in charge

Prerequisite: course 3B.

Integration with applications; infinite series.

**4B. Third Course in Calculus. (3) I, II.**

Mr. Singer in charge

Prerequisite: course 4A.

Solid analytic geometry, partial differentiation, multiple integration with applications.

Upper division credit will be allowed to students who are not majors in mathematics or engineering, who take the course while in the upper division.

**5A. Analytic Geometry and Calculus. (5) I, II.** Mr. Beckenbach in charge

Prerequisite: admission to the College of Engineering. Prescribed in the College of Engineering. Nonengineering students having two years of high school algebra and trigonometry will be admitted by special examination as described under course 3A. Students who have received credit for course D, E, or 1 will receive only 3 units for this course.

A unified course in algebra, analytic geometry, differential calculus and an introduction to integration for algebraic functions.

**5B. Analytic Geometry and Calculus. (3) I, II.**

Mr. Daus in charge

Prerequisite: course 5A.

A unified course in analytic geometry, differential calculus and an introduction to integration for transcendental functions.

- 6A. Differential and Integral Calculus.** (3) I, II. Mr. Straus in charge  
Prerequisite: course 5B.  
Indefinite and definite integrals, technique of integration, applications, infinite series.
- 6B. Differential and Integral Calculus.** (3) I, II. Mr. Steinberg in charge  
Prerequisite: course 6A.  
Solid analytic geometry, partial differentiation, multiple integration, with applications, ordinary differential equations. Upper division credit will be allowed to students who are not majors in mathematics or engineering who take the course while in upper division.
- 37. Mathematics for Social and Life Sciences.** (3) II. Mr. Bell  
(Former number, 7.)  
Prerequisite: course C, D, E, or 1.  
This course gives in brief form an introduction to analytic geometry and calculus, and other mathematical material particularly designed for students of the social and life sciences.
- 38. Fundamentals of Arithmetic.** (2) I, II. Mr. Bell  
(Former number, 18.)  
Prerequisite: sophomore standing.  
Designed primarily for prospective teachers of arithmetic. The course includes the study of the fundamental operations of arithmetic on integers and fractions, with applications. Although efficiency in arithmetical skills is required, the emphasis is on the understanding of arithmetical procedures.

## UPPER DIVISION COURSES

- 100. College Geometry.** (3) I. Mr. Daus  
Prerequisite: course 4A.  
Selected topics in geometry with particular emphasis on recent developments.
- 108. Theory of Algebraic Equations.** (3) I, II. Mr. Horn, Mr. Valentine  
Prerequisite: course 4A.
- 110AB. Advanced Engineering Mathematics.** (4) I, II. Mr. Swift in charge  
Prerequisite: course 4B. Not open to students who have taken course 6B or any course containing one unit of work in differential equations. Students in the engineering curriculum are required to take course 110AB or 110C, depending upon the prerequisite.  
Solution of equations, series, partial differentiation, differential equations, vector analysis.
- 110C. Advanced Engineering Mathematics.** (3) I, II. Mr. Sokolnikoff in charge  
Prerequisite: course 6B, or an equivalent course containing at least one unit of differential equations. Students who have credit for course 119A will be limited to two units of credit.
- 110D. Advanced Engineering Mathematics.** (3) II. Mr. Hodge in charge  
Prerequisite: course 110AB or 110C.  
Complex variable, probability, curve fitting.
- 111A. Introduction to Higher Algebra.** (3) II. \_\_\_\_\_  
Prerequisite: course 108.  
Selected topics in algebra, with particular reference to modern points of view.



- 112A. Introduction to Higher Geometry.** (3) I, II. Mr. Straus, Mr. Daus  
Prerequisite: course 108.  
Homogenous point and line coördinate, cross ratio, one- and two-dimensional projective geometry, point and line conics.
- 112B. Introduction to Metric Differential Geometry.** (3) II. Mr. Beckenbach  
Prerequisite: course 119A, or consent of the instructor.
- 113. Synthetic Projective Geometry.** (3) II. Mr. Daus  
Prerequisite: course 112A, or consent of the instructor.
- \*115A. Theory of Numbers.** (3) I. Mr. Steinberg  
Prerequisite: course 108, or consent of the instructor.  
Divisibility, congruences, diophantine analysis.
- \*115B. Theory of Numbers.** (3) II. Mr. Straus  
Prerequisite: course 115A.  
Selected topics in the theory of primes, algebraic number theory, and diophantine equations.
- 119A. Differential Equations.** (3) I, II. Mr. Sorgenfrey  
Prerequisite: course 4B. Not open to students who have credit for course 110AB or 110C.
- 119B. Differential Equations.** (3) II. Mr. Valentine  
Prerequisite: course 119A.  
Numerical methods, special equations and functions, and partial differential equations.
- 120. Probability.** (3) II. Mr. Redheffer  
Prerequisite: senior standing in mathematics.  
Basic laws of probability, Bayes' formula, discrete and continuous variable problems, mathematical expectations, laws of large numbers.
- 122A-122B. Advanced Calculus.** (3-3) Yr. Beginning either semester.  
Prerequisite: course 110A or 119A. Mr. Taylor
- 124. Vector Analysis.** (3) I. Mr. O'Neill  
Prerequisite: course 119A or 110AB.  
Vector algebra, vector functions and vector calculus, linear vector functions, field theory, transformations of integrals.
- 125. Analytic Mechanics.** (3) I. Mr. Hodge  
Prerequisite: course 119A or 110A-110B, and Physics 105.
- 126. Potential Theory.** (3) II. Mr. Coddington  
Prerequisite: course 4B and one year of college physics. Recommended: course 110A or 119A.
- 127A-127B. Foundations of Mathematics.** (3-3) Yr. Mr. Swift  
Prerequisite: senior standing in mathematics. Juniors with exceptional ability may be admitted with special consent of the instructor.  
Course 127A covers the basic logical ideas by means of symbolic logic.  
Course 127B covers set theory, theory of relations, the logical background of function theory, the number system, and induction.
- 128. Fourier Series and Laplace Transforms.** (3) I. Mr. Tompkins  
Prerequisite: course 119A, or consent of the instructor.

\* Not to be given, 1953-1954.

• In alternate years, course 115A will be given the second semester instead of the first semester, and course 115B will not be given.

**135A-135B. Numerical Mathematical Analysis.** (3-3) Yr. Mr. Southard  
Prerequisite: courses 108, 119A. Course 135A is not open to students who have credit for Astronomy 108.

**138. Matrix Inversion and Decomposition.** (3) I, II. Mr. Hayes in charge  
Prerequisite: Theory of Algebraic Equations 108 and Differential Equations 119A, or the equivalent.

Algebra of finite matrices. Special theory of finite matrices. Direct and iterative methods for inverting matrices and solving linear equations. Various methods for obtaining characteristic values and vectors of matrices.

**139. Automatic Digital Calculators.** (3) I, II. Mr. Mendelson in charge  
Prerequisite: differential equations.

Historical survey. Organization of a calculator. Electronics. Machine language. Logical circuit analysis. Preparation of problems—Universal Code.

**199. Special Problems in Mathematics.** (1-3) I, II. The Staff  
Prerequisite: consent of the department.

#### GRADUATE COURSES

(Open only to students who have regular graduate status.)

**205. Analytic Number Theory.** (3) I. Mr. Straus  
Prerequisite: courses 111A, 115A and 122A, completed or taken concurrently.

Domain of real integers, additive and multiplicative theory, integral domains, partitions, special series, prime number theory.

**208. Foundations of Geometry.** (3) I. Mr. Daus

**209. Introduction to Advanced Analysis.** (3) I. Mr. Taylor  
Prerequisite: course 122A-122B, or the approximate equivalent.

Point set theory in Euclidean space. The real number system and its relation to the rational field. Convergence and limits. Continuous functions. Infinite convergent processes. Existence theorems. Theories of integration (Riemann, Stieltjes), and a short introduction to measure and the Lebesgue integral.

**\*212. Algebraic Geometry.** (3) II. Mr. Steinberg  
Prerequisite: courses 111A and 112A.

Algebraic preliminaries, projective space, Grassmann coordinates, collineations and correlations.

**215. Non-Euclidean Geometry.** (3) II. Mr. Daus  
Prerequisite: consent of the instructor. Recommended: course 113 or 208.

**221A-221B. Higher Algebra.** (3-3) Yr. Mr. Steinberg  
Prerequisite: course 111A.

**\*222. Theory of Groups.** (3) I. Mr. Paige  
Prerequisite: course 221A-221B or 111A and consent of the instructor.  
Classical theorems of general group theory, permutation groups, group representations, basic facts on topological and Lie groups.

**224A-224B. Functions of a Complex Variable.** (3-3) Yr. Beginning either semester. Mr. Beckenbach, Mr. Valentine  
Prerequisite: course 122A-122B.

\* Not to be given, 1953-1954.

- 225A-225B. Theory of Elasticity. (3-3) Yr.** Mr. Sokolnikoff  
 Prerequisite: course 122A-122B or consent of the instructor.  
 Course 225A deals with the theory of mechanics of deformable media, analysis of stress, analysis of strain, stress-strain relations, energy theorems, fundamental boundary value problems of mechanics of continua.  
 Course 225B deals with the variational methods of solution of problems of elasticity, uses of the analytic function theory in two-dimensional problems, theory of plates and shells.
- 226A-226B. Topology. (3-3) Yr.** Mr. Sorgenfrey  
 Course 226A deals with the theory of point sets, including topological, Hausdorff, and perfectly separable metric spaces; continuous functions and homeomorphisms.  
 Course 226B deals with continua, locally connected spaces, cyclic element theory, transformations, and dimension theory.
- \*229. Theory of Plasticity. (3) I.** Mr. Hodge  
 Prerequisite: course 225A or consent of the instructor.  
 Yield conditions and theories of plastic flow; applications of perfect plasticity to torsion and plane strain; variational principles.
- 235. Lie Groups. (3) I.** Mr. Singer  
 Prerequisite: consent of the instructor.  
 The contents of Chevalley's *THEORY OF LIE GROUPS*, the classification of semisimple Lie groups, and their finite and infinite dimensional representations; algebraic groups, the topology of Lie groups; applications to differential geometry in the large and quantum mechanics.
- \*236. Topological Groups. (3) II.** Mr. Arens  
 Prerequisite: course 224A and 226A, or consent of the instructor.  
 Invariant integration, group algebras, representation of abelian and compact groups.
- \*237A-237B. Calculus of Variations. (3-3) Yr.** Mr. Hestenes  
 Prerequisite: course 224A, 242A, or consent of the instructor.  
 The differential equation of a curve minimizing a definite integral. Other properties of a minimizing curve analogous to those deduced by Legendre, Weierstrass, and Jacobi. Conditions which insure the existence of a minimum, extensions to multiple integrals.
- 239. Boolean Algebras. (3) II.** Mr. Horn  
 Prerequisite: course 226A or consent of the instructor.  
 Axioms and elementary properties, completeness properties, distributivity laws, ideal theory, sub-algebras and quotient algebras, representation theory, applications to topology, Boolean algebras with operators, closure algebras.
- 242A-242B. Functions of a Real Variable. (3-3) Yr. Beginning second semester.** Mr. Green  
 Prerequisite: course 122A-122B.  
 The real number system, point set theory, Lebesgue measure and Lebesgue integral. Iterated integration, absolute continuity, and fundamental theorem of the calculus.
- 243. Ordinary Differential Equations. (3) I.** Mr. Coddington  
 Prerequisite: course 224A, 242A, or consent of instructor.  
 Existence and uniqueness theorems, linear systems, systems with isolated singularities of the first and second kind, boundary value problems on finite intervals, singular boundary value problems, perturbation theory, Poincare-Bendixson theory of two-dimensional systems, differential equations on a torus, stability and asymptotic behavior.

\* Not to be given, 1958-1964.

**244A-244B. Topics in the Theory of Hilbert Space. (3-3) Yr.**

Prerequisite: course 242A.

Mr. Hestenes

Theory of bounded and unbounded linear operators in Hilbert space, spectral resolution. Orthogonal functions, representation theorems. Linear and quadratic forms. Applications to differential equations, integral equations and calculus of variations.

**\*245. Integral Equations. (3) II.**

Mr. Horn

**246A-246B. Partial Differential Equations of Mathematical Physics. (3-3) Yr.**

Prerequisite: course 224A or 242A or Engineering 181A.

Mr. Redheffer

Boundary value and characteristic value problems. Separation of variables and expansion in series of characteristic functions. Fourier and Laplace transforms. Green's functions. Integral equations. Characteristic approximate solutions.

**\*247A-247B. Tensor Analysis. (3-3) Yr.**

Mr. Tompkins

Prerequisite: course 122A-122B or consent of the instructor.

247A. Vectors in  $n$ -dimensional and infinitely dimensional manifolds. Linear transformations. Algebra and calculus of tensors. Applications to geometry.

247B. Applications to differential geometry of curves and surfaces. First and second differential forms, geodesics in Riemannian manifolds. Equations of Gauss and Codazzi. Applications to various branches of applied mathematics, including the theory of relativity.

**\*248. Normed Linear Spaces. (3) I.**

Mr. Taylor

Prerequisite: course 242A.

Abstract Banach spaces, vector spaces, and spaces of functions.

**260. Seminars in Mathematics. (3) I, II.**

The Staff

Topics in analysis, geometry, and algebra, and in their applications, by means of lectures and informal conferences with members of the staff.

**290. Research in Mathematics. (1 to 6) I, II.**

The Staff

**PROFESSIONAL COURSE IN METHOD****370. The Teaching of Mathematics. (3) II.**

Mr. Bell

Prerequisite: course 4A and senior standing.

A critical inquiry into present-day tendencies in the teaching of mathematics.

**STATISTICS****LOWER DIVISION COURSE****1. Elementary Statistics. (2) I, II.**

Mr. Redheffer in charge

For students without the mathematical background for course 131A. Emphasis is placed on the understanding of statistical methods. Topics covered are frequency distributions, measures of central tendency, measures of variation, moments, theoretical frequency distributions, sampling, standard errors, linear regression and correlation.

**UPPER DIVISION COURSE****131A-131B. Statistics. (3-3) Yr.**

Mr. Redheffer

Prerequisite: Mathematics 4A.

A basic introductory course in the theory and applications of statistical methods.

## GRADUATE COURSES

- \*231. Multivariate Analysis. (3) I.** Mr. Hoel  
Prerequisite: Statistics 131A-131B; recommended: Mathematics 122A.  
Multivariate normal distribution. Analysis of variance. Distribution of product moments. Normal correlation and regression. Chi-square distribution.
- 232. Theory of Estimation and Testing Hypotheses. (3) I.** Mr. Mood  
Prerequisite: Statistics 131A-131B; recommended: Mathematics 122A.  
Estimates. Asymptotic efficiency and normality. Neyman-Pearson theory of tests.
- \*233. Stochastic Processes. (3) I.** \_\_\_\_\_  
Prerequisite: an upper division course in probability or mathematical statistics, or consent of the instructor.  
Elements of Markoff processes, with applications to physics, biology, and engineering. Stationary processes with applications to electronics and other fields.
- 260. Seminars. Prerequisite: Statistics 231 or 232.**
- \*Theoretical Statistics. (3) II.** Mr. Mood  
Topics will be selected from distribution theory, advanced probability, theory of inference, theory of experimental design, multivariate analysis, sequential analysis, nonparametric methods.
- Applied Statistics. (3) II.** Mr. Brown  
Topics will be selected from those listed under Theoretical Statistics but the emphasis will be on applications.

## NATIONAL BUREAU OF STANDARDS

## INSTITUTE FOR NUMERICAL ANALYSIS

- John H. Curtiss, Ph.D., *Chief, National Applied Mathematics Laboratories.*  
Derrick H. Lehmer, Ph.D., *Director of Research.*  
Magnus R. Hestenes, Ph.D., *Assistant Director and University of California, Los Angeles, Liaison Officer.*  
Harry D. Huskey, Ph.D., *Assistant Director for Mathematical Services.*  
Gertrude Blanch, Ph.D., *Assistant to the Director (Numerical Analysis).*  
Albert S. Cahn, M.S., *Assistant to the Director (Administration).*

## Research Staff

- Forman S. Acton, D.Sc., *Research Mathematician.*  
Edward W. Barankin, Ph.D., *Research Mathematician.*  
George E. Forsythe, Ph.D., *Research Mathematician.*  
Cornelius Lanczos, Ph.D., *Research Mathematician.*  
Theodore S. Motzkin, Ph.D., *University of California, Los Angeles, Research Mathematician.*  
David S. Saxon, Ph.D., *Research Physicist.*  
Ragnar Thorensen, Ph.D., *Research Engineer.*  
Charles B. Tompkins, Ph.D., *University of California, Los Angeles, Research Mathematician.*  
Wolfgang B. Wasow, Ph.D., *Research Mathematician.*  
Jacob Wolfowitz, Ph.D., *University of California, Los Angeles, Research Mathematician.*

\* Not to be given, 1953-1954.

### Mathematical Services Unit

Arnold D. Hestenes, Ph.D., *Mathematician.*

Fred Hollander, M.A., *Mathematician.*

Marvin Howard, M.S., *Mathematician.*

Roselyn S. Lipkis, *Mathematician.*

Robert B. Reynolds, M.S., *Mathematician.*

Thomas Southard, Ph.D., *Mathematician.*

Everett C. Yowell, Ph.D., *Mathematician.*

The Institute for Numerical Analysis, a section of the National Bureau of Standards, is housed on the Los Angeles campus of the University of California. The Institute carries on basic research pertinent to the efficient exploitation and further development of high speed automatic digital computing equipment, and training in the use of computing machines. The Institute also provides a computing service for the southern California area and gives assistance in the formulation and analytical solution of problems in applied mathematics. The Institute is equipped with desk calculators and with punched-card machinery. It has designed and operates a general purpose automatic electronic digital computing machine which is now being constructed at the Institute. From time to time the Institute for Numerical Analysis gives courses pertinent to numerical analysis and computer design.

The research program of the Institute is at present underwritten by the Office of Naval Research. The principal sponsor of the computing service is the Air Matériel Command of the United States Air Force. Further information may be obtained by consulting the Administrative Officer in Temporary Building 3U.

### METEOROLOGY

Jakob Bjerknes, Ph.D., *Professor of Meteorology.*

Jörgen Holmboe, M.Sc., *Professor of Meteorology (Chairman of the Department).*

Morris Neiburger, Ph.D., *Associate Professor of Meteorology.*

Zdenek Sekera, Ph.D., *Associate Professor of Meteorology.*

\_\_\_\_\_, *Associate Professor of Meteorology.*

Yale Mintz, Ph.D., *Assistant Professor of Meteorology.*

James G. Edinger, Ph.D., *Acting Assistant Professor of Meteorology.*

\_\_\_\_\_, *Instructor in Meteorology.*



Robert E. Holzer, Ph.D., *Professor of Geophysics.*

Joseph Kaplan, Ph.D., *Professor of Physics.*

Clarence E. Palmer, M.Sc., *Associate Professor of Geophysics.*

*Letters and Science List.*—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list see page 6.

*Preparation for the Major.*—Course 3; Physics 1A, 1B, 2B, or Physics 2A-2B; Mathematics 1-3A, 3B, 4A, 4B, or Mathematics 5A, 5B, 6A, 6B. Chemistry 2A is recommended for students who have not had high school chemistry. Meteorology 5 is required but may be taken during the junior year.

*The Major.*—Courses 100A-100B, 107, 110, 115, 120; and 9 units to be selected from upper division courses in physics, mathematics, or statistics, of which 3 units must be in upper division physics.

LOWER DIVISION COURSES

- 3. Descriptive Meteorology. (3) I, II.** Mr. Mintz  
 Elementary survey of the causes and regional distribution of weather and climate.
- 5. Weather Observations. (3) I.** Mr. Edinger  
 Lecture, two hours; laboratory, three hours.  
 Prerequisite or concurrent: course 3.  
 Technique of synoptic and airways observations; upper-air wind observations; theory and care of the common meteorological instruments; weather codes.

UPPER DIVISION COURSES

- 100A. Synoptic Meteorology. (3) I.** Mr. Neiburger  
 Prerequisite: course 3 and Mathematics 4A; prerequisite or concurrent: course 107.  
 Three dimensional structure of atmosphere; world-wide survey of weather; fundamentals of weather map analysis and weather forecasting.
- 100B. Synoptic Meteorology. (3) II.** Mr. Neiburger  
 Prerequisite: courses 100A and 120.  
 Theory of special weather phenomena, including condensation forms, thunderstorms, icing, ceiling, and visibility; application of theory of pressure variations to weather forecasting.
- 102. Physics of the Higher Atmosphere. (3) I.** Mr. Kaplan  
 Prerequisite: course 104, or Physics 113, or consent of the instructor. Not open to students having credit for Astronomy 127.  
 Constitution of the atmosphere at various levels; the ozone layer; the ionosphere; cosmic rays; optical phenomena.
- \*103. Oceanography. (2) II.** Mr. Neiburger  
 Prerequisite: courses 107, 120.  
 Principles and methods of physical oceanography. Energy exchange between ocean and atmosphere. Distribution of temperature. Current systems. Wind waves and swell.
- 104. Meteorological Physics. (2) II.** Mr. Neiburger  
 Prerequisite: Physics 2A-2B, or 1A, 1B, 1C, 1D.  
 Theory of radiation with emphasis on its meteorological applications. Atmospheric electricity, optics, and acoustics. Condensation processes in the atmosphere.
- 107. Meteorological Thermodynamics. (3) I.** Mr. Sekera  
 Prerequisite: Physics 2A-2B or 1A, 1B, 1C, 1D; prerequisite or concurrent: Mathematics 4B.  
 Thermal properties of dry air, water vapor, and moist air. Atmospheric hydrostatics. Evaluation of aerological soundings.
- 108A. Physical Climatology. (2) II.** Mr. Mintz  
 Prerequisite: courses 3, 107.  
 The general circulation of the atmosphere and the mean fields of cloudiness, precipitation, and temperature.
- 108B. Physical Climatology. (2) I.** Mr. Mintz  
 Prerequisite: course 108A or 100A.  
 Mean structure and geographical distribution of the air-masses and fronts.

\* Not to be given, 1953-1954.

110. **Meteorological Laboratory.** (3) I. Mr. Edinger  
Prerequisite: course 5; prerequisite or concurrent: course 100A.  
Exercises in analysis of the surface weather map; introduction to weather forecasting.
- \*111. **Modern Meteorological Instruments.** (3) II. ———  
Lecture, two hours; laboratory, three hours.  
Prerequisite: course 5; prerequisite or concurrent: course 100B.  
A survey of modern instruments, their uses and limitations. Meteorological instrumentation with emphasis on accuracy and applicability of various techniques; measurement of special meteorological elements; upper-air sounding methods; radar storm detection, afeRICS; rawins.
115. **Meteorological Laboratory.** (5) II. Mr. Edinger  
Prerequisite: course 110; prerequisite or concurrent: course 100B.  
Practice in weather-map analysis and forecasting; use of upper-air data.
120. **Dynamic Meteorology.** (3) II. Mr. Sekera  
Prerequisite: course 107.  
Equations of atmospheric motion. Gradient wind. Thermal wind. Fronts. Stability of hydrostatic equilibrium.
121. **Dynamic Meteorology.** (3) I. Mr. Sekera  
Prerequisite: course 120.  
Theory of pressure changes. Circulation and vorticity. Frictional effects.
130. **Numerical Methods in Meteorology.** (3) II. Mr. Sekera  
Prerequisite: courses 107, 120.  
Application of numerical mathematics and statistics to selected meteorological problems.
- 199A-199B. **Special Problems in Meteorology.** (1-3; 1-3) Yr.  
Mr. Neiburger in charge

## GRADUATE COURSES

Prerequisite to all graduate courses: courses 100AB, 107, 110, 115, 120.

- 201A-201B. **Advanced Synoptic Meteorology.** (2-2) Yr. Mr. Bjerknes
- \*202. **Tropical Meteorology.** (2) I. Mr. Palmer
- 210A-210B. **Meteorological Laboratory.** (4-4) Yr. Mr. Bjerknes
217. **Meteorological Hydrodynamics.** (3) II. Mr. Holmboe
220. **Advanced Dynamic Meteorology.** (3) I. Mr. Holmboe
260. **Seminar in Meteorology.** (2) I, II. Mr. Holmboe
261. **Seminar in Cloud Physics.** (2) I. Mr. Neiburger
262. **Seminar in Hydrodynamics.** (2) II. Mr. Holmboe
- 290A-290B. **Research in Meteorology.** (1-6; 1-6) Yr.  
Mr. Bjerknes, Mr. Holmboe in charge

## RELATED COURSE IN ANOTHER DEPARTMENT

- Geophysics 255. Seminar in Atmospheric Physics.** (3) I. Mr. Holzer

\* Not to be given, 1953-1954.



## **MILITARY SCIENCE AND TACTICS**

- James M. Churchill, Jr., B.S., Colonel, Infantry, *Professor of Military Science and Tactics (Chairman of the Department)*.
- William W. Barnes, A.B., Lt. Colonel, Infantry, *Associate Professor of Military Science and Tactics*.
- Stephen E. Cavanaugh, Jr., Major, Infantry, *Associate Professor of Military Science and Tactics*.
- Frank L. Snyder, B.S., Lt. Colonel, Quartermaster Corps, *Associate Professor of Military Science and Tactics*.
- Burr B. Baldwin, A.B., Captain, Infantry, *Assistant Professor of Military Science and Tactics*.
- Robert W. Gansel, Captain, Quartermaster Corps, *Assistant Professor of Military Science and Tactics*.
- William P. Hastings A.B., Captain, Quartermaster Corps, *Assistant Professor of Military Science and Tactics*.
- Lee S. Henry, Jr., Captain, Infantry, *Assistant Professor of Military Science and Tactics*.
- Darrell R. Rumpf, Captain, Infantry, *Assistant Professor of Military Science and Tactics*.
- Leslie N. Shade, Jr., B.S., Captain, Infantry, *Assistant Professor of Military Science and Tactics*.
- Jack L. Robertson, Captain, Infantry, *Assistant Professor of Military Science and Tactics*.
- Kenneth I. Pressman, B.S., First Lieut., Quartermaster Corps, *Instructor in Military Science and Tactics*.

*Letters and Science List.*—All undergraduate courses in this department up to a total of 12 units are included in the Letters and Science List of Courses. Note: This in no way prejudices counting additional Military Science courses up to the 12 units of non-Letters and Science credit accepted toward the degree. For regulations governing this list, see page 6.

### **ARMY RESERVE OFFICERS' TRAINING CORPS**

In accordance with the National Defense Act of 1920, and with the concurrence of the Regents of the University, a unit of the Senior Division, Army Reserve Officers' Training Corps, was established on the Los Angeles campus of the University in July, 1920.

The purpose of the Army R.O.T.C. is to qualify male students as leaders in peace and war, and to acquaint them with the military factors of our national life to the end that they may more intelligently perform their duties as future leaders of their communities; and to qualify selected students for commissions as Second Lieutenants in either the United States Army Reserve or the Regular Army.

The courses in military science are those prescribed by the Department of the Army and are standard in all Army R.O.T.C. college units. Specialized courses are offered at the University of California, Los Angeles, in either Infantry or Quartermaster, but commissions are not limited to the courses offered. In the past year commissions were granted in all of the Combat Arms, as well as in the Corps of Engineers, Finance Corps, Military Police Corps, Medical Service Corps, Ordnance Corps, Signal Corps, and Quartermaster Corps. The interests, aptitudes, and educational goals of a student are always

given careful consideration in an attempt to commission him in the arm or service for which he is best qualified.

The Universal Military Training and Service Act of 1951 provides for deferment of certain selected members of the R.O.T.C. Regularly enrolled University of California, Los Angeles, students who are not on probation and are *currently* enrolled in military science may apply for deferment. A student must be considered as qualified for entry into the advanced course upon completion of the basic course before he may be selected for deferment.

All concerned must realize that the purpose of R.O.T.C. deferment is to select those students who have displayed the desired attributes necessary for the training of officers for the reserve and regular forces. Such students are then granted deferment until completion (within prescribed limits) of their academic career and their R.O.T.C. course of instruction.

### BASIC COURSE

The basic course supplements other academic courses by providing a basic knowledge of the military factors of our national security and the fundamentals of leadership. The instruction prescribed for the first year of the basic course is of a general type, applicable to the Army as a whole; it is designed to qualify the student as a leader and help prepare him to discharge his duties as a citizen. In the second-year basic course, students may specialize in either Infantry or Quartermaster courses. These courses prepare the student for the advanced course.

The basic course is prescribed for all first-year and second-year undergraduate male students who are citizens of the United States, able-bodied, and under twenty-four years of age at the time of initial enrollment in the basic course. Any student claiming exemption from all or part of the basic course because of noncitizenship, physical disability, age, active service in the armed forces of the United States, or previous R.O.T.C. training, will present a petition on the prescribed form to the Registrar for such exemption. Pending action on his petition the student will enroll in and enter the course prescribed for his year.

The United States furnishes arms, equipment, uniforms, and textbooks on a loan basis for the use of regularly enrolled students in this department. The uniforms and other items of military property are required to be returned in good condition on completion of the course and students are held liable for the loss of any articles of the uniform and other items of military property.

#### 1A-1B. First-Year Basic Military Science. (1½-1½) Yr. Beginning either semester. The Staff

Two hours of classwork and one hour of leadership, drill, and exercise of command each week.

Evolution of warfare; individual weapons and marksmanship; military policy of the United States; first aid and hygiene; military organization; maps and aerial photographs; military problems of the United States.

#### 20A-20B. Second-Year Basic Military Science, Infantry. (1½-1½) Yr. Beginning either semester. The Staff

Prerequisite: course 1B. Two hours of classwork and one hour of leadership, drill, and exercise of command each week.

Organization, weapons, technique of fire, combat formations, scouting and patrolling, and tactics of the rifle squad.

#### 26A-26B. Second-Year Basic Military Science, Quartermaster. (1½-1½) Yr. Beginning either semester. The Staff

Prerequisite: course 1B. Two hours of classwork and one hour of leadership, drill, and exercise of command each week.

Organization for supply in the Army, functions of the Quartermaster Corps, classification of supplies, property accountability and responsibility, research and development of supplies in the QMC, operation of QM units, and unit and organizational supply.

#### THE ADVANCED COURSE

The advanced course is a major source of officers for the United States Army Reserve. In addition, it provides one of the principal means of procurement of junior officers for the Regular Army. Outstanding students who are designated Distinguished Military Graduates are offered commissions in the Regular Army upon receipt of their baccalaureate degree.

The advanced course is offered for regularly enrolled students who are graduates of the basic course or veterans exempted from the basic course, physically fit, and who have not yet reached twenty-seven years of age at the time of admission to the advanced course. In addition, advanced course students must have at least two more academic years before graduation. Advanced students receive from the government commutation of subsistence (approximately \$27 per month), in addition to uniforms, arms, equipment, and textbooks. An officer-type uniform is furnished the student, which becomes his personal property upon successful completion of the advanced course.

Advanced course students are required to attend a course of summer camp training for six weeks during the summer vacation period, normally following the student's completion of the first year of the advanced course. The United States furnishes uniforms, equipment, transportation, and subsistence, and pays the student while at camp at the current rate of \$75 per month. Students who attend camp receive one-half unit of credit for each week of the duration of the camp.

Acceptance by the student of the monetary allowances listed above will make the completion of the advanced course a prerequisite to graduation from the University.

#### 130A-130B. First-Year Advanced Military Science, Infantry. (4-4) Yr.

The Staff

Four hours of classwork and one hour of leadership, drill, and exercise of command each week.

Organization, weapons, gunnery, communications, combat intelligence, estimate of the situation and combat orders, field fortifications, tactics of the rifle and heavy weapons platoons and companies.

#### 136A-136B. First-Year Advanced Military Science, Quartermaster.

(4-4) Yr.

The Staff

Four hours of classwork and one hour of leadership, drill, and exercise of command each week.

Station and depot supply, storage and warehousing, commissary operation, salvage and reclamation, food service activities, individual weapons and marksmanship, procurement of petroleum products, laundry and bakery operations.

#### 140A-140B. Second-Year Advanced Military Science, Infantry.

(4-4) Yr.

The Staff

Four hours of classwork and one hour of leadership, drill, and exercise of command each week.

Organization, command and staff, communications, motors and transportation, supply and evacuation, troop movements, new developments, the mili-

tary team, tactics of the infantry battalion in attack and defense, teaching methods, administration, military law, psychological warfare, geographical foundations of national power.

**146A-146B. Second-Year Advanced Military Science, Quartermaster.**

(4-4) Yr.

The Staff

Four hours of classwork and one hour of leadership, drill, and exercise of command each week.

Fiscal and procurement procedures, command and staff, combat intelligence, technical intelligence, the military team, QM operations in the zone of the interior and in the theater of operations, teaching methods, administration, military law, psychological warfare, geographical foundations of national power.

## MUSIC

Laurence A. Petran, Mus.M., Ph.D., F.A.G.O., *Professor of Music and University Organist.*

H. Jan Popper, Ph.D., *Professor of Music.*

John N. Vincent, Jr., Ph.D., *Professor of Music.*

Boris A. Kremeniev, Ph.D., *Associate Professor of Music.*

Raymond Moremen, M.S.M., *Associate Professor of Music (Chairman of the Department).*

Robert U. Nelson, Ph.D., *Associate Professor of Music.*

Feri Roth, Mus.Doc., *Associate Professor of Music.*

Walter H. Rubsamen, Ph.D., *Associate Professor of Music.*

Clarence Sawhill, M.M., *Associate Professor of Music.*

† Gladys Tipton, Ed.D., *Associate Professor of Music.*

Leroy W. Allen, M.A., *Associate Professor of Music, Emeritus.*

Frances Wright, *Associate Professor of Music, Emeritus.*

Henry Leland Clarke, Ph.D., *Assistant Professor of Music.*

Harry Edwall, M.A., *Acting Assistant Professor of Music.*

W. Thomas Marrocco, Ph.D., *Assistant Professor of Music.*

\* Robert M. Stevenson, Ph.D., *Assistant Professor of Music.*

Maurice Gerow, M.M., *Acting Assistant Professor of Music.*



Owen Brady, B.M., *Lecturer in Music.*

Gerald Taylor, *Lecturer in Music.*

Roger Chapman, M.A., *Lecturer in Music.*

George Drexler, Los Angeles Philharmonic Orchestra, *Lecturer in Music.*

Arthur Edwards, M.M., *Lecturer in Music.*

Bert Gassman, Los Angeles Philharmonic Orchestra, *Lecturer in Music.*

Albert Goldberg, Mus.M., *Lecturer in Music.*

Sinclair Lott, Los Angeles Philharmonic Orchestra, *Lecturer in Music.*

Guy Maier, Mus.Doc., *Lecturer in Music.*

Harry E. Myhr, A.B., *Lecturer in Music.*

Frederick Moritz, Los Angeles Philharmonic Orchestra, *Lecturer in Music.*

Anne Shaw Price, A.B., *Lecturer in Music.*

Alexander Reisman, M.M., *Lecturer in Music.*

Magdaleno Rivera, Twentieth-Century Fox Studios, *Lecturer in Music.*

\* Absent on leave, 1953-1954.

† Sabbatical leave in residence first semester, 1953-1954.

Erwin Windward, A.B., *Lecturer in Music.*

Waldo Winger, A.B., *Lecturer in Music.*



Helen Chute Dill, M.A., *Supervisor of Training, Music.*

Marjorie F. Kluth, M.A., *Supervisor of Training, Music.*

**Requirements for Entering Music Students.**—Specialization in music presupposes some knowledge of the fundamentals of music and some ability in sight reading at the piano. Therefore, every entering undergraduate intending to prepare for the major or teaching minor in music must take the Basic Music Test and the Sight Reading Test during the week prior to his first registration in the University. The student with previous preparation may substitute the corresponding Advanced Standing Examination (Musicianship or Piano).

Every student who fails the Basic Music Test or the Sight Reading Test must immediately enroll in course A (Basic Music) or course B (Sight Reading). Any student failing either of these courses will be required to repeat the course in the next semester of his residence in the University.

**Advanced Standing Examinations.**—Any student wishing to be placed above the beginning level in course 1A-1B-1C (Musicianship), 3A-3B-3C (Harmony), 40 (Voice), or 41 (Piano) must take the Advanced Standing Examination covering the subject matter of this course during the week prior to his first registration or in the previous spring during the University examination period. Placement depends on the results of these examinations rather than on any unit credit previously received. If he already has unit credit for part or all of these courses, he retains that credit, but receives no further unit credit for any part repeated as a result of the Advanced Standing Examinations.

For details concerning the Basic Music Test, the Sight Reading Test, and the Advanced Standing Examinations, inquire of the Department of Music.

The student may select a major in music in either the College of Letters and Science or in the College of Applied Arts; these majors lead to the degree of Bachelor of Arts in both instances. For information concerning teaching credentials, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

### College of Letters and Science

**Letters and Science List.**—All courses included in the series 1A to 31, 100A to 115D, 121 to 139, 170 to 177, 199. For regulations governing this list, see page 6.

**Preparation for the Major.**—Courses 1A-1B-1C, 3A-3B-3C, 5A-5B, 20A-20B, and a year course from the series 60 to 64. Recommended: a reading knowledge of French, German, or Italian, and Physics 2A-2B or 10.

**The Major.**—Twenty-four units of upper division courses, distributed as follows: (a) course 100A-100B, (b) 4 units chosen from courses 121 to 139, 170 to 177, 199, (c) 4 units chosen from courses 101 to 109B, and (d) additional upper division courses in music, including two year courses from the series 141, 159 to 166.

### College of Applied Arts

Three specializations are available:

#### 1. FOR THE BACHELOR'S DEGREE ALONE.

**Preparation for the Major.**—Courses 1A-1B-1C, 3A-3B-3C, 5A-5B, 20A-20B, and a year course from the series 60 to 64. Recommended: a reading knowledge of French, German, or Italian, and Physics 2A-2B or 10.

*The Major.*—Thirty-six units of upper division courses, distributed as follows: (a) course 100A-100B, (b) 4 units chosen from courses 121 to 139, 170 to 177, 199, (c) 4 units chosen from courses 101 to 109B, and (d) additional upper division courses in music, including two year courses from the series 141, 159 to 166, but not more than 8 units from courses 140 to 166, 180 to 195.

