

BULLETIN
OF
BROWN UNIVERSITY
• • •
GENERAL CATALOG



1954-1955



CORRESPONDENCE

Correspondence addressed simply to Brown University, Providence 12, Rhode Island, may be expected to reach the proper department but, in order to avoid delay, correspondents are requested to note the following directions:

Communications relating to matters directly in the charge of the Corporation, and all correspondence bearing upon the general interests of the University, should be addressed to the President.

Requests for the Annual Catalog and other publications, and general inquiries from prospective students, should be addressed to the Board of Admission, Brown University.

Definite inquiries from applicants for admission concerning requirements, undergraduate courses, scholarship aid, student loans, dormitory accommodations, and other related matters should be addressed to the Board of Admission, Brown University.

Inquiries regarding admission to the freshman class or to advanced standing at Pembroke College should be addressed to the Dean of Admission, Pembroke Hall.

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Inquiries concerning Pembroke College should be addressed to the Dean of Pembroke College, Pembroke Hall.

Inquiries or information concerning Alumni should be sent to the Director of Alumni Relations, Brown University.

BULLETIN OF BROWN UNIVERSITY

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THE BULLETIN OF
BROWN UNIVERSITY:
the General Catalog for
the year 1954-1955



One Hundred and Ninety-first year

PROVIDENCE

1954

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1954

Table with 4 columns: SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER. Each column contains a grid of days of the week (S, M, T, W, T, F, S) and dates.

1955

Table with 4 columns: JANUARY, FEBRUARY, MARCH, APRIL, MAY, JUNE, JULY, AUGUST, SEPTEMBER, OCTOBER, NOVEMBER, DECEMBER. Each column contains a grid of days of the week (S, M, T, W, T, F, S) and dates.

University Calendar

1954-1955

~ 1954 ~

SEPTEMBER 1	<i>Wednesday.</i> Annual Meeting of the Corporation.
SEPTEMBER 13	<i>Monday.</i> Freshman Week begins (<i>second Monday in September</i>).
SEPTEMBER 14-18	<i>Tuesday through Saturday.</i> Registration of graduate students.
SEPTEMBER 15-18	<i>Wednesday through Saturday.</i> Registration of new entrants and readmission students, and check-in period for upperclassmen.
SEPTEMBER 18	<i>Saturday.</i> Last day for payment of charges for the first semester of all undergraduate men and women.
SEPTEMBER 20	<i>Monday.</i> Opening of the One Hundred and Ninety-First Academic Year (<i>third Monday in September</i>). Convocation.
SEPTEMBER 20	<i>Monday, 10 a.m.</i> Classes of the first semester begin.
SEPTEMBER 30	<i>Thursday.</i> Examination for the President's Premiums in Greek (<i>Thursday preceding first Wednesday in October</i>).
OCTOBER 7	<i>Thursday.</i> Examination for the President's Premiums in Latin (<i>Thursday following first Wednesday in October</i>).
OCTOBER 12	<i>Tuesday.</i> Columbus Day. No University exercises.
OCTOBER 13, 14	<i>Wednesday and Thursday.</i> Language examinations for candidates for advanced degrees.
OCTOBER 14	<i>Thursday.</i> Examination for the Hartshorn and Hypatia Premiums in Mathematics.
OCTOBER 16	<i>Saturday.</i> Adjourned Meeting of the Corporation.
OCTOBER 21	<i>Thursday.</i> Examination for the Albert Bushnell Johnson Premiums in French.
OCTOBER 28	<i>Thursday.</i> Examination for the Caesar Misch and Asa Clinton Crowell Premiums in German.
NOVEMBER 6	<i>Saturday.</i> Mid-semester (<i>first Saturday in November</i>).

CALENDAR

NOVEMBER 9	<i>Tuesday, 12 noon.</i> Honors Convocation, Pembroke College (<i>Tuesday following Mid-semester</i>).
NOVEMBER 11	<i>Thursday.</i> Veterans' Day. No University exercises.
NOVEMBER 19	<i>Friday, 12 noon.</i> Honors Convocation, The College (<i>Friday preceding Thanksgiving</i>).
NOVEMBER 24-29	<i>Wednesday, 12 noon, to Monday, 8 a.m.</i> Thanksgiving recess (On Wednesday, November 24, the Saturday schedule will be followed).
DECEMBER 2	<i>Thursday.</i> The Gaston Prize in Oratory (open to men only), written orations due.
DECEMBER 9	<i>Thursday.</i> The Preston Gurney Literary Prizes, essays due.
DECEMBER 11	<i>Saturday.</i> Clarkson Abel Collins, Jr. Prize (open to men only), papers due.
DECEMBER 11	<i>Saturday.</i> Woods Hole Prize in Biology, names of contestants due.
DECEMBER 18, 1954- JANUARY 5, 1955	<i>Saturday, 12 noon, to Wednesday, 8 a.m.</i> Christmas recess.

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JANUARY 5	<i>Wednesday, 8 a.m.</i> Classes resume.
JANUARY 10	<i>Monday.</i> The Gaston Prize in Oratory, public competition.
JANUARY 15	<i>Saturday, 12 noon.</i> Classes of the first semester end (<i>Saturday following second Thursday in January</i>).
JANUARY 17-18	<i>Monday and Tuesday.</i> Check-in of junior and senior men for the second semester.
JANUARY 19-28	<i>Wednesday to Friday, inclusive, omitting Sunday.</i> Final examinations of the first semester (<i>including third and fourth Thursdays in January</i>).
JANUARY 27-29	<i>Thursday to Saturday, inclusive.</i> Check-in of freshman and sophomore men for the second semester and registration of readmitted students. Registration of graduate students for the second semester.
JANUARY 29	<i>Saturday.</i> Last day for payment of charges for the second semester of all undergraduate men except readmitted students.
JANUARY 31- FEBRUARY 1	<i>Monday and Tuesday.</i> Final registration of undergraduate women for the second semester.

CALENDAR

FEBRUARY 1	<i>Tuesday.</i> Last day for payment by all undergraduate women, including special students, of charges for the second semester.
FEBRUARY 2	<i>Wednesday, 8 a.m.</i> Classes of the second semester begin (<i>Wednesday after last Sunday in January</i>).
FEBRUARY 24	<i>Thursday.</i> Hicks Prizes for Interclass Debate, preliminary debate.
MARCH 1	<i>Tuesday.</i> Applications for fellowships, scholarships, and assistantships for 1955-56 in the Graduate School due.
MARCH 10	<i>Thursday.</i> Annual Initiation Exercises, Sigma Xi (<i>Thursday following first Sunday in March</i>).
MARCH 12	<i>Saturday.</i> The Thomas Carpenter and Minnie Helen Hicks Prizes for Elocution, preliminary applications due.
MARCH 19	<i>Saturday.</i> Mid-semester (<i>Saturday preceding third Sunday in March</i>).
MARCH 23-24	<i>Wednesday and Thursday.</i> Language examinations for candidates for advanced degrees.
MARCH 24	<i>Thursday.</i> Examination for the Henry Parker Manning Mathematical Prizes.
MARCH 24	<i>Thursday.</i> Hicks Prizes for Interclass Debate (open to men only), public debate.
APRIL 2-11	<i>Saturday, 12 noon, to Monday, 8 a.m.</i> Spring recess (<i>including first Wednesday in April</i>).
APRIL 14	<i>Thursday.</i> Samuel C. Lamport Prizes in History and in Political Science, papers due.
APRIL 14	<i>Thursday.</i> Isabel Harris Metcalf Prize (open to women only). essays due.
APRIL 14	<i>Thursday.</i> Gaspee Chapter, D.A.R. Prize (open to women only), papers due.
APRIL 18	<i>Monday.</i> The Thomas Carpenter and Minnie Helen Hicks Prizes for Elocution, public competition.
APRIL 21	<i>Thursday.</i> Examination for The Lucius Lyon Premiums in Latin.
APRIL 21	<i>Thursday.</i> Susan Colver Rosenberger Prizes in Music and in Art, papers due.
APRIL 21	<i>Thursday.</i> The Philo Sherman Bennett Prize, papers due.
APRIL 21	<i>Thursday.</i> Class of 1873 Prizes, papers due.

CALENDAR

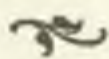
APRIL 21	<i>Thursday.</i> The Bishop McVickar Prizes, papers due.
APRIL 25	<i>Monday.</i> Theses of candidates for the degree of Doctor of Philosophy in June due.
APRIL 27, 28	<i>Wednesday and Thursday.</i> The Minnie Helen Hicks Prizes in Art (open to women only), judging of entries and public exhibit.
APRIL 28	<i>Thursday.</i> Examination for The Lafayette Sabine Foster Premium in Greek.
MAY 9	<i>Monday.</i> Theses of candidates for Masters' degrees in June due.
MAY 14-17	<i>Saturday through Tuesday, omitting Sunday.</i> Senior Review Period. Seniors excused from all classes.
MAY 16-20	<i>Monday to Friday, inclusive.</i> Senior examinations for Final Honors.
MAY 17	<i>Tuesday, 6 p.m.</i> Classes of the second semester end (<i>Tuesday following second Friday in May</i>).
MAY 18-19	<i>Wednesday and Thursday.</i> Comprehensive examinations for seniors.
MAY 21-31	<i>Saturday to Tuesday, inclusive, omitting Sundays.</i> Final examinations of the second semester (<i>Including fourth Friday in May</i>).
JUNE 3	<i>Friday.</i> Meeting of the Board of Fellows.
JUNE 3	<i>Friday.</i> Class Day.
JUNE 4	<i>Saturday.</i> Annual Meeting of the Phi Beta Kappa Society.
JUNE 4	<i>Saturday.</i> Commencement Meeting of the Corporation.
JUNE 4	<i>Saturday.</i> Graduate School Convocation, Sayles Hall.
JUNE 5	<i>Sunday, 3 p.m.</i> Baccalaureate Sermon, First Baptist Meeting House.
JUNE 6	<i>Monday, 10 a.m.</i> One Hundred and Eighty-Seventh Annual Commencement (<i>first Monday in June</i>), First Baptist Meeting House.
JUNE 7	<i>Tuesday.</i> Summer Vacation begins.