2. **FOR THE BACHELOR'S DEGREE LEADING TO THE SPECIAL SECONDARY TEACHING CREDENTIAL.** This major also meets the departmental requirements for admission to the graduate courses leading to the general secondary credential.

*Preparation for the Major.*—Courses 1A-1B-1C, 3A-3B-3C, 5A-5B, 20A-20B, 40 (4 units), 41 (4 units), and a year course from the series 60 to 64. Recommended: a reading knowledge of French, German, or Italian, and Physics 2A-2B or 10.

*The Major.*—Thirty-six units of upper division courses, distributed as follows: (a) courses 100A-100B, 107A, 109A, 110, 111, 115A-115B-115C-115D, (b) 4 units chosen from courses 121 to 139, 170 to 177, 199, and (c) additional upper division courses in music, including two year courses from the series 141, 159 to 166.

3. **FOR THE BACHELOR'S DEGREE WITH DIPLOMA IN PERFORMANCE MUSIC.** This major normally requires five years for completion. The study list for each semester should not include more than 12 units of courses other than applied music.

*Preparation for the Major.*—Courses 1A-1B-1C, 3A-3B-3C, 5A-5B, 20A-20B, a two-year course from the lower division applied music classes (40 through 55), four semesters of membership in a performance organization (60 through 64). Recommended: a reading knowledge of French, German, or Italian, and Physics 2A-2B or 10.

*The Major.*—A two-year course from the upper division applied music classes (140 through 155), a year course from the master classes (180 through 195), six semesters of membership in a performance organization (141, 159 through 166); plus thirty-six units of upper division courses, including (a) courses 100A-100B, 107A, 109A, 110, 111, (b) 4 units chosen from 121 to 139, 170 to 177, 199, (c) 4 units chosen from courses 101 to 109B, and (d) additional courses in upper division music.

### Graduate Division

Students who are admitted to regular graduate status in music are expected to take the placement examination given in the fall and spring semesters a few days prior to the beginning of classes. This examination is designed to point out to the student possible weaknesses or gaps in his undergraduate work, and thus enable him to remove them early in his graduate program. Subjects tested include sight singing, dictation, harmony, keyboard harmony, counterpoint, analysis, orchestration, score reading, conducting, solo performance, piano playing, history and literature of music, and stylistic analysis of scores. Passing the examination in its entirety is prerequisite to the final examination for the M.A. degree and the qualifying examination for the Ph.D. degree. Candidates for teaching credentials should also undertake to pass the complete examination so that the department will be better able to recommend them for positions.

A. *Requirements for the General Secondary Credential.*—Consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

B. *Requirements for Admission to Graduate Courses.*—

1. *As a candidate for the general secondary credential:* ordinarily the undergraduate major in music, or its equivalent, including courses 40 (4 units), 41

(4 units), 100A-100B, 107A, 109A, 110, 111, 115A-115B-115C-115D, 4 units chosen from courses 121-139, 170-177, 199.

2. *As a candidate for the master's degree*: ordinarily the undergraduate major of 24 upper division units of music.

#### C. Requirements for the Master's Degree.—

For the general requirements, see page 60. In addition, candidates for the Master of Arts degree in Music must satisfy the following:

1. *Admission*: the candidate must have the bachelor's degree with a major in music (or equivalent) as stated in CIRCULAR OF INFORMATION, this bulletin.

2. *Thesis*: the thesis plan (page 61, Plan I) is favored. A musical composition in large form is acceptable as a thesis.

3. *Course of study*: the planning of the course of study will be done under the guidance of the graduate adviser. The candidates may place emphasis upon music education, composition, theory or musicology.

4. *Foreign language*: a reading knowledge of a foreign language is required for a program of study emphasizing musicology or theory, but is not required for emphasis upon music education and composition.

5. *Examinations*: all candidates must take the *Placement Examination* during the first semester of residence and pass all parts of it before taking the *Final Examinations*. The latter are in two parts, oral and written.

### LOWER DIVISION COURSES

#### Theory and Literature

##### A. Basic Music. (No credit) I, II.

Two hours weekly. Although this course yields no credit, it displaces 2 units on the student's program. Every student failing the Basic Music Test is required to take course A in the semester immediately following this failure.

Fundamentals of music, including the major and minor scales, keys, the circle of fifths, accidentals, note-values and rest-values, time signatures, treble and bass clefs, and intervals in all forms; common musical terms; beginning ear training, sight singing, and dictation.

##### B. Sight Reading. (No credit) I, II.

Two hours weekly. Although this course yields no credit, it displaces 2 units on the student's program. Every student failing the Sight Reading Test is required to take course B in the semester immediately following this failure.

Development of facility in sight reading at the piano. Preparatory exercises; accompaniments of the difficulty of Schubert's "Who is Sylvia?"; simple four-part chorale harmonizations.

##### 1A-1B-1C. Musicianship. (2-2-2) Three semesters. Beginning either semester.

Three hours weekly, including one laboratory hour.

Prerequisite: passing the Basic Music Test and concurrent registration in course 3A-3B-3C except as excused by the Advanced Standing Examination in Harmony.

Ear training, sight singing, dictation, and keyboard harmony correlated with the corresponding semester of course 3A-3B-3C.

##### 3A-3B-3C. Harmony. (2-2-2) Three semesters. Beginning either semester. Mr. Chapman, Mr. Edwall, Mr. Gerow

Two hours weekly.

Prerequisite: passing the Sight Reading Test and concurrent registration in course 1A-1B-1C except as excused by the Advanced Standing Examination in Musicianship.

The harmonization of figured basses and of given and original melodies; 3A deals with triads, non-chord tones, and elementary modulation; 3B con-

tinues, with the addition of seventh and ninth chords; 3C deals with chromatic harmony.

**5A-5B. Counterpoint.** (2-2) Yr. Beginning either semester.

Mr. Edwall, Mr. Nelson

Prerequisite: course 3A-3B, or consent of the instructor.

5A, modal counterpoint, including motet writing; 5B, tonal counterpoint, including the writing of canons and inventions.

**20A-20B. Survey of Musical Literature.** (2-2) Yr. Beginning either semester.

Mr. Marrocco, \_\_\_\_\_

Three hours weekly, including one listening hour.

Prerequisite: course 3A, or concurrent registration in 3B. 20A is prerequisite to 20B.

Designed for the major and teaching minor in music. (Course 30A-30B is for general university students.)

The study of representative musical masterworks and their background.

**30A-30B. History and Appreciation of Music.** (2-2) Yr. Beginning either semester.

Mr. Rubsamen, Mr. Edwall, \_\_\_\_\_

No prerequisite. 30A is prerequisite to 30B.

Designed primarily for the general university student. (Course 20A-20B is for the major and teaching minor in music.)

A general survey of music with a consideration of its function, history, and aesthetics.

**31. Music for Classroom Teachers.** (3) I, II. Mr. Gerow, Mrs. Kluth

Four hours weekly, including one laboratory hour.

No prerequisite.

*Not open to students whose major is music.* Required of candidates for the general elementary credential. Emphasis upon developing the basic music skills essential to effective music teaching in elementary schools.

### Group Instruction in Applied Music

Courses in this series may be repeated for credit.

Prerequisite: audition for consent of the instructor.

- |                             |                          |
|-----------------------------|--------------------------|
| 40. Voice. (2) I, II.       | Mr. Winger, Mr. Windward |
| 41. Piano. (2) I, II.       | _____                    |
| 42. Violin. (2) I, II.      | Mr. Both, Mr. Marrocco   |
| 43. Viola. (2) I, II.       | _____                    |
| 44. Cello. (2) I, II.       | Mr. Reisman              |
| 45. Bass Viol. (2) I, II.   | Mr. Rivera               |
| 46. Flute. (2) I, II.       | Mr. Drexler              |
| 47. Oboe. (2) I, II.        | Mr. Gassman              |
| 48. Clarinet. (2) I, II.    | Mr. Caylor               |
| 50. Bassoon. (2) I, II.     | Mr. Moritz               |
| 51. French Horn. (2) I, II. | Mr. Lott                 |
| 52. Trumpet. (2) I, II.     | _____                    |



53. Trombone. (2) I, II. \_\_\_\_\_  
 55. Percussion. (2) I, II. \_\_\_\_\_

### Performance Organizations

Courses in this series may be repeated for credit.  
 Prerequisite: audition for consent of the instructor.

60. University Symphony Orchestra. (1-2) I, II. \_\_\_\_\_  
 Two two-hour rehearsals each week.  
 The study and performance of standard symphonic literature.
61. University Band. (1-2) I, II. Mr. Sawhill  
 Two two-hour rehearsals each week.
62. University Chorus. (1) I, II. No audition. \_\_\_\_\_  
 Two one-hour rehearsals each week.
63. University A Cappella Choir. (2) I, II. Mr. Brady, Mr. Moremen  
 Three one-hour rehearsals each week.  
 The study and performance of standard choral works.
64. University Glee Club. (1) I, II. Mr. Moremen, Mr. Brady  
 Two one-hour rehearsals each week.

### UPPER DIVISION COURSES

- 100A-100B. History and Analysis of Music. (4-4) Yr. Beginning either semester. Mr. Clarke, Mr. Nelson, Mr. Rubsamem  
 Five hours weekly, including one listening hour.  
 Prerequisite: courses 3A-3B-3C, 20A-20B, or their equivalent.  
 Course 100A (from antiquity to 1750) is not prerequisite to course 100B (from 1750 to the present). A study of the development of music; lectures, listening, technical analysis, and written reports.

### Theory

101. Advanced Keyboard Harmony. (2) I. Mr. Chapman  
 (Former number, 101A.)  
 Three hours weekly, including one laboratory hour.  
 Prerequisite: courses 3A-3B-3C.  
 The reading of figured bass; sequences, modulations, etc., in the harmonic vocabulary of the eighteenth and nineteenth centuries.
102. Score Reading. (2) II. Mr. Chapman  
 (Former number, 101B.)  
 Three hours weekly, including one laboratory hour.  
 Prerequisite: course 101.  
 Reading at the piano of several staves, the various C clefs, and parts for transposing instruments; chamber music and simple orchestral scores.
- 103A-103B. Advanced Harmony. (2-2) Yr. Mr. Kremenliev  
 Prerequisite: courses 3A-3B-3C.  
 Modes and new scales. Freer concepts of modulation. Chords built on fourths. Bitonality and polytonality. The Hindemith, the 12-tone, and other systems. Modern uses of rhythm. Analysis of contemporary works.
105. Advanced Modal Counterpoint. (3) I. Mr. Nelson  
 Prerequisite: course 5A and consent of the instructor.  
 Advanced modal counterpoint, including motet writing.

- 106. Advanced Tonal Counterpoint. (3) II.** Mr. Nelson  
 Prerequisite: course 5A-5B, and consent of the instructor.  
 Advanced tonal counterpoint, including the writing of invertible counterpoint, chorale preludes, and fugues.
- 107A-107B. Composition.**  
 Prerequisite: courses 3A-3B-3C, 5A-5B, 100A-100B, and consent of the instructor; 100A-100B may be taken concurrently.  
 Vocal and instrumental composition in the smaller forms.
- 107A, sec. 1, and 107B. (2-2) Yr.** Mr. Clarke, Mr. Vincent  
 For regular music majors.
- 107A, sec. 2. (2) I, II.** Mr. Kremenliev  
 For candidates for the special secondary teaching credential.
- 108A-108B. Studies in Musical Analysis. (2-2) Yr.** \_\_\_\_\_  
 Prerequisite: courses 3A-3B-3C, 20A-20B, 100A-100B, or consent of the instructor.  
 The application of a broad analytical approach to compositions in widely divergent styles.
- 109A-109B. Orchestration.**  
 Prerequisite: course 3A-3B-3C.
- 109A, sec. 1 and 109B. (2-2) Yr.** Mr. Kremenliev, \_\_\_\_\_  
 For regular music majors.  
 Ranges and properties of orchestral instruments. Scoring for full orchestra. Problems of balance and sonority. Analysis of orchestral scores.
- 109A, sec. 2. (2) I, II.** \_\_\_\_\_  
 For candidates for the special secondary teaching credential.  
 Theory and practice of writing for instrumental ensembles. The study of orchestral scores and an introduction to symphonic orchestration.
- 110. Choral Conducting. (2) I, II.** Mr. Brady  
 (Former number, 111A.)  
 Prerequisite: courses 1A-1B, 3A-3B, and 4 units of course 40.  
 The theory and practice of conducting choral organizations.
- 111. Instrumental Conducting. (2) I, II.** Mr. Sawhill  
 (Former number, 111B.)  
 Prerequisite: courses 1A-1B, 3A-3B.  
 The theory and practice of conducting instrumental organizations.
- 115A-B-C-D. Instrumental Technique.** Mr. Edwards, Mr. Sawhill  
 A practical and theoretical study of the technique of orchestra and band instruments, including the principles of arranging music for representative combinations. Appropriate literature for instrumental ensembles.
- 115A. Strings. (2) I, II.**
- 115B. Woodwind. (2) II.**
- 115C. Brass. (2) I.**
- 115D. Percussion and Ensemble. (2) II.**
- 116. Workshop in Radio Music. (2) II.** Mr. Kremenliev  
 Prerequisite: consent of the instructor.  
 The function of music in radio. Problems of programming, acoustics, recording, and editing. Microphone technique. The nature of background music. Preparation of radio programs. Composition for radio.

## History and Literature

121. **History of Music in America.** (2) I. Mr. Marrocco  
Prerequisite: consent of the instructor.  
A survey of music in the United States from the colonial period to the present day.
123. **Music in the Middle Ages, 900-1400.** (3) I. Mr. Marrocco  
Prerequisite: courses 3A-3B-3C, 20A-20B,  
A detailed study of the musical forms and the notation of sacred and secular music from the beginnings of polyphony to the end of the fourteenth century.
124. **Music in the Renaissance Period, 1430-1600.** (3) II. Mr. Rubsamen  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
The music of the renaissance period from Dunstable to Palestrina.
- \*125. **Music in the Baroque Period, 1600-1750.** (3) I. Mr. Clarke  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
The music of the baroque period from Monteverdi to Handel and J. S. Bach.
- \*126. **Music in the Classic Period, 1730-1827.** (3) II. \_\_\_\_\_  
(Former number, 124.)  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
The music of the early classic schools and of Haydn, Mozart, and Beethoven.
127. **Music in the Romantic Period, 1820-1900.** (3) I. Mr. Clarke  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
The music of the romantic period from Weber and Schubert to the end of the nineteenth century.
128. **Modern Tendencies in Music.** (3) II. Mr. Nelson  
(Former number, 127.)  
Prerequisite: courses 3A-3B-3C, 5A-5B.  
A study of form, style, and idiom in contemporary music.
- \*130. **Bach.** (2) II. Mr. Petran  
Prerequisite: courses 3A-3B-3C, 20A-20B.
- \*131. **Beethoven.** (2) I. \_\_\_\_\_  
Prerequisite: courses 3A-3B-3C, 20A-20B.
132. **Opera in the Classic Period.** (2) II. Mr. Popper  
Prerequisite: course 170 or its equivalent.  
A study of eighteenth-century opera with special concentration on the dramatic works of Gluck, Haydn, Mozart, and Beethoven.
- \*133. **The Operas of Wagner.** (2) I. Mr. Popper  
Prerequisite: course 170 or the equivalent.
- \*134. **The Operas of Verdi.** (2) II. Mr. Popper  
Prerequisite: course 170 or the equivalent.
135. **Opera of the Twentieth Century.** (2) I. Mr. Popper  
Prerequisite: course 170 or its equivalent.  
The history of opera from Debussy and Richard Strauss to the present.  
Analysis of representative masterworks.

\* Not to be given, 1953-1954.

136. **Folk Music.** (3) I. Mr. Petran  
Prerequisite: consent of the instructor.  
Origins, types, and illustrations of the folk music of various countries.
137. **Music for the Legitimate Drama, Screen, and Radio.** (2) II. Mr. Rubsamen  
Prerequisite: consent of the instructor.  
A history and analysis of incidental music for the theater from ancient Greece to the present. The place and function of background or mood music, overtures, entr'actes, and music that serves the action or locale.
- \*138. **Political Influences on Music.** (2) II. Mr. Rubsamen  
Prerequisite: consent of the instructor.  
The influence of revolution and dictatorship upon music and its allied arts from antiquity to the present.
139. **Aesthetics of Music.** (2) II. Mr. Marrocco  
Prerequisite: consent of the instructor.  
The study of the relationship of music to the human senses and intellect. Readings in the literature of music aesthetics from Plato to the modern aestheticians.
170. **History of the Opera.** (3) II. Mr. Edwall  
Prerequisite: consent of the instructor.  
A survey of operatic music from its inception to the present day.
- \*171. **History and Literature of Church Music.** (2) I. Mr. Stevenson  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
A study of the history and development of church music, including worship forms and liturgies.
172. **Oratorio Literature.** (2) II. Mr. Petran  
Prerequisite: courses 3A-3B-3C, 20A-20B.  
A survey of oratorio music from its inception to the present day.
173. **The Concerto.** (2) II. \_\_\_\_\_  
Prerequisite: courses 3A-3B-3C, 20A-20B, or consent of the instructor.  
Origins and development of the concerto with emphasis on the classic period.
174. **History of the Sonata.** (2) I. Mr. Popper  
Prerequisite: courses 3A-3B-3C, 20A-20B, or consent of the instructor.  
The development of the sonata from its beginnings to the close of the romantic period.
175. **Music Criticism.** (2) I. Mr. Goldberg  
Prerequisite: consent of the instructor.  
A study of factors in critical evaluation of musical works in performance.
177. **Selected String Quartets.** (2) I. Mr. Roth  
Prerequisite: courses 3A-3B-3C, 20A-20B, or consent of the instructor.

### Group Instruction in Applied Music

Courses in this series may be repeated for credit.  
Prerequisite: audition for consent of the instructor.

140. **Advanced Voice.** (2) I, II. Mr. Winger, Mrs. Price  
Prerequisite: 4 units of course 40.

\* Not to be given, 1953-1954.

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|--|-------------|
| 141. <b>Advanced Piano.</b> (2) I, II.         | Mr. Maier   |
| 142. <b>Advanced Violin.</b> (2) I, II.        | Mr. Roth    |
| 143. <b>Viola.</b> (2) I, II.                  | _____       |
| 144. <b>Cello.</b> (2) I, II.                  | Mr. Reisman |
| 145. <b>Bass Viol.</b> (2) I, II.              | Mr. Rivera  |
| 146. <b>Flute.</b> (2) I, II.                  | Mr. Drexler |
| 147. <b>Oboe.</b> (2) I, II.                   | Mr. Gassman |
| 148. <b>Clarinet.</b> (2) I, II.               | Mr. Caylor  |
| 150. <b>Bassoon.</b> (2) I, II.                | Mr. Moritz  |
| 151. <b>French Horn.</b> (2) I, II.            | Mr. Lott    |
| 152. <b>Trumpet.</b> (2) I, II.                | _____       |
| *153. <b>Trombone.</b> (2) I, II.              | _____       |
| 155. <b>Percussion.</b> (2) I, II.             | Mr. Myhr    |
| 158. <b>Studies in Accompanying.</b> (1-2) II. | Mr. Popper  |
- Pianists enroll for two units; other instrumentalists and singers desiring work in repertoire and interpretation may enroll for one unit.

**Performance Organizations**

Courses in this series may be repeated for credit.  
Prerequisite: audition for consent of the instructor.

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|--|-------------|
| 159. <b>Opera Workshop.</b> (1-2) I, II.   | Mr. Popper  |
| 160. <b>University Symphony Orchestra.</b> (1-2) I, II.<br>Two two-hour rehearsals each week.<br>Prerequisite: completion of 4 units of course 60 or the equivalent.<br>The study and performance of standard symphonic literature.              | _____       |
| 161. <b>University Band.</b> (1-2) I, II.<br>Two two-hour rehearsals each week.<br>Prerequisite: completion of 4 units of course 61 or the equivalent.   | Mr. Sawhill |
| 162. <b>University Chorus.</b> (1) I, II. No audition.<br>Two one-hour rehearsals each week.   | Mr. Tusler  |
| 163. <b>University A Cappella Choir.</b> (2) I, II. Mr. Moremen, Mr. Brady<br>Three one-hour rehearsals each week.<br>Prerequisite: completion of 4 units of course 63 or its equivalent.<br>The study and performance of standard choral works. |             |
| 164. <b>University Glee Club.</b> (1) I, II.<br>Two one-hour rehearsals each week.<br>Prerequisite: completion of 2 units of course 64 or the equivalent.  | Mr. Moremen |
| 165. <b>Madrigal Singers.</b> (2) I, II.<br>Three one-hour rehearsals each week.<br>The study and performance of significant music of the madrigal school.   | Mr. Moremen |
| 166. <b>Chamber Music Ensemble.</b> (2) I, II.<br>The study and interpretation of chamber music literature.  | Mr. Roth    |

\* Not to be given, 1953-1954.

### Master Classes

Courses in this series may be repeated for credit.

Prerequisite: audition for consent of the instructor.

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|---|--------------------|
| *180. Voice. (2) I, II.   | _____              |
| 181. Piano. (2) I, II.  | Mr. Maier          |
| 182. Violin. (2) I, II.   | Mr. Roth           |
| 183. Viola. (2) I, II.  | _____              |
| 184. Cello. (2) I, II.  | Mr. Reisman        |
| 185. Bass Viol. (2) I, II.  | Mr. Rivera         |
| 186. Flute. (2) I, II.  | Mr. Drexler        |
| 187. Oboe. (2) I, II.   | Mr. Gassman        |
| 188. Clarinet. (2) I, II.   | Mr. Caylor         |
| 190. Bassoon. (2) I, II.  | Mr. Moritz         |
| 191. French Horn. (2) I, II.  | Mr. Lott           |
| 192. Trumpet. (2) I, II.  | _____              |
| *193. Trombone. (2) I, II.  | _____              |
| 195. Percussion. (2) I, II.   | Mr. Myhr           |
| 199. Special Studies in Music. (1-4) I, II.<br>Prerequisite: consent of the instructor.                                       | The Staff          |
| GRADUATE COURSES  |                    |
| 200. Research Methods and Bibliography. (3) I.  | Mr. Nelson         |
| 201A-201B. Advanced Composition. (3-3) Yr.<br>This course may be repeated for credit.   | Mr. Vincent, _____ |
| 202A-202B. Advanced Orchestration. (2-2) Yr.  | Mr. Kremenliev     |
| *205. History of Pianoforte Style. (2) II.  | _____              |
| 206. History of Organ Style. (2) I.   | Mr. Petran         |
| 207. Variation Form. (2) II.<br>Prerequisite: courses 100A-100B, 107A-107B, or their equivalents.                             | Mr. Nelson         |
| 230. Pianoforte Sonatas of Beethoven. (2) II.<br>Detailed chronological study of the development of Beethoven's sonata style. | _____              |
| 253A-253B. Seminar in Historical Musicology. (3-3) Yr.<br>Prerequisite: course 100A-100B, or its equivalent.                  | Mr. Rubsamen       |
| *255. Seminar in American Music. (2) II.  | _____              |
| *261A-261B. Special Studies for Composers. Seminar. (2-2) Yr.   | Mr. Vincent        |

\* Not to be given, 1953-1954.

262. Seminar: Special Studies in Contemporary Music. (2) I. Mr. Nelson  
 263. Seminar in Music Theory. (2) II. \_\_\_\_\_  
 264. Seminar in Comparative Musicology. (2) II. Mr. Petran  
 Prerequisite: course 136 or its equivalent.  
 265. Analysis of Contemporary Musical Styles. (2) II. Mr. Vincent  
 \*268. Seminar in Aesthetics. (2) I. \_\_\_\_\_  
 270A-270B. Seminar in Music Education. (2-2) Yr. Mr. Vincent  
 299. Special Problems in Music. (1-4) I, II. The Staff

PROFESSIONAL COURSES IN METHOD

330. Music Education for Classroom Teachers. (3) I, II.  
 Mrs. Dill, Miss Tipton, Mrs. Kluth  
 Four hours weekly, including one laboratory hour.  
 Prerequisite: sophomore standing and course 31 or its equivalent. *Not open to students whose major is music.* Required of candidates for the general elementary credential.  
 Emphasis upon exploring musical literature and interpretative activities appropriate for children in elementary schools.  
 369. Music Education in Elementary Schools. (3) I. Miss Tipton  
 (Former number, 370A.)  
 Prerequisite: junior standing.  
 Required of music majors who are candidates for the general elementary and special secondary credentials.  
 A study of the place and function of music in elementary schools.  
 370. Music Education in Secondary Schools. (3) II. Miss Tipton  
 (Former number, 370B.)  
 Prerequisite: junior standing.  
 Required of candidates for the special secondary and general secondary credentials.  
 A study of the place and function of music in junior and senior high schools.  
 380. Piano Pedagogy. (2) I. Mr. Maier  
 Prerequisite: advanced standing in piano or consent of the instructor.  
 For teachers and prospective teachers of piano. A survey of graded piano literature. The class approach explored and evaluated.

RELATED COURSE IN ANOTHER DEPARTMENT

- Psychology 172A-172B. Psychology of Music. (3-3) Yr. Mr. Petran

**NAVAL SCIENCE**

- Joseph W. Adams, Jr., B.S., Captain, U. S. Navy, *Professor of Naval Science (Chairman of the Department).*  
 Albert Hartman, B.S., Major, U. S. Marine Corps, *Associate Professor of Naval Science.*  
 Wade C. Wells, B.S., Commander, U. S. Navy, *Associate Professor of Naval Science.*  
 Charles H. Black, B.S., Lieutenant, U. S. Navy, *Assistant Professor of Naval Science.*

\* Not to be given, 1953-1954.

Hayward C. Parish, M.A., Lieutenant, U. S. Navy, *Assistant Professor of Naval Science.*

Lawrence E. Redden, B.S., Lieutenant, U. S. Navy, *Assistant Professor of Naval Science.*

*Letters and Science List.*—All undergraduate courses in this department up to a total of 12 units are included in the Letters and Science List of Courses. Note: This in no way prejudices counting additional Naval Science courses up to the 12 units of non-Letters and Science credit accepted toward the degree. For regulations governing this list, see page 6.

### Naval Reserve Officers' Training Corps

By action of the Secretary of the Navy and of The Regents of the University of California in June, 1938, provision was made for the establishment of a unit of the Naval Reserve Officers' Training Corps on the Los Angeles campus.

The primary object of the Naval Reserve Officers' Training Corps is to provide at civil institutions systematic instruction and training which will qualify selected students of such institutions for appointment as officers in the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve. The Naval Reserve Officers' Training Corps is expected to train junior officers for the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve, and thus assist in meeting a demand for increased commissioned personnel in time of war or national emergency.

Courses in naval science are given for those who intend to complete the four years of training for a commission in the Regular Navy, Naval Reserve, Marine Corps, and Marine Corps Reserve. While only students signifying such a purpose will be admitted, students who for sufficient reasons are forced to discontinue their training before their commission is granted, will be permitted, at the end of two years, to count such training in lieu of the military training prescribed by the University. All courses in naval science described herein include infantry drill or other practical drill for two hours weekly for all Naval R.O.T.C. students.

Initial enrollment is restricted to able-bodied male students who are citizens of the United States and are between the ages of sixteen and twenty-one years. Students must pass the same physical examination as is required of all candidates for admission to the Naval Academy.

All courses listed are those prescribed by the Navy Department for the Naval Reserve Officers' Training Corps. The United States furnishes on loan to the individual arms, equipment, uniforms, and naval science textbooks for the use of these students. Upon satisfactory completion of the course, a uniform becomes the property of the student who was enrolled in the Regular or Contract status.

*Types of N.R.O.T.C. students.*—Officer candidates in the N.R.O.T.C. will be of three types:

(a) *Regular N.R.O.T.C. students* are appointed Midshipmen, U.S.N.R., and receive retainer pay at a rate of \$600 per year for a maximum period of four years while under instruction at the N.R.O.T.C. institution or during summer training periods. Their tuition, fees, books, and laboratory expenses are paid by the U. S. government during the above period. These students assume an obligation to make all required summer practice cruises (three) and to remain a member of a regular or reserve component of the U. S. Naval Service until the eighth anniversary of receipt of original commission in that service, three years of which will be on active duty after commissioning as Ensigns, U. S. Navy, or Second Lieutenants, U. S. Marine Corps. Students enrolled in this status are selected by nation-wide examination and selection conducted during the spring preceding the student's entrance into the University in the fall.



(b) *Contract N.E.O.T.C. students* have the status of civilians who have entered into a mutual contract with the Navy. For administrative purposes, they are styled Midshipmen. During their junior and senior years they are entitled to commutation of subsistence from the first day during an academic term until they complete the course at the institution or their connection with the Naval Reserve Officers' Training Corps is severed in accordance with the regulations prescribed, except that subsistence in kind will be furnished in lieu of commutation of subsistence for any periods devoted to cruises. The amount allowed for subsistence, which will be fixed from time to time by the Secretary of the Navy, will not exceed the value prescribed by law for a commuted ration in the Navy. Contract N.R.O.T.C. students agree to accept a commission in the Naval Reserve or in the Marine Corps Reserve to remain a member of a reserve component of the U. S. Naval Service until the eighth anniversary of receipt of original commission in that service and to serve not less than two years on active duty if ordered but may, if they so desire and if their services are required, be commissioned as Ensigns, U.S.N., or Second Lieutenants, U.S.M.C., subject to the same requirement as outlined in (a) above. Contract N.R.O.T.C. students are required to make one summer practice cruise.

Regular and contract students are deferred from induction until after completion or termination of their courses of instruction and so long as they continue in a regular or reserve status upon being commissioned.

(c) *Naval Science Students*

(1) With the approval of the academic authorities, and the Bureau of Naval Personnel, students may be permitted to pursue naval science courses for college credit only. They are not eligible to make N.R.O.T.C. practice cruises nor to be paid any compensation or benefits.

(2) Naval science students may become eligible for enrollment in N.R.O.T.C. as candidates for commissions provided they comply in every respect with the requirements for original enrollment, when vacancies occur in the unit quota.

Credit may be allowed for work completed during practice cruises and summer camps at the rate of one-half units per each two weeks' duty performed, not to exceed a total of six units.

*Freshman Year*

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|---|------------------|
| <p><b>1A. Naval History and Orientation. (3) I.</b><br/>U. S. Naval History and Sea Power.<br/>(BuPers Curriculum NS101.)</p> | <p>The Staff</p> |
| <p><b>1B. Naval History and Orientation. (3) II.</b><br/>Naval Administration, seamanship.<br/>(BuPers Curriculum NS102.)</p> | <p>The Staff</p> |

*Sophomore Year*

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|---|------------------|
| <p><b>2A. Naval Weapons. (3) I.</b><br/>Naval ordnance and gunnery, elementary fire-control.<br/>(BuPers Curriculum NS201.)</p>   | <p>The Staff</p> |
| <p><b>2B. Naval Weapons. (3) II.</b><br/>Advanced fire control, radar, anti-submarine warfare.<br/>(BuPers Curriculum NS202.)</p> | <p>The Staff</p> |

*Junior Year*

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|--|------------------|
| <p><b>101A. Navigation. (3) I.</b><br/>Piloting, aerology, maneuvering board, rules of the road.<br/>Prerequisite: Mathematics C.<br/>(BuPers Curriculum NS301.)</p> | <p>The Staff</p> |
|--|------------------|

- 101B. Navigation. (3) II.** The Staff  
Nautical astronomy, celestial navigation, navigator's day's work at sea.  
(BuPers Curriculum NS302.)
- \*103A. Evolution of the Art of War. (3) I.** The Staff  
Survey of the historical development of weapons, tactics, and matériel, to illustrate the classic principles of war.  
(BuPers Curriculum NS301M.)
- \*103B. Basic Strategy and Tactics. (3) II.** The Staff  
A survey of modern strategical and tactical principles using contemporary historical events as illustrative material.  
(BuPers Curriculum NS302M.)
- Senior Year*
- 102A. Naval Machinery and Diesel Engines. (3) I.** The Staff  
Naval machinery, steam, electrical and Diesel, including auxiliary equipment.  
(BuPers Curriculum NS401.)
- 102B. Ship Stability, Naval Justice and Leadership. (3) II.** The Staff  
Ship stability and buoyancy, naval justice and leadership.  
(BuPers Curriculum NS402.)
- \*104A. Amphibious Warfare. (3) I.** The Staff  
Principles of amphibious warfare techniques.  
(BuPers Curriculum NS401M.)
- \*104B. Amphibious Warfare, Leadership, and Military Justice. (3) II.** The Staff  
Application of amphibious warfare techniques in selected battles, leadership, and military justice.  
(BuPers Curriculum NS402M.)

## NURSING

Lulu K. Wolf, R.N., M.P.H., *Professor of Nursing (Chairman of the Department)*.

Dorothy E. Johnson, R.N., M.P.H., *Associate Professor of Pediatric Nursing.*

Agnes A. O'Leary, R.N., M.P.H., *Associate Professor of Public Health Nursing.*

Margaret S. Taylor, R.N., M.A., *Associate Professor of Public Health Nursing.*

\_\_\_\_\_, *Associate Professor of Nursing.*

Claire E. Bartholomew, R.N., M.P.H., *Assistant Professor of Psychiatric Nursing.*

Juanita A. Booth, R.N., M.A., *Assistant Professor of Nursing.*

Maura Catherine Carroll, R.N., M.A., *Assistant Professor of Medical-Surgical Nursing.*

Harriet M. Coston, R.N., M.A., *Assistant Professor of Nursing.*

Ruth P. A. Freet, R.N., M.A., *Assistant Professor of Nursing.*

Hellene N. Jensen, R.N., M.A., *Assistant Professor of Psychiatric Nursing.*

Charity C. Kerby, R.N., M.N., *Assistant Professor of Nursing.*

Marion R. Nighman, R.N., M.P.H., *Assistant Professor of Pediatric Nursing.*

\* These courses to be pursued by candidates for commissions in the Marine Corps or Marine Corps Reserve in place of courses 101A, 101B, 102A, and 102B.

Madge Sledge, R.N., S.M., *Assistant Professor of Obstetric Nursing.*

Carol J. Sturtevant, R.N., M.A., *Assistant Professor of Nursing.*

—————, *Assistant Professor of Pediatric Nursing.*

Doris S. Bernhagen, M.A., *Instructor in Social Work Methods.*

Jo Eleanor Elliott, R.N., M.A., *Instructor in Surgical Nursing.*

Evelyn Johnson Fisher, R.N., M.S., *Instructor in School Nursing.*

Marion S. Mayne, R.N., B.S., *Instructor in Industrial Nursing.*

Virginia Ragland, R.N., M.A., *Instructor in Nursing.*

—————, *Instructor in Medical Nursing.*



John S. Lawrence, M.D., *Professor of Medicine, School of Medicine.*

Daniel G. Morton, M.D., *Professor of Obstetrics and Gynecology, School of Medicine.*

Mary S. Browne, R.N., M.S., *Clinical Instructor in Surgical Nursing.*

Judith A. Davies, R.N., M.S., *Lecturer in Public Health Nursing.*

Ann Luise Finch, R.N., B.S., *Lecturer in Public Health Nursing.*

Ethel May Goldrick, R.N., P.H.N. Certificate, *Lecturer in Public Health Nursing.*

Dorothy Greenleaf, R.N., B.S., *Clinical Instructor in Psychiatric Nursing.*

June W. Harris, R.N., M.A., *Lecturer in Psychiatric Nursing.*

Audrey Holt, R.N., B.S., *Lecturer in Public Health Nursing.*

Ferne D. Hood, R.N., M.A., *Lecturer in School Nursing.*

Olive Whitlock Klump, R.N., B.S., *Lecturer in Public Health Nursing.*

Doris Lansing, R.N., B.S., *Clinical Instructor in Psychiatric Nursing.*

Edell F. Little, R.N., B.S., *Lecturer in Public Health Nursing.*

Mary McQuillen, R.N., M.A., *Lecturer in Public Health Nursing.*

Edith V. Martins, R.N., B.S., *Lecturer in Public Health Nursing.*

Sylvia Michal, R.N., B.S., *Clinical Instructor in Nursing.*

Marion Miller, R.N., B.A., *Clinical Instructor in Surgical Nursing.*

Myona M. Morrison, R.N., M.P.H., *Lecturer in Public Health Nursing.*

Helen Nicholson, R.N., M.S., *Clinical Instructor in Medical-Surgical Nursing.*

Dorothy J. Potts, R.N., B.S., *Lecturer in Public Health Nursing.*

Elizabeth E. Starr, B.E., *Clinical Instructor in Pediatric Nursing.*

Jeanne M. Tague, R.N., B.S., *Clinical Instructor in Surgical Nursing.*

Elise C. Williams, R.N., *Lecturer in Industrial Nursing.*

Helen L. Woodworth, R.N., B.S., *Lecturer in Public Health Nursing.*

### School of Nursing

The School of Nursing admits students of junior or higher standing and offers curricula leading to the degrees of Bachelor of Science and Master of Science in nursing.

Two curricula are offered for the Bachelor of Science degree:

#### 1. *Basic Program.*

*Preparation for the Major.*—Completion of the prenursing curriculum. (See page 6.)

*The Major.*—A minimum of 49 units of upper division nursing courses and 15 units of closely coordinated upper division courses designed to prepare university women for professional nursing responsibilities in the care of the patient and his family.

## 2. Program for Registered Nurses.

*Preparation for the Major.*—Completion of the admission requirements. (See page 6.)

*The Major.*—A minimum of 36 units of coördinated upper division courses planned on the basis of professional need. Students who have not had acceptable practice in public health nursing must complete Nursing 104 before enrolling in other courses in the major.\*

### LOWER DIVISION COURSES

Prerequisite: Sophomore standing. Required of all prenursing students. Not open to registered nurses.

#### 10. Orientation to Nursing. (3) I.

Miss Carroll

Survey of the social and economic factors which have influenced the development of nursing; responsibilities of the nursing profession in meeting the health needs of society.

#### 15. Nursing and Health Promotion. (3) I.

Miss Bartholomew

Nursing in relation to fundamental factors which influence the health of the individual, the family and the community.

#### 20. Fundamentals in Nursing Care. (4) II.

Miss Kerby, Miss Ragland

Prerequisite: courses 10 and 15. Concurrent with course 30.

A study of the principles and methods of nursing care which meet the interrelated physical, emotional, and social needs of the individual and his family.

#### 30. Maternity Nursing. (8) II.

Miss Ragland, Miss Sledge, Miss Taylor

Lectures, four hours; laboratory and conferences, 20 hours.

Prerequisite: courses 10 and 15 concurrent with course 20.

The study of the family unit with special emphasis on the nursing care of the mother and her newborn infant. Includes preparation for marriage, child-bearing, and parenthood; and nursing care intrinsic to gynecologic treatment. Guided participation in clinic, hospital, home.

### UPPER DIVISION COURSES FOR BASIC PROGRAM

#### 106. Public Health Nursing. (3) II.

Miss Taylor, Mrs. Mayne

A study of public health nursing and functions and responsibilities of the nurse in the community health program.

#### 110. Social Work Methods and Nursing. (2) I.

Mrs. Bernhagen

Discussion of interviewing, the preparation of social histories, and other social work methods useful to nurses; an introduction to case work, group work, and other specialized social work methods commonly employed by social welfare agencies with which nurses often work.

#### 121. Tuberculosis Nursing. (2) II.

Miss Booth

Lectures, 4 hours for 4 weeks; laboratory, 20 hours for 4 weeks.

Study of the prevention, treatment and control of tuberculosis and guided participation in nursing care essential to meet the needs of the tuberculous patient and his family.

#### 124. Geriatric Nursing. (2) I.

Miss Carroll, Miss Coston

Lectures, 1 hour per week for 16 weeks; laboratory, 20 hours per week for 4 weeks.

Prerequisite: courses 125A-125B.

Responsibilities of the professional nurse in the care of the aging person. Emphasis will be placed on maintenance and promotion of emotional and physical health, prevention of illness, and rehabilitation. Field trips.

\* Nursing 104 is offered in August of each year.

**125A. Medical-Surgical Nursing. (10) II.**

Prerequisite: course 30.

Miss Carroll, Miss Coston, Miss Elliot and the Staff

Lecture, 5 hours; laboratory, 20 hours.

Study of the nursing care of adults and the nursing functions essential to meeting the needs of the adult patient in health and disease. Diet and drug therapy are integrated throughout. Guided participation in the care of selected patients in the hospital and community.

**125B. Medical-Surgical Nursing. (8) I.**

Prerequisite: course 125A.

Miss Carroll, Miss Coston, Miss Elliot and the Staff

Lectures, 4 hours; laboratory, 20 hours.

Study of the nursing care of selected patients with medical and surgical conditions. Nursing functions essential to meeting the psychological, social and physical needs of the patient in the hospital and community.

**126. Orthopedic Nursing. (3) I.**

The Staff

Prerequisite: courses 10, 15 and 20.

Lectures, 2 hours; laboratory, 5 hours.

Study of the prevention of deformity and the treatment of patients with orthopedic disease. Guided participation in the care of selected patients with emphasis upon total rehabilitation.

**130. Nursing of Children. (8) I.** Miss Johnson, Miss Ragland and the Staff

Prerequisite: courses 20 and 30.

Lecture, 4 hours; laboratory and conferences, 20 hours.

Study of the nursing care of children and the nursing functions essential to meeting children's needs in health and disease, including the nurse's responsibility for parental counseling. Guided participation in child care programs in the hospital, health center, and home.

**144. Guided Participation in Public Health Nursing. (4) II.**

Prerequisite: consent of the instructor. Miss Taylor and the Staff

Guided participation in an official generalized public health nursing program or in a voluntary public health nursing program or both.

**165. Fundamentals of Psychiatric Nursing. (4) II.**

Miss Bartholomew, Miss Jensen and the Staff

Lectures, 4 hours per week for 8 weeks; laboratory, 20 hours per week for 8 weeks.

Study of the changing concepts in the care of psychiatric patients with guided participation in nursing care essential to meet the needs of the mentally ill patient and his family.

**199. Special Studies in Nursing. (1-3) II.**

The Staff

Prerequisite: senior standing and consent of the instructor.

Individual study of a problem in the field of nursing.

**UPPER DIVISION COURSES FOR REGISTERED NURSES**

Registered nurses having upper division standing are admitted to all upper division courses upon completion of course prerequisites. Course 104 must be taken before all other nursing courses.

**104. Orientation to Public Health Nursing. (2) I, II.**

Mrs. Fisher and the Staff

Planned observation in and orientation to community health and welfare programs with emphasis upon the role of the nurse in community health. Required of all students who have not had public health nursing experience. One month. Offered in August only.

- 106. Public Health Nursing.** (3) I, II. Miss O'Leary  
A study of public health nursing and functions and responsibilities of the nurse in the community health program.
- 108. Nursing and Health Service for Children.** (3) I, II. Miss Bartholomew, Miss Johnson  
Functions of the nurse in relation to the physical, emotional, and social needs for individual and family well-being from birth through adolescence.
- 109. Nursing and Health Service for Adults.** (3) I, II. Miss Bartholomew, Mrs. Fisher, Miss Sledge  
Prerequisite: course 108 or its equivalent.  
Functions of the nurse in relation to the physical, emotional, and social needs for individual and family well-being from adolescence through senescence including the maternity cycle.
- 110. Social Work Methods and Nursing.** (2) I, II. Mrs. Bernhagen  
Discussion of interviewing, the preparation of social histories, and other social work methods useful to nurses; an introduction to case work, group work, and other specialized social work methods commonly employed by social welfare agencies with which nurses often work.
- 116. Survey of Nursing.** (3) I, II. Miss Freet, Miss Carroll  
Critical analysis of studies in nursing and their relationship to the development of the profession.
- 122. Survey of Tuberculosis Nursing.** (2) I, II. Miss Booth  
Survey of recent advances in the prevention, treatment, and control of tuberculosis, and in nursing care, including rehabilitation of the patient with tuberculosis.
- 123. Field Work in Medical Nursing.** (2) II. Miss Coston  
Observation of and guided experience in the nursing care of adult patients. Minimum of eight hours per week including one to two hours of conference and discussion.
- 127. Survey of Orthopedic Nursing.** (2) II. The Staff  
Discussion of the newer concepts of posture, body mechanics and treatment of patients with orthopedic conditions. Emphasis is given to the rehabilitation of the handicapped person and the role of the nurse on the rehabilitation team.
- 132. Field Work in Maternity Nursing.** (2) I. Miss Sledge  
Prerequisite: consent of instructor.  
Observation of and guided experience in the total nursing care of maternity patients. Minimum of eight hours per week including one to two hours of staff conference and discussion.
- 137. Field Work in Pediatric Nursing.** (2) I. Miss Johnson, Miss Ragland  
Prerequisite: consent of the instructor.  
Observation of and guided experience in the nursing care of children of all age levels. Minimum of eight hours per week including one to two hours of staff conferences and discussion.
- 140. Health Teaching.** (3) I, II. Miss O'Leary  
A discussion of the content, methods, and materials of instruction as applied to individual, family, and community needs. Field observations and guided participation in group teaching.

- 144. Guided Participation in Public Health Nursing.** (4) I, II.  
Prerequisite: consent of the instructor. Miss O'Leary, Mrs. Fisher  
Guided participation in an official generalized public health nursing program or in a voluntary public health nursing program or both.
- 151. Development and Principles of Industrial Nursing.** (3) I, II.  
Mrs. Mayne and the Staff  
An interpretation of in-plant health services and the functions of the nurse in industry; a study of her interrelationship with management and labor organizations; a discussion of workmen's compensation and insurance programs. Field trips.
- 152. Guided Participation in Industrial Nursing.** (4) I, II. Mrs. Mayne  
Prerequisite: consent of the instructor.  
Guided participation in industrial health services.
- 160. Psychiatric Nursing.** (3) I, II. Miss Jensen and the Staff  
Basic concepts of psychiatric nursing and a consideration of how these concepts may be applied to nursing problems and particularly to those problems met in the nursing care of psychiatric patients. Lectures and demonstrations.
- 161. Field Work in Psychiatric Nursing.** (4) I, II.  
Miss Jensen, Mrs. Lansing, Miss Greenleaf  
Observation of and guided experience in the care of psychiatric patients. Minimum of twelve hours per week, including two to three hours of staff meetings and conferences.
- 170. School Nursing.** (2) I, II. Miss Bartholomew, Mrs. Fisher  
Lecture, 2 hours per week.  
Study of the philosophy, present practices, and trends in school nursing programs and the functions of the nurse in relation to the needs of the child in the school environment.
- 180. Survey of Hospital Nursing Service.** (2) I, II. Miss Freet  
Lecture, 2 hours per week.  
Analysis of the administrative aspects of the hospital nursing unit and of the functions and relationships of the nursing team.
- 199. Special Studies in Nursing.** (1-3) II. The Staff  
Prerequisite: consent of the instructor.  
Individual study of a problem in the field of nursing.

## GRADUATE COURSES

- 201. Current Concepts in Psychiatric Nursing.** (2) II.  
Lecture, 2 hours per week. Miss Bartholomew, Miss Jensen  
Prerequisite: consent of the instructor.  
A critical examination of recent advances in psychiatric nursing and a consideration of how these advances are incorporated in present-day professional nursing activities.
- 204. Community Nursing Care Programs.** (3) I. Miss Taylor  
A critical analysis of community nursing programs with particular emphasis on coöperative relationships and participation with other groups in planning and implementing programs of health care.
- 205. Nursing Research and Statistical Data.** (2) I.  
Miss Freet, Miss Taylor  
Exploration and evaluation of studies and research in nursing. Use of the scientific method and the handling of statistical data as an aid in the selection and solution of studies and thesis problems.

- 210. Changing Perspectives in the Nursing Profession. (2) I.** Miss Wolf  
A critical examination of the current situation in nursing and a consideration of the changing perspectives in the health fields. Consideration of the social and economic aspects of nursing and the interrelationship of the nurse as a member of the health team. Discussion is directed toward developing a working philosophy for leaders of professional nursing.
- 225. Administration in Nursing. (2) II.** Miss Freet  
A systematic study of the fundamentals of organization and administration with emphasis upon their application to the field of nursing.
- 230. Curriculum Development in Nursing. (2) II.** Miss Wolf and the Staff  
A critical evaluation of present-day nursing curricula, with a consideration of objectives, teaching methods, source materials, community resources, and sequence of instruction. Individual and group studies in university nursing-curriculum building.
- 236. Current Concepts in Pediatric Nursing. (2) I.** Miss Johnson  
A critical evaluation of new scientific discoveries in major clinical conditions occurring in childhood and of recent developments in the care and guidance of children from which principles and practices of pediatric nursing may be derived.
- 252. Seminar in Nursing Service Administration. (2-4) II.** Miss Freet  
Evaluation of the fundamentals of hospital nursing service administration including ward administration, personnel management, in-service education programs, nursing functions, team activities, and community relationships. Individual and group study and field work.
- 253. Seminar in Tuberculosis Nursing. (2-4) I, II.** Miss Booth  
Prerequisite: consent of the instructor.  
Study of the fundamentals of administration of tuberculosis nursing with emphasis upon program planning, supervision, personnel management, in-service education, and community activities. Individual and group study and field work.
- 254. Seminar in Nursing School Administration. (2-4) I.** Miss Wolf  
Evaluation of the fundamentals of nursing school administration including organization, control, personnel, physical and clinical facilities, curriculum, teaching, student selection, and student welfare. Individual and group study and field work.
- 256. Seminar in Public Health Nursing. (2-4) I, II.** Miss Taylor  
Evaluation of the fundamentals of public health nursing administration including agency interrelationships, student welfare, supervisory activities, and program planning in official and nonofficial agencies in urban and rural areas. Individual and group study and field work.
- 258A-258B. Seminar in Advanced Pediatric Nursing. (2-2) Yr.**  
Miss Bartholomew, Miss Johnson  
Evaluation of the needs of infants and children at different age levels and the various programs designed to meet these needs in urban and rural areas. Individual and group study and field work in child-care programs.
- 261A-261B. Seminar in Advanced Psychiatric Nursing. (2-2) Yr.**  
Miss Bartholomew, Miss Jensen  
Critical analysis of the philosophy, therapeutic principles, skills, and techniques inherent in the professional nursing care of the mentally ill. Guided study and field work.
- 262A-262B. Seminar in Advanced Obstetric Nursing. (2-2) Yr.**  
Miss Sledge and the Staff  
Evaluation of present obstetric practices, and analysis of recent advances



and changing philosophy in the care of mother and baby; community organization for maternal and child care; individual and group study and field work.

**270. Seminar in Advanced Medical Nursing. (2-4) I, II.**

Miss Carroll and the Staff

Evaluation of the fundamentals of medical nursing and the implications of scientific advances for nursing. Individual and group study and field work.

**275. Seminar in Advanced Surgical Nursing. (2-4) II.**

Miss Coston and the Staff

Evaluation of present surgical nursing practice in light of recent advances in surgery and current trends in rehabilitation. Critical analysis of methods used in patient and student teaching. Individual and group study and field work.

## OCEANOGRAPHY

Roger B. Revelle, Ph.D., *Director of the Scripps Institution of Oceanography and Professor of Oceanography.*

Adriano A. Buzzati-Traverso, Ph.D., *Professor of Biology.*

Milton N. Bramlette, Ph.D., *Professor of Geology.*

Carl Eckart, Ph.D., *Professor of Geophysics.*

Denis L. Fox, Ph.D., *Professor of Marine Biochemistry.*

Carl L. Hubbs, Ph.D., *Professor of Biology.*

Martin W. Johnson, Ph.D., *Professor of Marine Biology.*

G. F. McEwen, Ph.D., *Professor and Curator of Physical Oceanography, Emeritus.*

Norris W. Bakestraw, Ph.D., *Professor of Chemistry.*

Francis P. Shepard, Ph.D., *Professor of Submarine Geology.*

Claude E. ZoBell, Ph.D., *Professor of Marine Microbiology.*

Leonard N. Liebermann, Ph.D., *Associate Professor of Geophysics.*

Walter H. Munk, Ph.D., *Associate Professor of Geophysics.*

Fred B. Phleger, Ph.D., *Associate Professor of Oceanography.*

Russell W. Raitt, Ph.D., *Associate Professor of Geophysics.*

Robert S. Arthur, Ph.D., *Assistant Professor of Oceanography.*

Francis T. Haxo, Ph.D., *Visiting Assistant Professor of Botany.*

♣ Marston C. Sargent, Ph.D., *Assistant Professor of Oceanography.*

John D. Isaacs, B.S., *Associate Oceanographer and Assistant to the Director.*

James N. Snodgrass, A.B., *Associate Research Biologist.*

Willard Bascom, *Assistant Research Engineer.*

John C. Cochrane, M.S., *Junior Research Oceanographer.*

Gifford C. Ewing, Ph.D., *Assistant Research Oceanographer.*

Horace G. Ferris, Ph.D., *Assistant Research Physicist.*

Jeffery D. Frautschy, B.S., *Assistant Research Geologist.*

Edward D. Goldberg, Ph.D., *Assistant Marine Chemist.*

Joel W. Hedgpeth, Ph.D., *Assistant Research Biologist.*

Paul L. Horrer, M.S., *Assistant Research Oceanographer.*

Douglas L. Inman, Ph.D., *Assistant Research Geologist.*

Robert C. McReynolds, B.S., *Assistant Research Physicist.*

Carl H. Oppenheimer, Jr., Ph.D., *Assistant Research Biologist.*

Joseph L. Reid, M.S., *Junior Research Oceanographer.*

Philip Rudnick, Ph.D., *Assistant Research Physicist.*

♣ On leave for duty with the armed forces.

Theodore J. Walker, Ph.D., *Assistant Oceanographer.*  
 Warren Wooster, M.S., *Assistant Research Oceanographer.*  
 Robert S. Dietz, Ph.D., *Lecturer in Submarine Geology.*  
 Henry W. Menard, Ph.D., *Lecturer in Submarine Geology.*  
 R. Dana Russell, Ph.D., *Lecturer in Submarine Geology.*  
 Elbert H. Ahlstrom, Ph.D., *Research Associate.*  
 Stanley W. Chambers, A.B., *Research Associate.*  
 Wesley R. Coe, Ph.D., Sc.D., *Research Associate.*  
 Beatrice M. Merwin, Ph.D., *Junior Research Biologist.*  
 Milner B. Schaefer, Ph.D., *Research Associate.*

The courses in oceanography are given at the Scripps Institution of Oceanography at La Jolla, California. For further information concerning the Institution write to the Director.

*Letters and Science List.*—All courses in oceanography are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Advanced degrees.*—Work leading to the master's or Ph.D. degree in oceanography and certain other marine sciences is offered to a limited number of qualified students subject to the rules and regulations of the University as set forth in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. The student must be well trained in the fundamentals before coming to La Jolla. Resident work at Los Angeles or Berkeley may be required of candidates for advanced degrees.

*Preliminary requirements for a degree in oceanography.*†

(a) Graduation from an approved college or university, with major concentration in: mathematics, meteorology, engineering, or one of the physical or biological sciences.

(b) At least one one-year course in each of the following: mathematics, physics, chemistry, and one of the biological sciences.

(c) Preparation in foreign languages sufficient to pass a reading examination in German and/or French by the beginning of the second year. (Only one foreign language is required for the master's degree, but two for the doctor's degree.)

(d) Preparation in physical chemistry, organic chemistry, integral calculus, and geology is recommended.

During their first year, graduate students in oceanography will normally take the four upper division courses, 110, 111, 112, 113.

*Requirements for an advanced degree in other fields of study.*—Through a cooperative arrangement with other departments of the University, a student may do his research work in certain fields of study closely related to oceanography, i.e., chemistry, geological sciences, meteorology, microbiology, physical-biological science, plant science, and zoölogy. The preliminary requirements are the same as those listed under the corresponding departments or fields of study in this bulletin and in the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION. In addition, the student is required to complete at least two of courses 110 to 114 besides the work done in his special field. The credentials and proposed study program of the student must be approved by the chairman of the proper department or field of study, the Dean of the Graduate Division, Southern Section, and the Director of the Scripps Institution.

Any department of the University is invited to send its students to the Scripps Institution for special work. Ordinarily the department sending students will be responsible for the direction of the work but arrangements can

† Students who fail to meet these requirements may be admitted in "unclassified" status until deficiencies are removed.

be made for such students to work under the joint direction of the department and the staff of the Institution. Such students may register in one or more of the marine sciences at the Institution or they may register for some other subject in some other department of the University.

Students may not undertake graduate work at the Scripps Institution without approval in advance from the Dean of the Graduate Division, Southern Section.

UPPER DIVISION COURSES

110. **Introduction to Physical Oceanography.** (3) I. Mr. Revelle, Mr. Arthur
111. **Submarine Geology.** (3) I. Mr. Shepard
112. **Biology of the Sea.** (3) I. Mr. Johnson
113. **Chemistry of Sea Water.** (3) I. Mr. Rakestraw, Mr. Goldberg
114. **Marine Vertebrates.** (3) I. Mr. Hubbs
116. **Principles of Underwater Sound.** (2) II. Mr. Baitt  
 Elementary discussion of the propagation of sound in an ideal medium. Differences between the ocean and an ideal medium. Refraction of sound rays by the temperature gradients in the ocean. Experimental results on the transmission of sound in the ocean. Oceanography of temperature gradients. The scattering of sound by the ocean surface, bottom, and volume. Theoretical and experimental results on backward scattering (reverberation).
117. **Chemical Methods.** (1) II. Mr. Rakestraw  
 Prerequisite: Oceanography 113.  
 A laboratory course dealing with the chemical methods of analysis in routine use in oceanographic observations and the assembling and correlating of chemical data.
118. **Statistics.** (2) II. Mr. Rudnick  
 Theory of correlation; frequency distribution; interpolation; harmonic analysis.
121. **Marine Microbiology.** (3) II. Mr. ZoBell  
 Prerequisite: course 110, 112, and 113.  
 Methods of studying bacteria and allied microorganisms with particular reference to their importance as biochemical and geological agents in the sea.
122. **Marine Biochemistry.** (3) II. Mr. Fox  
 Prerequisite: fundamental courses in chemistry and biology, or Oceanography 112 and 113, and consent of the instructor.  
 The chemistry of living matter; marine colloids, comparative biochemical and physiological activities of marine animals; biochemical cycles in the sea.
123. **Geochemistry.** (2) II. Mr. Goldberg  
 The study of the distribution of nuclear species throughout the universe, with particular attention to marine problems.
199. **Special Studies in Oceanography.** (1-4) I, II. The Staff  
 Introduction to the observational and experimental methods, research problems, and literature of one or more of the following oceanographic sciences: physical oceanography; submarine geology; chemical oceanography;

biological oceanography, including marine biochemistry, marine microbiology, marine botany, marine vertebrates and invertebrates. Open to advanced students by arrangement.

## GRADUATE COURSES

**210. Physical Oceanography—General.** (3) II. Mr. Arthur  
Dynamics of ocean currents; turbulence; wind currents; atmospheric boundary layer; water masses and currents of the ocean; work at sea.

**211. Waves.** (3) II. Mr. Munk  
Theory of surface and internal waves; wind waves, swell and surf; wave action on beaches; methods of observation; field work.

**212. Tides.** (3) I. Mr. Munk  
Theory of tides; seiches; tides in adjacent seas; character of tides in different oceans; application of harmonic analysis.

**217. Hydrodynamics.** (3) I. Mr. Eckart  
A systematic exposition of the principles governing the flow of fluids. The various mathematical forms of the conservation principles (matter, momentum, energy), and of the second law of thermodynamics, are derived and illustrated by examples and problems.

**\*218. Marine Sediments.** (3-3) Yr.  
Mr. Dietz, Mr. Menard, Mr. Revelle, Mr. Russell, Mr. Shepard  
Lectures and laboratory. Origin, distribution, interpretation, and methods of study of marine sediments.

**219. Micropaleontology.** (2) II. Mr. Phleger  
Prerequisite: course 111 or the equivalent.  
Laboratory work, with occasional lectures, on the identification and ecology of foraminifera, with special emphasis on their significance in marine geology.

**220. Special Topics in Oceanography.** (2) I. The Staff and Visitors  
Lectures and demonstrations by different members of the staff and visitors. Present problems in oceanography; applications of oceanographic knowledge.

**222. Biochromes.** (2) II. Mr. Fox  
Prerequisite: course 122 or the equivalent, and consent of the instructor.  
Physical and chemical foundations of color manifestation; the natural occurrence, chemical classification, distribution and metabolic features of colored molecules, in aquatic and terrestrial environments.

**250. Seminar in Oceanography.** (1) I, II. The Staff

**251. Problems in General Oceanography.** (3) I. Mr. Ewing  
Presentation of reports and review of literature in general oceanography.

## RESEARCH COURSE

**299. Research in Oceanography.** (1-6) I, II. The Staff  
Research in one or more of the following oceanographic sciences: physical oceanography; submarine geology; chemical oceanography; biological oceanography, including marine biochemistry, marine microbiology, marine botany, marine vertebrates and invertebrates. Students must present evidence of satisfactory preparation for the work proposed.

\* Offered in alternate years.

## ORIENTAL LANGUAGES

Richard C. Rudolph, Ph.D., *Professor of Oriental Languages (Chairman of the Department)*.

\* Ensho Ashikaga, M.Litt., *Assistant Professor of Oriental Languages*.

H. S. Hibbett, Jr., Ph.D., *Instructor in Oriental Languages*.

Y. C. Chu, M.A., *Associate in Chinese*.

*Letters and Science List.*—All undergraduate courses in Oriental languages are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Courses 1A-1B or 21A-21B, 9A-9B or 29A-29B, and 32 or 42. Recommended: Anthropology 1-2.

*The Major.*—Required: Twenty-four upper division units of Oriental languages of which 16 units must be in language courses. Recommended: History 191A-191B, Geography 124B, Art 161A-161B. A reading knowledge of French and German is highly desirable.

### LOWER DIVISION COURSES

**1A-1B. Elementary Modern Chinese.** (4-4) Yr. Mr. Chu  
Introduction to the standard or "National Language" (Kuo Yü) of China.  
Not open to students with previous training. Five hours a week.

**9A-9B. Elementary Modern Japanese.** (4-4) Yr. Mr. Ashikaga, Mr. Hibbett  
Not open to students with previous training. Five hours a week.

**13A-13B. Classical Chinese.** (2-2) Yr. Mr. Rudolph  
Prerequisite: course 1A or consent of the instructor.  
Introduction to the development of Chinese writing and the Classical language in which the bulk of Chinese literature is written.

**\*21A-21B. Chinese Oral and Written Composition.** (3-3) Yr. Mr. Chu  
An elementary course for those who have had previous training in Chinese.

**\*29A-29B. Japanese Oral and Written Composition.** (3-3) Yr. Mr. Hibbett  
An elementary course for those who have had previous training in Japanese.

**32. History of Japanese Civilization.** (2) II. Mr. Rudolph  
A survey of the development of Japanese culture and its relationship to the Asiatic mainland.

**42. History of Chinese Civilization.** (2) I. Mr. Rudolph  
A survey of the development of the outstanding aspects of Chinese culture from prehistoric to modern times. No knowledge of Chinese is required.

### UPPER DIVISION COURSES

**101A-101B. Intermediate Chinese.** (3-3) Yr. Mr. Chu  
A continuation of 1A-1B.

**109A-109B. Intermediate Modern Japanese.** (3-3) Yr. Mr. Ashikaga, Mr. Hibbett  
A continuation of 9A-9B.

**112. Chinese Literature in Translation.** (2) II. Mr. Hibbett  
Lectures and collateral reading of representative works—including clas-

\* Not to be given, 1953-1954.

† In residence second semester only, 1953-1954.

sics, histories, belles-lettres, and fiction—in English translations. No knowledge of Chinese is required.

- 113A-113B. **Intermediate Classical Chinese.** (2-2) Yr. Mr. Rudolph  
Further readings in the classics.
- †119A-119B. **Advanced Modern Japanese.** (3-3) Yr. Mr. Hibbett  
A continuation of 29A-29B and 109A-109B.
- 121A-121B. **Advanced Chinese.** (3-3) Yr. Mr. Chu  
A continuation of 21A-21B and 101A-101B; with practice in newspaper style.
- †129A-129B. **Classical Japanese and Kambun.** (2-2) Yr. Mr. Ashikaga
132. **History of Japanese Literature.** (2) I. Mr. Hibbett  
History of Japanese literature in translation from the beginning to modern times, emphasizing Chinese, Buddhist, and Western influences.
153. **Manchu.** (2) II. Mr. Rudolph  
Prerequisite: consent of the instructor.
163. **Readings in Chinese.** (3) I. Mr. Rudolph  
Prerequisite: course 113A-113B.  
Selections from masters in the *Ku wen* style.
- \*164A-164B. **Tibetan.** (2-2) Yr. Mr. Ashikaga
173. **Chinese Historical Texts.** (2) II. Mr. Rudolph  
Prerequisite: course 113A-113B.
195. **Methods and Bibliography in Chinese Research.** (2) II. Mr. Rudolph
199. **Special Studies in Oriental Languages.** (1-4) I, II. The Staff  
Prerequisite: senior standing in the department and consent of the instructor.

## PHILOSOPHY

- ‡ C. D. Broad, Litt.D., *Flint Professor of Philosophy.*  
Hugh Miller, Ph.D., *Professor of Philosophy.*
- † Donald A. Piatt, Ph.D., *Professor of Philosophy.*  
Ernest C. Moore, Ph.D., LL.D., *Professor of Philosophy and Education, Emeritus.*  
J. Wesley Robson, Ph.D., *Associate Professor of Philosophy.*  
Abraham Kaplan, Ph.D., *Associate Professor of Philosophy (Chairman of the Department).*  
Donald Kalish, Ph.D., *Assistant Professor of Philosophy.*  
Nathaniel Lawrence, Ph.D., *Visiting Assistant Professor of Philosophy.*  
Hans Meyerhoff, Ph.D., *Assistant Professor of Philosophy.*  
Robert M. Yost, Jr., Ph.D., *Assistant Professor of Philosophy.*  
Alexander Sesonake, Ph.D., *Instructor in Philosophy.*

*Letters and Science List.*—All undergraduate courses in this department are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Twelve units of lower division courses in phi-

\* Not to be given, 1953-1954.

† The B part (119B and 129B) only will be offered, 1953-1954.

‡ In residence first semester only, 1953-1954.

§ In residence second semester only, 1953-1954.

osophy, including courses 20A, 20B. Course 30 must be taken either as part of the preparation for the major or in the upper division.

*The Major.*—Twenty-four units in upper division courses, including:

1. Three units from courses 148, 180, 181, 184, 185, 187.
2. Six units from courses 152, 153, 162, 163, 166.
3. Six units from courses 104A-104B, 121, 147, 183.

Three units of the upper division requirement may be from courses in other departments, provided they are relevant to the major and approved by the departmental adviser.

*Requirements for Regular Graduate Standing.*—In addition to the general University requirements and those for an undergraduate major in this department, the following courses (or their equivalents) are prerequisite to regular graduate standing: course 81, 104A-104B, 152 or 153, 162 or 163, 166, and three units from the Systematic Studies group numbered 180 to 189.

*Requirements for the Master's Degree.*—For the general requirements, see page 60. The Department of Philosophy requires:

1. A reading knowledge of one foreign language. The languages which the department will accept are Greek, Latin, French, and German.
2. At least 20 semester units, 8 or more of which must be in strictly graduate courses and the remainder in undergraduate courses numbered over 150.
3. An oral examination designed to test the student's general knowledge of the history of philosophy, theory of value, and logic and scientific method.
4. A thesis supervised and approved by the department.

*Requirements for the Doctor's Degree.*—For general regulations concerning this degree, see page 62. In the Department of Philosophy, the preliminary requirements are as follows:

1. A reading knowledge of two foreign languages. The acceptable languages are Greek, Latin, French, and German.
2. At least 24 related upper division units approved by the adviser in any one of the following fields: (a) natural sciences, (b) social sciences, (c) life sciences, (d) humanities, excluding philosophy.\*
3. Qualifying examinations for advancement to candidacy consisting of a written examination in each of the following fields: logic, history, theory of value, and metaphysics; the oral examination is to lie in one of these four fields and, in addition, the related fields represented by the nondepartmental members of the doctoral committee.

#### LOWER DIVISION COURSES

All lower division courses are introductory and without prerequisite, except as otherwise stated.

3. **Logic in Practice.** (2) I. Mr. Sesonke  
(Former number, 6.)  
Language and its analysis as an instrument of sound thinking in morals, politics, and everyday life.
4. **Short Introduction to Philosophy.** (2) I, II. Mr. Sesonke  
Not open for credit to students who have completed 6A.
5. **Problems of Ethics and Religion.** (2) I, II. Mr. Meyerhoff  
Human conduct, its rules and natural law; the moral basis of institutions; religion and the moral order.
- 6A-6B. **Introduction to Philosophy.** (3-3) Yr. Beginning either semester.  
Mr. Yost, Mr. Meyerhoff, Mr. Sesonke, Mr. Lawrence  
(Former number, 2A-2B.)  
A philosophical analysis of the basic ideas and methods in political theory, morals, art, science, and religion; and of the interrelations of these fields. An

\* Not applicable to those who filed applications for candidacy before March 15, 1950.

attempt is made to provide the student with a critical technique for developing a well-considered philosophy of his own. Recommended as a course to satisfy requirement (G) (2) in the College of Letters and Science.

Course 6A is a prerequisite to course 6B, and is not open for credit to students who have completed course 4.

**20A. History of Greek Philosophy. (3) I, II.**

(Former number, 20.)

Mr. Miller, Mr. Yost, Mr. Robson

The beginnings of Western science and philosophy; Socrates, Plato, and Aristotle; Greek philosophies in the Roman world and in the Christian era.

**20B. History of Modern Philosophy. (3) I, II.**

(Former number, 21.)

Mr. Piatt, Mr. Yost, Mr. Robson

The Renaissance and the rise of modern science; rationalism in Descartes, Spinoza, Leibniz; empiricism in Locke, Berkeley, Hume; Kant and his successors; recent movements.

**30. Inductive Logic and Scientific Method. (3) I, II.**

Mr. Kalish

The use of logic in science and practical life; fallacies; theory of indirect evidence; construction of scientific hypotheses; probability and statistical method.

**31. Deductive Logic. (3) I, II.**

Mr. Kalish, ———

The elements of formal logic; Aristotle's logic; modern symbolic logic. The forms of reasoning and the structure of language.

UPPER DIVISION COURSES

Upper division courses in philosophy include: (a) *General Studies* (numbered 104A to 148), dealing with the principles of wide fields of inquiry such as the natural sciences, the social sciences, and the humanities, or surveying the chief tendencies in the thought of a period. (b) *Historical Studies* (numbered 152 to 176), dealing more intensively with special periods or with individual thinkers. (c) *Systematic Studies* (numbered 180 to 189) pursuing a more rigorous analysis of the logical foundations of mathematics, science, and philosophy. Course 199A-199B is an individual problem course, available to exceptional students whose special studies are not included in the above curriculum.

*General Studies*

Prerequisite for all courses in this group; 6 units in philosophy or upper division standing, except as otherwise stated.

**104A. Ethics. (3) I.**

Mr. Piatt

Morality in theory and practice: the history and development of ethical theory.

**104B. Ethics. (3) II.**

Prerequisite: course 104A.

Morality in theory and practice: the critical application of ethical theory to contemporary civilization, with special reference to economic and political life.

**112. Philosophy of Religion. (3) I.**

Mr. Lawrence

The existence and nature of God, human free will, the problem of evil, the relation of church and state, the rivalry of living religions.

**114. History of American Thought. (3) II.**

Mr. Lawrence

Philosophies which have influenced American history, from colonial times to the present.



**121. Political Philosophy. (3) I.**

Prerequisite: 6 units of philosophy, or adequate preparation in the social sciences and history.

A study of the evolution of government, showing its causal relation to the development of science and philosophy, and its issue in democracy.

**124. Oriental Philosophy. (3) I.**

Mr. Kaplan

Prerequisite: course 20A-20B. Recommended: course 30.

A survey of the major philosophical systems of China and India: Hindu, Buddhist, Confucian, and Taoist. Attention will be paid to differences and similarities between these and dominant western conceptions of methodology, ethics, and social philosophy.

**125. Nineteenth-Century Idealism and Romanticism. (2) II.**

Mr. Meyerhoff

The philosophies of post-Kantian idealism, romanticism and evolution, with special reference to Hegel, Schopenhauer, Nietzsche, and Bergson.

**\*126. Nineteenth Century: Scientific Philosophy. (2) II.**

Prerequisite: course 20B.

Scientific philosophies of the nineteenth century, including positivism, materialism, and evolutionary philosophy, with special reference to Comte, Mill, Spencer, and Mach.

**136. Philosophy of Art. (3) I.**

Mr. Sesonke

Relation of the philosophy of art to the artist's activity, to aesthetic experience, and to the criticism of art. The principal theories of the nature of art; of aesthetic contemplation; and of beauty, sublimity, and other categories of aesthetic value. Nature and validity of standards of criticism.

**146. Philosophy in Literature. (3) II.**

Mr. Meyerhoff

A study of philosophical ideas and issues expressed in modern literature during the nineteenth and twentieth centuries. Analysis of works of major representatives such as Stendhal, Tolstoy, Dostoyevsky, Ibsen, Shaw, Mann, Proust, Joyce, Hemingway, Kafka, Eliot, and others.

**147. Philosophy of History. (3) I.**

Mr. Miller

Prerequisite: 6 units of philosophy, or adequate preparation in history and the social sciences.

A study of historical progress, relating human progress to the natural evolution described by modern science.

**\*148. Philosophy of Nature. (3) I.**

The physical universe and man's place in it in the light of modern discoveries.

*Historical Studies*

Prerequisite for all courses in this group: upper division standing in addition to the specific requirements stated.

**\*152. Plato and His Predecessors. (3) I.**

Mr. Meyerhoff

Prerequisite: course 20A or consent of the instructor.

**153. Aristotle and Later Greek Philosophy. (3) I.**

Mr. Meyerhoff

Prerequisite: course 20A or consent of the instructor.

**157. Medieval Philosophy. (3) II.**

Mr. Lawrence

Prerequisite: course 20A or the equivalent.

Philosophy in Christendom from the fourth to the fourteenth century, with particular reference to Augustine and Thomas Aquinas.

162. **Continental Rationalism.** (3) II. Mr. Yost  
Prerequisite: course 20B.  
The philosophies of Descartes, Spinoza, and Leibniz.
163. **British Empiricism.** (3) II. Mr. Broad  
Prerequisite: course 20B.  
The philosophies of Locke, Berkeley, and Hume.
166. **Kant.** (3) II. Mr. Meyerhoff  
Prerequisite: course 162 or 163, or consent of the instructor.
- 170A-170B. **Contemporary Philosophy.** (3-3) Yr. Mr. Robson  
Prerequisite: course 20B. Recommended: course 31.  
Theories of knowledge and nature in Russell, Santayana, Whitehead, and others; logical positivism and logical empiricism; problems in philosophical analysis.
- \*175. **Fragmatism.** (2) II. Mr. Piatt  
Prerequisite: consent of the instructor, based on the student's knowledge of the history of philosophy.  
A systematic and critical analysis of American pragmatism, with special reference to James, Dewey, and Mead.

*Systematic Studies*

Prerequisite for all courses in this group: upper division standing in addition to the specific requirements stated.

- \*180. **Philosophy of Space and Time.** (3) I. \_\_\_\_\_  
Prerequisite: course 30 or the equivalent.  
Euclidean and non-Euclidean geometry; problem of physical space; visualization of geometrical systems; structure of time; philosophical elements of Einstein's theory of relativity; gravitation, matter, geometry.
181. **Theory of Knowledge.** (3) I. Mr. Yost  
Prerequisite: course 30 or the equivalent.  
Theories of language, truth, probability, and meaning. The foundations of empiricism: the problem of impressions and the existence of external objects; the construction of our knowledge of the physical world on the basis of observation; the nature of psychology.
183. **Social Philosophy.** (3) II. Mr. Meyerhoff  
Prerequisite: consent of the instructor, based on preparation in philosophy, psychology, and social science.  
Problems of social policy and the logic of the social sciences, with special reference to recent developments in the conception of human nature and interpersonal relations.
184. **Advanced Logic.** (3) II. \_\_\_\_\_  
Prerequisite: course 31 or the equivalent.  
Methods of symbolic logic; foundations of mathematics; concept of the infinite; paradoxes of logic; logic and language; multivalued logics.
- \*185. **Foundations of Probability and Statistics.** (3) II. \_\_\_\_\_  
Prerequisite: courses 30 and 31, or the equivalent.  
Logical and mathematical theories of probability; development of the mathematical calculus of probability in a logistic form; outlines of a general mathematical theory of probability and statistics; different interpretations of probability; problem of induction; probability logic.