1955-1956

1955

SEPTEMBER 19	<i>Monday.</i> Official opening of the One Hundred and Ninety-Second Academic Year (<i>third Monday in September</i>). Preceded by Freshman Week.
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¹ On leave of absence, January-June, 1955.

² January-June, 1955.

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¹LEIGHTON TEETERICK BOHL, Sc.B., *Professor of Civil Engineering*
CHELCIE CLAYTON BOSLAND, PH.D., *Eastman Professor of Political Economy*
²LEICESTER BRADNER, PH.D., *Professor of English*
BENJAMIN WILLIAMS BROWN, A.M., *Professor of English and Public Speaking; Director of Dramatics*
HARCOURT BROWN, PH.D., *Professor of the French Language and Literature*
SHARON BROWN, A.B., *Professor of English*
GILBERT EUGENE CASE, PH.D., *Professor of Education; Director, Division of University Extension*
JAROSLAV ČERNÝ, PH.D., *Visiting Professor of Egyptology*
HERMAN BURLEIGH CHASE, PH.D., *Professor of Biology*
RODERICK MILTON CHISHOLM, PH.D., *Professor of Philosophy*
GEORGE LYLE CHURCH, PH.D., *Professor of Botany; Curator of the Herbarium*
²WILLIAM FARR CHURCH, PH.D., *Professor of History*
ROBERT HUGH COLE, PH.D., *Professor of Chemistry*
¹ARLAN RALPH COOLIDGE, PH.B., *Professor of Music*
HERBERT NEWELL COUCH, PH.D., *David Benedict Professor of Classics; Secretary of the Faculty*

¹ On leave of absence.

² On leave of absence, Semester I, 1954-55.

PROFESSORS

SAMUEL FOSTER DAMON, A.M., *Professor of English; Curator of the Harris Collection*

GUY HOWARD DODGE, PH.D., *Professor of Political Science*

²GEORGE ELLIOT DOWNING, PH.D., *Professor of Art*

¹DANIEL CHARLES DRUCKER, PH.D., *Professor of Engineering*

CURT JOHN DUCASSE, PH.D., *Professor of Philosophy; Romeo Elton Professor of Natural Theology*

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CLAUS EMANUEL EKSTROM, A.M., *Professor of Education*

HARRY EDWARD FARNSWORTH, PH.D., *Professor of Physics*

HERBERT FEDERER, PH.D., *Professor of Mathematics*

PAUL FREDRIC FENTON, PH.D., *Professor of Biology*

²WILLIAM LEOPOLD FICHTER, PH.D., *Professor of the Spanish Language and Literature*

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ROBERT HUDSON GEORGE, PH.D., *Munro, Goodwin, Wilkinson Professor of History*

GILBERT ERNEST GOODMAN, A.B., *Professor of Air Science and Tactics*

²JAMES BLAINE HEDGES, PH.D., *George L. Littlefield Professor of American History*

MAURICE HASKELL HEINS, PH.D., *Professor of Mathematics*

³DONALD FREDERICK HORNIG, PH.D., *Professor of Chemistry; Director of the Metcalf Research Laboratory*

⁴WALTER SAMUEL HUNTER, PH.D., *Professor of Psychology*

DAVID ALONZO JONAH, SC.M., *Librarian; John Hay Professor of Bibliography*

ISRAEL JAMES KAPSTEIN, PH.D., *Professor of English*

BARNABY CONRAD KEENEY, PH.D., *Dean of the College; Professor of History*

HUNTER KELLENBERGER, PH.D., *Professor of French*

ROBERT WEBB KENNY, PH.D., *Professor of English*

HUGH BAXTER KILLOUGH, PH.D., *Professor of Economics*

CHESTER HUGO KIRBY, PH.D., *Professor of History*

PAUL NORMAN KISTLER, SC.M., A.M., *Professor of Mechanical Engineering*

FREDERICK WILLIAMS LAING, SC.B., A.M., *Professor of Naval Science*

²ERASTUS HENRY LEE, PH.D., *Professor of Applied Mathematics*

ROBERT BRUCE LINDSAY, PH.D., *Dean of the Graduate School; Hazard Professor of Physics*

JUAN LÓPEZ-MORILLAS, PH.D., *Professor of Spanish*

CHARLES ARTHUR LYNCH, PH.D., *Professor of Classics*

¹ On leave of absence, Semester I, 1954-55.

² On leave of absence, Semester II, 1954-55.

³ On leave of absence.

⁴ Deceased August 3, 1954.

PROFESSORS

ANDREW HAMILTON MACPHAIL, PH.D., *Professor of Educational Psychology;*
Director of Educational Measurement

PAUL FRITZ MAEDER, PH.D., *Professor of Engineering*

JOHN HENRY MARCHANT, PH.D., *Professor of Engineering*

¹CARL WALLACE MILLER, PH.D., *Professor of Physics*

MATTHEW CARGILL MITCHELL, PH.D., *Professor of Political Science*

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OTTO EDUARD NEUGEBAUER, PH.D., LL.D., *Professor of the History of*
Mathematics

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Education

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Observatory

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MERTON PHILIP STOLTZ, PH.D., *Professor of Economics*

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PAUL SOUTHWORTH SYMONDS, PH.D., *Professor of Engineering*

¹PHILIP TAFT, PH.D., *Professor of Economics*

FREDERICK NEALE TOMPKINS, SC.B., *Professor of Electrical Engineering*

ROHN TRUELL, PH.D., *Professor of Applied Mathematics; Director of Re-*
search in Applied Mathematics

²WILLIAM FREEMAN TWADDELL, PH.D., *Professor of Linguistics and German*

¹VINCENT HEATH WHITNEY, PH.D., *Professor of Sociology*

ARTHUR OLNEY WILLIAMS, JR., PH.D., *Professor of Physics*

JAMES WALTER WILSON, PH.D., *Frank L. Day Professor of Biology*

¹ On leave of absence, Semester II, 1954-55.

² On leave of absence.

ASSOCIATE PROFESSORS

LAWRENCE COUNSELMAN WROTH, A.B., LITT.D., L.H.D., *Librarian of the John Carter Brown Library; Research Professor of American History*

Associate Professors

WILLIAM RAMSDEN BENFORD, SC.M., *Associate Professor of Civil Engineering*

KAARE ROALD BERGETHON, PH.D., *Associate Professor of German; Associate Dean of the College*

ROBERT THOMAS BEYER, PH.D., *Associate Professor of Physics*

RALPH LEON BLANCHARD, A.M., *Associate Professor of English*

EDWARD JAMES BROWN, PH.D., *Associate Professor of Russian*

PETER CHIARULLI, PH.D., *Associate Professor of Applied Mathematics*

LEALLYN BURR CLAPP, PH.D., *Associate Professor of Chemistry*

WILLIAM DINNEEN, A.M., *Associate Professor of Music; Director of Chapel Music*

WILLIAM GEORGE DOLAN, A.B., *Associate Professor of Air Science and Tactics*

MAC VINCENT EDDS, JR., PH.D., *Associate Professor of Biology*

DONALD HARNISH FLEMING, PH.D., *Associate Professor of History*

LEWIS HALL GORDON, PH.D., *Associate Professor of Italian*

ALAN HOLSKE, PH.D., *Associate Professor of German*

DAVID JAMES, PH.D., *Associate Professor of French*

JOSEPH KESTIN, PH.D., *Associate Professor of Engineering*

JOHN LADD, PH.D., *Associate Professor of Philosophy; Head Resident of the Quadrangle*

¹MOISE LEVY, SC.D., *Associate Professor of Engineering*

KURT LÜCKE, DOKTOR RER. NAT., DR. HABIL., *Associate Professor of Applied Mathematics*

²WILLIAM SCHUMACHER MASSEY, PH.D., *Associate Professor of Mathematics*

KURT BERND MAYER, PH.D., *Associate Professor of Sociology*

GEORGE WALTER MORGAN, PH.D., *Associate Professor of Applied Mathematics*

²ROBERT WARREN MORSE, PH.D., *Associate Professor of Physics*

WESTCOTT ENOCH SUMNER MOULTON, A.M., *Associate Dean of Students, Associate Professor of Student Recreation*

CONSTANTINE MYLONAS, PH.D., *Associate Professor of Engineering*

HAROLD RUSS NACE, PH.D., *Associate Professor of Chemistry*

WESLEY LEMARS NYBORG, PH.D., *Associate Professor of Physics*

RUSSELL ALLEN PECK, JR., PH.D., *Associate Professor of Physics*

WILLIAM HICKS PELL, PH.D., *Associate Professor of Engineering*

¹ Beginning Semester II, 1954-55.

² On leave of absence.

ASSISTANT PROFESSORS

WHITNEY TROW PERKINS, PH.D., *Associate Professor of Political Science*
ARTHUR JAMES RAUCHLE, A.B., *Associate Professor of Naval Science*
WILLIAM JOSEPH ROBBINS, PH.D., *Associate Professor of Biblical Literature*
WALTER JOSEPH SCHNERR, PH.D., *Associate Professor of Romance Languages*
FREDERICK GEORGE SHERMAN, PH.D., *Associate Professor of Biology*
CALEB ALLEN SMITH, PH.D., *Associate Professor of Economics*
RICHARD CLYDE TAYLOR, PH.D., *Associate Professor of Philosophy*
¹VINCENT ANTHONY TOMAS, PH.D., *Associate Professor of Philosophy*
²JANICE OAKLEY VAN DE WATER, A.M., *Associate Professor of English;*
Associate Director of Dramatics
CLARENCE MERTOUN WEBSTER, PH.D., *Associate Professor of English*
KARL SIEGFRIED WEIMAR, PH.D., *Associate Professor of German*
PAUL B. WEISZ, PH.D., *Associate Professor of Biology*
JOHN ROWE WORKMAN, PH.D., *Associate Professor of Classics*

Assistant Professors

CARLOS MANUEL ANGULO, M.E.E., *Assistant Professor of Engineering*
ROSALIE BEAMS, R.N., A.M., *Assistant Professor of Nursing Education*
JESS BALSOR BESSINGER, JR., PH.D., *Assistant Professor of English*
ELMER MILTON BLISTEIN, PH.D., *Assistant Professor of English*
EDWARD ALAN BLOOM, PH.D., *Assistant Professor of English*
¹GEORGE HERBERT BORTS, PH.D., *Assistant Professor of Economics*
HARRY GLENN BROWN, M.A., M.A. IN L.S., *Supervisor of Readers' Service;*
Assistant Professor of Bibliography
RICARDO AUGUSTO CAMINOS, PH.D., D.PHIL.(OXON.), *Assistant Professor*
of Egyptology
GENE BLAKELY CARPENTER, PH.D., *Assistant Professor of Chemistry*
THOMAS CASSIRER, PH.D., *Assistant Professor of French*
LUCIAN MONTGOMERY CAYCE, A.B., *Assistant Professor of Naval Science*
GORDON ROHDE DEWART, PH.D., *Assistant Professor of French*
JOHN ANDREW DILLON, JR.; PH.D., *Assistant Professor of Physics*
JACQUES WAYNE DUFFY, SC.M., *Assistant Professor of Engineering*
HUBERT JEROME DYER, PH.D., *Assistant Professor of Botany*
DURAND ECHEVERRIA, PH.D., *Assistant Professor of French*
JOHN OELHAF EDWARDS, PH.D., *Assistant Professor of Chemistry*
EDGARD ASHTON ELDRIDGE, SC.B., *Assistant Professor of Naval Science*
JOANNE ELLIOTT, PH.D., *Visiting Assistant Professor of Mathematics*
HAROLD PORTER EUBANK, PH.D., *Assistant Professor of Physics*
WALTER SIDNEY FELDMAN, M.F.A., *Assistant Professor of Art*
MARTIN JOHN FISCHER, MUS.B., *Assistant Professor of Music*

¹ On leave of absence.

² On leave of absence, Semester II, 1954-55.

ASSISTANT PROFESSORS

- JOHN DAVID FOULKES, PH.D., *Assistant Professor of Engineering*
DAVID GALE, PH.D., *Assistant Professor of Mathematics*
LYDIA MARIAN GOODING, M.S., *Assistant Professor of Bibliography*
RICHARD JOHNSON GOSS, PH.D., *Assistant Professor of Biology*
EDWARD FORBES GREENE, PH.D., *Assistant Professor of Chemistry*
CHARLES MEADE GRIGG, PH.D., *Assistant Professor of Sociology*
LENNIS GERALD HARRIS, SC.B. in ED., *Assistant Professor of Air Science and Tactics*
MILFORD HARRISON HATCH, SC.D., *Assistant Professor of Biology*
ROBERT MORPHET HAYTHORNTHTWAITE, PH.D., *Assistant Professor of Engineering*
RICHARD HALL JESCHKE, JR., SC.B., *Assistant Professor of Naval Science*
LESLIE ALLEN JONES, PH.B., *Assistant Professor of English; Technical Director of Dramatics*
¹BJARNI JONSSON, PH.D., *Assistant Professor of Mathematics*
WALTER JAMES KENWORTHY, PH.D., *Assistant Professor of Biology*
JULIUS WILLIAM KLING, PH.D., *Assistant Professor of Psychology*
EDWARD THEODORE KORNHAUSER, PH.D., *Assistant Professor of Physics*
ARON DAVID KOSSOFF, PH.D., *Assistant Professor of Spanish*
ELIZABETH HORTENSE LEDUC, PH.D., *Assistant Professor of Biology*
JOHN WILLIAM LENZ, PH.D., *Assistant Professor of Philosophy*
SAMUEL LERNER, SC.M., *Assistant Professor of Civil Engineering*
NISSIM MORRIS LEVY, PH.D., *Assistant Professor of Psychology*
WILLIAM GORDON LISTER, PH.D., *Assistant Professor of Mathematics*
WILLIAM CARL LOERKE, JR., M.F.A., *Assistant Professor of Art*
EDWARD HARRY MADDEN, PH.D., *Assistant Professor of Philosophy*
FRANCIS KING CAREY MADEIRA, *Visiting Assistant Professor of Music*
LEONARD CHARLES MAXIMON, PH.D., *Assistant Professor of Applied Mathematics*
ALLEN MCCONNELL, PH.D., *Assistant Professor of Political Science*
HYMAN PHILIP MINSKY, PH.D., *Assistant Professor of Economics*
DAVID MINTZER, PH.D., *Assistant Professor of Physics*
GORDON FRANK NEWELL, PH.D., *Assistant Professor of Applied Mathematics*
WILLIAM ALBERT OLIVER, JR., PH.D., *Assistant Professor of Geology*
HAROLD WINSTON PFAUTZ, PH.D., *Assistant Professor of Sociology*
CHARLES HORACE PHILBRICK, II, PH.D., *Assistant Professor of English*
RONALD FILMORE PROBSTEIN, PH.D., *Assistant Professor of Engineering*
FELIX RACKOW, PH.D., *Assistant Professor of Political Science*
EDGAR CARPENTER RECKARD, JR., A.B., B.D., *Chaplain of the University; Assistant Professor of Biblical Literature*

¹On leave of absence.

LECTURERS AND RESEARCH ASSOCIATES

THOMAS LLOYD REED, PH.D., *Assistant Professor of Art*

EVELYN ORA RICHARDSON, R.N., A.M., *Assistant Professor of Nursing Education*

BEVERLY SELLMAN RIDGELY, PH.D., *Assistant Professor of French*

JOHN ROSS, PH.D., *Assistant Professor of Chemistry*

ANDREW JOSEPH SABOL, PH.D., *Assistant Professor of English*

WILLIAM HENRY SANDS, ED.M., *Assistant Professor of Air Science and Tactics*

MICHAEL ANGELO SANTONE, SC.M., *Assistant Professor of Air Science and Tactics*

¹PAUL NAMON SCHATZ, PH.D., *Assistant Professor of Chemistry*

MORTON SMITH, PH.D., *Assistant Professor of Biblical Literature*

WALTER CZECHURA STANLEY, PH.D., *Assistant Professor of Psychology*

FRANK MOORE STEWART, PH.D., *Assistant Professor of Mathematics*

PAUL TAMARKIN, PH.D., *Assistant Professor of Physics*

MILLARD SPONSEL THOMSON, MUS. M., *Assistant Professor of Music*

ALAN STUBBS TRUEBLOOD, PH.D., *Assistant Professor of Spanish*

ELMER ROY TRUMBULL, PH.D., *Assistant Professor of Chemistry*

OTTO VAN KOPPENHAGEN, *Assistant Professor of Music*

ALBERT DOUGLASS VAN NOSTRAND, PH.D., *Assistant Professor of English; Chairman of the Honors Council*

JOHN WERMER, PH.D., *Assistant Professor of Mathematics*

PETER JOCELYN WESTERVELT, PH.D., *Assistant Professor of Physics*

HERBERT FLETCHER WILLEY, SC.B., *Assistant Professor of Naval Science*

CHUNG FU YING, PH.D., *Assistant Professor of Applied Mathematics*

Lecturers and Research Associates

WILFORD HOYT ANDERSEN, PH.D., *Research Associate in Chemistry*

GORDON FRANCIS ANDERSON, SC.M., *Research Associate in Engineering*

²JOHN KIRBY BARE, PH.D., *Research Associate in Psychology*

EUGENE BELL, PH.D., *Research Associate in Biology*

WILLIAM TURNBULL BRADNER, PH.D., *Research Associate in Biology*

KENNETH TAYLOR BROWN, PH.D., *Research Associate in Psychology*

SARAH ELIZABETH CAMPBELL, ED.M., *Lecturer in Education*

BRUCE BRAGDON CHICK, SC.M., *Research Associate in Applied Mathematics*

JANET CRUM CORNSWEET, A.M., *Research Associate in Psychology*

ROBIN LIVINGSTONE CURTIS, PH.D., *Research Associate in Biology*

JOHN HAMILTON CURTISS, PH.D., *Research Associate in Mathematics*

MAX DEGEN, *Research Associate in Engineering*

JOHN DEKLERK, PH.D., *Research Associate in Applied Mathematics*

KLAUS DETERT, ING.D., *Research Associate in Applied Mathematics*

¹ Resigned August 31, 1954.

² Summer, 1954.

INSTRUCTORS

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¹WALTER FREIBERGER, PH.D., *Research Associate in Applied Mathematics*

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ANDREW VINCENT GRANATO, SC.M., *Research Associate in Applied Mathematics*

GORDON LEE HIEBERT, SC.B., *Research Associate in Chemistry*

²ERNEST PARKER JOHNSON, PH.D., *Research Associate in Psychology*

RUTH HORNE KOSSOFF, PH.D., *Lecturer in Spanish*

MARGARET NAST LEWIS, PH.D., *Research Associate in Physics*

TUNG CHI LIN, PH.D., *Research Associate in Applied Mathematics*

ALBERT EDGAR LOWNES, PH.B., A.M., *Lecturer in History of Science*

LACHLAN MACKINNON, PH.D., *Visiting Lecturer in Physics*

DONALD CAMPBELL MCKEAN, D.PHIL. (Oxon.), *Research Associate in Chemistry*

²EMIN TURAN ONAT, SC.D., *Research Associate in Applied Mathematics*

JENS RAINER MARIA RADOK, M.A., *Visiting Lecturer in Applied Mathematics*

WILLIAM PERIN RANEY, SC.M., *Research Associate in Physics*

VIRGINIA FRANKLIN ROSS, PH.D., *Research Associate in Geology*

ERICH SCHAFRANIK, *Research Associate in Engineering*

ROBERT ELLSWORTH SCHLIER, PH.D., *Research Associate in Physics*

²JOHN MITCHELL STEPHENSON, SC.B., *Research Associate in Engineering*

²ALEXANDER JEN WANG, PH.D., *Research Associate in Applied Mathematics*

WILLIAM HAMER WARNER, PH.D., *Research Associate in Applied Mathematics*

RICHARD M. WARREN, PH.D., *Research Associate in Psychology*

ROSLYN SAUNDRA WARREN, PH.D., *Research Associate in Psychology*

JOHN VROOMAN WEHAUSEN, PH.D., *Research Associate in Mathematics*

MAX REID WIECK, LL.B., *Lecturer in Air Science and Tactics*

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ROY CARL ALVERSON, SC.B., *Instructor in Engineering*

RALPH GARFIELD ANDERTON, PH.B., *Instructor in Student Recreation*

SIMON BARENBAUM, DIPL. DE PROF. DE FRANÇAIS, *Instructor in French*

JAMES ORRIS BARNHILL, A.M., *Instructor in English*

MILLICENT LANG BELL, A.M., *Instructor in English*

JAMES HARRY BICK, SC.B., *Instructor in Engineering*

WILLIAM THEODORE BLUHM, A.M., *Instructor in Political Science*

MATTHEW JOSEPH BOLGER, JR., SC.B., *Instructor in Student Recreation*

KENNISON TILDEN BOSQUET, SC.M., *Instructor in Psychology*

¹ Beginning March 1, 1955.