- 186. Philosophy of Evolution. (2) II.** Mr. Miller  
 Prerequisite: consent of the instructor.  
 A study of the basic concepts of evolution now used in the several sciences, looking to the expansion of these concepts in an adequate philosophy of nature and society.
- 187. Semantics. (3) I.** Mr. Kalish  
 Prerequisite: course 31.  
 Philosophy of language and meaning, with special reference to its implications for logic, theory of knowledge, and theory of value. A study will be made of the contributions of Frege, Russell, Tarski, Carnap, Morris, Quine, and others.
- 188. Ethical Theory. (3) II** Mr. Broad  
 Prerequisite: course 104A-104B or consent of the instructor.  
 A systematic study of moral psychology; right and wrong; good and evil; and some leading theories about these topics.
- 189. Esthetic Theory. (3) II.** Mr. Kaplan  
 Prerequisite: courses 20A-20B and 136.  
 A survey of the major philosophies of art from Plato to the present.
- 199A-199B. Selected Problems in Philosophy. (2-3; 2-3) Yr.**  
 Admission by special arrangement. Mr. Kaplan in charge

GRADUATE COURSES

- 251. Seminar: Metaphysics. (3) I.** Mr. Miller
- \*252. Seminar: Naturalism. (3) I.** Mr. Piatt
- 253. Seminar: Pragmatism. (3) I.** Mr. Piatt
- \*254. Seminar: Ethics and Theory of Value. (3) II.** Mr. Piatt
- 255. Seminar: Political Philosophy. (3) II.** Mr. Miller
- 256. Seminar: Philosophy of Art. (3) II.** Mr. Kaplan
- 257. Seminar: Philosophy of History. (3) II.** Mr. Miller
- 258. Seminar: Hume. (3) II.** Mr. Robson
- 259. Seminar: Leibniz. (3) I.** Mr. Yost
- \*260. Seminar: Philosophy of Mathematics. (3) I.** \_\_\_\_\_
- 261. Seminar: Semantics. (3) II.** Mr. Kalish
- \*262. Seminar: Philosophy of Physics. (3) II.** \_\_\_\_\_
- \*263. Seminar: Epistemology. (3) I.** \_\_\_\_\_
- \*264. Seminar: Logic. (3) II.** \_\_\_\_\_
- 265. Seminar: Methodology of the Human Sciences. (3) I.** Mr. Kaplan
- 298A-298B. Special Study: Selected Problems in Philosophy. (2-4; 2-4) Yr.**  
 Mr. Piatt in charge

\* Not to be given, 1953-1954.

## PHYSICAL EDUCATION

- <sup>1</sup> Rosalind Cassidy, Ed.D., *Professor of Physical Education.*  
Ben W. Miller, Ph.D., *Professor of Physical Education (Chairman of the Department).*
- <sup>2</sup> Carl Haven Young, Ed.D., *Professor of Physical Education.*  
John F. Bovard, Ph.D., *Professor of Physical Education, Emeritus.*  
Ruth Abernathy, Ph.D., *Associate Professor of Physical Education.*  
Donald T. Handy, Ed.D., *Associate Professor of Physical Education.*  
Valerie Hunt, Ed.D., *Associate Professor of Physical Education.*  
Edward B. Johns, Ed.D., *Associate Professor of Physical Education.*  
Wayne W. Massey, Ph.D., *Associate Professor of Physical Education.*  
Raymond A. Snyder, Ed.D., *Associate Professor of Physical Education.*  
———, *Visiting Associate Professor of Physical Education.*  
Ethel T. Bell, Ed.D., *Assistant Professor of Physical Education.*  
Jean Swenson Breck, Ed.D., *Assistant Professor of Physical Education.*  
Evelyn Davies, Ed.D., *Assistant Professor of Physical Education.*
- <sup>1</sup> Margaret D. Greene, Ed.D., *Assistant Professor of Physical Education.*  
June Breck Jones, Ed.D., *Assistant Professor of Physical Education.*  
Marjorie E. Latchaw, Ph.D., *Assistant Professor of Physical Education.*  
Norman P. Miller, Ed.D., *Assistant Professor of Physical Education.*  
Ellen C. Millisor, Ed.D., *Assistant Professor of Physical Education.*  
Charles Nagel, Ph.D., *Assistant Professor of Physical Education.*  
Deane E. Richardson, Ed.D., *Assistant Professor of Physical Education.*  
John Sellwood, Ed.D., *Assistant Professor of Physical Education.*  
———, *Assistant Professor of Physical Education.*  
———, *Assistant Professor of Physical Education.*  
Magnus Syverson, Ed.D., *Instructor in Physical Education.*  
William H. Spaulding, A.B., *Director of Athletics, Emeritus.*  
Paul Frampton, M.A., *Supervisor of Physical Education.*  
Edith I. Hyde, M.A., *Supervisor of Physical Education.*
- <sup>2</sup> Marjory G. Allen, Ed.B., *Associate Supervisor of Physical Education.*  
Norman D. Duncan, M.A., *Associate Supervisor of Physical Education and Coördinator of Men's Staff.*  
Cecil B. Hollingsworth, Ed.D., *Associate Supervisor of Physical Education.*  
Donald K. Park, B.S., *Associate Supervisor of Physical Education.*  
Orsie M. Thomson, M.A., *Associate Supervisor of Physical Education.*  
Diana W. Anderson, M.A., *Assistant Supervisor of Physical Education and Elementary School Training, Physical Education.*  
Howard M. Curtis, M.A., *Assistant Supervisor of Physical Education.*  
Stanley Gabrielsen, M.A., *Assistant Supervisor of Physical Education.*  
M. Briggs Hunt, Ed.B., *Assistant Supervisor of Physical Education.*  
Ruth Jacobs, B.S., *Assistant Supervisor of Physical Education.*  
Patricia B. Lafler, M.S., *Assistant Supervisor of Physical Education.*  
Dick A. Smith, M.Ed., *Assistant Supervisor of Physical Education.*  
Wilfred Sutton, M.A., *Assistant Supervisor of Physical Education.*  
James G. Dunkelberg, M.S., *Junior Supervisor of Physical Education.*  
Gene A. Logan, M.S., *Junior Supervisor of Physical Education.*

<sup>1</sup> In residence first semester only, 1953-1954.

<sup>2</sup> In residence second semester only, 1953-1954.

Mary Hays Pendleton, M.S., *Junior Supervisor of Physical Education.*

William F. Pillieh, B.S., *Junior Supervisor of Physical Education.*

Carol J. Scothorn, M.A., *Junior Supervisor of Physical Education.*

Douglas M. Strehle, M.S., *Junior Supervisor of Physical Education.*

Lorenzo J. Rossi, M.S., *Junior Supervisor of Physical Education.*

Camille Brown, M.P.H., *Lecturer in Physical Education.*

\* Pia Gilbert, *Lecturer in Physical Education.*



Donald McKinnon, M.D., *Director, Student Health Service.*

Physical Education 1 (men) or 26 (women) is prescribed for all first-year and second-year undergraduate students who are under twenty-four years of age until four semesters of work have been completed. A student claiming exemption because of age will present to the Registrar a petition on the prescribed form for such exemption. A student whose health requires either exemption or special assignment will report directly to the Medical Examiner. Pending action on his petition, the student will enroll in, and regularly attend the required course in physical education. Complete uniform will be furnished by the Physical Education Department, except for gym shoes and swimming caps which will be furnished by the student. Any upper division student may elect Physical Education 1 (men) or 26 (women) for credit, but the total units in Physical Education activity courses presented for graduation may not exceed four units.

Assignment to men's activities in physical education is elective in that freshmen may choose activity courses from *a-i*, and sophomores may choose activity courses from *a-o*. Swimming is the only required activity for all lower division men. Exemption from swimming is allowed upon passing a competence test. A student may take only one physical education activity course for credit during any given semester. An activity course may be taken for credit once only:

- a. Apparatus and tumbling
- b. Basic fundamentals
- c. Developmental physical education
- d. Swimming (elementary)
- e. Swimming (advanced)
- f. Track and field
- g. Wrestling
- h. Games, fall (touch football, soccer, volleyball)
- i. Games, spring (speedball, softball)
- j. Tennis†
- k. Golf†
- l. Archery
- m. Basketball
- n. Handball
- o. Social dancing

In the women's program, any Physical Education 26 class may be selected by the student to meet the lower division requirement unless she is restricted in choice by the Student Health Service. Students may not repeat an activity course for credit. Lower division women students may enroll in an additional Physical Education 26 class or the equivalent as an elective for credit. How-

† Playing equipment provided by student.

\* In residence second semester only, 1953-1954.

ever, this does not reduce the requirement of four semesters of physical education.

Archery	Fencing	Social Dancing
†Badminton	Folk Dancing	Swimming
Basketball	†Golf	Senior Lifesaving
Body Mechanics	Lacrosse	Water Composition
*Bowling	Recreational Sports	†Tennis
Dance Fundamentals	†Skiing (dry)	Volleyball
Deck Sports		

*Medical Examination.*—(a) Students entering the University for the first time and (b) reëntering students are required to obtain a clearance of their health records from the Student Health Service prior to registration. The examiner may exempt the student from required military training; he may assign the student to a restricted exercise section of physical education.

### College of Applied Arts

The Department of Physical Education offers the following majors:

#### 1. Major in Physical Education.

##### WOMEN

*Preparation for the Major.*—Courses 5, 29, 30, 31, 32, 35, 44; Chemistry 2; Zoölogy 15, 25.

*The Major.*—At least 36 units of upper division courses in physical education, including courses 100, 102, 130, 132, 145A–145B, 152, 326A–326B, 327A–327B; and electives chosen from courses 103, 104, 106, 131, 135, 139, 140, 141, 142, 143, 144, 150, 151, 153A–153B, 154, 155, 160, 190A–190B–190C, 199.

##### MEN

*Preparation for the Major.*—Courses 5, 6, 7, 8, 9, 24, 44; Chemistry 2; Zoölogy 15, 25.

*The Major.*—At least 36 units of upper division courses in physical education chosen from courses 100, 102, 130, 131, 133, 145A–145B, 171, 190A–190B, 354, 355A–355B–355C–355D.

#### 2. Major in Health Education.

(a) *Plan I. School Health Education and Physical Education.*

*Preparation for the Major.*—Chemistry 2; Bacteriology 1; Zoölogy 15, 25; Psychology 1A, 1B or 33; English 1A–1B, or English 1A–Speech 1A, or Speech 1A–1B; Physical Education 5, 44, and 6, 7, 8, 9 (men), or 29, 30, 31, 32 (women).

*The Major.*—At least 36 units of upper division courses, including Home Economics 138 or Sociology 142; Sociology 101; Psychology 145A–145B; Education 112; Public Health 100A, 145; Physical Education 100, 102, 132 or 133, 145A–145B, 160.

(b) *Plan II. School Health and Public Health.*

*Preparation for the Major.*—Chemistry 2; Bacteriology 1; Zoölogy 15, 25; Psychology 1A, 1B or 33; English 1A–1B, or English 1A–Speech 1A, or Speech 1A–1B; Physical Education 1 or 26, 5, 44.

*The Major.*—At least 36 units of upper division courses, including Home Economics 138 or Sociology 142; Sociology 101; Psychology 145A–145B; Public Health 100A, 110, 125, 134, 145; Physical Education 100, 145A–145B, 160.

\* Fee.

† Playing equipment provided by student.

**3. Major in Physical Therapy.**

(a) *Affiliation Plan* (leading to degree and certificate). This program includes three years of University work (90 units) and a fourteen-month course at the Children's Hospital School of Physical Therapy,\* which is affiliated with the University. The hospital work, which is completed in the senior year, is accepted in fulfillment of the residence requirement. Students completing the combined program will receive the degree of Bachelor of Science and the Certificate in Physical Therapy.

*Preparation for the Major.*—Courses 1 or 26, 5, 42, 43, 44; Chemistry 2A; Physics 10; Zoölogy 15, 25; Psychology 1A-1B or 33; plus 12 units of social science

*The Major.*—Courses 100, 102; and the fourteen-month course at the Children's Hospital School of Physical Therapy. The Hospital program includes courses in anatomy, pathology, psychology, electrotherapy, hydrotherapy, massage, therapeutic exercise, physical therapy (as applied to medicine, neurology, orthopaedics, surgery), ethics and administration, electives recommended by the American Medical Association and the American Physical Therapy Association, and clinical practice. A maximum of 30 units will be allowed for completion of the Hospital program.

(b) *Four-year Plan* (leading to degree only). This program is designed for students who wish to earn the degree of Bachelor of Science before enrolling in a school of physical therapy.

*Preparation for the Major.*—Courses 1 or 26, 5, 42, 43, 44; Chemistry 2; Physics 10 or 2A; Zoölogy 15, 25. Recommended: Art 27A; Psychology 1A, 1B or 33; Speech 1A-1B; Sociology 1, 2.

*The Major.*—Thirty-six units of upper division courses, including courses 100, 102, 103, 104, 106, 145A-145B, and electives selected from courses 130, 140, 141, 142, 155, 160; Education 110, 111, 112, 160, 180; Psychology 108, 112, 113, 168, 169.

**4. Major in Recreation.**

This major is designed to develop professional leaders in recreation with a sound general education, an insight into the social responsibilities of community agencies, and an understanding of the nature and significance of the group work method in recreation.

*Preparation for the Major.*—Courses 1 or 26, 5, 7, 23, 27, 28, 43, 44; Art 27A-27B; Botany 1; English 1A; Music 30A-30B; Psychology 1A, 33; Speech 1A; Sociology 1, 2.

*The Major.*—At least 36 units of upper division courses, including Physical Education 132, 139, 140, 141, 142, 143, 144, 155, 190C-190D; and electives selected from Art 330; Education 112, 181; Psychology 145A-145B, 147; Sociology 126, 143, 189; Speech 106; Physical Education 330; Theater Arts 156B.

**Teaching Minor in Physical Education.**

Not less than twenty units of coördinated courses, at least 6 of which are in the upper division. All courses must be approved by an adviser in the Department of Physical Education. For requirements consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

**Curriculum in Dance.**

For details concerning this curriculum, students should consult the coördinator of the women's staff, Department of Physical Education.

\* Students completing the three-year University program cannot be assured of admission to the Children's Hospital School of Physical Therapy. When the number of qualified applicants exceeds the available facilities, selection of students will be made on the basis of scholarship as determined from the transcript of record, examination, and by personal interview.

**Requirements for the Special Secondary Credential.**

Students may complete a teaching major in physical education for a Special Secondary Credential. For the general requirements, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

**Requirements for the General Secondary Credential.**

Students may complete requirements for the general secondary credential with a major either in physical education or in health education. For the general requirements, consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES. For more specific information, consult the Department of Physical Education.

**Requirements for the Master's Degree.**

The degree of Master of Science is awarded with a program in either physical education, health education, or recreation education. With skillful planning, the student may combine a portion of the course work for the master's degree with the work for the general secondary credential, although generally, to complete both programs will require approximately three semesters of work. For the general requirements, see page 60 of this bulletin and the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION.

**College of Letters and Science\***

*Letters and Science List.*—Courses 1, 26, 44, 130, 139, 146, 147, 150, 151, 155 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

**LOWER DIVISION COURSES****†1. Physical Education Activities (Men). (½) I, II.**

The Staff

Classes meet three times weekly. Section assignments are made by the department. Physical Education 1 is prescribed for freshmen and sophomores and may be elected by students in the junior and senior years. Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.

**2. Hygiene and Sanitation. (2) I, II.**

Mr. McKinnon

A broad elementary course emphasizing the strictly practical aspects of hygiene.

**5. Safety Education and First Aid. (2) I, II.**

Mr. Frampton, Mr. Richardson

Prevention and care of common accidents and emergencies in the home, school and community. An American Red Cross instructor's certificate will be granted upon satisfactory completion of an additional 15 hours to those who qualify.

**‡Professional Activities (Men). (1½) I, II.**

Mr. Massey, Mr. Syverson

Designed for the orientation and guidance of major and minor students in Physical Education. Course must be taken during the first semester of enrollment in the major or minor.

\* The University of California, Los Angeles, does not offer a major in physical education in the College of Letters and Science. A group major in physical education and hygiene is offered in the University at Berkeley. Students planning to transfer to Berkeley and to satisfy the requirements for this major are referred to the GENERAL CATALOGUE, DEPARTMENTS AT BERKELEY.

† The University requirements in physical education referred to in this section cover Physical Education 1 (men) and 26 (women), one-half-unit courses which are required of students in the freshman and sophomore years.

‡ This course may be accepted in lieu of the required course, Physical Education 1, with the consent of the adviser.



- 7. **Professional Activities.** (1½) I, II. Mr. Pillich  
Designed for major and minor students in physical education. Fundamental knowledge and skills in rhythmical activities.
- †8. **Professional Activities (Men).** (1½) II. Mr. Hunt, Mr. Park  
Designed for major and minor students in physical education. Fundamental knowledges in swimming and wrestling.
- †9. **Professional Activities (Men).** (1½) I. Mr. Hollingsworth  
Designed for major and minor students in physical education. Fundamental knowledges and skills in track and field, and tumbling and apparatus.
- \*15. **Fundamentals of Scouting (Men).** (2) Mr. Frampton  
Lectures; three field trips required.  
Need of organization for youth; history and growth of the Boy Scouts of America; the Boy Scout program; organization of a troop and techniques of troop management; fundamentals involved in troop activities.
23. **Recreational Activities.** (2) I. Mrs. Jones  
An introduction to a variety of recreational activities in music, dramatics, sports, camping, social recreation, arts and crafts, and hobbies.
- 24. **Advanced Swimming and Lifesaving.** (2) Men: I, II. Women: II.  
Mr. Park, Mr. Smith  
*Men:* The Senior Red Cross Life Saving and Instructor's Certificate will be issued to those students who meet the requirements. Qualifying test required.  
*Women:* Instructor's Certificate will be issued to those students who meet the requirements.
- †26. **Physical Education Activities (Women).** (½) I, II. The Staff  
Classes meet three times weekly. Section assignments are made only by the department. This course is prescribed for freshmen and sophomores and may be elected for credit by juniors and seniors. Only 4 units are accepted for graduation.  
Students whose physical condition indicates the need of modified activity are assigned to individual physical education classes.  
Special equipment and course fee are required for certain activities. Information regarding these activities may be obtained from the department at the time of registration.
- 27. **Games for the Elementary School.** (1) I, II.  
Miss Latchaw, Mr. Nagel, Mr. Smith  
Open only to students who are to be candidates for the elementary school credentials and students majoring in recreation. Not open to freshmen.  
Participation in physical education activities designed for the elementary school child, understanding and application of principles of movement in fundamental skills.  
A prerequisite for Physical Education 330.

\* Not to be given, 1953-1954.

† The University requirements in physical education referred to in this section cover Physical Education 1 (men) and 26 (women), one-half-unit courses which are required of students in the freshman and sophomore years.

‡ This course may be accepted in lieu of the required course, Physical Education 1, with the consent of the adviser.

\* Students may substitute this course for the required course, Physical Education 1 or 26, for the semester in which they are enrolled with the consent of the departmental adviser.

°28. **Rhythmical Activities in the Elementary School.** (1) I, II.

Miss Latchaw, Mr. Pillich

Open only to students who are to be candidates for the elementary school credential, and students majoring in recreation. Not open to freshmen.

A prerequisite for Physical Education 330.

Participation in creative and free rhythms. Fundamentals of rhythmical activities designed for elementary education and recreation majors.

§29. **Professional Activities (Women).** (3) I. The Staff

Open only to students with a major or minor in physical education.

§30. **Professional Activities (Women).** (3) II. The Staff

Open only to students with a major or minor in physical education.

§31. **Professional Activities (Women).** (3) I. The Staff

Open only to students with a major or minor in physical education.

§32. **Professional Activities (Women).** (3) II. The Staff

Open only to students with a major or minor in physical education.

°°34. **Stage Movement.** (2) II.

Four hours, lecture and laboratory.

Study of the principles of physical timing, rhythm, and control in the acting situation.

35. **Music Analysis for Dance Accompaniment.** (2) II. Mrs. Gilbert

Analysis of musical forms and structure in relation to their use in dance forms. A workshop class in study of rhythms, using piano and percussion instruments.

42. **Orientation in Rehabilitation.** (2) II. Miss Hunt

A survey of rehabilitation and its ancillary services with reference to professional opportunities. Emphasis is placed upon physical therapy, occupational therapy and physical education, and recreation in rehabilitation.

43. **Recreation for the Exceptional.** (2) II. Miss Hunt

Recreational activities as a means of rehabilitation for the exceptional child and adult in community or hospital. Includes group organization, teaching techniques and modification of activities. Designed for social workers, nurses, therapists, recreation leaders, and teachers.

44. **Principles of Healthful Living.** (3) I, II.

Mr. Sutton, Mrs. Bell, Mr. Richardson, Miss Brown,  
Mr. Nagel, Miss Thomson

Fundamentals of healthful living designed to provide scientific health information, promote desirable attitudes and practices. A prerequisite to Physical Education 330 for all elementary school credential candidates.

UPPER DIVISION COURSES

100. **Analysis of Human Movement.** (5) I, II.

Prerequisite: Zoölogy 15, 25. Miss Davies, Miss Hunt, Mr. Sellwood

Analysis of human movement based upon the integration of kinesiology and physiology of activity.

§ Students may substitute this course for the required course, Physical Education 26, for the semester in which they are enrolled.

\* Students may substitute this course for the required course, Physical Education 1 or 26, for the semester in which they are enrolled with the consent of the departmental adviser.

\*\* Theater arts majors may substitute this course for the required courses, Physical Education 26 and 1, for the semester in which they are enrolled.

**102. Developmental Physical Education. (3) I, II.**

Prerequisite: course 100. Miss Davies, Miss Hunt, Mr. Sellwood

Concerned with growth and developmental patterns with implications for special and regular physical education programs. Includes an analysis of postures and divergencies with procedures for prevention and correction within the public schools.

**103. Advanced Developmental Physical Education. (3) I. Miss Davies**

Prerequisite: course 102.

For advanced students with major interest in Developmental Physical Education. Study of prevalent disabilities and the general organization and supervision of developmental programs. Includes laboratory experiences in the University and community. This course is a prerequisite for student teaching in corrective physical education.

**104. Neuromuscular Reeducation. (3) I. Miss Hunt, Miss Davies**

Appraisal of neuromuscular limitations as a basis for selection of activities for rehabilitation.

**106. Massage. (2) II. Miss Davies**

Survey and practice of massage and relaxation techniques. Does not include massage for pathological conditions.

**\*120. Professional Orientation in Health, Physical, and Recreation Education (Women). (2) I. Miss Hyde**

The scope and significance of health, physical education, and recreation in the modern school program. Open only to students with a major or minor in physical education. Required of all upper division transfers and those who have not taken Physical Education 29, 30, 31, and 32. Prerequisite for course 130 for all transfer students.

**130. Principles of Physical Education. (2) I, II.**

Mr. Richardson, Mr. Snyder

A critical analysis of the assumptions underlying the physical education program.

**131. Administration of Physical Education. (3) I, II.**

Mr. Snyder, Miss Thomson

An analysis and study of the underlying philosophy, principles, policies and procedures of administration as applied to physical education. Legal aspects are considered and the interrelationships with the general school curriculum at the local, state, and national levels.

**132. Conduct of the Program of Sports. (2) I.**

Section 1. Recreation majors.

Mr. N. P. Miller

Section 2. Women physical education majors.

Prerequisite: for women physical education majors, courses 130, 326A, and 326B or consent of the instructor; no prerequisite for recreation majors.

A study of the principles and policies underlying the program of sports in the secondary schools and community centers; class management, organization of clubs, tournaments, care of equipment and facilities, program planning, and sports days.

**133. Organization of the Class (Men). (2) I, II.**

Mr. Handy

One lecture and two laboratory periods.

Teacher responsibilities in class organization and management on the secondary school level.

\* Not to be given, 1953-1954.

**135. Evaluation Procedures. (2) I.**

Mr. Massey

The study and application of methods of evaluating the physiological, sociological, and psychological aspects of the program.

**139. Principles of Recreation. (3) I, II.**

Mr. Gabrielsen

A consideration of philosophy and foundations of recreation, the environmental factors influencing it, and the basic principles underlying community organization and professional practice in recreation.

**140. Organization of Community Recreation. (3) II.**

Mrs. Breck

Prerequisite: course 139.

A study of the organization of recreation in the community, with implications for the administration of public and voluntary agency programs.

**141. Club Activities. (2) I.**

Mr. N. P. Miller

An analysis of the activities of clubs of various types, with emphasis upon leadership requirements and program planning to meet needs and interests of groups.

**142. Camp Leadership. (2) II.**

Mr. N. P. Miller

Prerequisite: upper division standing and consent of instructor.

A study of camping and outdoor education, including the philosophy of camping, camp areas and facilities, camping programs of public and private agencies, youth problems in camp, counseling techniques, staff problems, and other related information.

**143. Problems in Group Work. (2) II.**

Mrs. Jones

Principles and procedures of group work in recreation with emphasis on group structure, community relations, and program planning.

**144. Recreation Survey. (2) I.**

Mrs. Breck

An examination of the fields and methods of recreation research with special emphasis on the design and administration of the community recreation survey.

**145A. School Health Education. (3) I, II.**

Mr. Snyder, Miss Abernathy, Miss Brown

Prerequisite: course 44 and senior standing, or consent of the instructor.

A study of the school health program as an integral part of the school curriculum; the underlying principles and functions of health instruction, health service, healthful school living; and the contributing community health agencies.

**145B. School Health Education. (3) I, II.**

Mr. Sutton, Miss Abernathy, Miss Brown

Prerequisite: courses 44, 145A and senior standing, or consent of the instructor.

A synthesis of the major areas of health education in the elementary and secondary school program.

**146. Social Aspects of Health. (2) I, II.**

Mrs. Bell

Prerequisite: course 44 or consent of the instructor.

A study of the basic health factors underlying democratic society, with special emphasis on health as a social problem.

**147. Development of Modern Health Problems. (3) I, II.**

Miss Thomson, Mrs. Bell

Prerequisite: course 44 or consent of the instructor. Open to elementary school credential candidates.

A study of the history and development of modern health problems, with special emphasis on interpretation of their effect on individuals and community life.

- 150. History of Dance and the Related Arts. (2) II.** \_\_\_\_\_  
A survey of the historic development of various media of expression, inter-relating these arts: dance, music, painting, sculpture, architecture, literature, and poetry.
- 151. History of Dance in America. (2) I.** Mr. Pillieh
- 152. Organization of Public Performances. (2) II.** \_\_\_\_\_  
Consideration of purpose, sources of materials, production procedure for folk festivals, dance recitals, and other special events.
- 153A-153B. Dance Composition Workshop. (2-2) Yr.** \_\_\_\_\_  
Prerequisite: consent of the instructor.  
Analysis of the elements and process of dance composition, and practice in individual and group composition and evaluation.
- 154. Advanced Music Analysis for Dance. (2) II.** Mrs. Gilbert  
Prerequisite: course 35 or consent of instructor.  
Piano and percussion improvisation; analysis of music for the dance; the historical development of musical forms used in dance; building an accompanist's repertoire.
- 155. Folk Festivals. (2) I.** Mrs. Scothorn  
Study of folklore in relation to festivals and pageants. The preparation of an original festival.
- \*160. Counseling in the Physical Education Program. (2) I.** \_\_\_\_\_  
A study of present-day principles and procedures used in guiding students through physical education experiences in secondary school and college.
- 171. Conditioning of Athletes and Care of Injuries (Men). (2) I, II.**  
Lecture, one hour; laboratory, two hours. Mr. Logan  
Prerequisite: course 102 or consent of the instructor.  
Anatomical and physiological approach to conditioning as it relates to athletic teams. Prevention, examination, and care of athletic injuries, methods of taping, bandaging, and therapeutic exercises applied to athletic injuries; diets; training room equipment, protective devices, and supplies.
- 190A-B-C-D-E-F. Field Work in the Profession. (3 units each) I, II.**  
Mr. Rossi, Mr. Johns, Mr. Gabrielsen, Mrs. Breck  
**190A-190B. Rehabilitation.** Prerequisite: course 102 or consent of instructor.  
**190C-190D. Recreation.** Prerequisite: course 140 or consent of instructor.  
**190E-190F. Health Education.** Prerequisite: Public Health 134 or consent of instructor.  
Observation and practical experiences in public, private and/or voluntary agency programs.
- 199. Physical Education Problems (Individual). (1-4) I, II. Beginning**  
either semester. The Staff  
Prerequisite: consent of the instructor.  
Enrollment with Mr. Snyder.

## GRADUATE COURSES

- 201. Secondary School Curriculum in Physical Education. (3) II.**  
Seminar and laboratory assignments. Mr. Handy  
A study of physical education programs based on the needs of boys and girls in American secondary schools. (Required of fifth-year students preparing for the General Secondary Credential.)

\* Not to be given, 1953-1954.

**\*227. Comparative Study of Materials and Methods in Dance. (3) II.**

A study of educational ideas and practices as they relate to the various forms of dance, primarily designed for students in the fifth-year preparing for the General Secondary Credential.

**235. Evaluation Procedures. (2) II.**

Mr. Massey

Prerequisite: course 135 or consent of the instructor.

Study of, and experimentation with, methods of developing and using instruments and techniques of evaluation which are related to the fields of health education, physical education and recreation.

**245. Curriculum Development in Health Education. (3) II.**

Mr. Johns

Prerequisite: course 145A-145B or consent of the instructor.

The development of the health instruction program based on the health needs of school-age children. The formulation of objectives, scope and sequence of instruction, the examination of teaching methods, source materials, community resources, and evaluation procedures.

**250. Changing Perspectives in the Profession. Seminar. (3) I, II.**

Miss Cassidy, Miss Abernathy, Mr. B. W. Miller

Seminar and group conferences.

Prerequisite: the seminar is limited, except by consent of the instructor, to doctoral-level students during fall semester, and is open to other graduate students during spring semester.

A student-staff examination of changing perspective in the field directed toward the formulation of a working professional philosophy in the fields of health education, physical education, and recreation.

**254. Current Problems in Health Education. (3) I.**

Mr. Johns

A critical analysis of new findings in the basic health education areas (nutrition, mental health, family health, consumer health, safety, communicable and chronic diseases) contributing to healthful living in the family, school, and community.

**255. Administrative Interrelationships in Health Education. Seminar.**

(3) II

Miss Abernathy, Mr. Johns

Prerequisite: consent of the instructor.

A consideration of the principles, policies, and practices involved in the interrelationships of the school curriculum, the public and private health agencies in the community.

**256. Administrative Problems in Physical Education. Seminar. (3) I.**

Mr. B. W. Miller

A consideration of policies, problems, and practices in school and college physical education administration; interrelationships with the general curriculum, and among the local, state and federal levels.

**\*257. Administrative Problems in Recreation. Seminar. (3) I.**

Mr. N. P. Miller

A consideration of policies, problems, and current administrative practices and interrelationships in public and private recreation agencies at the local, state, and national levels.

**258. Problems in Developmental Physical Education. (3) II.**

Mr. Young

Identification and solution of problems in the administration, supervision, instruction, curriculum, research, evaluation, and personnel services in developmental (corrective) physical education at the local, state, and national levels.

\* Not to be given, 1953-1954.

- 259. Intertherapy Education Seminar. (3) I.** Miss Hunt  
Prerequisite: consent of the instructor.  
The scope, functions, and interrelationships of physical therapy, occupational therapy, recreational therapy and developmental physical education pertaining to programs of prevention, treatment and adjustment in the schools and community.
- 265. Foundations of the Curriculum. Seminar. (3) I.** Miss Cassidy  
A study of the process of present-day curriculum making in physical education based on a critical analysis of the areas of individual and group needs in contemporary society. Students may center their individual studies at elementary, secondary, or college level.
- 266. Social Bases of the Profession. Seminar. (3) I.** Miss Abernathy  
Analysis of the social forces and relationships bearing on the fields of health education, physical education, and recreation, and the significant role of the professional person in these areas.
- 267. Physiological Bases of the Profession. Seminar. (3) I.** Mr. Massey  
Critical analysis of the physiological bases of health education, physical education, and recreation, with special attention to concepts from which principles and criteria of the profession are derived.
- 275. Seminar in Health, Physical, and Recreation Education. (2) I.** Mr. Snyder  
The development of a better comprehension of the profession through an exploration of existing research and critical evaluation of needed research in health, physical, and recreation education.
- 276. Fundamentals of Research. Seminar. (3) I, II.** Mr. Massey, Mr. Young  
Prerequisite: the seminar is limited, except by consent of the instructor, to doctoral-level students during the spring semester and is open to other graduate students during fall semester.  
The application of scientific methods and techniques to aid in the selection and solution of research studies, thesis and dissertation problems.
- 280. Research in Health, Physical, and Recreation Education. (2) II.** Mr. Massey  
Prerequisite: consent of the instructor.  
Application of research methods and techniques in health education, physical education, and recreation.
- 299. Independent Study. (2-4) I, II.** The Staff  
Prerequisite: course 276 and consent of the instructor.  
Independent study in a number of special sub-areas: health education, physical education, and recreation. Enrollment with Mr. Snyder.

**PROFESSIONAL COURSES IN METHOD**

- 326A-326B. Principles of Teaching Athletics (Women). (2-2) Yr.** The Staff  
Analysis of problems in teaching athletic activities, including techniques and game forms, with special reference to their use in planning teaching units and lesson plans. Advanced practice is provided in team activities, with emphasis on the interpretation of rules and the technique of officiating. Officiating in local schools and recreation centers is required.
- 327A-327B. Principles of Teaching Dance (Women). (2-2) Yr.** The Staff  
Prerequisite or concurrent: course 35 or 154. Must be taken concurrently with course 326A-326B.

**330. Physical Education in the Elementary School. (3) I, II.**

Miss Anderson, Miss Latchaw, Mrs. Bell, Mr. Nagel

Prerequisite: upper division standing, courses 27, 28, and 44, or the equivalent, and Education 111. A course to prepare the student to guide elementary school-age children through a well-balanced program in health, physical, and recreation education. Study of aims and objectives, procedures, methods, evaluation and program planning. Prerequisite to all supervised teaching for the Kindergarten-Primary or General Elementary credentials.

**354. Teaching Fundamentals (Men). (3) I, II.**

Mr. Handy

Lectures, two hours; laboratory, three hours. (Laboratory assignment to be made by the instructor.)

Prerequisite: senior standing.

A study of the principles involved in the teaching of physical education, together with functional application through observation and laboratory experiences. This course may be taken only during the semester directly preceding student teaching.

**355A-B; 356A-B. Technique of Teaching Activities (Men). (3-3; 3-3)****355A. Basketball. I.**

Mr. Richardson

**355B. Baseball and Volleyball. II.**

Mr. Syverson

**356A. Football. I.**

Mr. Duncan

**356B. Track and Field, Tumbling, Apparatus. II.** Mr. Hollingsworth

Prerequisite: upper division standing.

A critical analysis of the methods and problems in teaching and coaching. Application is made to the secondary-school teaching situation, with emphasis on lesson planning, development of teaching units, organization for class activity, and administration of the program. Advanced practice is provided in the activities with emphasis on strategy, selection of players, officiating, interpretation of rules, scoring, scouting, systems of team play, and administration of inter-school meets.

**PHYSICS**Alfredo Baños, Jr., Dr. Eng., Ph.D., *Professor of Physics.*Walter H. Barkas, Ph.D., *Visiting Professor of Physics.*Leo P. Delsasso, Ph.D., *Professor of Physics.*\* Laurence E. Dodd, Ph.D., *Professor of Physics.*Joseph W. Ellis, Ph.D., *Professor of Physics.*Joseph Kaplan, Ph.D., *Professor of Physics.*E. Lee Kinsey, Ph.D., *Professor of Physics (Chairman of the Department).*Vern O. Knudsen, Ph.D., *Professor of Physics.*Kenneth R. MacKenzie, Ph.D., *Professor of Physics.*\* J. Reginald Richardson, Ph.D., *Professor of Physics.*Norman A. Watson, Ph.D., *Professor of Physics.*Samuel J. Barnett, Ph.D., *Professor of Physics, Emeritus.*Robert J. Finkelstein, Ph.D., *Associate Professor of Physics.*Robert W. Leonard, Ph.D., *Associate Professor of Physics.*Isadore Rudnick, Ph.D., *Associate Professor of Physics.*David S. Saxon, Ph.D., *Associate Professor of Physics.*Byron T. Wright, Ph.D., *Associate Professor of Physics.*Steven A. Moszkowski, Ph.D., *Assistant Professor of Physics.*

\* Absent on leave, 1953-1954.

\* In residence second semester only, 1953-1954.



Robert A. Satten, Ph.D., *Assistant Professor of Physics.*  
 Harold K. Ticho, Ph.D., *Assistant Professor of Physics.*



Jörgen Holmboe, M.Sc., *Professor of Meteorology.*  
 Robert E. Holzer, Ph.D., *Professor of Geophysics.*  
 Louis B. Slichter, Ph.D., *Professor of Geophysics.*

*Letters and Science List.*—All undergraduate courses in physics except 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major in Physics.*—Required: Physics 1A, 1B, 1C, 1D, or, with the consent of a departmental adviser, Physics 2A, 1C, 1D or Physics 2A, 2B; Chemistry 1A, 1B; Mathematics 5A, 5B, 6A, 6B; or 1-3A, 3B, 4A, 4B; or their equivalents.

*The Major in Physics.*—The following upper division courses in physics, representing at least one course in each of the main subjects in physics, are required: 105, 107, 107C, 108B, 108C, 110, 112, 114A, 121, 113 or 124, 113C or 114C or 124C. An average grade of C or higher must be maintained in the above courses. Required: Mathematics 110AB or 110C or 119A. Strongly recommended: Mathematics 122A-122B. Recommended: a reading knowledge of German and French. This major leads to the degree of Bachelor of Arts in the College of Letters and Science.

*Preparation for the Major in Applied Physics.*—Required: Physics 1A, 1B, 1C, 1D, or, with the consent of a departmental adviser, Physics 2A, 1C, 1D, or Physics 2A, 2B; Chemistry 1A, 1B; Mathematics 5A, 5B, 6A, 6B, or Mathematics 1-3A, 3B, 4A, 4B, or their equivalents; recommended: mechanical drawing. The last-named course may be taken in high school, University Extension, or elsewhere.

*The Major in Applied Physics.*—Required: Mathematics 110AB or 110C and one of the following groups of courses prescribed to give a specialization in some particular field of physics:

(a) *Specialisation in electronics:* Physics 105, 107, 107C, 108B, 108C, 110, 112, 114A, 116A, 116B, 116C, 116D, 121, 124.

(b) *Specialization in optics and spectroscopy:* Physics 105, 107, 107C, 108A, 108B, 108C, 109, 112, 113, 113C, 114A, 116A, 116C, 121.

(c) *Specialization in acoustics and electronics:* Physics 105, 107, 107C, 108B, 108C, 112, 114A, 114B, 114C, 116A, 116B, 116C, 116D, 121.

(d) *Specialization in chemical physics:* Physics 105, 107, 107C, 108B, 108C, 112, 113, 113C or 124C, 116A, 121, 124; Chemistry 8, 110A, 110B, 111.

(e) *Specialization in nuclear physics:* Physics 105, 107, 107C, 108B, 108C, 112, 113, 113C, 114A, 116A, 116B, 116C, 121, 124, 124C.

(f) *Specialization in atmospheric physics:* Physics 105, 107, 107C, 108B, 108C, 110, 112 or Meteorology 107, 113, 114A, 116A, 116C, 121, 124; Meteorology 104; Geophysics 155.

An average grade of C or higher must be maintained in the above courses. Recommended: a reading knowledge of German and French. This major leads to a degree of Bachelor of Science in the College of Letters and Science.

#### LOWER DIVISION COURSES

Physics 1A, 1B, 1C, and 1D form a sequence of courses in general physics for major students in physics and applied physics. All, or part, of the sequence is also required or recommended as first choice for major students in: astronomy, chemistry, engineering, meteorology, and certain interdepartmental fields of concentration. Students in departments other than those listed and

with correct prerequisites may elect course 1A and any other courses in the sequence. (Course 1A is prerequisite to any of the other courses in the sequence.)

Physics 2A and 2B form a one-year sequence of courses in general physics which is required of students specializing in the following fields: agriculture, bacteriology, geology, medical technology, pre-dentistry, premedicine, pre-optometry, prepublic health, and zoölogy. It is an alternate sequence (but only on approval of the appropriate departmental adviser) for major students in physics, applied physics, astronomy, chemistry, and meteorology. Students in other departments and with correct prerequisites may elect 2A or 2A and 2B. (Course 2A, or 1A, is always prerequisite to course 2B.)

Physics 10 is a one semester, nonlaboratory course which surveys the whole field of general elementary physics. It is designed primarily for the liberal arts student. It is required in the pre-nursing curriculum.

Certain combinations of lower division courses involve limitations of total credit as follows: 2A and 1A or 1B, 5 units; 2A and 1A and 1B, 6 units; 2B and 1C or 1D, 6 units; 2B and 1C and 1D, 7 units. Six units are allowed for 10 and 1A or 1B or 1C or 1D. Seven units are allowed for 10 and 2A or 2B. In general, not more than 12 units of credit will be given for any amount of lower division work. Credit in excess of 12 units will be given only in exceptional cases, when approved by the department.

**1A. General Physics: Mechanics of Solids. (3) I, II.**

Mr. Baños, Mr. Delsasso, Mr. Ellis, Mr. Watson

Lecture and demonstration, three hours; laboratory, two hours.

Prerequisite: high school physics or chemistry; Mathematics 5A, or 1-3A with Mathematics 3B taken concurrently with Physics 1A.

**1B. General Physics: Mechanics of Fluids, and Heat. (3) I, II.**

Mr. Barkas, Mr. Dodd

Lecture and demonstration, three hours; laboratory, two hours.

Prerequisite: course 1A; Mathematics 5B, or Mathematics 4A taken previously or concurrently.

**1C. General Physics: Electricity and Magnetism. (3) I, II.**

Mr. Barkas, Mr. Baños

Lecture and demonstration, three hours; laboratory, two hours.

Prerequisite: course 1A or 2A; Mathematics 5B, or 4A taken concurrently.

**1D. General Physics: Light and Sound. (3) I, II.**

Mr. Satten, Mr. Moszkowski

Lecture and demonstration, three hours; laboratory, two hours.

Prerequisite: course 1A or 2A; Mathematics 5B, or 4A taken concurrently.

**2A. General Physics: Mechanics, Heat, and Sound. (4) I, II.**

Mr. MacKenzie, Mr. Satten

Lectures and demonstrations, four hours; laboratory, two hours.

Prerequisite: three years of high school mathematics, or two years of high school mathematics and one 3-unit college course in algebra or trigonometry.

**2B. General Physics: Electricity, Magnetism, and Light. (4) I, II.**

Mr. Rudnick, Mr. Kinsey

Lectures and demonstrations, four hours; laboratory, two hours.

Prerequisite: course 2A or 1A.

**10. General Physics. (3) I, II.**

Mr. Kaplan

Prerequisite: high school algebra and plane geometry.

An introductory survey course in classical and modern physics designed primarily for liberal arts students.

Students enrolled in this course who desire laboratory work in lower division physics are referred to courses 21 (2A) and 21 (2B).

**21. Supplementary Laboratory Courses in General Physics. (1)**

Lower Division Staff (Mr. Watson in charge)

These courses are intended primarily for students entering the University with partial credit in general physics and are part of the regular work of courses 1A, 1B, 1C, 1D, 2A, and 2B. Students should enroll under one or more of the following numbers:

- 21 (1A). Mechanics of Solids. I, II.
- 21 (1B). Mechanics of Fluids, and Heat. I, II.
- 21 (1C). Electricity and Magnetism. I, II.
- 21 (1D). Light and Sound. I, II.
- 21 (2A). Mechanics, Heat, and Sound. I, II.
- 21 (2B). Electricity, Magnetism, and Light. I, II.

**UPPER DIVISION COURSES**

Prerequisite for all upper division courses: Physics 1A, 1B, 1C, 1D, or 2A, 1C, 1D, or 2A-2B; Mathematics 5A, 5B, 6A, 6B; or 1-3A, 3B, 4A, 4B; or the equivalents. Upper division standing is required for all courses except 105, 107, 107C, 108A, 109, 121.

- 105. Analytic Mechanics. (3) I, II.** Mr. Watson, Mr. Delsasso  
The statics and dynamics of particles and rigid bodies.
- 107. Electrical Theory and Measurements. (3) I, II.** Mr. Ticho, Mr. Wright  
Lectures on direct and alternating current theory and measurements, and on introductory electronics.
- 107C. Electrical Measurements Laboratory. (2) I, II.** Mr. Ticho  
Laboratory to accompany 107.
- 108A. Geometrical Optics. (3) II.** Mr. Dodd  
Lecture, demonstrations, and problems, two hours; laboratory, three hours.  
Geometrical methods applied to the ray-optics of mirrors, prisms, and lenses. This course is basic to an understanding of the performance of optical instruments.
- 108B. Physical Optics. (3) I.** Mr. Ellis  
Wave motion, interference, diffraction, dispersion, polarization, and crystal optics.
- 108C. Physical Optics Laboratory. (1) I.** Mr. Satten  
Laboratory to accompany 108B.
- \*109. Modern Optical Instruments. (3) I.** Mr. Dodd  
Lecture, two hours; laboratory, three hours.  
Prerequisite: course 108A or consent of the instructor.  
Detailed studies of visual and photographic systems used in research, industry, defense, and medicine, such as cameras, microscopes, telescopes, refractometers, laryngoscopes, cystoscopes, range finders, periscopes, etc. Attention will be given to the electron microscope and the new phase-microscope. Conducted on a semi-seminar basis.
- 110. Electricity and Magnetism. (3) II.** Mr. MacKenzie  
Prerequisite: courses 105 and 107, or consent of the instructor. A survey of field theory, to include systems of charged conductors and of linear circuits, simple dielectric and magnetic media, and the formulation of Maxwell's equations.

\* Not to be given, 1953-1954.

- 112. Thermodynamics and Introduction to Kinetic Theory. (3) I.** Mr. Rudnick
- 113. Introduction to Spectroscopy and Quantum Theory. (3) II.** Mr. Ellis  
Atomic spectra and atomic structure; black body radiation; old and new quantum theories.
- 113C. Spectroscopy Laboratory. (1) II.** Mr. Satten  
Prerequisite or concurrent: course 113.
- 114A. Mechanics of Wave Motion and Sound. (3) I, II.** Mr. Watson  
Prerequisite: course 105.  
Vibration of particles and elastic bodies; sound sources; propagation in elastic media.
- 114B. Mechanics of Wave Motion and Sound. (3) II.** Mr. Leonard  
Prerequisite: course 114A or the equivalent.  
Propagation of sound in gases; reflection, refraction, interference, and diffraction of sound; acoustic impedance; applications.
- 114C. Mechanics of Wave Motion and Sound Laboratory. (2) II.** Mr. Leonard  
Prerequisite: courses 107 and 107C completed, and 114B completed or taken concurrently, or consent of the instructor.
- 116A. Electronics. (3) I.** Mr. Ticho  
Prerequisite: course 107 or the equivalent.  
The properties of electrons; thermionic and photoelectric emission; conduction of electricity in gases; vacuum tubes, gas tubes, and associated circuits.
- 116B. Electronics. (3) I.** Mr. Leonard  
Prerequisite: course 116A or the equivalent.  
Wave filters, lines, and wave guides; ultrahigh frequency generators and measuring equipment.
- 116C. Electronics Laboratory. (2) II.** Mr. Ticho  
Laboratory to accompany 116A.
- 116D. Electronics Laboratory. (2) I.** Mr. Leonard  
Laboratory to accompany 116B.
- 119. Kinetic Theory of Matter. (3) II.** Mr. MacKenzie  
Prerequisite: course 112 or the equivalent.  
An introduction to the elementary classical and quantum mechanical theories of statistical mechanics. Emphasis is placed on the application to various fields in modern physics such as fluctuation phenomena, low temperature physics, and the theory of metals.
- 121. Atomic Physics. (3) I, II.** Mr. Saxon, Mr. Barkas  
The atomic nature of matter and atomic composition. The propagation of electromagnetic waves and their interaction with matter. Special relativity. Atomic spectra and electron distribution. Basic concepts of wave mechanics.
- 124. Nuclear Physics. (3) I.** Mr. Moszkowski  
Basic nuclear concepts. The origin and interaction with matter of alpha, beta and gamma rays. Nuclear forces. Neutrons. Nuclear disintegration. Detection equipment. Particle accelerators. Fission.

- 124C. Atomic and Nuclear Physics Laboratory.** (1) I. Mr. Wright  
 Prerequisite: course 121. Laboratory to accompany course 124.  
 Electron diffraction. X-ray diffraction. Beta-ray spectroscopy. Neutron absorption. Artificial radioactivity. Rutherford scattering of alpha-particles and other experiments.
- 199. Special Problems in Physics.** (1-3) I, II.  
 The Staff (Mr. Ellis in charge)

## GRADUATE COURSES

- \*208. Classical Optics.** (3) I.  
 Propagation of light waves in isotropic and anisotropic media, interference, diffraction, dispersion, scattering, and polarization on the basis of the electromagnetic theory of light. Recommended: course 210A or its equivalent.
- 210A. Electromagnetic Theory.** (3) II. Mr. Bafios  
 An advanced course on electromagnetic theory based on the vector treatment of Maxwell's equations. The vector and scalar potentials, the Hertz polarization potentials, energy considerations, the electrostatic and magnetostatic fields, and a general discussion of plane homogenous waves in unbounded, isotropic media. Boundary value problems.
- \*210B. Electromagnetic Theory.** (3) I. Mr. Bafios  
 Theory of wave propagation in cylindrical structures with particular applications to wave guides and coaxial lines. The general theory of electromagnetic cavity resonators from the point of view of the Lagrangian formulation. Spherical waves and applications to the general problem of radiation. Introduction to relativistic electrodynamics.
- 212. Thermodynamics.** (3) I. Mr. Kaplan
- 213. Spectra and Structures of Diatomic and Polyatomic Molecules.** (3) I.  
 Mr. Ellis
- 214. Advanced Acoustics.** (3) I. Mr. Delsasso
- 215. Statistical Mechanics.** (3) II. Mr. Kaplan
- 217. Hydrodynamics.** (3) II. Mr. Holmboe, Mr. Saxon  
 Not open for credit to students who have credit for Meteorology 217.
- 220A. Theoretical Mechanics.** (3) I. Mr. Kinsey
- \*220B. Theoretical Mechanics.** (3) II. Mr. Kinsey
- 220C. Quantum Mechanics.** (3) II. Mr. Moszkowski
- 220D. Quantum Mechanics.** (3) I. Mr. Finkelstein
- 224A. Nuclear Physics.** (3) I. Mr. MacKenzie  
 A summary of the present knowledge and descriptive theory of nuclear forces, nuclear reactions, and radioactivity; with emphasis on a critical evaluation of the experimental evidence, and a discussion of possible future experimental lines of attack on problems in nuclear physics.
- 224B. Nuclear Physics.** (3) II. Mr. Finkelstein  
 An advanced course in the theory of nuclear forces and nuclear radiation with particular emphasis on the meson theory of nuclear forces and the general application of quantum mechanics to the theory of nuclei.

\* Not to be given, 1953-1954.

- 231. Methods of Theoretical Physics. (3) I.** Mr. Baños  
An advanced course in which the general mathematical methods employed in the solution of boundary value problems arising in all chapters of theoretical physics are systematically developed and coordinated. A detailed discussion is given of the use of Green's functions, characteristic functions, variational methods, conformal mapping, and of integral equations the solution of which is based on the theory of the Fourier and Laplace transforms.
- 261. Seminar in Special Problems in Theoretical Physics. (1-3) I, II.** Mr. Finkelstein
- 264. Seminar in Advanced Acoustics. (1-3) II.** Mr. Delsasso, Mr. Knudsen
- \*266A-266B. Seminar in Propagation of Waves in Fluids. (1-3; 1-3) Yr.** Mr. Rudnick
- 269. Seminar in Nuclear Physics. (1-3) I, II.** Mr. Barkas
- 281. Experimental Techniques in Modern Physics. (2) II.** Mr. Wright  
Essentially a laboratory course with some lectures on the theory of the techniques used. An effort is made to develop a critical research attitude on the part of the student and considerable freedom is allowed in the choice of problems to be attacked. High-vacuum technique, atomic magnetic resonance, magnetic spectrograph, electron diffraction, cloud chamber, electrical counting of particles, conduction of electricity through gases, etc.
- 284. Experimental Techniques in Acoustics. (2) II.** Mr. Rudnick  
A laboratory course in experimental acoustics designed to train the student in the techniques and instrumentation used in modern acoustic research.
- 290A-290B. Research. (1-6; 1-6) Yr.** The Staff (Mr. Kinsey in charge)

## RELATED COURSES AND CURRICULUM

## GEOPHYSICS

See page 12 for an interdepartmental curriculum in geophysics involving physics and geology.

## UNDERGRADUATE COURSES

- 155. Electrical and Magnetic Phenomena of the Atmosphere. (3) II.** Mr. Holzer  
A survey of electrical, magnetic and electromagnetic phenomena of the atmosphere, including the problems of the ionosphere and related problems in geomagnetism.  
For other undergraduate courses, see offering of Department of Geology, page 181.

## GRADUATE COURSES

- 250. Seminar in Geophysics. (3) I, II.** Mr. Slichter  
Seismology, geophysical prospecting, electromagnetic prospecting. Selected topics in earth physics. The content will vary from year to year.
- 255. Seminar in Atmospheric Physics. (3) I.** Mr. Holzer  
Selected problems in physics of the high atmosphere, electromagnetic waves in ionized media; magnetic noise; atmospheric electrical currents. The content will vary from year to year.

\* Not to be given, 1958-1954.

290A-290B. Research. (1-6; 1-6) Yr. Mr. Slichter, Mr. Griggs, Mr. Holzer

This course will include experimental studies in the electromagnetic and seismic model laboratories; research relative to gravity earth-tides (Mr. Slichter). Properties of matter at high pressure (Mr. Griggs). Atmospheric electrical phenomena (Mr. Holzer).

The student may select other special topics in geophysics with the approval of his adviser.

#### PHYSICAL SCIENCES

##### PROFESSIONAL COURSE IN METHODS

370. Methods and Materials for Teaching Physical Sciences. (3) II.

Mr. Bissiri, Mr. Kinsey

Reference books, visual aids, sources of materials and equipment, problems of teaching astronomy, chemistry, geology, meteorology and physics, in the junior and senior high schools; lectures, demonstrations, and field trips.

Prerequisite: graduate or senior standing.

## PLANT PATHOLOGY

Kenneth F. Baker, Ph.D., *Professor of Plant Pathology (Vice-Chairman of the Department)*.

John G. Bald, Ph.D., *Professor of Plant Pathology*.

Pierre A. Miller, M.S., *Professor of Plant Pathology*.

Donald E. Munnecke, Ph.D., *Assistant Professor of Plant Pathology*.

*The Major.*—The major is offered on the Berkeley and Davis campuses. See the PROSPECTUS OF THE COLLEGE OF AGRICULTURE and consult the appropriate adviser for students in agriculture.

#### UPPER DIVISION COURSES

120. Plant Diseases. (4) I.

Mr. Munnecke

Lectures, two hours; laboratory, six hours.

Prerequisite: Botany 1, or the equivalent. Bacteriology 1 recommended.

A general course treating on the nature, cause, and control of plant diseases.

130. Diseases of Subtropical Fruit Plants. (4) I.

Mr. Miller

Lectures, three hours; laboratory, three hours.

Prerequisite: Botany 1, or the equivalent. Bacteriology 1 and Plant Pathology 120 recommended.

The pathology of citrus and other subtropical fruit plants. The distribution, economic importance, nature, cause, and control of the principal diseases.

140. Diseases of Floricultural Plants. (3) I.

Mr. Baker, Mr. Bald

Laboratory, lecture, and discussion, nine hours. Several field trips.

Prerequisite: Plant Pathology 120 or equivalent.

The pathology of floricultural plants in relation to cultural practices. Recognition, environmental relations, etiology, and control of important types of diseases.

199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.

Prerequisite: senior standing and consent of the instructor. The Staff

#### GRADUATE COURSES

265A-265B. Seminar in Plant Pathology. (1-1)

The Staff

282A-282B. Research in Plant Pathology. (2-6; 2-6) Yr.

The Staff

## POLITICAL SCIENCE

Winston W. Crouch, Ph.D., *Professor of Political Science and Director of the Bureau of Governmental Research.*

Russell H. Fitzgibbon, Ph.D., *Professor of Political Science.*

Malbone W. Graham, Ph.D., *Professor of Political Science.*

J. A. C. Grant, Ph.D., *Professor of Political Science.*

Dean E. McHenry, Ph.D., *Professor of Political Science.*

H. Arthur Steiner, Ph.D., *Professor of Political Science.*

\*Frank M. Stewart, Ph.D., *Professor of Political Science.*

Charles H. Titus, Ph.D., *Professor of Political Science.*

Thomas P. Jenkin, Ph.D., *Associate Professor of Political Science (Chairman of the Department).*

Robert G. Neumann, Ph.D., *Associate Professor of Political Science.*

Charles B. Nixon, Ph.D., *Associate Professor of Political Science.*

Foster H. Sherwood, Ph.D., *Associate Professor of Political Science.*

John C. Bollens, Ph.D., *Assistant Professor of Political Science.*

Ernest A. Engelbert, Ph.D., *Assistant Professor of Political Science.*

David G. Farrelly, Ph.D., *Assistant Professor of Political Science.*

Ivan H. Hinderaker, Ph.D., *Assistant Professor of Political Science.*

James C. Lien, Ph.D., *Assistant Professor of Political Science.*

Currin V. Shields, Ph.D., *Assistant Professor of Political Science.*

David T. Cattell, Ph.D., *Instructor in Political Science.*

James S. Coleman, Ph.D., *Instructor in Political Science.*

T. Bruce Adkinson, M.A., *Acting Instructor in Political Science.*

*Letters and Science List.*—All undergraduate courses in political science are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Two courses from among courses 1 and 2 (or 3A-3B), and 103, or the equivalent, and 3 units selected from the following: Economics 1A-1B, Geography 1A-1B, History 1A-1B, 5A-5B, 7A-7B, 8A-8B, Anthropology 1, 2, or Philosophy 6A-6B.

*The Major.*—Twenty-four units in upper division political science courses numbered from 110 to 199. The work in political science must be so distributed that at least three courses are taken in one of the groups and at least one course in each of three other groups in which the upper division courses of the department are divided: Group I (Courses 110-118), Group II (Courses 120-138), Group III (Courses 141-148), Group IV (Courses 150-159), Group V (Courses 161-168, 117, 133A-133B, 187) and Group VI (Courses 171-187, 166). A copy of the detailed regulations may be obtained from a departmental adviser. The student must maintain an average grade of C or higher in all upper division courses in political science.

*Related Curricula.*—For the curriculum in public service and the curriculum in international relations, students are referred to pages 14 and 18.

### LOWER DIVISION COURSES

#### 1. Introduction to Government. (3) I, II.

Mr. Bollens, Mr. Engelbert, Mr. Farrelly, Mr. Hinderaker,  
Mr. Lien, Mr. McHenry, Mr. Nixon

An introduction to the principles and problems of government with particular emphasis on national government in the United States. This course fulfills in part the requirement of American History and Institutions. Students

\* Absent on leave, 1953-1954.



who have credit for American Institutions 101 will receive only one unit of credit for Political Science 1.

**2. Introduction to Government.** (3) I, II.

Mr. Adkinson, Mr. Cattell, Mr. Lien, Mr. McHenry,  
Mr. Neumann, Mr. Shields

A comparative study of constitutional principles, governmental institutions, and political problems of selected governments abroad.

**UPPER DIVISION COURSES**

Prerequisite for all upper division courses: upper division standing, except as indicated below.

Majors in political science must distribute their upper division work so that they have at least three courses in one of the following groups, and at least one course in each of three other groups.

**101. American Institutions.** (2) I, II.

The Staff

This course counts toward satisfaction of the "Requirement of American History and Institutions." (See page 28C of this bulletin.) It may not be applied toward the political science major, and it is not open to students who have credit for Political Science 1 or Political Science 3A.

The fundamental nature of the American constitutional system and of the ideals upon which it is based.

**102. Contemporary World Politics.** (3) I, II.

Mr. Graham

Current problems and issues in the foreign policies of the world powers since World War II, with particular attention to diplomatic, political and security affairs. Open without prerequisite to both lower and upper division students, but not applicable to the requirements of the major in political science or international relations.

**103. Principles of Political Science.** (2) I, II.

Mr. Lien

Prerequisite: course 1 or 2, or the equivalent.

Principles of political organization; the major institutions and practices of government, such as political parties, legislatures, constitutions, etc., or the functions they perform.

**104. Parliamentary Organization and Procedure.** (1) I, II.

Prerequisite: upper division standing. Mr. Hinderaker, Mr. Lien

Theory and practice of the parliamentary law and procedure of public and private bodies with particular emphasis on its application to organized groups.

*Group I.—Political Theory*

**110. History of Political Ideas.** (3) I, II.

Mr. Jenkin, Mr. Nixon, Mr. Shields

An exposition and critical analysis of the ideas of the major political philosophers and schools from Plato to the seventeenth century.

**112. Modern Political Theory.** (3) I, II.

Mr. Jenkin, Mr. Nixon, Mr. Shields

An exposition and critical analysis of the ideas of the major political philosophers from the seventeenth century to the present.

**113. American Political Thought.** (3) I, II.

Mr. Jenkin, Mr. Nixon, Mr. Shields

A survey of the development of American ideas concerning political authority from Cotton and Williams to the present.

**117. Jurisprudence.** (3) II.

Mr. Sherwood

Development of law and legal systems; comparison of methods and procedure in making and enforcing law in Roman and common law systems; con-

sideration of fundamental legal concepts; contributions and influence of modern schools of legal philosophy in relation to law and government. This course may be counted in either *Group I* or *Group V*.

118. **Nature of the State.** (3) I. Mr. Jenkin, Mr. Nixon  
Prerequisite: course 110, 112, or 113.

A systematic analysis of modern concepts and problems of political association.

*Group II.—International Relations*

120. **Colonies in World Politics.** (2) I, II. Mr. Adkinson, Mr. Fitzgibbon

A brief survey of the more important historical imperial systems, followed by a study of colonial governments and the problems of imperialism in the world today.

125. **Foreign Relations of the United States.** (3) I, II.

Mr. Graham, Mr. Neumann, Mr. Steiner

A survey of the factors and forces entering into the formation and carrying out of American foreign policy, with special emphasis on contemporary problems.

126. **Latin-American International Relations.** (3) I. Mr. Fitzgibbon

The major problems of Latin-American international relations and organization in recent decades.

127. **International Relations.** (3) I, II.

Mr. Graham, Mr. Neumann, Mr. Steiner

A general survey of the institutions and agencies of international government, including the United Nations, with major stress on outstanding issues in contemporary diplomacy.

130. **World Politics and National Policies: Atlantic Area.** (3) I.

Mr. Adkinson, Mr. Steiner

A contemporary survey of the foreign policies of the North Atlantic countries and of coöperative efforts to attain political, economic and military coördination on a regional basis. Replaces Political Science 130A.

131. **World Politics and National Policies: Soviet Sphere.** (3) II.

Mr. Adkinson, Mr. Steiner

A contemporary survey of the foreign policies and aspirations of the Soviet Union and other states in the Soviet bloc; analysis of content and effects of Communist doctrine affecting relations between the Soviet and democratic spheres. Replaces Political Science 130B.

133A-133B. **International Law.** (3-3) Yr.

Mr. Cattell, Mr. Neumann, Mr. Sherwood

A critical analysis of the general principles of the law of nations as demonstrated in the decisions of international and municipal tribunals and in the practices of nations. This course may be counted in either *Group II* or *Group V*.

136. **Problems of the Pacific Area.** (3) I. Mr. Steiner

A survey of contemporary problems of special international interest.

138. **International Relations of the Far East.** (3) II. Mr. Steiner

A survey of the relations of China and Japan with the Western world and with each other, and of the policies of the powers in southeast Asia.

*Group III.—Politics*

141. **Politics.** (3) I, II. Mr. Hinderaker, Mr. Nixon, Mr. Titus

An analysis of political activities, with emphasis on methods of operating, capturing, and creating organizations.

142. **Elections.** (2) I. Mr. Titus  
 An analysis of the history, rules, procedures, techniques, and politics of the American system of elections.
143. **Legislatures and Legislation.** (3) II. Mr. Farrelly, Mr. Hinderaker  
 The functions of legislatures, the organization and procedure of typical legislative bodies, and the problems and principles of law making.
145. **Political Parties.** (2) I, II. Mr. Farrelly, Mr. Hinderaker, Mr. McHenry, Mr. Nixon  
 Organization, functions, and practices of political parties primarily in the United States.
146. **Public Opinion and Propaganda.** (2) I, II. Mr. Nixon  
 Prerequisite: upper division standing only.  
 A study of the nature and the means of formation of public opinion. Public opinion as a factor in popular government and as a control device in the modern state, with special reference to current conditions in American democracy.
148. **Public Relations.** (2) I, II. Mr. Hinderaker, Mr. Titus  
 An analysis of principles, activities, problems, and distinctive types of organizations in the field of public relations.

*Group IV.—Comparative Government*

- 150A–150B. **The Governments of Latin America.** (3–3) Yr. Mr. Fitzgibbon  
 A study of the constitutional development, governmental organization and operation, and political practices and attitudes in Latin-American states. Neither semester is prerequisite to the other; either semester may be taken separately.
152. **British Government.** (3) I. Mr. McHenry  
 The government and politics of the United Kingdom; the British constitution, parliament, parties and elections, foreign policies, administrative problems, and local governments.
153. **The British Commonwealth of Nations.** (2) II. Mr. McHenry  
 The constitutional and political relations of the United Kingdom and dominion governments; the governments of Canada, Australia, New Zealand, Union of South Africa.
154. **The Governments of Central Europe.** (3) II. Mr. Neumann  
 An intensive study of the political and constitutional organization of Germany and Danubian Europe, with special attention to contemporary political issues, parties, elections, and foreign relations.
155. **The Governments of Eastern Europe.** (3) I, II. Mr. Cattell, Mr. Neumann  
 An intensive study of the political and constitutional organization of the Soviet Union and its component parts, with special attention to contemporary political issues, parties, elections, and foreign relations.
157. **Governments of Western Europe.** (3) I. Mr. Neumann  
 The constitutional and political structure and development of the countries of western continental Europe with special attention to contemporary problems.
159. **Chinese Government and Politics.** (3) I. Mr. Steiner  
 Organization and structure of Chinese government, with particular attention to the policies, doctrines and institutions of Chinese Communism; political problems of contemporary China.

*Group V.—Public Law*

- 161. The Anglo-American Legal System.** (3) I, II. Mr. Grant  
Evolution of the English common law courts and their legal system, with special emphasis on the contributions made by canon law, the law merchant and equity; the theory of *stare decisis* as illustrated by the evolution of modern rules of negligence.
- 166. Administrative Law.** (3) I. Mr. Sherwood  
The rights, duties, and liabilities of public officers; relief against administrative action; extraordinary legal remedies; jurisdiction, conclusiveness, and judicial control; legal principles and tendencies in the development of public administration.
- 167A. Constitutional Law.** (3) I, II. Mr. Farrelly, Mr. Grant, Mr. Lien  
General principles of constitutional law, federal and state; relations and powers of the federal government and the states.
- 167B. Constitutional Law.** (3) I, II. Mr. Farrelly, Mr. Grant, Mr. Lien  
Limitations on the federal government and the protection accorded to individual rights under the American constitutional system.
- 168. Government and Business.** (3) I, II. Mr. Grant, Mr. Lien  
Governmental activities in the preservation and regulation of competition, with special emphasis upon problems of administration and intergovernmental cooperation; regulation of trades and professions.

*Group VI.—Public Administration and Local Government*

- 171. State and Local Government.** (3) I, II.  
Mr. Bollens, Mr. Crouch, Mr. Stewart  
Development of state constitutions; the political, administrative, and judicial systems of state and county government; and relations between the state and local rural government, with special reference to California.
- 172. Municipal Government.** (3) I, II.  
Mr. Bollens, Mr. Crouch, Mr. Stewart  
A study of the modern municipality in the United States; legal aspects of city government; local election problems; types of municipal government; problems of metropolitan areas; relationship of the cities to other units; problems bearing on city government today.
- 181. Principles of Public Administration.** (3) I, II.  
Mr. Bollens, Mr. Crouch, Mr. Engelbert, Mr. Stewart  
Development of public administration and its relation to other branches of government; the process of centralization; the process of integration; reorganization of administration; budgets; purchasing; problems of personnel; and types of control of the administration.
- 183. Problems in Public Administration.** (3) II.  
Mr. Engelbert, Mr. Bollens, Mr. Stewart  
Problems of policy, organization, and procedure in selected fields of public administration, with emphasis on administrative functions.
- 184. Municipal Administration.** (3) II.  
Mr. Bollens, Mr. Crouch, Mr. Stewart  
A study of governmental functions performed at the municipal level, such as planning, zoning, water supply, housing, recreation and parks, public health, traffic, law enforcement, public works, and municipal finance; development of modern concepts of administration in local areas.

**185. Public Personnel Administration. (3) I.** Mr. Crouch, Mr. Engelbert  
Evolution of public employment policies; a study of the principles and practices of public service personnel, including recruitment, promotion, morale and discipline, retirement, classification, compensation, unions of employees, organization of the personnel agency, and training for public employment.

**186. National Policy and Administration. (3) I.** Mr. Crouch, Mr. Engelbert  
A study of the major policies and programs of the National government and their administration as illustrated in such areas as national defense, social welfare, agriculture, etc. Particular attention will be paid to the role of the President and other administrators in formulating public policy and in maintaining a responsible bureaucracy.

**187. The Administrative Process. (3) II.** Mr. Sherwood  
An analysis of (1) judicial control of the way in which administrative agencies operate, and (2) within these limits, the most effective procedures as demonstrated by experience. This course may be counted in either *Group V* or *Group VI*.

#### *Ungrouped*

**199A-199B. Special Problems in Political Science. (1-3; 1-3) Yr.**  
Prerequisite: credit for 6 units of upper division courses in political science, and the special requirements necessary for the field selected for special study. Permission to register for this course is required.

Section 1. Techniques of Legal Research. Mr. Farrelly, Mr. Sherwood

Section 2. Problems in International Relations. Mr. Graham

Section 3. Readings in Political Theory.

Mr. Jenkin, Mr. Nixon, Mr. Shields

Section 4. Methods of Administrative Management. Mr. Bollens

Section 5. Problems in Comparative Government.

Mr. Graham, Mr. Neumann

Section 6. Problems in Politics and Legislation. Mr. Hinderaker

Section 7. Problems in Latin-American Political Institutions.

Mr. Fitzgibbon

Section 8. Problems of the Pacific Area.

Mr. Steiner

Section 9. Problems of the British Empire.

Mr. McHenry

Section 10. Problems in Public Administration.

Mr. Engelbert

Section 11. Individual Study.

The Staff

#### GRADUATE COURSES

Prerequisite for graduate courses 211 through 228: satisfactory completion of at least two upper division courses in the field, or equivalent.

**203. Scope and Methods. (3) I, II.** Mr. Farrelly, Mr. Lien, Mr. Shields  
The scope, methods, techniques, interrelationships, and literature of political science as a whole. The course includes an examination of the historical development of political science, of its relation to other social sciences, of methods of dealing with problems of political science, and of techniques of research. Required of all candidates for a graduate degree.

**211. Political Theory. (3) II.** Mr. Jenkin  
An analysis of the central problems of political theory and their relation to allied disciplines.

**212. International Relations. (3) II.** Mr. Steiner  
An intensive analysis of the principles and practices of international organization, chiefly as illustrated in the operation of the United Nations and its specialized agencies.

- 214. Politics. (3) II.** Mr. Hinderaker, Mr. Nixon, Mr. Titus  
An analysis of political leaderships, with emphasis on the American presidency and its relation to various aspects of American politics, including Congress, political parties, elections, and public opinion.
- 215. Comparative Government. (3) I.** Mr. McHenry, Mr. Neumann  
An intensive and systematic analysis, employing the comparative approach, of the basic principles and problems of government of the major states and areas.
- 216. Public Law. (3) I.** Mr. Sherwood  
A systematic analysis of the scope and nature of public law, with particular attention given to its materials and methods as illustrated in concepts and doctrines drawn from various of its subject fields.
- 218. Public Administration and Local Government. (3) I, II.** Mr. Crouch, Mr. Engelbert, Mr. Stewart  
The nature and scope of public administration and its role in a democratic society; basic problems in the execution of public policies on all levels of government, such as organization, personnel, finance, internal management, administrative powers and responsibilities, inter-government relationships, and the impact of public opinion, pressure groups, and political parties on administration.
- 228. Administrative Management. (3) II.** Mr. Crouch, Mr. Stewart  
An intensive study of the role of the modern budget process and of the personnel program in government administration. This course is required for candidates for the M.P.A. degree; it may be elected by other qualified graduate students.

## GRADUATE SEMINARS

Prerequisite for all graduate seminars: advance consent of instructors.

- 250. Seminar in Governments and International Relations of Latin America. (3) II.** Mr. Fitzgibbon
- 252. Seminar in Public Law. (3) II.** Mr. Farrelly, Mr. Grant, Mr. Sherwood
- 253. Seminar in International Relations. (3) I, II.** Mr. Graham, Mr. Neumann, Mr. Steiner
- 254. Seminar in Public Administration. (3) I.** Mr. Crouch, Mr. Engelbert, Mr. Stewart
- 256. Seminar in Comparative Government. (3) I, II.** Mr. Graham, Mr. McHenry, Mr. Neumann, Mr. Steiner
- 257. Seminar in Political Theory. (3) I, II.** Mr. Jenkin, Mr. Nixon, Mr. Shields
- 259. Seminar in Political and Electoral Problems. (3) I.** Mr. Hinderaker, Mr. Nixon, Mr. Titus
- 262. Seminar in Municipal Government. (3) I.** Mr. Bollens, Mr. Crouch
- 263. Seminar in Political and Administrative Aspects of Planning. (3) II.** Mr. Engelbert
- 298. Special Study and Research for M.A. Degree Candidates. (1-3) I, II.** The Staff
- 299. Special Study and Research for Ph.D. Degree Candidates. (2-6) I, II.** The Staff

**401A-401B. Internship in Public Service. (1-3) I, II.**

Mr. Bollens

Directed work in applying the techniques of public administration during a period of service in a governmental agency. A required course for students enrolled in the Master of Public Administration program. Open to other properly qualified graduate students upon application.

**BUREAU OF GOVERNMENTAL RESEARCH**

The Bureau of Governmental Research was established in 1937 chiefly to perform the three functions of: (1) maintaining a collection of current pamphlets, periodicals, and documents relating to public administration and local governments; (2) providing facilities for upper division and graduate students and members of the faculty to pursue study and research in public administration, local government, and related fields; and (3) conducting studies of governmental functions of particular interest to southern California and cooperating with public officials in solving their administrative problems.

Further information may be obtained by consulting the Director, Mr. Winston W. Crouch, Room 46, Library.

**PORTUGUESE**

For courses in Portuguese, see under Department of Spanish and Portuguese.

**PSYCHOLOGY**

Boy M. Dorcus, Ph.D., *Professor of Psychology and Professor of Psychology in the School of Medicine.*

Franklin Fearing, Ph.D., *Professor of Psychology.*

Joseph A. Gengerelli, Ph.D., *Professor of Psychology (Chairman of the Department).*

Howard C. Gilhousen, Ph.D., *Professor of Psychology.*

Milton E. Hahn, Ph.D., *Professor of Psychology.*

Bruno Klopfer, Ph.D., *Clinical Professor of Psychology.*

Donald B. Lindsley, Ph.D., *Professor of Psychology and Professor of Psychology in the School of Medicine (Pediatrics).*

Marion A. Wenger, Ph.D., *Professor of Psychology.*

Kate Gordon Moore, Ph.D., *Professor of Psychology, Emeritus.*

S. Carolyn Fisher, Ph.D., *Associate Professor of Psychology.*

F. Nowell Jones, Ph.D., *Associate Professor of Psychology.*

George F. J. Lehner, Ph.D., *Associate Professor of Psychology.*

Jessie L. Rhulman, Ed.D., *Associate Professor of Psychology.*

John P. Seward, Ph.D., *Associate Professor of Psychology.*

James F. T. Bugental, Ph.D., *Assistant Professor of Psychology.*

Richard Centers, Ph.D., *Assistant Professor of Psychology.*

James C. Coleman, Ph.D., *Assistant Professor of Psychology.*

Andrew L. Comrey, Ph.D., *Assistant Professor of Psychology.*

Glen A. Holland, Ph.D., *Assistant Professor of Psychology.*

Irving Maltzman, Ph.D., *Assistant Professor of Psychology.*

\*George E. Mount, Ph.D., *Assistant Professor of Psychology and Engineering.*

Joseph Sheehan, Ph.D., *Assistant Professor of Psychology and Clinical Psychologist, Student Health Service.*

\* Absent on leave, 1953-1954.