² Summer, 1954.

INSTRUCTORS

- WILLIAM EDWARD BRADY, A.M., *Instructor in English*
¹DERICKSEN MORGAN BRINKERHOFF, A.M., *Instructor in Art*
 ROBERT MILLINGTON BROWN, A.M., *Instructor in English*
 MILDRED CARLEN BRUNSCHWIG, Sc.M., *Instructor in Mathematics*
 DEANE CHALMERS CARSON, A.M., *Instructor in Economics*
 WILLIAM SHEN CHIE CHANG, Sc.M., *Instructor in Engineering*
 AUGUSTA STUART CHAPMAN, Sc.M., *Instructor in Physical Education*
 RICHARD JOHN CHORLEY, B.A., *Instructor in Geology*
 ROBERT WHITFIELD COMERY, A.M., *Instructor in English*
 ARCHIBALD CARY COOLIDGE, JR., A.B., *Instructor in English*
 BENJAMIN HUTTON CUNNINGHAM, B.S., *Instructor in Naval Science*
 RICHARD CHRISTIAN DOENGES, A.B., *Instructor in English*
 RICHARD MATEER DOUGLAS, A.M., *Instructor in History*
 FRANCES ELLIOT DUNN, A.M., *Instructor in Education; Assistant to the Director of Educational Measurement*
 TRYGG ENGEN, Ph.D., *Instructor in Psychology*
 KHODADAD FARMANFARMAIAN, A.M., *Instructor in Economics*
 ELI HANSELL FREEDMAN, Ph.D., *Instructor in Chemistry*
 ERNEST SUNLEY FRERICHs, A.M., S.T.B., *Instructor in Biblical Literature*
 IVAN WILLIAM FUQUA, Sc.M. in Ed., *Instructor in Student Recreation*
 VICTOR H. FUSIA, Sc.B., *Instructor in Student Recreation*
 HERBERT SHELDON GOCHBERG, A.M., *Instructor in French*
 ANTHONY CABOT GOSSE, A.M., *Instructor in English*
 GEORGE HALEY, JR., A.M., *Instructor in Spanish*
 JOHN MACLEAN HEFFERNAN, Ed.M., *Instructor in Student Recreation*
 WILLIAM FRANCIS HIGGINS, M.S. in E.E., *Instructor in Engineering*
 DANIEL JOHN HUGHES, A.M., *Instructor in English*
 JULIAN JOSEPH JAFFE, A.M., *Instructor in Biology*
 DAVID KRAUSE, Ph.D., *Instructor in English*
 DAVID LAURENT, A.M., *Instructor in Music*
 GEORGE HANS LUCK, DR. PHIL. (BERN), *Instructor in Classics*
 PATRICIA MARIE MAHON, A.M., *Instructor in English*
 WILLIAM GEORGE MAISCH, Sc.B., *Instructor in Chemistry*
 ROYCE ALTHEA MASON, Sc.B., *Instructor in Physical Education*
 RUTH HASSELL MEADER, A.B., *Instructor in English*
 JOHN ALBERT MEIXNER, A.M., *Instructor in English*
 ROBERT MINSHALL, Ph.D., *Instructor in German*
 KAY KIRLIN MOORE, A.B., B.S. in L.S., *Head Cataloger, John Hay Library; Instructor in Bibliography*
 SAMUEL MAURICE OSGOOD, Ph.D., *Instructor in History*
 HOWARD BENEDICT PALMER, Ph.D., *Instructor in Chemistry*

STAFF OF DIVISION OF ATHLETICS

HERBERT ALLEN PERLUCK, A.M., *Instructor in English*
JAMES ARTHUR PETERS, PH.D., *Instructor in Biology*
JOHN ROBERT PFLUG, SC.B., *Instructor in Student Recreation*
ROSEMARY PIERREL, PH.D., *Instructor in Psychology*
ELIHU ZUNDER RUBIN, PH.D., *Instructor in Psychology*
LEO FRANCIS SCHNORE, JR., PH.D., *Instructor in Sociology*
SHARON G. SEIF, A.B., *Instructor in Physical Education*
NORMAN CLIFFORD SMALL, M.M.E., *Instructor in Engineering*
ETTA SOIREF, PH.D., *Registrar of the Graduate School; Instructor in English*
JEROME LEON STEIN, A.M., *Instructor in Economics*
MACK EUGENE THOMPSON, A.M., *Instructor in History*
BARBARA LOIS UNDERHILL, SC.B., *Instructor in Physical Education*
LEROY STANLEY WARD, SC.B., *Instructor in Student Recreation*
JOSEPH WATMOUGH, *Instructor in Student Recreation*
CHARLES HENRY WATTS, II, PH.D., *Instructor in English*
JOSEPH BERNARD YOKELSON, A.M., *Instructor in English*
DANTE CIRIACO YOULA, SC.M., *Instructor in Engineering*
IGOR ZELLJADT, A.M., *Instructor in German*

Interns

CHARLES STANIFORD KESSLER, A.M., *Intern in Art*
ROBERT THOMAS KIRKPATRICK, A.M., *Intern in Philosophy*
VICTOR GREGORY LATIES, PH.D., *Intern in Psychology*
WILLIAM GERALD MCLOUGHLIN, JR., PH.D., *Intern in Political Science*
ROBERT PARKE, JR., A.M., *Intern in Sociology*
JAMES MACDONALD TERRELL, PH.B., *Intern in Economics*
JAMES MELVILLE OWEN WHEATLEY, A.M., *Intern in Philosophy and Biology*
FRANKLIN MYLES WRIGHT, A.M., *Intern in History*

Staff of Division of Athletics and Student Recreation

RALPH GARFIELD ANDERTON, PH.B., *Instructor; Coach of Wrestling*
MATTHEW JOSEPH BOLGER, JR., SC.B., *Instructor; Assistant Coach of Football*
IVAN WILLIAM FUQUA, SC.M. in ED., *Instructor; Coach of Track*
VICTOR H. FUSIA, SC.B., *Instructor; Assistant Coach of Football*
JOHN MACLEAN HEFFERNAN, ED.M., *Instructor; Director of Student Recreation and Intramural Athletics; Coach of Freshman Baseball and Basketball; Assistant Coach of Freshman Football*
ALVA EUGENE KELLEY, JR., SC.B. in M.E., *Head Coach of Football*
JAMES JOSEPH KENNAWAY, *Coach of Soccer*
WILFRID HENRY LEFEBVRE, SC.B. in ED., *Coach of Varsity Baseball*

ASSISTANTS

PAUL FRANCIS MACKESEY, PH.B., LL.B., *Director of Athletics*
WESTCOTT ENOCH SUMNER MOULTON, A.M., *Associate Professor; Associate Dean of Students*
ALEXANDER FRANCIS NAHIGIAN, PH.B., *Assistant Coach of Football*
JOHN ROBERT PFLUG, SC.B., *Instructor; Assistant Coach of Football*
LEROY STANLEY WARD, SC.B., *Instructor; Coach of Varsity Basketball; Assistant Coach of Football*
JOSEPH WATMOUGH, *Instructor; Coach of Swimming*
DONALD FRANCIS WHISTON, A.B., *Coach of Hockey*
ELGIN FERRELL WHITE, A.B., *Director of Sports Information*

Assistants, Research Assistants, Teaching Associates

JOHN ROGER ABRAHAM, B.SC.(ENG.), *Research Assistant in Engineering*
DANIEL KUO YI AI, M.S. IN MECHANICS, *Research Assistant in Engineering*
RICHARD BALLENTINE ALLEN, A.M., *Research Assistant in Physics*
AMERICO BERNARDO ALMEIDA, SC.B., *Assistant in Biology; Special Research Assistant¹*
ROBERT RAY AMMERMAN, A.M., *Assistant in Philosophy*
JOSÉ AMOR Y VAZQUEZ, A.M., *Assistant in Spanish*
GEORGE PHILIP ANDERSON, A.B., *Research Assistant in Applied Mathematics*
MYRON GEORGE ANDERSON, A.B., *Assistant in Philosophy*
CARL FAUST ATEN, JR., A.B., *Assistant in Chemistry*
DONALD LEE BALL, A.B., *Research Assistant in Chemistry*
BARBARA ELIZABETH BARKER, SC.B., *Assistant in Biology; Special Research Assistant¹*
ROSWELL PARKHURST BARNES, JR., A.B., *Assistant in Physics*
DAVID ALAN BECKWITH, SC.M., *Research Assistant in Applied Mathematics*
JACQUES GEORGES BENAY, A.B., *Assistant in French*
JAMES WATERHOUSE BENTLEY, A.M., *Assistant in French*
SELDON EDWIN BERNSTEIN, A.M., *Research Assistant in Biology*
JANET MALONE BLISS, A.B., *Research Assistant in Biology*
HENRY VICTOR BOHM, SC.M., *Assistant in Physics*
JOHN BRUCE BRACKENRIDGE, SC.M., *Assistant in Physics*
LAWRENCE THOMAS BRENNAN, SC.B., *Assistant in Mathematics*
DAVID ERICKSON BRICKL, A.M., *Assistant in Physics*
ROSAMOND JACQUELINE BROWN, A.B., *Assistant in Biology*
FREDERICK SAMUEL BRUNDSCHWIG, SC.M., *Assistant in Physics*
ROBERT MERCER BURGER, SC.M., *Research Assistant in Physics*
EMILIE LOUISE CAMP, A.B., *Research Assistant in Biology*

Summer, 1954.