Alvin A. Lasko, Ph.D., *Instructor in Psychology.*

John J. Schwarz, Ph.D., *Instructor in Psychology, Instructor in Personnel and Industrial Relations, and Junior Research Psychologist, Institute of Industrial Relations.*



Laurence A. Petran, Mus.M., Ph.D., *Professor of Music and University Organist.*

\* Harry W. Case, Ph.D., *Professor of Engineering and Psychology.*

Ruth S. Tolman, Ph.D., *Clinical Professor of Psychology.*

Harry M. Grayson, Ph.D., *Associate Clinical Professor of Psychology.*

Frank J. Kirkner, Ph.D., *Associate Clinical Professor of Psychology.*

Dorothy M. Clendenen, Ed.D., *Lecturer in Psychology and Manager, Student Counseling Center.*

Bertram R. Forer, Ph.D., *Assistant Clinical Professor of Psychology.*

Elise S. Hahn, Ph.D., *Assistant Professor of Speech and Associate in the Psychological Clinic.*

Harrington V. Ingham, M.D., *Assistant Clinical Professor of Psychology and Neuropsychiatrist, Student Health Service.*

Charlyne T. Seymour, Ph.D., *Assistant Clinical Professor of Psychology.*

William M. Wheeler, Ph.D., *Assistant Clinical Professor of Psychology.*

Frances B. Berres, M.A., *Associate in the Clinic School.*

David Pablo Boder, Ph.D., *Research Associate in Psychology.*

Evelyn Gentry Hooker, Ph.D., *Research Associate in Psychology.*

Margaret Hubbard Jones, Ph.D., *Research Associate in Psychology.*

Irving Weschler, Ph.D., *Research Assistant, Institute of Industrial Relations, and Lecturer in Psychology.*

*Letters and Science List.*—All undergraduate courses in psychology, except course 162, are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Required of all majors: Psychology 1A-1B. Upper division students changing to psychology should consult an adviser regarding lower division requirements. (For non-majors, course 101 will be acceptable as prerequisite for certain upper division courses as specified on page 291.)

Recommended: Courses from the following areas according to the student's interests: (a) Natural science such as physics, chemistry, zoölogy, physiology; (b) Social science such as anthropology, sociology, economics, political science, history; (c) Mathematics, statistics; (d) Humanities such as philosophy, languages, literature, art, music, drama.

Recommended for students who expect to do graduate study in psychology, at least 18 units, distributed among the following: (a) 6 units of cultural or social anthropology and/or sociology; (b) not less than 3 units of college chemistry; (c) one year of college physics, including laboratory; (d) college algebra and analytic geometry or mathematics for the social and life sciences; (e) not less than one year of work chosen from the following: general zoölogy, elementary physiology, elementary zoölogy and physiology, applied human physiology, general physiological biology, endocrinology, genetics. These students should also plan to take such courses as will give them the reading knowledge of two foreign languages required for the Ph.D. degree.

*The Major.*—Courses 105A and 106A, and 18 additional units in upper division psychology. Upper division courses in other departments may not be substituted for this requirement.

\* In residence second semester only, 1953-1954.



*Requirements for the M.A. degree.*—The department follows Plan II (see page 61). The list of topics and alternatives for the Comprehensive Examination may be obtained from the department.

*Requirements for the Ph.D. degree.*—Permission to proceed to the written part of the qualifying examinations will be based on: (a) fulfillment of the general University requirements; (b) completion of specified upper division courses in addition to the undergraduate major; (c) departmental approval of the applicant's program, and of his probable qualifications for the making of a competent psychologist; and (d) consideration of the probability of the applicant's securing employment in his chosen field. The department will endorse petitions for candidacy, and request appointment of doctoral committees, only for applicants who have passed with credit the written examinations. Detailed statements of the requirements may be obtained from the department.

#### LOWER DIVISION COURSES

**1A. Introductory Psychology.** (3) I, II. Mr. Gilhausen in charge  
(Former number, 21.)

Consideration of facts and principles pertaining to the topics of perception, imagination, thought, feeling, and emotion, leading to the problems of experimental psychology, and the topics of intelligence and personality.

**1B. Elementary Physiological Psychology.** (3) I, II. Mr. Jones in charge  
(Former number, 22.)

Prerequisite: 1A or course 21 taken in previous years.

Study of the integrative relations of psychological processes to nervous, muscular, and glandular features of the response mechanism; including the structure and functions of the sense organs.

**33. Personal and Social Adjustment.** (3) I, II. Mr. Lehner, Miss Rhulman  
(Former number, 23.)

Prerequisite: 1A or course 21 taken in previous years.

The principles of mental hygiene. Orientation in the practical use of psychological principles in problems and circumstances encountered in college and later life.

#### UPPER DIVISION COURSES

Except as otherwise indicated, courses 1A and 1B are normally prerequisite to all upper division courses. Exceptions to the requirements are made for students who are not majoring in psychology, for the following courses: 120, 126, 142, 143, 145A-145B, 147, 167A-167B, 175, 177, 180, 185, 186. For these courses, 1A and 33 or the equivalent will be accepted as meeting the prerequisite.

**101. Principles of Psychology.** (3) I, II. Mr. Centers, Mr. Maltzman

Open to upper division students who do not have credit for courses 1A and 1B. For non-majors, may be offered in substitution for courses 1A and 1B as the prerequisite for certain upper division courses.

A critical discussion of the basic topics in psychology. Elementary details, including essential information concerning nervous, muscular, and glandular mechanisms will be covered by examinations based on readings.

**105A. Mental Measurements.** (3) I, II. Mr. Comrey

A study of the construction, techniques of application, and interpretation of tests and scales. Practice in statistical procedures applicable to data derived from tests. Students who have credit for any other course in statistics will receive only one unit of credit for this course.

- 105B. Mental Measurements.** (2) I, II. Mr. Laako  
Prerequisite: course 105A.  
Further study of the principles of measurement, stressing basic concepts. Application to problems of test construction, administration, and interpretation.
- 105C. Mental Measurements.** (2) I, II. Mr. Holland  
Prerequisite: course 105B and consent of the instructor.  
Practice in individual intelligence testing.
- 106A. Experimental Psychology.** (3) I, II. Mr. Jones  
Lectures and demonstrations, two hours; laboratory, two hours; assigned readings.  
Methods, techniques, and typical results in experimental research in psychology.
- 106B. Experimental Psychology.** (3) I, II. Mr. Jones  
Prerequisite: course 106A.  
Lectures, two hours; laboratory, two hours; assigned readings and reports.  
Continuation of the study of methods, techniques, and typical results in experimental research. Emphasis is placed on the conditions and requirements of representative laboratory experiments and evaluation of associated experimental literature.
- 107. Advanced Psychometric Methods.** (3) I, II. Mr. Gengerelli  
Prerequisite: course 105B; recommended, Mathematics 3B or 37. The application of higher statistical methods to psychological data.
- 108. Physiological Psychology.** (3) I, II. Mr. Wenger  
Prerequisite: course 1A-1B.  
Integrative activities, consciousness, intelligent behavior, receptor and effector processes in relation to neuromuscular structure and function. Facts, problems, and methods.
- 109. Research Methods in Human Dynamics.** (3) I. Mr. Seward  
Application of experimental techniques to problems in human adjustment. Group and individual projects will give experience in planning research, treating and interpreting data, and describing experiments.
- 110. Educational Psychology.** (3) I, II. Miss Rhulman  
A general survey of the basic principles of psychology that are pertinent to education. Includes a study of growth and development, abilities, intelligence, social and emotional factors, and principles of learning.
- 112. Child Psychology.** (3) I, II. Mr. Holland  
An elaboration of the developmental aspects of physical, mental, social, and emotional growth from birth to adolescence.
- 113. Psychology of Adolescence.** (2) II. Mr. Holland  
Prerequisite: course 112.  
The physical, psychological, and social development of the adolescent. Essentially a continuation of child psychology, but with relatively greater emphasis on personality formation and problems of social adjustment.
- 120. History of Psychology.** (3) I, II. Miss Fisher  
The development of psychological theories and research to the end of the nineteenth century.
- 126. Contemporary Psychology.** (2) II. Miss Fisher  
Recommended: course 120.  
The variant tendencies in current psychology, including a critical examination of the more important so-called "schools" of psychology.

- 131. Sensation and Perception. (2) I.** Miss Fisher  
Intensive study of sense perception, with reference to the structure and functions of sense mechanisms, and experimental findings.
- 134. Motivation. (2) II.** Mr. Gilhousen  
Theories and experimentally determined facts concerning drives, needs, preferences, and desires.
- 135. Imagination and Thought. (2) I.** Mr. Maltzman  
An analysis of experimental studies of problem solving, reasoning, insight, concept formation, and related topics.
- 137A. Human Learning. (3) I.** Mr. Seward  
Prerequisite: course 106A.  
A critical survey of the principal theories of learning, with the experimental findings on which they are based.
- 137B. Human Learning. (3) II.** Mr. Seward  
Prerequisite: course 137A.  
A more intensive study of experimental problems. Students will have an opportunity to carry out research projects in this field.
- 138. Feeling and Emotion. (2) II.** Mr. Wenger  
The nature and basis of the affective factor in life, with particular emphasis on the critical evaluation of affective theory. This is not a course in personality and emotional adjustment.
- 142. Human Communication. (2) I.** Mr. Fearing  
Prerequisite: courses 145A-145B or 147; or consent of the instructor.  
Role of communication in human social organization; psychological factors involved in the creation and manipulation of symbols; art, drama, and science as forms of communication. Particular attention will be given to the social and psychological aspects of the mass media of communication, radio, and motion pictures.
- 143. Propaganda and Public Opinion. (2) II.** Mr. Fearing  
Prerequisite: course 145A-145B or 147; or consent of the instructor.  
Propaganda as a form of communication. The detection, analysis and effects of propaganda. The creation, manipulation, and measurement of public opinion; the relation between public opinion and propaganda; the relation between the mass media of communication and public opinion and propaganda.
- 144. Psychological Interviewing and Case History Methods. (3) I.** Mr. Lasko  
Prerequisite: senior or graduate standing and permission of the instructor.  
Procedures, methods, and problems in the collection of personal data in the interview situation.
- 145A-145B. Social Psychology, General Course. (2-2) Yr.** Mr. Centers  
Interaction between the individual and the group; the individual in the group. Critical analysis of concepts of group mind, imitation and suggestion; rational and irrational motives in group living. Social motivation, attitudes, values, opinions, and beliefs, in relation to group personality structure. Adjustments and maladjustments as conditioned by cultural and subcultural group pressures. 145A is prerequisite to 145B.

- 146. Attitude and Opinion Measurement. (3) I.** Mr. Centers  
Prerequisite: two semesters of social psychology, or consent of the instructor.  
The nature of attitudes and opinions, and their measurement by means of various types of attitude scales and public opinion surveys. Study design, formulation of questionnaires and interview schedules, sampling methods, techniques of interviewing, analysis of results, and applications to various psychological problems. Class projects and field work.
- 147. The Psychological Method in the Social Sciences. (3) II.** Mr. Fearing  
Psychological factors in major social problems, including social control, propaganda, group conflict, cultural determination, etc.
- 148. Personality Structure and Development. (2) I.** Mr. Bugental  
Consideration of the cultural and biological determinants of personality.
- 150A. Animal Psychology. (3) I.** Mr. Gilhausen  
General survey of the behavior of the higher forms of animal life.
- 150B. Animal Psychology. (3) II.** Mr. Gilhausen  
Prerequisite: course 150A, or consent of the instructor.  
A more intensive study of facts and theories concerning motivation, learning and problem solving. Lectures and laboratory demonstration.
- 160. Mental Deficiency. (2) I.** Mr. Lindsley  
Prerequisite: course 112 or equivalent.  
A study of mental retardation and related abnormalities in children and adults, including a consideration of causes, classifications, special traits, and educational, vocational, and social problems and needs (lectures, readings, discussion, demonstration).
- 161. The Psychology of Exceptional Children. (3) II.** Mr. Sheehan  
Prerequisite: course 112 or equivalent.  
A study of the nature, diagnosis, and treatment of exceptional disabilities and problem behavior in individual children or special groups.
- 162. Speech Pathology. (2) I.** Mr. Sheehan  
Recommended: courses 108 and 168.  
A clinical approach to speech problems, with emphasis on stuttering and neurological disorders and their treatment.
- 167A. Remedial Techniques in Basic School Subjects. (2) I, II.** Mr. Coleman  
The diagnosis and treatment of reading, spelling, and other school disabilities in children and adults. Clinical demonstration, testing, and training of typical cases.
- 167B. Laboratory in Remedial Techniques. (2) I, II.** Mr. Coleman  
Lecture, one hour; laboratory, three hours. Laboratory course for course 167A.
- 168. Abnormal Psychology. (3) I, II.** Mr. Coleman  
Prerequisite: recommended: course 108, or Zoölogy 35 or 106. Students may be required, early in the semester, to demonstrate an acquaintance with the elementary facts of structure and function of the nervous system.  
Disorders of sensation, perception, feeling, and thought; their nature, causation, effects on life, and amelioration.

- 169. Psychology of the Physically Handicapped. (2) II.** Mr. Lindsley  
A study of the basic facts, principles, and methods of understanding the personality and behavior of individuals who possess physical handicaps, with particular reference to methods of reeducation and adjustment, psychological disabilities resulting from sensory and motor disorders, illness and disease, and injury will be discussed.
- 172A-172B. Psychology of Music. (3-3) Yr.** Mr. Petran  
A study of the psychological factors and problems in music from the points of view of the listener, performer, and composer.
- \*175. Psychology of Religion. (3) II.** \_\_\_\_\_  
The place of religion in personal and social life and its historical development in Western cultures. Specific beliefs are considered only in relation to their psychological conditions and effects.
- \*177. Psychology and Art. (3) I.** \_\_\_\_\_  
Problems of the appreciation of the materials and ideas of the fine arts, with special references to the psychological processes of imagination, feeling, and emotion.
- 180. Psychology of Advertising and Selling. (2) I.** Mr. Comrey  
The relative strength of the desires in buying; attention value of form, size, color, and typographical layout and methods of measuring the effectiveness of advertisements; characteristics of salesmen.
- 185. Personnel Psychology. (2) I.** Mr. Schwarz  
The methods of selection, classification, and training of employees.
- 186. Occupational Counseling and Job Classification. (2) II.** Mr. Harder  
Prerequisite: courses 105A and 185.  
Principles of occupational counseling; nature and sources of occupational information; methods of job analysis and creation of job families.
- 187. Industrial Psychology. (2) II.** Mr. Case  
Description of factors such as illumination, noise, temperature as they affect production.
- 188A-188B. Psychological Bases of Counseling. (2-2) Yr.** Mr. Hahn, Miss Clendenen  
Prerequisite: open to senior and graduate students who have preparation in educational psychology, statistics, tests and measurements, mental hygiene, or abnormal psychology. Permission of the instructor.  
The logical and experimental approaches to human aptitudes, abilities, and interests as used in counseling. Mental organization, physiological and psychological traits, individual and group educational-vocational-personality characteristics, derivation of interest and ability patterns, pattern analysis and its counseling applications.
- 199. Special Problems in Psychology. (3) I, II.**  
Prerequisite: courses 105A, 106A, and 6 other units in upper division psychology. Specific permission to enroll is necessary.  
Section 1. Training in the fundamentals of psychological research. Primarily for students who expect to do graduate work in psychology.  
Mr. Maltzman, and the Staff  
Section 2. Primarily for students preparing for the school psychometrist credential. Special prerequisite: Psychology 105C or the equivalent.  
Mr. Lasko  
Section 3. For students who have been selected for the Honors Program.  
The Staff

\* Not to be given, 1953-1954.

## GRADUATE COURSES

- 207A-207B. Advanced Psychometric Methods.** (2-2) Yr.  
Mr. Gengerelli, Mr. Comrey
- 213. Experimental Design in Psychology.** (2) I, II. Mr. Seward  
Prerequisite: courses 106B and 107, or the equivalent.  
The function of experiment in relation to theory, the requirements of a good experiment, and the interdependence of experimental design and statistical evaluation of results. Students will evaluate typical designs and construct their own, in preparation for original research.
- 215A-215B. Commercial and Industrial Psychology.** (2-2) Yr.  
Mr. Jones, Mr. Comrey  
Prerequisite to 215B: course 107 or equivalent.  
Selection and training of employees; factors influencing efficiency of work.
- 216. Critical Problems in Psychology.** (2) I, II. Miss Fisher, Mr. Maltzman  
Some critical problems in the field of psychology will be discussed, depending on the interests of the instructor and the class. This course may be repeated without duplication of credit.  
Miss Fisher will organize the course around problems of perception; Mr. Maltzman will deal with the application of learning theory to the problems of reasoning and thinking.
- 217A-217B. Clinical Psychology.** (2-2) Yr. Mr. Lehner, Mr. Bugental  
Prerequisite: course 161 or 168, or equivalent.  
Discussion and integration of basic concepts in clinical psychology.
- \*218. Communication, Propaganda, and Public Opinion.** (2) I. Mr. Fearing  
Problems, methods, and theories in communications research. Particular attention is given to the analysis of communications content, the theory and role of propaganda, and the dynamics of public opinion.
- 219A-219B. Clinical Measurement Techniques.** (2-2) Yr.  
Prerequisite: course 105C or the equivalent. Mr. Bugental, Mr. Sheehan  
Advanced study of tests in clinical diagnostic study, including the special application of individual and group tests of intelligence, personality, diagnosis and projective techniques. Emphasis will be placed upon application in the clinical situation.
- 220. Clinical Neurology.** (2) II. Mr. Rose  
Prerequisite: courses 108 and 217A, or their equivalents.  
Presentation of selected neurological cases. This course is designed to integrate the student's knowledge of mental and motor dysfunction with the neurological bases of such dysfunction.
- \*221. Experimental Psychology.** (3) I, II. Mr. Mount  
Prerequisite: course 106B and consent of the instructor.  
Methods, techniques, and apparatus applicable to research problems of various types. Attention will be given to sources of error, difficulties in operation, and limitations on interpretations.
- 222. Personality Dynamics.** (2) II. Mr. Bugental  
A survey of the theoretical views of Freud, Jung, Adler, Rank, and various modern writers including Allport, Lewin, Murray, and Murphy.

\* Not to be given, 1953-1954.

- †224A-224B. **Theory and Practice in Projective Methods.** (2-2) Yr. Mr. Klopfer  
 Prerequisite: courses 217A, and 217B or 219A or 252A; consent of the instructor. Recommended: courses 144 and 219B.  
 Survey of theories and fields of application of projective methods, and supervised practice in techniques.
225. **Advanced Rorschach Interpretation.** (3) I. Mr. Klopfer  
 Prerequisite: course 224A-224B. Recommended: course 213.  
 Rationale and methods of research in projective techniques.
226. **Experimental Approaches to Clinical Psychology.** (2) I. Mr. Lindsley  
 A survey of techniques and procedures employed in experimental and physiological psychology as they relate to problems in clinical psychology. Emphasis will be placed upon research in, and the development of, new psychodiagnostic measures, using the classical experimental literature on perception, attention, emotion, action, etc., as a guide.
- 227A-227B. **Tools and Techniques of Diagnosis in Psychological Counseling.** (3-3) Yr. Mr. Hahn and the Staff  
 Prerequisite: courses 105A-105B, 148 or equivalents.  
 Study of the theoretical and practical problems arising from the use of psychological methods and instruments on case work material.  
 Recommendation of adviser and consent of instructor.
228. **Psychophysiology of Brain Function.** (2) II. Mr. Lindsley  
 Modern concepts of the functional organization of the brain, with particular reference to psychological phenomena and behavior. Recent advances in neurophysiology and electroencephalography bearing on perception, attention, drive, sleep-wakefulness, levels of consciousness, etc. Some emphasis on pathology of behavior resulting from brain injury.
251. **Seminar in Problems of Learning in Psychology.** (3) II. Mr. Seward  
 A consideration of the major theories of learning and related research with particular emphasis on human problems.
- 252A-252B. **Seminar in Mental Measurements.** (3-3) Yr. Mr. Comrey
- 253A-253B. **Seminar in Physiological Psychology.** (3-3) Yr. Mr. Wenger  
 Prerequisite: course 108 or its equivalent.
254. **Seminar in Genetic Psychology.** (3) I. Mr. Holland
- 255A-255B. **Seminar in Social Psychology.** (3-3) Yr. Mr. Fearing
- \*256. **Seminar in Group Behavior.** (3) II. Mr. Fearing  
 Prerequisite: a course in social psychology or consent of the instructor.  
 Consideration of the psychological theories, methods of study, and dynamics of the various forms of collective behavior.
- 257A-257B. **Seminar in Psychotherapeutic Techniques.** (3-3) Yr. Mr. Dorcus, Mr. Klopfer, Mr. Ingham  
 Prerequisite: third-year graduate standing in the clinical training program.
- \*258A-258B. **Seminar in Abnormal Psychology.** (3-3) Yr. Mr. Dorcus

\* Not to be given, 1953-1954.

† Both 224A and 224B to be given fall semester only.

259. **Seminar in Motivation.** (3) II. Mr. Gilhousen
260. **Seminar in Comparative Psychology.** (3) I. Mr. Gilhousen
- 261A-261B. **Seminar in Sensation.** (3-3) Yr. Mr. Jones  
Prerequisite: consent of the instructor.  
Consideration of the problems, methods, and research literature in the psychology of sensation.
262. **Seminar in Advanced Speech Pathology.** (2) I. Mr. Sheehan
266. **Seminar in Opinion and Attitude Research.** (3) II. Mr. Centers
267. **Mass Communication as a Social Force.** (2) I. Mr. Fearing  
Prerequisite: open to graduate students in Journalism and Theater Arts; open to graduate students in psychology with consent of the instructor.  
The social implications of motion picture, newspaper, radio, theater, and television in the integration of human society.
- 277A-277B. **Field Work in Personnel Psychology.** (3-6; 3-6) Yr.  
Miss Clendenen and the Staff  
Prerequisite: regular graduate standing and upper division or graduate work in tests and measurements, statistics, mental hygiene or abnormal psychology, and counseling methods; recommendation of the adviser and consent of the instructor.  
Internship in the Student Counseling Center, which includes psychometrics, observation of counseling, preparation of case materials for counselors, record keeping, test scoring, case discussions, and participation in other service activities. Minimum of 10 hours per week, including 1-2 hours of staff meetings and conferences.
- 278A-278B. **Research in Psychology.** (3-6; 3-6) Yr. The Staff  
Prerequisite: consent of the adviser.
- 279A-279B. **Field Work in Clinical Psychology.** (3-6; 3-6) Yr.  
Prerequisite: Consent of the adviser.  
Students in the Veterans Administration Clinical Training Program are required to register for this course each semester.  
Section 1. General Clinical Psychology.  
Mr. Lehner and the Clinical Staff  
Practical work in hospitals and clinics in clinical diagnostic testing and psychotherapy.
- Section 2. Speech Pathology. Mr. Sheehan  
Practical work in hospitals and clinics in diagnostic testing and psychotherapy with speech disorders.
- 401A-401B. **Internship in Clinical Psychology.** (3-6; 3-6) Yr.  
Mr. Lehner and the Clinical Staff  
Prerequisite: consent of the adviser.

## PUBLIC HEALTH

- John Beeston, M.B., D.P.H., *Associate Professor of Public Health.*  
A. Harry Bliss, M.S., M.P.H., *Associate Professor of Public Health (Chairman of the Department).*  
Mary Elveback, M.A., *Lecturer in Biostatistics.*  
Charles E. Steele, B.S., *Associate in Sanitation.*



- Charles E. Smith, M.D., D.P.H., *Professor of Public Health (Berkeley).*  
Walter S. Mangold, B.S., *Associate Professor of Public Health (Berkeley).*



- John M. Chapman, M.D., M.P.H., *Lecturer in Public Health.*  
 Kenneth M. Eastman, M.A., *Lecturer in Hospital Administration.*  
 Sam M. Houston, M.A., Ph.D., *Lecturer in Public Health Administration.*  
 Paul LeVan, M.D., *Lecturer in Venereal Disease Control.*  
 Harold Mazur, M.D., M.P.H., *Lecturer in Public Health.*  
 Byron O. Mork, M.D., M.P.H., *Lecturer in Public Health.*  
 Melvin Robert Plancey, M.D., M.P.H., *Lecturer in Public Health.*  
 Charles Senn, B.S. in C.E., M.P.A., *Lecturer in Public Health.*  
 Raymond V. Stone, D.V.M., *Lecturer in Public Health.*  
 Leo Tepper, M.D., *Lecturer in Tuberculosis Control.*  
 J. Albert Torribio, M.S.S.W., M.S.W., *Lecturer in Health Education.*

*Letters and Science List.*—Courses 5, 100A, 106, 110, 145, 147B, 160A are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

### School of Public Health

*Admission:* Undergraduate students who have satisfactorily completed at least 60 units of work in one of the colleges of the University, or transfer credit evaluated as equivalent, may apply for admission to the School of Public Health. A formal application must be filed in the office of the School. Students are admitted on a competitive basis of aptitude and scholastic record. Any prerequisites in the student's curriculum must be completed in addition to the upper division major requirements. The College of Applied Arts offers a Prepublic Health Curriculum (page 42). It is suggested that interested students follow this program, although it is not necessary that these requirements be completed prior to admittance to the School of Public Health.

*Requirements:* Candidates for the degree of Bachelor of Science must have completed at least 128 units of college work, of which at least the last 24 units shall have been completed in the School of Public Health. The student must have obtained at least as many grade points as there are units in the total credit value of all courses undertaken by him in the University of California. (See page 56 of this bulletin for degree requirements.)

*Graduate Work in Public Health.*—See ANNOUNCEMENT OF THE SCHOOL OF PUBLIC HEALTH, and page 57 of this bulletin.

#### LOWER DIVISION COURSES

##### 5. Introduction to Public Health. (3) I, II.

Mr. Beeston

A survey of the entire field of public health, including a consideration of the evolution of disease prevention and control; the social, medical, and economic aspects of sickness, disability, and death; and orientation in the administration of health programs by official agencies and by voluntary health organizations.

##### 49. Field Training Course. (Noncredit) I, II.

Mr. Mangold, Mr. Bliss

Field training course in health departments and/or military establishments for learning administrative methods and practical procedures in environmental sanitation.

#### UPPER DIVISION COURSES

The prerequisite to all upper division courses is course 5, Introduction to Public Health, or the equivalent, except that this requirement may be waived by the instructor in individual cases.

- 100. Public Health Administration. (3) I, II.** Mr. Bliss, Mr. Houston  
Principles of public administration and fundamentals of organization and administration in public health.
- 101. Field of Hospital Administration. (3) II.** Mr. Eastman, ———  
Prerequisite: course 100 or consent of the instructor.  
Principles of hospital and medical care organization and administration.
- 106. Medical Care Problems. (2) I, II.** Mr. Beeston  
A medical survey of social problems including a survey of the medical care agencies and programs which exist and which may be required to meet the needs of the community.
- 110. Environmental Sanitation. (3) I.** Mr. Senn  
Fundamentals of housing, heating, ventilation, lighting, water supply, waste disposal, insect and rodent control, and control of milk and other food supplies.
- 113A. Principles and Practices in Sanitary Science. (3) I.** Mr. Bliss  
Lectures, two hours; laboratory or field trips, three hours.  
Prerequisite: course 110 and consent of the instructor.  
Objectives and special techniques in general sanitation covering communicable disease control, water and sewage, housing, ventilation, lighting and vector control.
- 113B. Principles and Practices in Sanitary Science. (3) II.** Mr. Bliss  
Lecture, two hours; laboratory or field trips, three hours.  
Prerequisite: course 110 and consent of the instructor.  
Objectives and special techniques in food sanitation covering milk, meat, markets, restaurants, and processing plants.
- 114. Advanced Study in Sanitation. (1-5) I, II.** Mr. Bliss  
Prerequisite: senior or graduate standing in the School of Public Health.
- 125. Maternal and Child Health. (3) II.** Mr. Beeston  
A consideration of conditions pertaining to the health of children from the time of conception to the end of puberty.
- \*131. Health Education Laboratory. (1) I, II.** ———  
Laboratory, three hours.  
Prerequisite: course 134, or taken concurrently with 134.  
Emphasis will be placed on techniques of teaching health to adults through the media of radio, films, slides, posters, press, printed materials, and lectures. Research in these fields will be evaluated and exercises in preparing and using materials will be included.
- 134. Community Health Education. (2) I, II.** Mr. Torribio  
Primarily for students majoring in some area of health work. Theory and field problems in community health organization.
- 145. Community Control of Communicable Disease. (3) I, II.** Mr. Mazur  
The epidemiology and community control of communicable diseases, including tuberculosis and the venereal infections.
- \*147A. Principles of Epidemiology. (2) I.** Mr. Chapman  
Prerequisite: Bacteriology 103, Public Health 145 and 162, or their equivalents, or consent of the instructor.  
Principles of epidemiology and the study of the infection chains of certain type diseases.

\* Not to be given, 1953-1954.

- 147B. Principles of Epidemiology. (2) I, II.** Mr. Chapman  
 Prerequisite: courses 145, 162, or 160A.  
 Lecture, one hour; laboratory, three hours.  
 Methods of investigating epidemics; collection and analysis of data.
- 148. Epidemiology of Chronic Diseases. (2) I.** Mr. Beeston  
 Prerequisite: course 106.  
 The study of epidemiological methods as applied to the occurrence of the non-infectious diseases, and the conditions associated with the aging process.
- \*153A. Applied Biology of Sanitation. (2) II.** \_\_\_\_\_  
 Lectures, two hours.  
 Prerequisite: Bacteriology 103. Primarily for students in the public health sanitarian curriculum, but open to others by permission of the instructor.  
 Principles of life sciences relevant to control of environmental sanitation, and techniques of their application.
- \*153B. Applied Biology of Sanitation. (2)** \_\_\_\_\_  
 Laboratory, six hours.  
 Prerequisite: Bacteriology 103. Primarily for students in the public health sanitarian curriculum, but open to others with the consent of the instructor.  
 Principles of life sciences relevant to control of environmental sanitation, and techniques of their application.
- 160A. Biometry. (3) I.** Miss Elveback  
 Lectures, two hours; laboratory, 3 hours.  
 Open only to students who have completed at least 8 units of laboratory courses in the biological sciences. Students who have completed courses in statistics may enroll only with the consent of the instructor.  
 Elements of statistical analysis; introduction to the methods of statistical analysis and their application in the fields of the biological sciences.
- 160B. Biometry. (3) II.** Miss Elveback  
 Lectures, two hours; laboratory, 3 hours.  
 Prerequisite: course 160A or consent of the instructor.  
 Bivariate distributions, elementary methods of sampling, introduction to analysis of variance, special methods applicable to biological data.
- 161A. Applied Biostatistics. (3) I.** Miss Elveback  
 Lecture, two hours; laboratory, four hours.  
 Elements of vital statistics and demography. Includes consideration of problems of registration, enumeration, morbidity, and mortality statistics.
- 161B. Applied Biostatistics. (4) II.** Miss Elveback  
 Lecture, two hours; laboratory, six hours.  
 Prerequisite: course 161A.  
 Extension of methods introduced in 161A to more advanced problems. Methods of establishing record systems for health activities including case registers for chronic diseases; evaluation and analysis.
- 162. Public Health Statistics. (3) I, II.** Miss Elveback  
 Lecture, two hours; laboratory, three hours.  
 An applied course in public health statistics designed primarily for students not majoring in biostatistics.
- 170. Industrial Health. (2) I, II.** Mr. Plancey  
 A survey of the field of industrial health and hygiene. Discussion of occupational diseases and hazards, their evaluation, and methods of control; plant medical services and other organizations concerned with industrial health problems.

186. **Venereal Disease Control and Epidemiology of Tuberculosis.** (2) II.  
Prerequisite: consent of the instructor. Mr. LeVan, Mr. Tepper  
A consideration of the basic medical data; epidemiology; the prevention and administrative control of tuberculosis and the venereal diseases; evaluation of methods used.
198. **Directed Group Study.** (1-5) I, II. Mr. Steele  
Field trips are often required. Students will furnish their own transportation.
199. **Special Study for Advanced Undergraduates.** (1-5) I, II.  
The Staff (Mr. Bliss in charge)

## GRADUATE COURSE

299. **Special Study for Graduate Students.** (2 to 4), I, II.  
The Staff (Mr. Bliss in charge)

**ROMANCE LANGUAGES AND LITERATURE**

Harry F. Williams, Ph.D., *Assistant Professor of French.*

## GRADUATE COURSES

- 201A-201B. **French Historical Grammar and Methodology of Romance Linguistics.** (2-2) Yr. Mr. Williams  
A knowledge of Latin is indispensable.
- 203A-203B. **Old Provençal: Reading of Texts.** (2-2) Yr. Mr. Williams

**SCANDINAVIAN LANGUAGES**

For courses in Scandinavian Languages, see under Department of Germanic Languages.

**SLAVIC LANGUAGES**

- Dimitry M. Krassovsky, *Candidate of Law, Assistant Professor of Russian.*  
Kenneth E. Harper, Ph.D., *Assistant Professor of Slavic Languages (Chairman of the Department).*  
Peter P. Lapiken, A.B., *Lecturer in Slavic Languages.*  
Noel A. Voge, M.A., *Lecturer in Slavic Languages.*  
Alexander S. Mornell, J.S.C., *Associate in Russian.*

*Letters and Science List.*—All courses in Slavic languages are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—Courses 1, 2, 3A-3B, 18A-18B, and History 149A-149B (to be taken in the sophomore year).

*The Major.*—(1) Requirement in language: 103A-103B; 8 units chosen from courses 104A-104B, 119A-119B, 120A-120B, 122A-122B, 124A-124B. (2) Requirement in literature: 130; 9 units chosen from courses 132, 137, 143A-143B, 145, 149.

## LOWER DIVISION COURSES

1. **Beginning Russian.** (4) I, II. The Staff  
The first course in the Russian language. To meet five times a week.
- 1G. **Elementary Russian**—Reading course for graduate students. (No credit) I. Mr. Harper  
Four hours a week.

- 2. Elementary Russian.** (4) I, II. The Staff  
Prerequisite: course 1.  
Continuation of course 1. To meet five times a week.
- 3A-3B. Second-Year Russian.** (3-3) Yr. The Staff  
(Former number, 102A-102B.)  
Prerequisite: courses 1 and 2. Upper division students who are not majors in Slavic Languages may receive upper division credit for this course.
- 6. Readings in Russian.** (3) I. Mr. Mornell  
Prerequisite: course 2.
- 18A-18B. Elementary Russian Conversation.** (1-1) Yr. The Staff  
A course in Russian conversation designed to accompany the lectures and recitations of courses 1 and 2. Open only to students who are taking 1 or 2.
- UPPER DIVISION COURSES
- 103A-103B. Third-Year Russian.** (3-3) Yr. Mr. Lapiken  
Prerequisite: course 3A-3B.
- 104A-104B. Fourth-Year Russian.** (3-3) Yr. Mr. Lapiken  
Prerequisite: course 103A-103B.
- 119A-119B. Intermediate Russian Conversation.** (2-2) Yr. Mr. Mornell  
Prerequisite: courses 1, 2, and 18A-18B, or the equivalent.
- 120A-120B. Advanced Russian Conversation.** (2-2) Yr. Mr. Lapiken  
Prerequisite: course 119A-119B.
- 122A-122B. The Russian Language.** (2-2) Yr. Mr. Lapiken  
Prerequisite: course 3A-3B.  
Phonetics, morphology, and syntax.
- \*124A-124B. Advanced Russian Composition.** (2-2) Yr. Mr. Lapiken  
Prerequisite: course 103A-103B.
- 130. Survey of Russian Literature to 1917.** (3) I. Mr. Harper  
Lectures and reading in English. Required of all majors. Open to all upper division students, and to sophomores with the permission of the instructor.
- 132. Russian Literature since 1917.** (3) II. Mr. Harper  
A survey of Soviet literature. Lectures and reading in English. Open to all upper division students.
- \*137. The Russian Drama.** (3) II. Mr. Harper  
A survey of Russian drama from the seventeenth century to the twentieth. Lectures and reading in English.
- 143A-143B. Russian Novelists of the Nineteenth Century.** (2-2) Yr. Mr. Harper  
Lectures and reading in English. Open to all upper division students.
- \*145. Tolstoy.** (3) II. Mr. Harper  
A study of Tolstoy's principal novels, short stories, plays, and essays, in English. Open to all upper division students.
- \*149. Survey of Russian Poetry.** (3) I. Mr. Lapiken  
Selected readings in the major poets from Pushkin to Blok. Conducted in Russian.

199A. **Special Studies: Russian Bibliography.** (1 to 3) II. Mr. Krassovsky  
 Prerequisite: senior standing and adequate proficiency in the language.  
 Study of types, forms and subjects of bibliographies; principal American  
 collections of Russian bibliography; study and practice in methods of bibliographical research.

## SOCIAL WELFARE

Karl deSchweinitz, L.H.D., *Professor of Social Welfare.*

Donald S. Howard, Ph.D., *Professor of Social Welfare (Chairman of the Department).*

Judd Marmor, M.D., *Visiting Professor of Social Welfare.*

Mary E. Duren, M.S., *Associate Professor of Social Welfare.*

Mary B. Novick, M.A., *Visiting Associate Professor of Social Welfare.*

Rose Segal, M.S., *Associate Professor of Social Welfare.*

Olive M. Stone, Ph.D., *Associate Professor of Social Welfare.*

Marion S. Blank, M.S., *Assistant Professor of Social Welfare.*

Ethel Swengel, M.A., M.S.W., *Acting Assistant Professor of Social Welfare.*

Avis Duncan, M.S.W., *Instructor in Social Welfare.*

Marie McNabola, M.S.W., *Instructor in Social Welfare.*

Jean T. Cram, M.S., *Lecturer in Social Welfare.*

Mildred Keenan, M.S.S.A., *Lecturer in Social Welfare.*

Charles Schottland, A.B., *Social Welfare Certificate, Lecturer in Social Welfare.*

Barbara Shenko, M.S.S., *Field Work Supervisor and Lecturer in Social Welfare.*

For information concerning curricula offered by the School of Social Welfare, requirements for admission and degree requirements, etc., see pages 58 and 59 of this bulletin.

### GRADUATE COURSES

The Department of Social Welfare offers courses on the graduate level only. These are intended for students enrolled in the degree curriculum of the School and are not open to others except by permission of the department. Completion of the presocial welfare curriculum in the College of Letters and Science, or its equivalent, is most desirable as preparation for graduate study in social welfare.

Inasmuch as the social work profession is a discipline primarily based upon interpersonal relationships, the department reserves the right to exclude from courses students who have not demonstrated in class, practice, and professional relationships the personal attributes regarded as essential to the successful practice of social work, even though the academic work done by such students may be satisfactorily performed. The department reserves the right to exclude from courses any student whose scholastic performance falls below the requirement for the master's degree.

#### 201A. *The Dynamics of Personal Well-Being.* (2) I.

Miss Segal, Mr. Marmor

Problems of normal growth of individuals as revealed in fundamental human experiences; behavior, growth, and change in the individual in contemporary society; requirements for individual and group well-being.

**201B. Cultural Patterns and Social Work. (2) I.** Miss Duren  
The effect of various racial, religious, and other cultural factors upon social-work practice; the effect of community and environmental values and influences upon persons served by welfare agencies and upon the nature of the services rendered.

**\*201C. Special Needs of Children and Youths. (2) II.** Miss Duren  
Consideration of the many factors affecting the well-being of children and youths, particularly those separated from their own parents or suffering from other handicapping conditions.

**202A. Social Aspects of Physical and Mental Health. (2) I, II.** Miss Segal, Mr. Marmor  
Discussion of public health and medical care problems with special reference to the welfare workers role in assisting the ill person to make constructive use of existing health and medical resources of the community and the worker's function in developing new ones.

**202B. Social Aspects of Physical and Mental Health. (2) II.** Mr. Marmor, Miss Segal  
Prerequisite: course 201A.  
An orientation course directed toward an understanding of contemporary theories and therapies in the control and treatment of mental and emotional disabilities and the social implications of medical and psychological factors.

**202C. Special Problems Affecting Physical and Mental Health. (2) I.** Mr. Marmor  
Prerequisite: course 202B and second-year standing.  
An advanced course to discuss modern concepts in diagnosis and treatment of psychopathologies. Emphasis on relation of constitutional, psychogenic factors and social complications in treatment. The respective roles of psychiatry, psychology, and social work.

**204A. The Social Welfare Worker and the Law. (2) II.** Mr. Schottland  
Law as an expression of social purpose; responsibility of social welfare workers to operate within the law and to interpret legal limitations upon and resources available to persons served; analysis of substantive law most frequently encountered in social welfare work.

**\*204B. Legal Aspects of Social Welfare Administration. (2) II.** Mr. Schottland  
Prerequisite: courses 204A and 226A.  
General principles of administrative law applicable to the administration of welfare agencies and programs.

**210A. Social Welfare Programs. (2) I, II.** Mr. deSchweinitz  
Brief survey of the historical development of social welfare programs with emphasis on the contemporary structure and operations of welfare agencies; with interrelationship and responsibilities of federal, state, and local governments, relationships between governmental and voluntary services; critical analysis of various types of service and the bases upon which these are made available.

**210B. Criteria for Social Welfare Programs. (2) II.** Mr. Howard  
Prerequisite: course 210A.  
Discussion of standards by which effectiveness and adequacy of social welfare programs may be evaluated. Effort will be made to help students become capable of judging the merits and weaknesses of various social welfare programs.

\* Not to be given, 1953-1954.

**\*211A. Public-Welfare Organization and Administration. (2) I. \_\_\_\_\_**

Intensive examination of public-welfare administration problems; implications of government in social work; various forms of organization and their suitability for different purposes.

**\*211F. Special Problems in the Organization and Administration of Social Security. (2) I. \_\_\_\_\_**

Mr. deSchweinitz

The problems which the individual faces in his efforts to maintain an income in unemployment, sickness, old age, disability and like contingencies, and the various measures such as social insurance and public assistance used to deal with this problem.

**221A-221B. Social Case Work. (2-2) Yr. \_\_\_\_\_**

Mrs. Duncan, Mrs. Blank

Introduction to the professional principles, methods and techniques which form the basis of social case-work practice. Emphasis is upon understanding the individual who presents the social problem, upon work with individuals in a group setting, and upon the use of agency services and community resources in the helping process. Concurrent field work is required.

**221C-221D. Advanced Social Case Work. (2-2) Yr. \_\_\_\_\_**

Prerequisite: course 221A-221B.

Miss Duren, Miss McNabola

Examination and discussion of increasingly difficult case material illustrating principles of case-work practice; critical analysis of the professional content of social case work and of the role of the professional case worker in the helping process. Diagnosis and case-work treatment with increased focus on the worker-client relationship and its manipulation in helping the client. Concurrent field work is required.

**221E-221F. Generic Social Work Methods as Used by Social Caseworkers. \_\_\_\_\_**

(1-1) I

Miss Stone and the Staff

Introduction to work with individuals in a group setting and use of agency services and community resources in the helping process. Concurrent enrollment in Social Welfare 221A and 401A is required.

**\*222A-222B. Social Group Work. (2-2) Yr. \_\_\_\_\_**

Analysis of the principles, practices, content, and methods of professional group work, and of the function and role of the professional worker in the group process.

**\*222C. Advanced Social Group Work. (2) I. \_\_\_\_\_**

Prerequisite: courses 222A-222B.

Special areas of group-work practice and special problems in supervision and administration as applied to group work.

**\*223A. Social Welfare Planning. (2) II. \_\_\_\_\_**

The interrelationship and significance of community forces in determining the character and extent of social-work programs; the methods and processes by which cooperative action is achieved in determining social needs and in developing resources to meet them.

**\*223B-223C. Advanced Social Welfare Planning. (2-2) Yr. \_\_\_\_\_**

Prerequisite: course 223A.

Examination and discussion of case material illustrating principles of intergroup work and social welfare planning; critical analysis of the professional content of welfare planning and of the role of the professional worker in the intergroup (community organization) process. Concurrent field work is required.



- \*224A. Interviewing in Social Welfare Programs. (2) I.** Miss Duren  
The content and methodology of interviewing as entailed in the determination of eligibility for social insurance and public assistance and related services, in the placement activities of the employment service and in the general administration of these programs.
- \*225A. Social-Work Supervision. (2) II.** Miss Stone  
Prerequisite: 1 year of case-work and field-work practice plus one year of supervisory experience or current supervisory work, and consent of the instructor.  
An introduction to methods of supervision with emphasis upon teaching and learning through individual and group conferences, the supervisor-worker relationship, and the evaluation process. Recorded supervisory materials will be used.
- 226A. Administration of Social Welfare Services. (2) I, II.** Mr. Howard  
General principles of administration applicable to both public and private agencies; determining (or ascertaining) an agency's purpose and role; methods of carrying out that role effectively.
- 226C. Problems in the Development and Application of Policy. (2) I, II.** Miss Stone  
Prerequisite: course 210A or 226A or consent of the instructor.  
Consideration of factors involved in determining policies of social welfare agencies and methods of coming to decisions as to how particular policies should be interpreted and applied to specific categories of persons or to individuals.
- 229GA-229GB. Work with Individuals in an Authoritarian Setting. (2-2) Yr.**  
Prerequisite: consent of the department.  
Delinquency will be studied with emphasis on the emotional aspects of anti-social behavior. In addition, modern concepts of delinquency prevention will be contrasted with traditional methods of dealing with juvenile delinquency, criminality, and other forms of anti-social behavior.
- 230A. History of Social Welfare. (2) I.** Mr. deSchweinitz  
An introduction to the history of social welfare with particular reference to movements, organizations, leaders, and literature in the United States and the United Kingdom.
- 250A. Seminar: Philosophy of Professional Social Work. (2) I, II.** Mr. Howard  
Critical analysis of the role of social welfare in the life of today and its probable role in the future; the character and responsibilities of the professional welfare worker; aids to the integration of the student's total learning experience and to the formulation and reformulation of his own philosophy.
- 252A. Social Case-Work Seminar. (2) I.** Miss Duren  
Prerequisite: course 221A-221B and consent of the instructor.  
This seminar will be conducted in several sections (medical, psychiatric, child welfare, etc.). Students will be assigned to sections on the basis of the setting in which they are doing their field work. Implications of the team approach will be discussed in each with emphasis on the social worker's particular contribution to the team.
- 252B. Seminar on Use of Consultation in Social Case Work. (2) II.** Miss Duren, Mr. Marmor and the Staff  
Prerequisite: course 202C, 252A, and consent of the department.  
This will be a seminar utilizing a different student case for each session,

the emphasis being on psycho-diagnosis as it relates to social case work, and is planned to correlate with 252A, where emphasis is more on case-work treatment. The instructor here will be utilized much as students would use a psychiatric consultant.

**280A. Social Welfare Research and Statistical Data. (2) II. Mrs. Novick**

Sources and nature of social welfare statistical and research information and data, and of broader social data of concern to social welfare workers. Special attention will be given to the limitations of such information and data and to point out sources of current information and data.

**280CA-280CB. Advanced Social-Work Research. (2-2) Yr. Mrs. Novick**

Prerequisite: course 280A.

Intensive analysis of major methods used in research in the field of social work and in the social sciences; application of research techniques through participation in study projects individually or as a member of a group.

**401A-401B. Field Work. (2-6) Yr.**

The Staff

Normally the student will be required to spend 15 hours a week in field practice under supervision.

**401C-401D. Field Work. (2-6) Yr. Miss Duren, Miss Segal and the Staff**

Normally the student will be required to spend 20 hours a week in field practice under supervision.

**\*412A-412B. Group-Work Laboratory. (1-1) Yr.**

Laboratory experience to be taken concurrently with courses 222A and 222B, respectively.

## SOCIOLOGY

For courses in sociology, see under Department of Anthropology and Sociology.

## SPANISH AND PORTUGUESE

Hermenegildo Corbató, Ph.D., *Professor of Spanish.*

John A. Crow, Ph.D., *Professor of Spanish (Chairman of the Department).*

Angel del Río, Ph.D., *Visiting Professor of Spanish.*

Manuel Pedro González, Ph.D., *Professor of Spanish-American Literature.*

Ernest H. Templin, Ph.D., *Professor of Spanish.*

Marion Albert Zeitlin, Ph.D., *Professor of Spanish.*

William E. Bull, Ph.D., *Associate Professor of Spanish.*

Anna Krause, Ph.D., *Associate Professor of Spanish.*

José R. Barcia, Licenciado en Filosofía y Letras, *Assistant Professor of Spanish.*

Donald F. Fogelquist, Ph.D., *Assistant Professor of Spanish.*

Leo Kirschenbaum, Ph.D., *Assistant Professor of Spanish.*

Manuel Olguín, Ph.D., *Assistant Professor of Spanish.*

Stanley L. Robe, Ph.D., *Assistant Professor of Spanish.*

Maria L. de Lowther, M.A., *Assistant Professor of Spanish, Emeritus.*

James Richard Andrews, Ph.D., *Instructor in Spanish.*

Leonor Montau, A.B., *Associate in Spanish.*



Virginia G. Baños, Ph.D., *Lecturer in Spanish.*

\* Not to be given, 1953-1954.

## SPANISH

*Letters and Science List.*—All undergraduate courses in Spanish and Portuguese except Spanish 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

*Preparation for the Major.*—(1) Courses 1, 2, 3, 4, 20 or 25A–25B, and 42, 44, or the equivalent to be tested by examination. Students who wish to make Spanish their major subject must have maintained at least an average grade of C in the college courses in Spanish taken prior to admission to the upper division. (2) English 1A–1B. (3) A minimum of two years of a second foreign language in high school, or of two semesters at the college level, or English 46A–46B, or History 8A–8B. This requirement must be met before entering upon the senior year.

*The Major.*—Required: courses 102A–102B, 116A–116B, and twelve units elected from courses 103, 104, 106, 110, 112, 114, 115, 124, 134, 140, and Portuguese 122, 123. Courses 108, 158, 171 may not be counted on the twelve elective units. With the permission of the department a maximum of four units of upper division work in literature in French, Italian, or Latin, in folklore, or in linguistics and general philology, may be included among the elective units. Students who do not have lower division credit for courses 20 or 25A–25B, or who failed to make a grade of A or B in them, are required to take course 101A–101B as juniors, but may omit 101B if 101A is passed with a grade of A or B.

Students desiring to specialize in the Spanish field should choose the elective units from courses 103, 106, 110, 112, and 115; those desiring to specialize in the Spanish-American field, from courses 104, 112, 114, 124, 134, and 140.

Students planning to take graduate work in the department are expected to take course 115 or offer an equivalent. Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

As electives the department recommends courses in (1) the history, anthropology, geography, political institutions, and international relations of the country or countries most intimately connected with the major; (2) English literature; (3) French, German, Greek, Italian, Latin, and Portuguese language and literature; (4) the history of philosophy.

Students who fail to maintain at least an average grade of C in the Spanish courses taken in the upper division will, upon approval of the Dean of the College of Letters and Science, be excluded from the major in Spanish.

*Requirements for Admission to Graduate Courses.*

The requirement is ordinarily the undergraduate major in Spanish, or its equivalent, with a minimum grade-point average of 1.75. This requirement is prerequisite to the 24 units demanded for the M.A. degree. If the candidate is deficient in this prerequisite, he must fulfill it by undergraduate work which is not counted toward his graduate residence.

*Requirements for the General Secondary Credential.*

Consult the ANNOUNCEMENT OF THE SCHOOL OF EDUCATION, LOS ANGELES.

*Requirements for the Master's Degree.*

1. For the general requirements, see page 60. The department follows Plan II, as described on page 61. The Master's Comprehensive Examination consists of two three-hour written examinations, which are given in the next-to-the-last week preceding the final examination period of each semester. The student will be expected to show (1) a fair knowledge of the history of the Spanish language and a general acquaintance with the history of Spanish literature; (2) a more thorough acquaintance with the authors, works, and movements of either (a) Spanish literature or (b) Spanish-American literature. A list of

suggested readings in the literature of the student's choice will be provided and will constitute the basis for part of the examination.

2. Departmental requirements: (a) All students must complete courses 115A-115B and 212A-212B. (b) Students specializing in Spanish literature must complete at least 8 units chosen from courses 201A-201B, 203A-203B, 206, 209A-209B, 210A-210B, 215A-215B, and 244. (c) Those specializing in Spanish-American literature must complete at least 8 units chosen from courses 204A-204B, 214A-214B, 224, 234, 240, 241, 242, and 244. (d) The remaining units of the required 24 may include, with the approval of the graduate adviser, a maximum of 6 units of upper division or graduate courses in the history, geography, anthropology, political institutions, or international relations of Spain or the Spanish-American countries, in Portuguese and Brazilian literature and language, in other literatures, or in philosophy.

Two years of high school Latin, or the equivalent, are prerequisite to candidacy for the master's degree in Spanish.

#### *Requirements for the Ph.D. Degree.*

For the general requirements, see page 62. Graduate work with concentration in Spanish is offered leading to the degrees of Ph.D. in Hispanic Languages and Literature and Ph.D. in Romance Languages and Literature. For specific requirements for these degrees, see the ANNOUNCEMENT OF THE GRADUATE DIVISION, SOUTHERN SECTION, or consult the departmental adviser.

#### LOWER DIVISION COURSES

The prerequisites for the various lower division courses are given in each case. Students who have had special advantages in preparation may upon examination or recommendation of the instructor be permitted to take a more advanced course than indicated.

1. **Elementary Spanish—Beginning.** (4) I, II. The Staff  
This course corresponds to the first two years of high school Spanish. Sections meet five hours weekly, including one hour of oral drill.
- 1G. **Elementary Spanish—Reading Course for Graduate Students.**  
(No credit) I, II. The Staff  
Four hours a week.
2. **Elementary Spanish—Continued.** (4) I, II. The Staff  
Prerequisite: course 1, two years of high school Spanish, or the equivalent. Sections meet five hours weekly, including one hour of oral drill.
3. **Intermediate Spanish.** (4) I, II. The Staff  
Prerequisite: course 2, three years of high school Spanish, or the equivalent. Sections meet five hours weekly, including one hour of oral drill.
4. **Intermediate Spanish—Continued.** (4) I, II. The Staff  
Prerequisite: course 3, four years of high school Spanish, or the equivalent.
- 8A-8B-8C-8D. **Spanish Conversation.** (1 unit each semester) Beginning  
each semester. The Staff  
Classes meet two hours weekly. Open to students who have completed course 3 or its equivalent. Those with grade A or B in course 2 may be admitted.
20. **Grammar Review.** (5) I, II. Mr. Robe  
Prerequisite: same as for course 25A-25B.
- 25A-25B. **Advanced Spanish.** (3-3) Beginning either semester. The Staff  
For lower division students who have had course 4 or the equivalent. Designed especially for freshmen and sophomores who propose to make Spanish their major subject.

- 42. Spanish Civilization. (3) I.** Mr. Bull  
Prerequisite: sophomore standing. Lectures are in English, reading in Spanish or English. Required of major students in Spanish.  
A study of the growth and development of Spanish culture in the various fields.
- 44. Latin-American Civilization. (3) II.** Mr. Fogelquist  
Prerequisite: sophomore standing. Required of major students in Spanish.  
Origins and main currents of Latin-American culture. Lectures in English, reading in Spanish or English.

## UPPER DIVISION COURSES

- Prerequisite: 16 units of lower division Spanish or the equivalent.  
*Junior Courses:* Courses 101A-101B and 102A-102B.  
*Junior and Senior Courses:* Courses 103A-103B, 104A-104B, 106, 108, 112, 140, 158, and 171.  
*Senior Courses:* Courses 110A-110B, 114, 115A-115B, 116A-116B, 124, and 134.
- 101A-101B. Oral and Written Composition. (3-3) Yr.** Beginning either semester. Miss Krause in charge  
May not be taken concurrently with or following 116A-116B. Does not count on the major.
- 102A-102B. Survey of Spanish Literature to 1700. (3-3)** Beginning either semester. Miss Krause, Mr. del Río  
Prerequisite: course 42. Required of major students in Spanish.
- 103A-103B. Nineteenth-Century Spanish Literature. (3-3) Yr.** Mr. Kirschenbaum
- 104A-104B. Survey of Spanish-American Literature. (3-3) Yr.** Beginning either semester. Mr. Fogelquist, Mr. González
- 106. Eighteenth-Century Spanish Literature. (2) I.** Mr. Corbató
- 108. The Folk Song in Spain and Spanish America. (1) I.** Mr. Corbató  
Class meets two hours weekly. Required of credential candidates.  
A study of the origins and development of Spanish folk music and of the different types of folk songs and folk poetry peculiar to the various regions of Spain and Spanish America.
- 110A-110B. Contemporary Literature. (2-2) Yr.** Mr. Barcia  
Reading and discussion of Spanish writers of the twentieth century.
- \*112. Literary Criticism in Spain and Spanish America. (3) I.** Mr. Olguín
- 114. Mexican Literature. (3) II.** Mr. González
- 115A-115B. Don Quijote. (2-2) Yr.** Mr. Templin  
Students planning to take graduate work in Spanish are expected to take this course or offer an equivalent.
- 116A-116B. Advanced Composition. (3-3) Yr.** Beginning either semester. Required of Spanish majors. Mr. Crow, Miss Krause
- 124. Argentine Literature. (3) I.** Mr. González
- \*134. The Argentine Novel. (3) II.** Mr. González
- 140. The Spanish-American Essay. (3) II.** Mr. Olguín  
A study of the favorite themes of modern Spanish-American essayists.  
Intensive class reading; outside reading with written and oral reports; occasional lectures.

\* Not to be given, 1953-1954.

158. **Oral Interpretation of Literature in Spanish.** (2) I, II. Mr. Barcia  
 Oral reading of selected scenes in verse and prose from Spanish dramatic works of the classical and modern periods. Literary appreciation, training in pronunciation and intonation, elements of acting and directing of plays. Designed particularly for future teachers of Spanish.

171. **Contemporary Spanish Linguistics.** (3) II. Mr. Bull

199A-199B. **Special Studies in Spanish.** (1-3; 1-3) Yr. The Staff  
 Prerequisite: senior standing, at least ten units of upper division Spanish, the approval of the departmental adviser, and the consent of the instructor in the field selected for special study.

#### GRADUATE COURSES†

201A. **Studies in Spanish Poetry.** (2) I. Mr. Templin  
*The Cancioneros and the Romancero.*

201B. **Studies in Spanish Poetry.** (2) II. Mr. Templin  
*The Siglo de Oro, especially in relation to the Baroque.*

203A-203B. **Realism and Naturalism in the Nineteenth Century.** (2-2) Yr.

204A-204B. **Spanish-American Literature.** (2-2) Yr. Mr. González

\*206. **Eighteenth-Century Writers.** (2) I. Mr. Corbató

\*209A-209B. **The Drama of the Golden Age.** (2-2) Yr. Mr. Templin

210A-210B. **Contemporary Literature.** (2-2) Yr. Miss Krause

212A-212B. **Historical Grammar and Old Spanish Readings.** (2-2) Yr.  
 A knowledge of Latin is indispensable. Mr. Zeitlin

\*214A-214B. **The Modernista Movement in Spanish America.** (2-2) Yr.  
 Prerequisite: course 104B or 114. Mr. González

215A-215B. **Prose of the Golden Age.** (2-2) Yr. ———

\*224. **The Contemporary Mexican Novel.** (2) II. Mr. González  
 Prerequisite: course 114.

\*234. **The Gaucho Epic.** (2) I. Mr. González  
 Prerequisite: course 124 or 134. Lectures, outside reading, reports, and intensive reading in class.

240. **The Contemporary Spanish-American Novel.** (2) I. Mr. Crow

241. **The Spanish-American Short Story.** (2) II. Mr. Crow

\*242. **Contemporary Spanish-American Poetry.** (2) II. Mr. Crow  
 Prerequisite: course 104B.

Lectures, extensive reading, and seminar reports about the themes and technique of selected twentieth-century poets.

\* Not to be given, 1953-1954.

† All candidates for the degree of Master of Arts must offer at least two years of high school Latin, or the equivalent.

\*244. *España en América.* (2) I.

Mr. Corbató

290A-290B. *Special Study and Research.* (2-6; 2-6) Yr.

The Staff

**PROFESSIONAL COURSE IN METHOD**

370. *The Teaching of Spanish.* (3) I.

Mr. Bull

Required of all candidates for the general secondary credential whose major subject is Spanish. To be taken concurrently with Education 370. (Note that Spanish 370 is given only in the fall semester.)

**PORTUGUESE**

**LOWER DIVISION COURSES**

1. *Elementary Portuguese—Beginning.* (4) I.

Mr. Zeitlin, Mr. Kirschenbaum

This course corresponds to the first two years of high school Portuguese.

2. *Elementary Portuguese—Continued.* (4) II.

Mr. Kirschenbaum, Mr. Zeitlin

Prerequisite: course 1, or two years of high school Portuguese.

**UPPER DIVISION COURSES**

101A-101B. *Grammar, Composition, and Reading of Texts.* (3-3) Yr.

Prerequisite: course 2, or the equivalent.

Mr. Kirschenbaum

122. *Portuguese Literature.* (3) I.

Mr. Kirschenbaum

Prerequisite: course 101A-101B, or the equivalent.

Survey of the literature of Portugal, with emphasis on the sixteenth and nineteenth centuries.

123. *Brazilian Literature.* (3) II.

Mr. Kirschenbaum

Prerequisite: course 101A-101B, or the equivalent. It is advisable that students also offer course 122 as a prerequisite.

Survey of the literature of Brazil, with emphasis on the nineteenth and twentieth centuries.

199A-199B. *Special Studies in Portuguese.* (1-3; 1-3) Yr.

Mr. Zeitlin

Prerequisite: 10 units of Portuguese, or the equivalent, and consent of the instructor.

**RELATED COURSES (See page 302)**

**Romance Languages and Literatures**

201A-201B. *French Historical Grammar and Methodology of Romance*

*Linguistics.* (2-2) Yr.

Mr. Williams

203A-203B. *Old Provençal: Reading of Texts.* (2-2) Yr.

Mr. Williams

**SUBJECT A: ENGLISH COMPOSITION**

Bradford A. Booth, Ph.D., *Chairman, Committee on Subject A.*

Everett L. Jones, M.A., *Supervisor of Instruction in Subject A.*

Ella O. Hutchins, M.A., *Associate in Subject A.*

Hortense H. Williams, M.A., *Associate in Subject A.*

Subject A. (No credit) I, II.

The Staff

Fee, \$20.

Three hours weekly for one semester. Although this course yields no credit, it displaces 2 units on the student's program. Every student who does not pass

\* Not to be given, 1953-1954.

the examination in Subject A is required to take, in the semester immediately following this failure, the course in Subject A. Sections are limited to thirty students. For further details, see page 28C of this bulletin.

Training in correct writing, including drill in sentence and paragraph construction, diction, punctuation, grammar, and spelling. Weekly compositions and written tests on the text.

## SUBTROPICAL HORTICULTURE

Sidney H. Cameron, Ph.D., *Professor of Subtropical Horticulture (Chairman of the Department)*.

Frederick F. Halma, Ph.D., *Professor of Subtropical Horticulture*.

Robert W. Hodgson, M.S., *Professor of Subtropical Horticulture*.

William H. Chandler, Ph.D., *Professor of Horticulture, Emeritus*.

Jacob B. Biale, Ph.D., *Associate Professor of Subtropical Horticulture*.

Charles A. Schroeder, Ph.D., *Associate Professor of Subtropical Horticulture*.

Royce S. Bringhurst, Ph.D., *Assistant Professor of Subtropical Horticulture*.

Arthur Wallace, Ph.D., *Assistant Professor of Subtropical Horticulture*.

George F. Ryan, Ph.D., *Instructor in Subtropical Horticulture*.

*Preparation for the Major.*—Required courses, or their equivalent: Chemistry 1A, 1B, 8; Botany 1, 107; Subtropical Horticulture 2. Recommended courses, or their equivalent: Plant Pathology 130; Irrigation and Soils 105, 126; Entomology 134.

*The Major.*—Twelve units of upper division courses in the major, which should normally include Subtropical Horticulture 100 and 110.

### LOWER DIVISION COURSE

#### 2. Introduction to Horticulture. (3) I.

Mr. Halma

Lectures, three hours. Prerequisite: Botany 1 or equivalent. This course is equivalent to Horticulture 2, given at Berkeley and at Davis.

The principles and practices of general horticulture.

### UPPER DIVISION COURSES

#### 100. Systematic Pomology. (3) I.

Mr. Schroeder

Lectures, one hour; laboratory, six hours. Prerequisite: course 2 or the equivalent.

The botanical classification and relationships of the principal fruits; horticultural races and groups; growth and bearing habits; bud and fruit morphology; varietal characters.

#### 101. Citriculture. (4) II.

Mr. Hodgson, Mr. Schroeder

Lectures, three hours; laboratory, three hours; four or five Saturday field trips. Prerequisite: course 2, or the equivalent.

The characteristics of the citrus fruits and their responses to environmental influences and cultural practices; the economics of the citrus fruit industry.

#### \*102. Subtropical Fruits Other Than Citrus. (4) I.

Mr. Schroeder

Lectures, three hours; laboratory, three hours; three or four Saturday field trips. Prerequisite: course 2 or the equivalent.

A survey of the knowledge concerning the requirements and responses of the subtropical fruit plants other than *Citrus*; the economics of their industries. The fruits considered include the walnut, pecan, almond, fig, olive, avocado, date, oriental persimmon, and certain others grown in California.

\* Not to be given, 1953-1954.



- 110. Plant Propagation. (2) II.** Mr. Ryan  
Laboratory and lecture, six hours; three field trips. Prerequisite: Botany 1 or equivalent. Recommended: Botany 6 and 107 (may be taken concurrently). Principles and practices in plant propagation.
- †**111. Respiration and Respiratory Enzymes. (2) I.** Mr. Biale  
Lecture-discussion, two hours.  
Prerequisite: Chemistry 8 or equivalent.  
Basic concepts of respiration; aerobic and anaerobic processes; the Pasteur effect; respiratory substrates; intermediates and end products; kinetics and mechanism of enzyme action; proteins and prosthetic groups of enzymes; oxidases, dehydrogenases, and carriers; phosphorylations; metabolic and enzyme cycles.
- 113. Fruit Physiology and Storage Problems. (2) I.** Mr. Biale  
Lectures and discussions, two hours. Prerequisite: Botany 107 or equivalent.  
Anatomical, physiological, and chemical changes in developing fruits; composition of mature fruits; maturity standards; respiratory and fermentative processes; production of emanations; low-temperature effects; ordinary and modified air storage; field, packing house, and transit practices; frozen fruit products; specified fruit problems.
- 142. Physiology of Fruit Trees. (3) II.** Mr. Wallace, Mr. Cameron  
Lectures, 3 hours.  
Prerequisite: Botany 107 or the equivalent.  
Discussions of recent findings on the responses of fruit trees to management practices and to their environment.
- 147. Fruit Breeding. (3) I.** Mr. Bringhurst  
Lectures, 2 hours; laboratory, 3 hours.  
Prerequisite: Botany 140 or the equivalent. Botany 141 recommended.  
Application of genetics and cytogenetics to the improvement of fruit plants, including hybridization, varietal selection, incompatibility, apomixis, polyploidy, and mutations.
- 199A-199B. Special Study for Advanced Undergraduates. (2-4; 2-4) Yr.**  
Prerequisite: senior standing and consent of the instructor. The Staff
- GRADUATE COURSES**
- 240. Horticultural Experimentation. (3) I.** Mr. Cameron, Mr. Wallace  
Lectures and discussions, 3 hours.  
Prerequisite: graduate standing and consent of the instructor.  
A critical review and analysis of horticultural research in selected fields.
- 255A-255B. Seminar in Horticultural Science. (2-2) Yr.** The Staff
- 281A-281B. Research in Subtropical Horticulture. (2-6; 2-6) Yr.**  
The Staff

## THEATER ARTS

- \*Kenneth Macgowan, B.S., *Professor of Theater Arts.*  
Walden Philip Boyle, Ph.D., *Associate Professor of Theater Arts.*  
Ralph Freud, *Associate Professor of Theater Arts (Chairman of the Department).*  
G. Edward Hearn, M.A., *Associate Professor of Theater Arts.*  
Walter Kingson, Ed.D., *Associate Professor of Theater Arts.*

\* Absent on leave, 1953-1954.

† Not applicable toward the major in Subtropical Horticulture.

- <sup>1</sup> William Melnitz, Ph.D., *Associate Professor of Theater Arts (Head of the Theater Division).*  
 George M. Savage, Ph.D., *Associate Professor of Theater Arts.*  
 \_\_\_\_\_, *Assistant Professor of Theater Arts (Head of the Motion Picture Division).*  
 Curtis Courant, *Assistant Professor of Theater Arts.*  
 Arthur Friedman, M.A., *Assistant Professor of Theater Arts (Head of the Radio Division).*
- <sup>2</sup> Melvyn Helstien, M.F.A., *Assistant Professor of Theater Arts.*  
 John Jones, M.A., *Assistant Professor of Theater Arts.*  
 Henry Schnitzler, *Assistant Professor of Theater Arts.*  
 Nordstrom C. Whited, A.B., *Acting Assistant Professor of Theater Arts.*  
 William Jordan, M.A., *Acting Instructor of Theater Arts.*



Edgar Brokaw, M.A., *Lecturer in Theater Arts.*  
 Edward Freed, M.A., *Lecturer in Theater Arts.*  
 Fred L. Gerber, M.S., *Lecturer in Theater Arts.*  
 Rex B. Gunn, M.A., *Lecturer in Theater Arts.*  
 Patricia Hungerland, M.A., *Lecturer in Theater Arts.*  
 Jack Morrison, M.A., *Lecturer in Theater Arts.*  
 Charlotte Motter, M.A., *Lecturer in Theater Arts.*  
 Irving Pichel, A.B., *Lecturer in Theater Arts.*  
 Ruth Swanson Schwartz, M.A., *Lecturer in Theater Arts.*  
 William Shull, B.S., *Lecturer in Theater Arts.*  
 L. S. Trimble, M.S., *Lecturer in Theater Arts.*  
 Richard Tumin, A.B., *Lecturer in Theater Arts.*  
 John Young, M.A., *Lecturer in Theater Arts.*  
 Richard C. Hawkins, M.A., *Associate in Theater Arts.*

### College of Applied Arts

The Department of Theater Arts offers four specializations:

#### 1. Theater.

*Preparation for the Major.*—Courses 1, 2A, 7, 24, 27, 28A–B–C–D, English 1A–1B, Humanities 1A–1B.

*The Major.*—Forty units of coördinated upper division courses, including English 114C–D–E, Classics 113, Theater Arts 105, 156A, 149A–B–C–D, 159A, 159C–D–E, and electives approved by the departmental adviser.

#### 2. Motion Pictures.

*Preparation for the Major.*—Courses 1, 2A, 7, 24, 27, 28A–B–C–D, English 1A–1B, Humanities 1A–1B.

*The Major.*—Forty units of coördinated upper division courses, including English 114C–D–E, Theater Arts 105, 164A–164B, 165A–165B, 169, 179A–179B, 179C–D–E, 181A–181B, and electives approved by the departmental adviser.

<sup>1</sup> In residence first semester only, 1953–1954.

<sup>2</sup> Not in residence, 1953–1954.

**3. Radio.**

*Preparation for the Major.*—Courses 1, 2A, 7, 24, 27, 28A-B-C-D, English 1A-1B, Humanities 1A-1B.

*The Major.*—Forty units of coordinated upper division courses, including English 114C-D-E, Classics 113, Theater Arts 116A, 125A-125B, 128A-128B, 129A, 129C-D-E, and electives approved by the departmental adviser.

**4. Theater Arts-English.**

*Preparation for the Major.*—Courses 2A-2B, 24, 28A-B-C-D, English 1A-1B, 2, 46A-46B.

*The Major.*—Thirty-six units of upper division courses, including English 106L, 114C-D-E; 4 units from English 130A-130B-130C or 190A-190B; Theater Arts 103, 105, 123, 125B, 156A, 159A, 180, and electives approved by the departmental adviser.

**College of Letters and Science**

*Letters and Science List.*—Courses 7, 24, 102, 103, 104, 105, 106, and 169 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

**GRADUATE DIVISION***Admission to Regular Graduate Status.*

In addition to the general requirements of the Graduate Division, the applicant must:

1. Have completed the undergraduate theater arts major or its equivalent.
2. Provide the department with the results of certain diagnostic tests, letters of reference, and a photograph. Information regarding this requirement should be obtained from the chairman of the department at least three months prior to the beginning of the semester in which the student plans to enroll.

*Requirements for the Master's Degree.*

The Department of Theater Arts follows Plan I or Plan II. (See page 61.) The program requires at least one year (two semesters) of intensive study and laboratory exercises. In addition to the minimum courses for completion of the master's degree, the chairman of the department, in consultation with the other members of the student's advisory committee, may prescribe such additional courses as he believes are necessary to satisfy the educational needs of the student. All students are required to take an active part in the production program of the department as partial fulfillment of the degree requirements. In planning his course of study, the candidate will place his emphasis upon the theater, motion pictures, radio, theatrical and dramatic history and literature, or playwriting. Candidates who wish to place their major emphasis on playwriting must submit a long play or a number of short plays for admission to the program.

**LOWER DIVISION COURSES****1. Social Aspects of Mass Communication. (2) I. Mr. Jordan, Mr. Kingson**

Lecture, two hours; laboratory, two hours.

An orientation course devoted to the study of the relation of man to society. Particular attention will be given to the theater, motion pictures, and radio as media of communication and of integration in human society. The responsibilities of professional workers in these fields will be stressed.

**2A-2B. Acting Fundamentals. (3-3) Yr. Beginning either semester.**

Lecture, two hours; laboratory, three hours. Mr. Schnitzler in charge

**2A.** The acting process. Exercises in characterization, interpretation, speech, diction, and movement.

**2B.** Elementary stage techniques based on the study of selected dramatic scenes.

- 7. Theater Arts Survey.** (2) I, II. Mr. Freud, and the Staff  
A course of lectures designed to provide the beginning student with a general knowledge of the objectives and procedures of the department. Required of all undergraduates during first year of residence.
- 24. The History of Theater Arts.** (3) I, II. Mr. Whited  
The history of the development of the theater and its relationship to the arts, sciences, and disciplines of society from Aristotle to the motion picture, radio and television.
- 27. Film Techniques.** (2) I, II. \_\_\_\_\_  
Lecture, two hours; laboratory, two hours.  
Prerequisite or concurrent: course 7.  
Techniques and practices in photography, sound, editing, direction, animation, design, writing, management and budgeting for the motion picture, and their place in theater arts.
- 28A. Theater Arts Crafts.** (2) I, II. Mr. Whited  
Lecture, two hours; laboratory, three hours; theater arts practice, by assignment.  
Study of and laboratory practice in the construction and handling of scenery. The use of scenic materials and equipment for theater, motion pictures, and television.
- 28B. Theater Arts Crafts.** (2) I, II. Mrs. Hungerland  
Lecture, two hours; laboratory, three hours; theater arts practice, by assignment.  
Study of costume construction techniques. Laboratory practice in cutting, fitting, and assembling of costumes. An introductory survey of the history of costume.
- 28C. Theater Arts Crafts.** (3) I, II. \_\_\_\_\_  
Lecture, three hours; laboratory, two hours; theater arts practice, by assignment.  
Study of the physical aspects of lighting, sound, and photography. Laboratory practice in the use of basic theater arts equipment.
- 28D. Theater Arts Crafts.** (2) I, II. Mr. Morrison  
Lecture, two hours; laboratory, three hours; theater arts practice, by assignment.  
Theory and practice in the managerial aspects (promotion, planning, budgeting, accounting) in theater, film, radio, and television.
- \*29. Elementary Theater Laboratory.** (1) Yr. Mr. Gunn  
Acting exercise under faculty instruction.