ASSISTANTS

- ERNEST CAPSTACK, JR., Sc.M., *Assistant in Chemistry*
JAMES BARR CARROLL, Sc.B., *Research Assistant in Engineering*
CHARLES HINSON CARVER, A.B., *Special Research Assistant in Biology*
¹GRACE CATANIO, Sc.B., *Research Assistant in Biology*
CARL RICHARD CAVONIUS, A.B., *Assistant in Psychology*
MARY PIN CHANG, Ph.D., *Research Assistant in Biology*
ROBERT MAXWELL CHAPMAN, A.B., *Assistant in Psychology*
CARL COMETTA, M.E., *Research Assistant in Engineering*
¹JOHN CHARLES CORELLI, Sc.M., *Research Assistant in Physics*
TOM NORMAN CORNSWEET, Sc.M., *Assistant in Psychology; Research Assistant¹*
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JEAN LOUISE CRONIN, A.M., *Assistant in Economics*
JOAN PRICHARD CUDHEA, A.B., *Assistant in Economics*
ALLEN FROST DAY, A.B., B.ARCH., *Assistant in Engineering*
¹MARY ROBERTS FORBES DAY, A.M., *Special Research Assistant in Biology*
WILLIAM DEMINOFF, A.M., *Assistant in English*
ESTHER AMELIA DICK, A.M., *Assistant in Botany*
GRACE MARIE DONNELLY, Sc.B., *Assistant in Botany*
JOHN DWAINÉ DREHER, A.B., *Assistant in Political Science*
TIMOTHY JOHN DUGGAN, JR., A.M., *Assistant in Philosophy*
ERNEST DZENDOLET, Sc.B.(CHEM.), Sc.B.(BIOL.), *Research Assistant in Psychology*
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ARTHUR ABNER EBENFIELD, A.M., *Assistant in Economics*
RONALD KRAFT EBY, Sc.B., *Assistant in Physics*
DAYTON DALE EDEN, A.B., *Assistant in Physics*
EDMUND EISENBERG, Sc.B., *Assistant in Mathematics*
SAMUEL ADAMS ELDER, A.M., *Assistant in Physics*
ROBERT PORTER ERICKSON, Sc.B., *Assistant in Psychology*
ROBERT BRUCE ERWIN, A.B., *Assistant in Geology*
FREDERICK RICHARD FLAD, Sc.B., *Research Assistant in Physics*
KENNETH NELSON FLECK, A.B., *Assistant in French*
LIBBY FLEISHER, A.B., *Assistant in Psychology*
DAVID PAUL FLEMMING, A.B., *Research Assistant in Applied Mathematics*
¹VICTOR RALPH FORMISANO, Sc.B., *Special Research Assistant in Biology*
DONALD HOLLY FORTNUM, Sc.B., *Assistant in Chemistry*
WAYNE FRANKLIN FRAIR, A.B., Sc.B., *Assistant in Biology*
JAMES PHILLIP FRINK, A.B., *Assistant in Mathematics*
THOMAS HENRY GEORGE, Sc.M., *Research Assistant in Physics*
WILLIAM RICHARD GOFF, A.B., *Assistant in Psychology; Research Assistant¹*
SEYMOUR GOODMAN, B.B.A., *Assistant in Economics*

¹ Summer, 1954.

ASSISTANTS

- ROBERT KENNETH GOULD, Sc.B., *Assistant in Physics*
ROBERT EDWARD GREEN, JR., Sc.B., *Assistant in Physics*
ROY MELVIN GUNDERSEN, Sc.M., *Research Assistant in Applied Mathematics*
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ANN MARY HALD, A.B., *Research Assistant in Biology; Special Research Assistant*¹
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JOAN FENNER HALL, Sc.B. IN ENGIN., *Research Assistant in Engineering*
JEANNE LILLIAN HALLAHAN, A.B., *Assistant in Sociology*
RUSSELL VANDERVORT HANKS, Sc.B., *Assistant in Chemistry*
JOHN EVERETT HARRIS, Sc.B., *Assistant in Chemistry*
STEPHEN HAVRILIAK, JR., A.B., *Research Assistant in Chemistry; Assistant*²
ROBERT BERNARD HEIART, Sc.B., *Research Assistant in Chemistry*
GORDON HEMS, B.Sc., *Teaching Associate in Biology; Special Research Assistant*¹
¹DORIS HERMAN, Sc.B., *Research Assistant in Biology*
CHARLES WILLIAM HETZLER, Ph.D., *Research Assistant in Engineering*
ELAINE FRANCES HEYMAN, A.B., *Research Assistant in Applied Mathematics*
ELIZABETH HICKSON, B.A., *Teaching Associate in Biology*
AKIRA HIKATA, Sc.B., *Research Assistant in Applied Mathematics*
BERNARD HOWARD, Sc.B., *Assistant in Mathematics*
STEWART HARDING HULSE, JR., A.B., *Assistant in Psychology; Research Assistant*¹
PAUL ILIE, A.B., *Assistant in Spanish*
FRANCIS JOSEPH JACKSON, Sc.B., *Assistant in Physics*
BERENICE ANITA JACOBS, A.B., *Assistant in History*
ARNOLD RICHARD JOHNSON, Sc.B. IN ENGIN., *Research Assistant in Engineering*
GRANT EDWIN KAISER, A.M., *Assistant in French*
HERBERT MEYER KAMOWITZ, A.M., *Assistant in Mathematics*
¹GAUTAM KHOSLA, Sc.M., *Research Assistant in Engineering*
HARRY FREDERICK KING, Sc.B., *Assistant in Chemistry; Research Assistant*¹
KENNETH FRANCIS KING, Sc.B., *Assistant in Chemistry*
THOMAS RICHARD KINNEBREW, A.B., *Assistant in Naval Science*
THOMAS WILLIAM KIRKCONNELL, A.B., *Assistant in French*
JAMES MARTIN KLINE, Sc.M., *Research Assistant in Physics*
¹ANTHONY KOOHARIAN, Sc.B., *Research Assistant in Applied Mathematics*
SAMUEL JOSEPH KOZAK, Sc.B., *Assistant in Geology*
CARLTON ANDREWS LANE, Sc.M., *Assistant in Physics*

¹ Summer, 1954.

² Semester II, 1954-55.

ASSISTANTS

WILLIAM EDWIN LANGLOIS, Sc.B., *Research Assistant in Applied Mathematics*

FREDERICK STRUBE LEE, A.B., *Assistant in Chemistry*

JAMES FRANCIS SHER-YORK LEE, Sc.M., *Research Assistant in Physics*

BERNARD CHARLES LESEVICIUS, Sc.M., *Assistant in Chemistry*

HARRY LIGHTHALL, JR., Sc.M. IN CHEM., Sc. M. IN MATH., *Assistant in Mathematics*

KATHERINE ELIZABETH LIVINGSTONE, M.Sc., *Assistant in Biology*

¹STUART ESTES LOVELL, Sc.B., *Research Assistant in Chemistry*

JACK ANDREW LUBRANO, A.M., *Technical Assistant in Physics*

GERTRUDE KYLLIKKI LUSTIG, Sc.B., *Research Assistant in Biology*

HANNIBAL HAMLIN MADDEN, JR., A.M. IN PHYSICS, *Research Assistant in Physics*

MARIE FRANCES MADDEN, A.B.(MATH.), *Research Assistant in Physics*

URSULA RENATE MAHLENDORF, *Assistant in German*

DONALD GENE MALM, A.M., *Assistant in Mathematics*

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JOHN MACCLENAHAN MARSH, Sc.B., *Research Assistant in Biology; Special Research Assistant¹*

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JADVYGA MCCLOSKEY, LIC.-ES-LET., *Assistant in French*

HERBERT ANTHONY MEHLHORN, A.B., *Assistant in Physics*

CAROLINE HOFFBERG MEIXNER, A.B., *Assistant in Psychology*

THEODORE JOSEPH MENTEL, Sc.M., *Research Assistant in Applied Mathematics*

PHILIP LAURENT MERCIER, A.B., *Research Assistant in Chemistry*

CHARLOTTE FRANCES MERRILL, Sc.M., *Research Assistant in Biology*

KENNETH LEE MILLER, A.M., *Research Assistant in Applied Mathematics*

KNOX EMERSON MILLER, Sc.M., *Research Assistant in Psychology*

FRANCES BAUER MITCHELL, A.B., *Research Assistant in Biology*

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MAXWELL MARK MOZELL, Sc.M., *Assistant in Psychology; Research Assistant¹*

THOMAS PATRICK MULHERN, Sc.B., *Assistant in Mathematics*

KURT MÜLLER-VOLLMER, *Assistant in German*

BERNARD JOHN MULLIGAN, Sc.B., *Assistant in Biology*

¹JACK NACHMIAS, A.M., *Research Assistant in Psychology*

MYRON KRIKOR NALBANDIAN, A.B., *Research Assistant in Sociology*

¹ Summer, 1954.