#### UPPER DIVISION COURSES

Theater arts major or minor or departmental consent is prerequisite to all upper division courses, except courses 103, 104, 105, 106, 111A, 112, 116A, 123, 125A-125B, 135A-135B, 148A-148B, 154, 169, 170, 180, 185.

- 102. Main Currents in Theater History.** (2) I. Mr. Melnitz  
A one-semester survey of the development of the theater, with emphasis on the contributions of Europe from the Greeks to the twentieth century, based upon the most authoritative critical studies in the field.
- 103. Secondary School Dramatics.** (3) Miss Motter  
Sec. 1. Limited to Theater Arts-English majors. I.  
Sec. 2. Limited to majors other than Theater Arts-English. II.  
Techniques of teaching acting. Choosing, mounting, and presenting plays on the secondary school level.

\* Not to be given, 1953-1954.

- 104. History of the American Theater.** (2) II. Mr. Freud  
The history of the American theater from the Revolutionary War to the present.
- 105. Readings for the Contemporary Theater.** (2) I, II. Mr. Schnitzler  
Study and discussion of modern theories and styles of production, direction, and acting, based on readings in definite works on the modern theater.
- 106. Fundamental Problems of Writing for Theater Arts.** (3) I, II.  
Prerequisite: English 1A-1B. Mr. Friedman, Mr. Savage  
Analysis of story structure, character, thematic approach, and author's point of view, in the creation of dramatic material meant for production in the mass media. Special problems of story synopsis with constructive critical commentary by instructors and class.
- †**107C-D-E. Playwright's Production Workshop.** (2 units each)  
Prerequisite: departmental consent. Mr. Savage and Staff  
Observation and study of the rehearsal and staging of original dramatic manuscripts with particular emphasis upon problems of re-writing and the relationship of the playwright to the directorial process.
- 111A-111B. Acting for the Radio.** (2-2) Yr. Beginning either semester. Mrs. Schwartz  
The study of special problems in interpretation, characterization, dialect, and microphone technique with opportunity for performance activity. 111B may be taken only with consent of the instructor.
- 112. Radio Speech.** (2) II. Mrs. Schwartz  
Lecture, one hour; laboratory, two hours.  
Study and practice of microphone technique for announcing, news commentation, and public service programs.
- 116A. Problems in Radio Writing.** (3) I. Mr. Friedman  
Theory and practice in script analysis and the writing of various types of radio programs. The course is designed primarily from the producer's and director's point of view rather than that of the writer.
- 116B. Dramatic and Documentary Radio Writing.** (3) II. Mr. Gerber  
Prerequisite: course 116A or consent of the instructor.  
Study and practice in the writing of original scripts in which the emphasis is on the use of dramatic documentary material, combined with special uses of music and sound effects.
- 123. Workshop in Educational Radio.** (3) I. Mr. Kingson  
Script and production problems of school broadcasting. The use of radio in the classroom to stimulate student creative self-expression. Transcription demonstrations and production practice under studio conditions.
- 125A. Theory of Radio Direction.** (3) I, II. Mr. Tumin  
A lecture course devoted to the theories of radio direction with a comparative study of directional techniques employed in the production of various types of radio programs.
- 125B. Elementary Radio Production.** (3) I, II. Mr. Tumin  
Prerequisite: course 125A (for radio majors and Theater Arts-English teaching majors only).  
A lecture course devoted to the study of the techniques and tools at the disposal of the radio director. Problems of music, sound effects, casting, studio acoustics, transcriptions, and timing.

† This course is offered in alternate summer sessions only. The three parts must be taken concurrently and constitute a full academic load for one session.

- 126. Radio and Television News—Writing and Production Problems. (3) II.**  
 Prerequisite: consent of the instructor. Mr. Kingson  
 The preparation of news in the mediums of radio and television. The analysis of production problems relating to special events, news features, straight newscasts, etc., in radio and television.
- 128A. Radio and Television Programming. (2) I.** Mrs. Schwartz  
 A study of the factors affecting programming for the standard broadcast station, the educational radio station, and the television station. Organization and theory of programming in relation to the broadcaster's role in the community.
- 128B. Radio and Television Station Operation. (2) II.** Mrs. Schwartz  
 Lecture, one hour; laboratory, three hours.  
 Prerequisite: course 128A or consent of the instructor.  
 A lecture and laboratory course devoted to the administrative elements of radio and television broadcast stations providing the student with practical experience in broadcast management.
- 129A. Intermediate Radio Workshop. (3) I, II.** Mr. Gerber  
 Prerequisite: course 125B.  
 A basic laboratory course offering practice in the preparation of radio programs.
- 129B. Advanced Radio Workshop. (3) I, II.**  
 Mr. Friedman, Mr. Kingson, Mrs. Schwartz  
 Prerequisite: course 129A.  
 Practice in radio production for broadcast.
- †**129C-D-E. Summer Radio Workshop. (2 units each)** The Staff  
 Prerequisite: departmental consent.  
 A creative laboratory course in broadcasting, involving the preparation of programs for actual production and transmission at a local radio station.
- \*135A-135B. Television Principles and Practices. (2-2) Yr.**  
 A lecture course interrelating television with theater, motion pictures, and radio. The evolution of television here and abroad; social and educational implications; audience-station-advertiser relationships; production problems; observation trips to stations.
- 140. Advanced Technical Practice. (3) I, II.** Mr. Whited  
 Lecture, two hours; laboratory, four hours.  
 Study of materials and tools of stage production. Includes design analysis, rigging, shifting, and construction techniques.
- 141. Theatrical Lighting. (3) I.** Mr. Hearn  
 A study of the principles of light, color, control, and lighting theory as applied to the stage.
- 142. Theater and Motion Picture Costume Construction. (3) I, II.**  
 Mrs. Hungerland  
 Lectures, demonstrations, and practice in the analysis of the costume sketch, in terms of fabric, pattern drafting, fitting, and construction.
- 148A. Scenic Design. (2) I, II.** Mr. Jones  
 Basic principles of design as applied to stage settings. Study of styles and techniques of stage design, past and present. Execution of designs for modern and period plays.

\* Not to be given, 1953-1954.

† This course is offered in summer sessions only. The three parts must be taken concurrently and constitute a full academic load for one season.

- 148B. Scenic Design. (2) II.** Mr. Jones  
Prerequisite: course 148A, or consent of the instructor.  
Advanced study of the problems of stage design.
- 149A-B-C-D. Training in the Technical Operation of Theater, Motion Picture, or Radio Production. (1-1-1-1) I, II.** Mr. Hearn, Mr. Tumin, Mr. Freed  
Prerequisite: consent of the instructor.  
Supervised completion of assignments in scenery, property, and costume construction, lighting, sound recording, scene-changing and management related to the production programs of the department.
- 151. Advanced Acting. (3) I, II.** Mr. Freud, ———  
Lecture, two hours; laboratory, six hours.  
Prerequisite: course 2A, and consent of the instructor.
- 154. Theater Arts Administration. (2) II.** Mr. Morrison  
Administrative and organizational techniques in the operation of theater, film, radio, and television producing units.
- 156A. Dramatic Direction. (3) I, II.** Mr. Schnitzler  
Prerequisite: course 105.  
Studies in analysis of dramatic materials and techniques of directional restatement in theatrical terms.
- 156B. Dramatic Direction. (3) I, II.** Mr. Boyle, Mr. Morrison  
Prerequisite: consent of the instructor.  
Practice in theater direction.  
Section 1—One-act play direction.  
\*Section 2—Recreational theater direction (limited to Recreation Majors of the Department of Physical Education).
- 159A. Intermediate Theater Workshop. (2) I, II.** The Staff  
Prerequisite: courses 28A-B-C-D.  
Practice in theater production for technical workers, designers, writers, dancers, and musicians.
- 159B. Advanced Theater Workshop. (3) I, II.** Mr. Boyle, Mr. Freud, Mr. Hearn, Mr. Melnitz, Mr. Schnitzler, Mr. Jones, Mr. Whited  
Prerequisite: consent of the instructor.  
Practice in theater production before a paying audience.
- †159C-D-E. Summer Theater Workshop. (2 units each)** The Staff  
Prerequisite: departmental consent.  
Practice in and observation of the complete operation of a summer theater on a semiprofessional level.
- 162. Acting for the Motion Picture. (2) I, II.** The Staff  
Prerequisite: consent of the instructor.  
The training and development of acting style for the motion picture.
- 163. Theater and Motion Picture Make-up. (1) I, II.** Mr. Gunn  
The art and use of make-up for the theater and for motion pictures.
- 164A. Motion Picture Direction. (2) I, II.** ———  
Lecture, two hours; laboratory, one hour.  
Prerequisite: courses 105, 165A, and 181A.  
Basic study of the theories of the directorial process in motion pictures.

\* Not to be given, 1953-1954.

† This course is offered in alternate summer sessions only. The three parts must be taken concurrently and constitute a full academic load for one session.

- 164B. Motion Picture Direction.** (3) I, II. \_\_\_\_\_  
Lecture, two hours; laboratory, three hours.  
Prerequisite: course 164A or consent of instructor.  
Advanced study of the techniques of motion picture direction with practical work during laboratory hours.
- 165A-165B. Motion Picture Editing.** (2-2) Yr. Mr. Brokaw  
Lecture, two hours; laboratory, four hours.  
165A. The mechanics of film cutting.  
165B. Technical and creative aspects of film editing.
- 166A. Writing for the Screen.** (3) II. \_\_\_\_\_  
Prerequisite: English 106D-106E or Theater Arts 106, or consent of the instructor.  
Theory and practice in the writing of fictional film script.
- 166B. Writing for the Screen.** (3) I, II. \_\_\_\_\_  
Prerequisite: courses 106, 180, or consent of the instructor.  
Theory and practice in the writing of educational and documentary film scripts.
- \*167A-167B. Production Designing for the Theater Arts.** (3-3) Yr. \_\_\_\_\_  
Prerequisite: course 148A or consent of the instructor.  
Theory and practice of designing productions for the stage and the motion pictures in terms of the relationship of setting, problems in working from play and motion picture scripts.
- 169. History of Motion Pictures.** (2) I, II. \_\_\_\_\_  
The history and development of the motion picture until today.
- 170. Motion Picture Animation.** (3) I, II. Mr. Shull  
Lecture, three hours; laboratory, three hours.  
Theory and practice of graphic film expressions and the use of appropriate equipment.
- 171. Advanced Motion Picture Animation.** (3) I. Mr. Shull  
Lecture, two hours; laboratory, four hours.  
Prerequisite: course 170 and consent of the instructor.
- \*172. Motion Picture Animation Workshop.** (3) II. Mr. Shull  
Lecture, two hours; laboratory, four hours.  
Prerequisite: course 170.
- 179A. Elementary Motion Picture Workshop.** (3) I, II.  
Prerequisite: courses 165A and 181A. Mr. Freed, Mr. Jordan  
Laboratory practice in the fundamentals of film-making.
- 179B. Intermediate Motion Picture Workshop.** (3) I, II. The Staff  
Prerequisite: course 179A or 179C-D-E.  
Laboratory practice in film-making.
- †179C-D-E. Summer Motion Picture Workshop.** (2 units each) The Staff  
Prerequisite: course 179A or departmental consent.  
Intensive practice in and observation of the production of motion pictures.

\* Not to be given, 1958-1954.

† This course is offered in alternate summer sessions only. The three parts must be taken concurrently and constitute a full academic load for one session.

\* For admission to this course candidates must submit original designs six weeks in advance of the semester opening.



- 180. Educational and Documentary Film Techniques.** (2) I, II. Mr. Freed  
A course of lectures surveying the basic techniques and practices employed in the documentary and educational fields; comparative study and analysis of existent films.
- 181A. Motion Picture Photography.** (2) I, II. Mr. Young  
Lecture, one hour; laboratory, three hours.  
Prerequisite or concurrent: course 27.  
An elementary course in optics, photographic chemistry, sensitometry, lighting, and operation of all major 16mm cameras, with practical work during laboratory hours.
- 181B. Motion Picture Photography.** (2) I, II. Mr. Courant  
Lecture, one hour; laboratory, three hours.  
Prerequisite: course 181A or consent of instructor.  
An advanced course in exterior and interior lighting, composition, use of filters, creative camera movement, and special problems of motion picture photography. Practical work during laboratory hours.
- 182. Color Cinematography.** (2) I, II. Mr. Trimble  
Prerequisite: course 181A.  
History and theories of color photography, with particular emphasis on present-day methods in motion picture production. A comparative study of additive and subtractive systems as employed by Dufay, Thomas, Gaspar, Ansco, Kodachrome, Technicolor, and others.
- 185. Photographic Aids to Instruction.** (3) II. Mr. Jordan  
Theory and practice in the preparation of photographic aids to instruction and to research, including still photographs, slides, slidefilms, and 16mm motion pictures, emphasizing application to the student's own field of study.
- 199A-199B. Special Studies in Theater Arts.** (1-4; 1-4) I, II.  
Mr. Freud and the Staff  
Prerequisite: senior standing, an average grade of B or higher in the department, and consent of the instructor.  
Advanced individual work upon specific problems connected with theater, motion pictures, or radio.

## GRADUATE COURSES

- 200. Bibliography and Methods of Research in Theater Arts.** (2) I, II. Mr. Melnitz, Mr. Savage
- 201. The Backgrounds of Theatrical Art.** (3) II. Mr. Boyle, Mr. Schnitzler  
An analysis of the aesthetic principles and content of the theater.
- 206A-206B. Advanced Playwriting.** (3-3) Yr. Mr. Savage  
Guided completion of a full-length play, or study and preparation for the writing of a thesis play.
- 220. Policies and Problems of Radio and Television Broadcasting.** (3) II. Mr. Kingson  
Advanced study in comparative radio and television broadcasting, with special emphasis upon British, Canadian, Continental, and Australian systems.
- 231. The Teaching of Secondary School Dramatics.** (2) II. Mr. Morrison  
Study of current methods and problems of production as related to teaching on the secondary level. Restricted to candidates for teaching certificates and approved theater arts majors.

- 235. Advanced Motion Picture Editing.** (2) I. \_\_\_\_\_  
Prerequisite: courses 165A-165B.  
Study and analysis of the editor's creative contribution to the structure and final form of the picture. The basis of rhythmic and dynamic montage, and application of all types of special effects.
- 239. Film Aesthetics.** (2) II. \_\_\_\_\_  
Study and analysis of the film in relation to other art forms.
- 240. Technical Methods and Practices in the Theater.** (3) II. Mr. Hearn  
Advanced studies in theater production planning and budgeting, theater architecture, stage design and lighting.
- 270. Seminar in the Educational Film.** (3) II.  
Staff of the Department of Theater Arts and School of Education  
Contributions from the two staffs to the analysis of existent educational films and the history of the theories and practices of visual education.
- 271. Seminar in the Documentary Film.** (2) I. \_\_\_\_\_  
History of theory and practice in the documentary film and analysis of existent films.
- 272. Seminar in Theater History.** (3) II. Mr. Melnitz, Mr. Freud  
Exploration of a selected area of theatrical history. Guided reading in University, Clark, and Huntington libraries. Presentation of fully annotated written report of independent investigation.
- 290. Research Projects in Theater Arts.** (1) I, II. The Staff  
Section 1. In Theater.  
Section 2. In Motion Pictures.  
Section 3. In Radio.
- 291. Production Planning in Theater Arts.** (1) I, II. The Staff  
Section 1. In Theater.  
Section 2. In Motion Pictures.  
Section 3. In Radio.
- 292. Advanced Problems in Documentary Radio.** (3-5) I, II. Mr. Friedman  
A lecture and projects course in the writing and production of documentary programs. The course is designed to explore the field of documentary radio programs from the standpoint of subject matter and develop new techniques in writing and production.
- 299A-299B. Special Problems in Theater Arts.** (2-5; 2-5) I, II. The Staff  
Practical creative work in the area of theater arts which the student has designated his area of emphasis. Study may be pursued in the following areas: theatrical production, motion picture production, audio-visual educational production, radio writing and production, and original research in theater arts.

#### RELATED COURSES IN OTHER DEPARTMENTS

- Education 147. Audio-Visual Education.** (2) I, II. Mr. McClusky
- Education 199H. Studies in Audio-Visual Education.** (2-4) I, II.  
Mr. McClusky
- Education 247A-247B. Audio-Visual Education. Advanced Course.**  
(2-2) Yr. Mr. McClusky

Education 257A-257B. Audio-Visual Education. Seminar. (2-2) Yr.	Mr. McClusky
English 106D-106E. Playwriting. (3-3) Yr.	Mr. Macgowan
English 262A-262B. Shakespeare. (3-3)	Mr. Phillips, Mr. Smith
English 262D. Studies in Elizabethan Drama. (3)	Mr. Smith
English 263C. Studies in Drama, 1660-1790. (3)	Mr. Smith
Psychology 267. Mass Communications as a Social Force. (2) I.	Mr. Fearing

## ZOÖLOGY

- Gordon H. Ball, Ph.D., *Professor of Zoölogy.*
- \* Raymond B. Cowles, Ph.D., *Professor of Zoölogy.*
- Frederick Crescitelli, Ph.D., *Professor of Zoölogy.*
- Theodore L. Jahn, Ph.D., *Professor of Zoölogy (Chairman of the Department).*
- Edgar L. Lazier, Ph.D., *Professor of Zoölogy.*
- A. Mandel Schechtman, Ph.D., *Professor of Zoölogy.*
- Bennet M. Allen, Ph.D., *Professor of Zoölogy, Emeritus.*
- Loye Holmes Miller, Ph.D., *Professor of Biology, Emeritus.*
- Sarah Rogers Atsatt, Ph.D., *Associate Professor of Zoölogy.*
- Theodore H. Bullock, Ph.D., *Associate Professor of Zoölogy.*
- Waldo H. Furgason, Ph.D., *Associate Professor of Zoölogy.*
- Taylor Hinton, Ph.D., *Associate Professor of Zoölogy.*
- \* George A. Bartholomew, Ph.D., *Assistant Professor of Zoölogy.*
- Reed A. Fliedinger, Ph.D., *Assistant Professor of Zoölogy.*
- Thomas R. Howell, Ph.D., *Assistant Professor of Zoölogy and Curator of the Dickey Ornithological Collection.*
- Blaine H. Levedahl, Ph.D., *Assistant Professor of Zoölogy.*
- Clark P. Read, Ph.D., *Assistant Professor of Zoölogy.*
- Clara Szege Roberts, Ph.D., *Assistant Professor of Zoölogy.*
- Boyd W. Walker, Ph.D., *Assistant Professor of Zoölogy.*
- Thomas W. James, M.A., *Acting Instructor in Zoölogy.*
- Gretchen L. Humason, M.A., *Lecturer in Microscopic Technique.*
- Paul A. Dehnel, M.A., *Associate in Zoölogy.*



- \* Albert W. Bellamy, Ph.D., *Professor of Biophysics.*
- Vincent Cirillo, Ph.D., *Junior Research Zoölogist.*
- Edgar W. Clark, Ph.D., *Junior Research Zoölogist.*
- S. J. Glass, M.D., *Research Zoölogist.*
- Lyle Herbst, M.A., *Lecturer in Life Sciences.*
- Isaac Jones, M.D., *Research Associate in Zoölogy.*
- John B. Loefer, Ph.D., *Research Zoölogist.*
- Harold L. Segal, Ph.D., *Assistant Research Zoölogist.*

*Letters and Science List.*—All undergraduate courses in this department except 136, 136C and 370 are included in the Letters and Science List of Courses. For regulations governing this list, see page 6.

\* Absent on leave, 1958-1954.

† In residence second semester only, 1958-1954.

*Preparation for the Major.*—Required: courses 1A, 1B, Chemistry 1A, 1B, Physics 2A, 2B, or 1A, 1B, 1C, 1D. Recommended: German, French, and English 1B, or English 106S.

*The Major.*—Eighteen units of upper division work in Zoölogy and 6 units of upper division work chosen from zoölogy or from approved *related* courses in anthropology, bacteriology, botany, chemistry, entomology, home economics, mathematics, paleontology, physics, or psychology. Of the 18 upper division units in zoölogy at least 4 units must be taken in each of the three following groups of courses:

Group 1: Courses 101A, 101B, 101C, 103, 103C, 118A–118B–118C, 119, 130A, 130B, 130C, 142.

Group 2: Courses 100, 106, 107, 108, 111, 111C, 111H, 115.

Group 3: Courses 110, 112, 133, 133C, 134, 134C, 135, 136, 136C, 141, 159.

*Curriculum for Medical Technicians.*—For details, see page 15.

**1A. General Zoölogy. (4) I.**

Mr. Read

Lectures, two hours; laboratory, six hours; field trip. Recommended: Chemistry 1A or 2A.

Principles of animal biology with emphasis on the invertebrates. Offered primarily for zoölogy majors and premedical students.

**1B. General Zoölogy. (4) II.**

Lectures, two hours; laboratory, six hours. Prerequisite: course 1A, and chemistry.

Principles of animal biology with emphasis on comparative gross and microscopic anatomy and physiology of the vertebrates.

**4. Histological Technique. (2) I, II.**

Mrs. Humason

Lectures and laboratory, six hours. Prerequisite: course 1B or the equivalent, or consent of the instructor.

**15. Elementary Zoölogy and Physiology. (5) II.**

Mr. Howell

Lecture, three hours; laboratory, six hours. Prerequisite: one semester college chemistry (Chemistry 2A or 1A). Not open to premedical or zoölogy majors.

**25. General Human Anatomy. (3) I.**

Miss Atsatt

(Former number, 35.)

Lecture, two hours; laboratory, three hours. Prerequisite: course 15, and sophomore standing.

**UPPER DIVISION COURSES**

**100. Vertebrate Embryology. (4) I.**

Mr. Flickinger

Lectures, two hours, laboratory, six hours.

Prerequisite: courses 1A, 1B, or the equivalent.

Study of embryologic development of the vertebrates, including amphibia, chick, and mammal.

**101A. Introduction to General Physiology. (3) I.**

Mr. Crescitelli

Special emphasis on the physical and chemical properties of protoplasm; osmotic relations and permeability of living cells; physiological action of ions and principles of enzyme action. Prerequisite: course 1A, 1B, or equivalent; Chemistry 1A, 1B, 5A, 8; Physics 2A, 2B, or equivalent are recommended.

**101B. General Physiology. (3) II.**

Mr. Crescitelli

Continuation of course 101A with emphasis on oxidation-reduction systems, excitation, inhibition, respiration, and muscle contraction. Prerequisite: course 101A.

- 101C. Laboratory in General Physiology. (2) II.** Mr. Crescitelli, Mr. James  
Prerequisite: course 101A, 101B. Course 101B may be taken concurrently.
- 102. Vertebrate Physiology. (3) II.** Mr. Crescitelli  
Prerequisite: upper division standing.  
Physiology of those systems which are concerned with the integration of body functions and with determination of behavior, with special emphasis on reflexes, motor coördination, and visceral functions. Designed particularly for majors in psychology and related fields.
- 103. Experimental Embryology. (3) II.** Mr. Flickinger  
Prerequisite: courses 1A, 1B, or equivalent; recommended: course 100.  
Principles governing histological and morphological differentiation; an analysis of the factors involved in normal and abnormal growth and differentiation of cells and tissues.
- 103C. Experimental Embryology Laboratory. (2) II.** Mr. Flickinger  
Prerequisite: course 4; prerequisite or concurrent: course 103, and consent of the instructor.
- 106. Comparative Anatomy of the Vertebrates. (4) II.** Miss Atsatt  
Lectures, two hours; laboratory, six hours. Prerequisite: course 100, or consent of the instructor.  
A study of the major concepts of vertebrate morphology with particulars drawn from embryonic and fossil materials, as well as recent adult forms. Laboratory study mainly of the shark and cat.
- 107. Microanatomy. (4) I.** Miss Atsatt  
Lectures, two hours; laboratory, six hours.  
Prerequisite: course 1B.  
The structure and activities of cells and tissues with emphasis on the mammals. Designed for zoölogy majors.
- 108. Comparative Histology of Vertebrates. (2) II.** Miss Atsatt  
Lecture, one hour; laboratory, three hours.  
Prerequisite: course 107.  
Comparative study of microanatomy of organ systems of fishes, amphibians, reptiles, birds with mammals.
- 110. Protozoölogy. (4) II.** Mr. Ball  
Lectures, two hours; laboratory, six hours. Prerequisite: course 1A.
- 111. Parasitology. (2) I.** Mr. Ball  
Prerequisite: course 1A.
- 111C. Parasitology Laboratory. (2) I.** Mr. Ball  
Prerequisite or concurrent: course 111.
- 111H. Laboratory Aide Training in Parasitology. (2) I.** Mr. Ball  
Prerequisite or concurrent: course 111C.  
For persons intending to become laboratory technicians.
- 112. Invertebrate Zoölogy. (4) I.** Mr. Bullock  
Lectures, two hours; laboratory and field, six hours. Prerequisite: upper division standing and general zoölogy.  
Morphologic, systematic, and ecologic aspects of invertebrates.
- 115. Helminthology. (4) II.** Mr. Read  
Prerequisite: course 1A.  
Lectures, two hours; laboratory, six hours.  
A general course in the helminth parasites of animals.

- 118A. Introductory Endocrinology. (3) I.** Mrs. Szego-Roberts  
Prerequisite: course 1B or equivalent. Chemistry 8 recommended.  
A survey of the influence of hormonal mechanisms on body structure and function.
- 118B. Advanced Endocrinology. (3) II.** Mrs. Szego-Roberts  
Prerequisite: course 118A and Chemistry 8.  
Lectures, two hours; discussion and conference, one hour.  
Continuation of course 118A. Detailed analysis of selected endocrine interrelationships and discussion of current research in the field.
- 118C. Endocrinology Laboratory. (3) II.** Mrs. Szego-Roberts  
Laboratory, six hours; discussion, one hour.  
Prerequisite or concurrent: course 118B and consent of the instructor.
- 119. Isotopic Tracers in Biology. (3) I.** Mr. Levedahl  
Lectures, two hours; discussion or demonstration, one hour.  
Prerequisite: one of the following: courses 101A, 118A, and 118B; Botany 160A; Bacteriology 106; or Chemistry 108A.  
The use of isotopic tracers in the study of biological processes, including methods, problems investigated, interpretation of data, and possible future developments. For majors in the biological sciences.
- 130A. Introductory Genetics. (2) I.** Mr. Hinton  
Lectures and discussions, two hours. Prerequisite: course 1A, Botany 1A, or Life Sciences 1A-1B.  
The general principles of heredity and their bearings on reproduction and evolution.
- 130B. Physiological and Developmental Genetics. (2) II.** Mr. Hinton  
Prerequisite: course 130A, or Botany 140.  
The nature of the gene in terms of modern experimental work in the fields of chemical and developmental genetics and cytogenetics.
- 130C. Genetics Laboratory. (2) I.** Mr. Hinton  
Laboratory, six hours. Prerequisite or concurrent: course 130A.  
Breeding experiments to illustrate the principles of genetics.
- 133. Biology of the Cold-Blooded Vertebrates. (2) II.** Mr. Cowles  
Lecture, two hours.  
Prerequisite: courses 1A and 1B, and upper division standing.  
The systematics, distribution, physiology, and ecology of amphibians and reptiles, with a brief account of the fishes.
- 133C. Laboratory in Cold-Blooded Vertebrates. (2) II.** Mr. Cowles  
Laboratory, six hours; field trips. Prerequisite or concurrent: course 133.
- 134. Biology of Birds and Mammals. (3) I.** Mr. Howell  
Lecture, three hours.  
Prerequisite: courses 1A and 1B.  
The ecology, physiology, distribution, and behavior of birds and mammals.
- \*134C. Laboratory in Birds and Mammals. (2) I.** Mr. Bartholomew  
Prerequisite or concurrent: course 134, laboratory, six hours; field trips.
- 135. Ichthyology. (4) I.** Mr. Walker  
Lecture, two hours; laboratory, six hours; field trips.  
Prerequisite: course 1A, 1B, and upper division standing.  
The evolution, systematics, ecology, and biology of fishes, with special emphasis on local marine forms.

\* Not to be given, 1953-1954.

- 136. Fisheries Biology. (2) II.** Mr. Walker  
Lecture, two hours.  
Prerequisite: course 1B.  
Review of commercial and sport fisheries; methods of study and management.
- 136C. Laboratory in Fisheries Biology. (2) II.** Mr. Walker  
Laboratory, six hours; field trips.  
Prerequisite: course 135 and 136, or 136 concurrent and consent of the instructor.  
Designed for students planning further work in this field.
- \*138. Biology and Human Welfare. (3) I.** Mr. Cowles  
Prerequisite: upper division standing, but no prerequisite courses.  
History of major contributions of biology to human welfare, health, economics, and philosophy; and a survey of the resulting problems and aspects.
- \*139. Biological Effects of Radiation. (3) II.** \_\_\_\_\_  
Prerequisite: one course in biology (zoölogy, botany, bacteriology or life science).  
General biological responses following exposure of plants, animals, and man to ionizing radiations, especially those emanating from products of nuclear reactions.
- 140. Development of Biological Ideas. (3) I.** Mr. Furgason  
Prerequisite: upper division standing and at least one year in the biological sciences.  
History of the biological sciences.
- 141. Advanced Ornithology. (4) II.** Mr. Howell  
Lecture, two hours; laboratory and field trips, six hours.  
Prerequisite: course 134 or consent of the instructor.  
The systematics, distribution, evolution, and field biology of birds.
- 142. Comparative Physiology. (4) II.** Mr. Bullock  
Lectures, two hours; laboratory, six hours.  
Prerequisite: course 1A-1B; recommended, course 101 and 112.  
A survey of the differences in mechanism among animal groups of the several organ systems, nervous, endocrine, nutritive, respiratory, excretory, reproductive, etc. Experimental work chiefly upon invertebrates.
- 159. Physical Ecology. (2) II.** Mr. Walker  
Prerequisite: course 1B.  
A survey of the physical and chemical factors of the environment as they affect the distribution and mode of life of animals.
- 195A-195B. Readings in Zoölogy. (2-2) Yr.** The Staff  
Prerequisite: senior standing.  
Library problems.
- 199A-199B. Problems in Zoölogy. (2-2) Yr.** The Staff  
Prerequisite: senior standing with such special preparation as the problem may demand.

## GRADUATE COURSES

- 201. Advanced Cellular Physiology. (3) II.** Mr. Jahn  
Prerequisite or concurrent: course 101B.  
Permeability, salt accumulation, bioelectric phenomena, oxidation-reduction potentials, effects of temperature and cell metabolism.

\* Not to be given, 1953-1954.

- †202A-†202B-†202C. **Advanced General Physiology.** (2) I. Mr. Crescitelli  
 Prerequisite: course 101A and 101B.  
 Among topics discussed are respiration, enzymes, nerve physiology, vitamins, tracer techniques, and physiology of growth.
- 203A-203B. **Physiology of Development.** (2-2) Yr. Mr. Schechtman  
 Prerequisite: courses 100 and 103.  
 More recent work in experimental embryology, chemical embryology, and physiological studies in general, dealing with early stages of the organism; with regeneration and carcinogenesis.
- †204. **Kinetics of Biological Systems.** (2) I. Mr. Levedahl  
 Prerequisite: courses 101A-101B or Biochemistry 108A-108B.  
 Recommended: calculus and physical chemistry.  
 A consideration of the basis and practice of modern enzyme kinetics.
205. **Comparative Cellular Physiology.** (2) I. Mr. Levedahl, Mr. Read  
 Prerequisite: courses 101A-101B, 201.  
 Recommended: course 204, calculus and physical chemistry.  
 Designed for senior graduate majors in general physiology. Subjects covered will be phosphate metabolism, energy metabolism, adaptive enzymes, and physiological evolution.
210. **Physiology of Protozoa.** (2) I. Mr. Jahn  
 Lecture, two hours.  
 Recommended: course 110.  
 Protoplasmic structure, locomotion, motor responses, respiration, excretion, metabolism, growth and nutrition of protozoa, especially as compared with other groups of organisms.
- 210C. **Physiology of Protozoa Laboratory.** (2) I. Mr. James  
 Prerequisite or concurrent: course 210.  
 The use of phase, polarizing and darkfield microscopes, microdissecting apparatus, microrespirometers, and bacteria-free culture techniques applied to study of the protozoa.
211. **The Physiology of Animal Parasites.** (2) II. Mr. Read  
 Prerequisite: courses 101A and 111.  
 Lectures on nutrition, metabolism, physiological ecology, and protoplasmic evolution of parasitic protozoa, helminths, and arthropods.
230. **Advanced Genetics and Cytology.** (2) II. Mr. Hinton  
 Prerequisite or concurrent: course 130A.  
 The structure and function of chromosomes, irradiation effects, and experimental cytogenetics.
231. **Advanced Physiological and Human Genetics.** (2) II. Mr. Hinton  
 Lectures, two hours; discussion, one hour.  
 Prerequisite: course 130A.  
 The student will attend the lectures in 130B and in addition do assigned reading in human and medical genetics and meet to discuss the material. Not open to students who have had course 130B.
250. **Survey of Animal Biology.** (2) II. Mr. Furgason  
 Prerequisite: course 140 and consent of the instructor.  
 A review of the basic concepts and theories of biological sciences as viewed with historical perspective and as related to contemporary viewpoints.
- 251A-251B. **Seminar in Ecology of Amphibia and Reptiles.** (2-2) Yr. Mr. Cowles

† Each course given every third year. 202B to be given, 1953-1954.

‡ Given in alternate years, beginning fall, 1953-1954.



- \*251C-251D. Seminar in Ecology of Birds and Mammals. (2-2) Yr.  
Mr. Bartholomew, Mr. Howell
- 252A-252B. Seminars in Endocrinology. (2-2) Yr. Mrs. Szego-Roberts
- 253A-253B. Seminars in Genetics. (2-2) Yr. Mr. Hinton  
Prerequisite: course 130B or 231.
- 254A-254B. Seminars in Physiology of Development. (2-2) Yr.  
Mr. Flickinger
- 255A-255B. Seminars in Protozoölogy and Parasitology. (2-2) Yr.  
Mr. Ball, Mr. Read
- 257A-257B. Seminar in Comparative Physiology. (2-2) Yr. Mr. Bullock
258. Seminar in Physiology of Sense Organs. (2) I. Mr. Jahn
- 260A. Seminar in Ichthyology. (2) I. Mr. Walker
- 260B. Seminar in Fisheries Biology. (2) II. Mr. Walker
263. Seminar in Physiology of Microörganisms. (2) II. Mr. Jahn
- †264A-264B. Seminar in Kinetics. (2) Yr. Mr. Levedahl  
Prerequisite: course 204.
- 290A-290B. Research in Zoölogy. (2-6; 2-6) Yr. The Staff

#### PALEONTOLOGY

Courses in general and invertebrate paleontology are offered by the Department of Geology (see page 184).

#### LIFE SCIENCES

- 1A-1B. Fundamentals of the Life Sciences. (3-3) Yr.  
Mr. Furgason, Mr. Thompson  
Lectures, demonstrations, discussions, three hours.  
In order to obtain biological science credit students must complete year course. Both semesters must be satisfactorily completed to fulfill the College of Letters and Science requirement of at least 5 units in biological science.
370. Methods and Materials for Teaching Life Science. (3) II.  
Lectures, demonstration, field trips. Mr. Cowles, Mr. Herbst  
Prerequisite: major in biological sciences, senior or graduate status, one of the following courses: Botany 3, Zoölogy 112, 133, or 134. Required of all prospective life science teachers who wish to secure the general secondary or junior college credential. It must be taken prior to practice teaching courses, Education G377, G378, and G379.

#### BIOLOGY‡

12. General Biology. (3) II. Mr. Cowles  
Lectures, three hours; demonstration, one hour; one required field trip in the semester. Prerequisite: high school biological science or the equivalent, or consent of the instructor.  
The biology of our environment, the common animals and some plants of southern California; their interrelationships, and their relationship to climate.

\* Not to be given, 1953-1954.

† Given in alternate years, beginning spring, 1953-1954.

‡ The attention of non-science majors is called to Zoölogy 188, Biology and Human Welfare (see page 329). This course is designed for students not majoring in zoölogy.

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# **Administrative Bulletins of the University of California, 1953-1954**

The administrative bulletins of the University of California present information concerning the colleges, schools, and departments of the University. For copies of the bulletins or other information concerning instruction at Los Angeles, address the Office of Admissions, University of California, Los Angeles 24; for other bulletins, and for information concerning the departments at Berkeley, address the Registrar of the University of California, Berkeley 4; for information concerning instruction at Davis, address the Registrar, University of California, Davis; for information concerning instruction at Santa Barbara, address the Registrar of Santa Barbara College, Santa Barbara; for information concerning instruction at Riverside, address the Registrar, University of California, Riverside; bulletins of the schools and colleges in San Francisco may be had by addressing the deans in charge.

## **Bulletins Referring Primarily to the Departments of the University at Los Angeles**

The Circular of Information, Departments at Los Angeles, containing general information about the University, requirements for admission, general regulations, students' fees and expenses, curricular offerings in the several colleges and schools, etc.

The Announcement of Courses and Curricula, Departments at Los Angeles, containing requirements for the degree of Associate in Arts, and for the bachelor's degree in the Colleges of Letters and Science, Applied Arts, Agriculture, and Engineering, and in the Schools of Business Administration, Education, Law, and Nursing; for the master's and doctor's degrees; and announcements of courses of instruction in the departments at Los Angeles and La Jolla. Price, 20 cents.

The General Catalogue, Departments at Los Angeles. A combination of the Circular of Information and the Announcement of Courses and Curricula. Price, 25 cents.

The Announcement of the Graduate Division, Southern Section.

The Announcement of the College of Applied Arts.

The Announcement of the Colleges of Engineering.

The Announcement of the School of Business Administration, Los Angeles.

The Announcement of the School of Education, Los Angeles.

The Announcement of the School of Law, Los Angeles.

The Announcement of the School of Medicine, Los Angeles.

The Schedule of Classes, University of California, Los Angeles: containing the time schedule of exercises and an office directory of officers of instruction and administration. Published in February and September of each year for the semester immediately following. Price, 10 cents.

The Annual Commencement Programme (at Los Angeles), containing the list of degrees conferred, scholarships, prizes, and other honors.

The Bulletins and Circulars of University Extension.

## **Other Bulletins Referring to Departments of the University at Los Angeles**

The Announcement of the School of Public Health.

The Prospectus of the College of Agriculture.