ASSISTANTS

- EARL WAYNE O'DELL, Sc.B., *Research Assistant in Physics*
 RUTH DEMBO O'DELL, Sc.B., *Assistant in Mathematics*
 EUGENE GUILFORD O'DONNELL, Ed.M., *Assistant in English*
 OLIVER ENOCH OVERSETH, JR., Sc.B., *Research Assistant in Physics*
 CAROLINE NESTMANN PECK, A.M., *Assistant in Egyptology*
 EDWARD JUSTIN PFEIFER, A.M., *Teaching Associate in American Civilization*
 LOUIS JOHN PIERRO, Sc.M., *Assistant in Biology*
 JANISLAW PIOTR PIETRASZ, DIPL. ING., *Research Assistant in Engineering*
 NICODEMUS PITULA, DIPL. PHYS., *Research Assistant in Applied Mathematics*
 JANICE SWANSON POST, A.B., *Research Assistant in Biology*
 JEANNE ADELE POWELL, A.B., *Research Assistant in Biology*
 PATRICIA MARY POZZI, A.B., *Research Assistant in Biology*
 GERALD JOSEPH PRATT, Sc.B., *Assistant in Physics*
 JOSEPH MASON PROUD, JR., A.B., *Assistant in Physics*
 WALTER COLE QUEVEDO, JR., Sc.M., *Teaching Associate in Biology; Special Research Assistant*¹
 ANN HUNTINGTON RADEMACHER, A.B., *Research Assistant in Biology; Special Research Assistant*¹
 SEYMOUR HAROLD REUTER, Sc.B., *Assistant in Biology*
¹EDWARD EDDY RILEY, A.M., *Special Research Assistant in Biology*
²ARNOLD RITTER, A.B., *Assistant in Psychology*
 JANICE ROSSBACH, Sc.M., *Research Assistant in Applied Mathematics*
 ALEX THOMAS ROWLAND, A.B., *Assistant in Chemistry*
 GERALD LEWIS ROY, A.B., *Assistant in Chemistry*
 NEIL ROLF SCHROEDER, A.B., *Assistant in English*
 JOHN WILFRED SCHULTZ, Sc.B., *Assistant in Chemistry; Research Assistant*¹
 RAYMOND LEWIS SCUNGIO, A.M., *Assistant in Spanish*
 JAMES ALAN SEILER, Sc.M., *Research Assistant in Applied Mathematics*
 JOHN EDWARD SELBY, A.M., *Assistant in History*
 HOWARD FRANKLIN SHAWCROSS, A.M., *Assistant in English*
 BEN SILVER, Sc.B., *Assistant in Mathematics*
³ROBERT WAYNE SIMPSON, Sc.B., *Special Research Assistant in Biology*
 PAUL SLEPIAN, Sc.B., *Assistant in Mathematics*
 GERALD FRANCIS SMITH, A.B., *Research Assistant in Applied Mathematics*
 JOAN MARGARET SMITH, Sc.B., *Assistant in Biology*
 SANFORD FREDERICK SMITH, A.B., *Research Assistant in Applied Mathematics*
 PAUL THEODOR SOMM, M.E., *Research Assistant in Engineering*

¹ Summer, 1954.

² Semester II, 1953-54.

³ November 24, 1953-August 17, 1954.

ASSISTANTS

- MARIA THERESA SPAZIANO, Sc.B., *Research Assistant in Biology*
LEON STEINBERG, A.B., *Research Assistant in Applied Mathematics*
RICHARD MORITZ STERN, A.B., *Assistant in Physics*
JEANNIE CALDER STEWART, A.M., *Research Assistant in Educational Measurement*
WILLIAM EDWIN STRAILE, A.B., *Assistant in Biology; Special Research Assistant*¹
HELEN BRINTZENHOFF STUART, Ph.B., *Research Assistant in Biology*
HARRISON COBB SUDBOROUGH, A.B., *Assistant in German*
NANCY ANN SULLIVAN, A.M., *Assistant in English*
CHARLES OTTO SWANSON, A.B., *Assistant in Political Science*
CHARLES CHRISTOPHER TAYLOR, Sc.M., *Research Assistant in Applied Mathematics*
LOUIS JOSEPH TEUTONICO, Sc.B., *Research Assistant in Applied Mathematics*
JOHN LOVELL THOMAS, A.M., *Teaching Associate in American Civilization*
JAN PETER TOENNIES, A.B., *Research Assistant in Chemistry*
HUSEYIN CAVIT TOPAKOGLU, Sc.D., *Research Assistant in Applied Mathematics*
LEONORA TORRES, A.B., *Research Assistant in Biology*
JACQUELINE ZELIE VAN HEMERT, A.B., *Research Assistant in Biology*
HUNG-EN WANG, Sc.M., *Research Assistant in Engineering*
MARTHA MANSFIELD WARREN, A.B., *Assistant in Biology*
WHITNEY MATHEWS WASHBURN, A.M., *Assistant in Spanish*
ALLYN JARVIS WASHINGTON, Sc.B., *Assistant in Physics*
PETER CARY WATERMAN, Sc.B., *Research Assistant in Applied Mathematics*
FORREST GEROME WEST, JR., Sc.B., *Research Assistant in Applied Mathematics*
TSE-CHIEN WOO, Sc.M. IN MECH. ENGIN., *Research Assistant in Engineering*
ALBERT DOUGLAS WOOD, Sc.M., *Research Assistant in Engineering*
WILLIAM BRUCE WOODWARD, Sc.B., *Research Assistant in Applied Mathematics*
KURT WRAY, A.B., *Research Assistant in Chemistry*
RICHARD LOGSDON YOUNG, Sc.B., *Assistant in Chemistry*
ARTHUR ZACHARIAS, M.F.A., *Assistant in Art*

Committees

Standing Committees of the Corporation

Advisory and Executive Committee

The PRESIDENT, Chairman, *ex-officio*; Messrs. PERKINS, A. C. THOMAS, BURWELL, J. N. BROWN, TANNER, LOUITTIT, MILLAR, HOMER, PARKER, BUMPUS, and GODDARD, and Mrs. VERNEY; Mr. COCHRAN, Secretary.

Athletic Advisory Council

The PRESIDENT, the VICE-PRESIDENT and BUSINESS MANAGER, the DEAN OF THE COLLEGE, the DEAN OF STUDENTS, all *ex-officio*; Messrs. BRANCH, FALES, Chairman, and CLIFFORD; Professors JONAH, SNELL, and CASE; Messrs. W. J. GILBANE, L. S. MILNER, and R. R. CHASE.

Audit Committee

Messrs. D. L. BROWN, Chairman, GLOVER, and BLACK.

Brown Christian Association Board

The DEAN OF THE COLLEGE, the CHAIRMAN, the CORRESPONDING SECRETARY and the TREASURER OF THE BROWN CHRISTIAN ASSOCIATION GRADUATE ADVISORY COMMITTEE, the UNDERGRADUATE PRESIDENT OF THE BROWN CHRISTIAN ASSOCIATION CABINET, all *ex-officio*; Messrs. A. C. THOMAS, and MERCER, Chairman, and Professor C. W. MILLER.

Brown Outing Reservation Advisory Board

The DEAN OF THE COLLEGE, the SUPERINTENDENT, both *ex-officio*; Mr. TEMKIN, Dean MOULTON, Professor NACE, Messrs. E. M. PORTER, Chairman, R. C. CLEMENT, and D. W. GREENE.

Commencement Committee

The PRESIDENT, the SECRETARY OF THE CORPORATION, the PRESIDENT OF THE ASSOCIATED ALUMNI, the PRESIDENT OF THE ALUMNAE ASSOCIATION, all *ex-officio*; Messrs. BALLOU, BURTON, and H. S. SMITH; Provost ARNOLD, Chairman; Vice-President BIGELOW; Deans KEENEY, DURGIN, LEWIS, and LINDSAY; Professor COUCH; Messrs. WORTHINGTON and McCORMICK, and Mrs. McCONNELL.

Comprehensive Planning and Development of University Property

The PRESIDENT, *ex-officio*; Messrs. GODDARD, LOUITTIT, Chairman, GERRY, PARKER, CLIFFORD, and LOWNES.

COMMITTEES

Consultation between the Advisory and Executive Committee and the Associated Alumni

The VICE-PRESIDENT, *ex-officio*; Mr. LOUTTIT.

Consultation between the Corporation and the Faculty

The PRESIDENT, Chairman, *ex-officio*; Messrs. WILLIAMS and A. L. BROWN, and Mrs. VERNEY; Professors STOLTZ, MITCHELL, and ADAMS.

Faunce House Advisory Board

The DEAN OF THE COLLEGE, the PRESIDENT and the VICE-PRESIDENT OF THE STUDENT BOARD OF GOVERNORS, *all ex-officio*; Mr. SHARPE, Professor VAN KOPPENHAGEN, Chairman, Messrs. S. C. SHERMAN, and W. T. BRIGHTMAN, JR.

Investment Committee

The PRESIDENT, the TREASURER, both *ex-officio*; Messrs. BABCOCK, Chairman, GODDARD, GERRY, WILCOX, and D. L. BROWN; Mr. COCHRAN, Secretary.

Lectureships Committee

The PROVOST, *ex-officio*; Messrs. J. N. BROWN and L. R. THOMAS; Professors ROBINSON, Chairman, R. STEWART, SMILEY, FLEMING, CHAS. HOLM, and TAFT.

Library Committees:

Annmary Brown Memorial Committee of Management

The PRESIDENT, Chairman, *ex-officio*; Professors WROTH and JONAH; Messrs. F. R. GOFF and A. E. LOWNES.

John Carter Brown Library Committee of Management

The PRESIDENT, Chairman, *ex-officio*; Messrs. J. N. BROWN, MILLER, C. S. BRIGHAM, and W. S. LEWIS.

University Library Committee

The PRESIDENT, Chairman, the LIBRARIAN, the DEAN OF THE GRADUATE SCHOOL, *all ex-officio*; Messrs. A. C. THOMAS, L. R. THOMAS, W. SMITH, and BALLOU, Mrs. SWAIN and Mrs. VERNEY; Professors PARKER, H. B. CHASE, and ADAMS.

Nautical Advisory Board

The DEAN OF THE COLLEGE, the SUPERINTENDENT, both *ex-officio*; Mr. LOWNES, Professor BLISS, Chairman, Messrs. R. H. SWEET, J. E. C. HALL, B. S. TULLY, and F. H. WILSON, JR.

COMMITTEES

Pembroke College Advisory Committee

The PRESIDENT, Chairman, the DEAN OF PEMBROKE COLLEGE, Secretary, the PRESIDENT OF THE ALUMNAE ASSOCIATION, all *ex-officio*; Mrs. SWAIN and Mr. GLOVER; Professors PFAFFMANN and WHITNEY; Mrs. M. H. BROWN, Miss M. L. MELVILLE, Miss F. L. WEEDEN, and Miss M. L. HARGREAVES.

Representatives on the Administrative Board of the Rhode Island Hospital School of Nursing

The DEAN OF PEMBROKE COLLEGE, *ex-officio*; Professor WILSON.

Representatives on the Board of Trustees of the Rhode Island School of Design

Provost ARNOLD and Dean KEENEY.

Standing Committee Vacancies

Messrs. BURGESS, Chairman, McLEOD, and MERCER.

Trustee Vacancies

The PRESIDENT, Chairman, the CHANCELLOR, Secretary, both *ex-officio*; Messrs. CLIFFORD, WATSON, and GERRY.

Standing Committees of the Faculty¹

Board of Admission

VICE-PRESIDENT BIGELOW, Chairman, the DEAN OF THE COLLEGE, the DEAN OF PEMBROKE COLLEGE, the DEAN OF ADMISSION OF THE COLLEGE, the DEAN OF ADMISSION OF PEMBROKE COLLEGE, and the DIRECTOR OF EDUCATIONAL MEASUREMENT, all *ex-officio*; Messrs. WILSON (to 1955), SCHLOSBERG (to 1956), and LOERKE (to 1957).

On Academic Standing

The DEAN OF THE COLLEGE, Chairman, the DEAN OF STUDENTS OF THE COLLEGE, the DEAN OF PEMBROKE COLLEGE, the CHAIRMAN OF THE BOARD OF ADMISSION, the DIRECTOR OF THE HONORS PROGRAM, the RECORDER OF THE COLLEGE, the RECORDER OF PEMBROKE COLLEGE, all *ex-officio*; Messrs. BLISS (Semester I, 1954-55), DRUCKER (Semester II, 1954-55); LYNCH (to 1956), and GEORGE (to 1957).

¹The President of the University is *ex-officio* a member of all Standing Committees of the Faculty.

COMMITTEES

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The PRESIDENT, Chairman, the PROVOST, the DEAN OF THE COLLEGE, the DEAN OF PEMBROKE COLLEGE, the DEAN OF THE GRADUATE SCHOOL, the DIRECTOR OF THE HONORS PROGRAM, all *ex-officio*; Messrs. CLAPP, DODGE, and PFAFFMANN (to 1955); Messrs. DOWNING, LÓPEZ-MORILLAS, and A. O. WILLIAMS (to 1956); Messrs. BRADNER, LEE, and TAYLOR (to 1957).

On Student Organizations

The DEAN OF STUDENTS OF THE COLLEGE, Chairman, the DIRECTOR OF ATHLETICS, the ASSOCIATE DEAN OF STUDENTS OF THE COLLEGE, the ADVISOR ON STUDENT ACTIVITIES OF PEMBROKE COLLEGE, all *ex-officio*; Messrs. KENNY and SALVAN (to 1955); Messrs. BLOOM and NACE (to 1956); Messrs. RECKARD and WORKMAN (to 1957).

On Prizes and Premiums

Messrs. BENNETT, Chairman, PECK (to 1955), BESSINGER (to 1956), and ECHEVERRIA (to 1957).

On the Faculty Travel Fund

Messrs. C. A. SMITH (to 1955), Chairman, SHERMAN (to 1956), and GALE (to 1957).

On Schedules

The RECORDER OF THE COLLEGE, Chairman, the RECORDER OF PEMBROKE COLLEGE, both *ex-officio*; Messrs. MASSEY (to 1955), RIGGS (to 1956), and MACPHAIL (to 1957).

On Commencement Speakers

Mr. S. BROWN, Chairman, the ASSOCIATE DEAN OF THE COLLEGE, the DEAN OF PEMBROKE COLLEGE, the INSTRUCTOR IN PUBLIC SPEAKING, all *ex-officio*; Messrs. ARMSTRONG (to 1955), C. W. MILLER (to 1956), and SCHNERR (to 1957).

On Scholarly Publications

The LIBRARIAN, Chairman, the DEAN OF THE GRADUATE SCHOOL, both *ex-officio*; Messrs. LÓPEZ-MORILLAS (to 1955), RIGGS (to 1956), and HEDGES (to 1957).

Faculty Members of Joint Committees

Athletic Advisory Council

THE DEAN OF THE COLLEGE, the DEAN OF STUDENTS OF THE COLLEGE, both *ex-officio*; Messrs. JONAH (to 1955), SNELL (to 1956), and CASE (to 1957).

On the Library

THE DEAN OF THE GRADUATE SCHOOL, *ex-officio*; Messrs. PARKER (to 1955), CHASE (to 1956), and ADAMS (to 1957).

On Consultation between the Corporation and the Faculty

Messrs. STOLTZ (to 1955), MITCHELL (to 1956), and ADAMS (to 1957).

Honors Council

THE DIRECTOR OF THE HONORS PROGRAM, Mr. VAN NOSTRAND, Chairman, Messrs. EDDS (to 1955), F. M. STEWART (to 1956), HOLSKE (to 1957), and MAYER (to 1958).

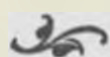
Graduate Council

THE PRESIDENT, the PROVOST, the DEAN OF THE GRADUATE SCHOOL, all *ex-officio*; Messrs. COLE, KAPSTEIN, RIVLIN, SALVAN, SCHLOSBERG, and WHITNEY.

Physical Sciences Council

Messrs. PRAGER, Chairman, COLE, DRUCKER, FARNSWORTH, HORNIG, LEE, LINDSAY, and TRUELL.

History



BROWN UNIVERSITY was founded in 1764 in Warren, Rhode Island, as Rhode Island College. The seventh oldest college in America and the third in New England, it came into existence at a time when conditions in the colony were ripe for the establishment of an institution of higher learning: commerce on land and sea was a growing source of wealth; the population included many men of wide intellectual interests; and the spirit of religious liberty prevailed in the commonwealth founded by Roger Williams.

The Charter

Under these conditions, the Charter of the College, which was granted by the General Assembly of the Governor and Company of the English Colony of Rhode Island and Providence Plantations, was one of the most liberal instruments of its kind written in the eighteenth century. The original incentive in the founding of Rhode Island College, as with other colonial colleges, was a desire to perpetuate an educated ministry, but in addition a broader purpose was defined and declared in the language of this Charter of 1764—“*preserving in the Community a Succession of Men duly qualify'd for Discharging the Offices of Life with usefulness and reputation.*”

As Rhode Island gave to the American colonies an example of freedom of conscience within a civil state, so Rhode Island College gave to the American colleges one of the earliest examples of full freedom in teaching. The Charter declared that there “*shall never be admitted any Religious Tests but on the Contrary all members hereof shall forever enjoy full free absolute and uninterrupted Liberty of Conscience*” and “*that the Sectarian differences of opinions shall not make any Part of the Public and Classical Instruction.*” With an outlook unusually far-sighted for the eighteenth century the Charter also required “*that the Public teaching shall in general respect the Sciences.*”

In the founding of the College the Baptists took the leadership, but in their willingness to share control with members of other faiths they made a most important contribution to the cause of education. This idea was further expressed in the Charter revision of 1942, which removed all denominational restrictions for members of the Corporation.

Colonial Beginnings

In September, 1765, the College had its first registration—a single student, with a faculty consisting of James Manning, the first President. The second member of the faculty, David Howell, was added in 1766. In 1767 the student enrollment was ten and in 1769 the first class could be graduated. Exercises were held at Warren with the degree of Bachelor in the Arts conferred upon seven young men.

During these early years, there was much agitation to have the College permanently located elsewhere in the Colony. Each town vied with the others in offering inducements. Finally Providence won, and in 1770 the College was moved to "College Hill" high above the town, where it has remained ever since. At that time, work was begun on the first building, *The College Edifice*, known since 1823 as University Hall.

Shortly after the College was moved to Providence, it was rocked by events which not only threatened the existence of New England's thriving commerce but which were destined to shape the movement for political independence. The infant College, with its slender resources, was to make an important contribution in the struggle which was soon to follow. From 1776 to 1782, during the American Revolution, the College was closed while faculty and students, "almost to a man," were engaged in the service of their country and *The College Edifice* was used as a barracks and hospital for American troops and for the French soldiers of Rochambeau.

In 1790, after peace had been restored, George Washington, then President of the United States, visited the town of Providence with Thomas Jefferson and was awarded the honorary degree, Doctor of Laws. University Hall was illuminated by candles in celebration of the event, and President Washington with his friends visited the building and viewed the illumination from the College Green. It was in response to a greeting from President Manning upon this occasion that President Washington made this declaration: "You may rely on whatever protection I am able to afford in so important an object as the education of our youth."

Early Nineteenth Century Growth

In 1804, Nicholas Brown, son of one of the founders of the College, a member of the Class of 1786, and then Treasurer of the College, made a gift of a sum of money, large for those times. In recognition of this generosity, the name of the College was changed to Brown University. The benefactions of Nicholas Brown to the University continued through many years until they aggregated approximately \$160,000. As a result of his generosity, Hope College, Manning Hall, and the Library Fund came into existence. The John Carter Brown Library, founded by and named for the

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son of Nicholas Brown, contains the finest collection of early Americana in the world and is one of the choicest material possessions of the University.

During this early period many men were graduated who later were to have positions of prominence and responsibility and whom today we remember for service to our country and for the distinction that they have brought to their Alma Mater. Samuel Snow (1782) was United States Consul in Canton, China. Jonathan Maxcy (1786) was the second President of Brown, later President of Union College and the first President of the University of South Carolina. Jonathan Russell (1791), one of the commissioners who negotiated the treaty of Ghent in 1814, later became a member of Congress and Minister to Norway and Sweden. Henry Wheaton (1802), the authority of his day on international law, served as Minister to Prussia. Adoniram Judson (1807) is remembered as a brilliant and heroic missionary to Burma. William L. Marcy (1808) served as Governor of the State of New York before becoming the Secretary of War for President Polk and Secretary of State for President Pierce. Wilbur Fisk (1815), a Methodist clergyman, was the first president of Wesleyan University. Horace Mann (1819), as Secretary of the Massachusetts Board of Education, profoundly influenced public school education throughout the country. Samuel Gridley Howe (1821) was a hero in the Greek war of independence and later in America became a pioneer in humanitarian work for the blind. George D. Prentice (1823) became the famed editor of the Louisville (Ky.) Journal.

Later Nineteenth Century Expansion

Brown, having grown from a small college to a well established university, called Francis Wayland in 1827 to be its fourth President. He was probably the most distinguished college president of his time, and his was an administration notable in the history of the University. His influence was felt both in the physical growth and development and in the improved intellectual and moral tone of the institution. The personnel was enlarged and the material resources were greatly increased. Entrance requirements were raised; the scope of the curriculum was enlarged and greater emphasis was given to the natural sciences and political economy. His theories of universal education were probably the most advanced of any leader since Thomas Jefferson. Wayland pioneered the elective system and he encouraged the introduction of courses in applied science and engineering. The beginnings of the Division of Engineering at Brown go back to the days of Francis Wayland.

During the period of the Civil War, Brown again felt the influence of a national conflict. Of the 278 men who were graduated during the war, 132 enlisted for service and it was only at the end of this civil strife that the University regained its normal stride.

Important innovations were introduced during the next twenty-five years. Athletics were organized and Brown was represented in intercollegiate sports, particularly baseball and rowing. Many new buildings were added to the campus and the financial resources of the University were greatly increased. The Alumni Association was created during this period, enabling former students to take an ever increasing and vital interest in the growth of the institution. The time of Commencement was changed from September to June in 1870, and in 1888 the first Master of Arts degree, in course, was awarded, followed in 1889 by the first degree of Doctor of Philosophy.

In 1889, Elisha Benjamin Andrews of the Class of 1870 became the eighth President of Brown. His administration marks another important era in Brown's history. The modern University, already emerging, developed rapidly under the initiative and contagious enthusiasm of Andrews. Pembroke College, a coördinate undergraduate college for women, was established in 1891. Nine new departments of instruction were created, and graduate study was seriously encouraged. The undergraduate enrollment was more than doubled and the faculty was increased more than threefold, largely by the appointment of a group of promising young men who had prepared for teaching in the graduate schools of this country and abroad. These men were a remarkable group of teachers and scholars whose influence is still felt in the University.

From the time of President Wayland to the end of the nineteenth century many eminent men were graduated from Brown. Samuel Sullivan Cox (1846) became famous as an author, humorist, statesman, and diplomat. James B. Angell (1849) was President of the University of Vermont, President of the University of Michigan, and later Minister to Turkey and to China. Alexander L. Holley (1853) became a pioneer in modern engineering, particularly in the development of the iron and steel industry. Richard Olney (1856) and John Hay (1858) were both Secretaries of State. Hay was also personal secretary to President Lincoln and Ambassador to Great Britain. William W. Keen (1859), the distinguished surgeon, served in the Civil and Spanish-American wars and in World War I. Elisha Benjamin Andrews, the President of Brown, was also Chancellor of the University of Nebraska. Benjamin Ide Wheeler (1875) was the President of the University of California. Dr. Charles V. Chapin (1876) was a pioneer in the field of preventive medicine. Charles Evans Hughes (1881) was, in succession, the Governor of the State of New York, Secretary of State, Justice of the World Court, and Chief Justice of the United States. Sam Walter Foss (1882), editor and poet, and Dana Carleton Munro (1887), medieval historian, were well-known graduates of Brown. Alexander Meiklejohn (1893), Dean at Brown and President of Amherst College, was later Chairman at the Experimental College in the University of Wisconsin and Director of the

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School of Social Studies in San Francisco. John D. Rockefeller, Jr. (1897), philanthropist and financier, has spent a lifetime in humanitarian endeavors.

Names of graduates in this present century will also be written indelibly into our national history. Time eventually will make its decision which of the graduates since 1900 will be listed on the distinguished honor rolls of the future.

The Founding of Pembroke College

Pembroke College in Brown University was established in 1891. The first building erected on the women's campus was dedicated in 1897 and was called Pembroke Hall in honor of Pembroke College in Cambridge University, the alma mater of Roger Williams. From the very beginning the aim of the coördinate college at Brown was to preserve for women the distinct social life of a separate institution, the college to be affiliated and not appended, but its graduates to be graduates of Brown University. Mary E. Woolley, a distinguished president of Mount Holyoke College was a member of the first graduating class. The great success of Pembroke is in part a tribute to the foresight of President Elisha Benjamin Andrews, for whom the main dormitory at Pembroke is named.

The Turn of the Century

Just before the turn of the century, William Herbert Perry Faunce of the Class of 1880 began his administration, 1899-1929, the longest in the history of the University. Under his direction Brown became in fact, as well as in name, a university-college—an institution primarily concerned with the liberal education of the individual student but also equipped to offer advanced and specialized study in the scholarly environment of a university.

These thirty years saw a remarkable increase in the physical plant and material resources of the University, with the endowments increasing nine-fold and the income increasing correspondingly. In 1929 the libraries of the University contained approximately four hundred thousand volumes. The undergraduate enrollment had increased to approximately 1300 men in the College and 500 women in Pembroke, and the faculty was over 200 in number.

During this period the University achieved a position of larger importance in the field of American education. Entrance requirements were raised, the curriculum was considerably broadened, study for Honors was inaugurated, and graduate study was given formal recognition by the establishment of the Graduate School. More adequate provisions were made for the administration of student life and welfare, closer relationships with the community were encouraged, and all aspects of the educational process were broadened in scope and enriched in content.

Brown in Recent Years

In 1929, Clarence Augustus Barbour, of the Class of 1888, became the tenth President of the University. During the period of his administration the University continued to develop its educational program and to enlarge its physical and financial resources. The educational policy of the University was summed up at the beginning of his administration in the following statement: "Education proceeds best by contact between superior minds and personalities. The character of a university as an institution of higher education depends essentially upon the competence of the faculty, the quality of the students, and the adequacy of the provisions for contact between them. Out of these primary elements the educational policy of a university is constructed." With this policy as the basic principle, the University has limited the student body in size by developing a system of selective admission to the freshman class, attracted a faculty of able teachers, utilized the resources of its location in an old New England city, and encouraged investigation and research.

Henry Merritt Wriston, one of the nation's educational leaders, was inaugurated President of Brown in 1937. His administration has served to strengthen Brown's contribution to the welfare of the nation. Since 1937 the endowment and physical plant of the University have been increased, the library resources have been enlarged, new departments of instruction have been added, pioneer work in freshman-sophomore curricula has been initiated, and an extensive student housing program has been completed with the construction of a dormitory-fraternity quadrangle. The Corporation has followed a policy of maintaining a university-college, feeling that many of the advantages of both the small college and the large university may be secured at Brown. As President Wriston has stated, "The central business of the University is the increase of knowledge, the inculcation of wisdom, the refinement of emotional responses, and the development of spiritual awareness. The University has concentrated its energies deliberately and with more and more conviction and assurance upon the undergraduate colleges of liberal arts and graduate work in the arts and sciences."

General Regulations



Admission

ADMISSION to the freshman class at Brown is limited to those who, in the judgment of the Board of Admission, are best qualified to benefit from the educational opportunities which the University offers. In defining qualifications for admission, the University seeks evidence of ability to pursue academic work of collegiate grade and evidence of personal qualities which offer assurance that the candidate for admission will be a desirable member of the academic community.

New students are ordinarily admitted only in September each year, and the size of an entering class is limited to approximately 600. The College enrollment is approximately 2000.

Factors Determining Admission

The decision of the Board of Admission with respect to an applicant is based upon the following factors:

1. *Secondary school record.* Much importance is attached to the academic record and the class standing of the applicant.
2. *School Recommendation.* Admission decisions are greatly influenced by the statement of the secondary school concerning the ability, ambition, and character of the applicant.
3. *Personnel information.* In addition to the school report, further information is secured concerning the applicant's general fitness for college life at Brown.
4. *Personal interview.* All candidates for admission should, if possible, have a personal interview with an officer of the University or a designated alumnus.
5. *Scholastic Aptitude Test.* All applicants for admission who have not previously attended college are required to take the Scholastic Aptitude Test of the College Entrance Examination Board.

Subject Requirements

Four years of secondary school work are normally required for admission. While the University maintains that the educational program should be adapted to the needs and aptitudes of the individual student and believes

ADMISSION PROCEDURE

that quality of academic performance is more important than subject requirements as a criterion for judging applicants, experience shows that certain specific subject requirements should be met. Beyond these, however, any subject which is acceptable to the secondary school as credit for graduation will ordinarily be accepted by the Board.

The requirements which should be fulfilled vary for the several degrees. (Exceptions are made in unusual cases.) These requirements are as follows:

Degree of Bachelor of Arts: Four years in English, two in algebra, one in plane geometry, two in one foreign language, and seven electives, preferably in the fields of English, foreign language, mathematics, history, and science. (Three years in one foreign language are recommended.)

Degree of Bachelor of Science in Engineering: Four years in English, two in algebra, one in plane geometry, one-half in solid geometry, one-half in plane trigonometry, one in history, one in physics, and six electives, preferably in the fields of English, foreign language, mathematics, history, and science.

Degree of Bachelor of Science in Chemistry: Four years in English, two in algebra, one in plane geometry, one in history, two in one foreign language, and six electives, preferably in the fields of English, foreign language, mathematics, history, and science.

Degree of Bachelor of Science in Physics: Four years in English, two in algebra, one in plane geometry, one in history, two in one foreign language, and six electives, preferably in the fields of English, foreign language, mathematics, history, and science.

Degree of Bachelor of Science in Applied Mathematics: Four years in English, two in algebra, one in plane geometry, one-half in solid geometry, one-half in plane trigonometry, one in history, one in physics, and six electives, preferably in the fields of English, foreign language, mathematics, history, and science.

Combined five year program leading to a Bachelor of Arts and Bachelor of Science degree: Four years in English, two in algebra, one in plane geometry, one-half in solid geometry, two in one foreign language, one in physics, and five in elective subjects, preferably in the fields of English, foreign language, mathematics, history, and science.

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Preliminary Application

Preliminary application for admission to the University may be made at any time during a student's secondary school course. Early application is not required, but it is strongly recommended since it assures a continuing interest on the part of the University in the secondary school career of the

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applicant for admission. Early application, however, does not insure admission.

In addition to making early application, a prospective applicant should confer with the school officials as early as possible regarding the arrangement of his secondary school course to meet the requirements for admission to Brown.

Final Application

Final application for admission should be made early in the senior year. Application forms may be obtained by writing to the Admission Office, Brown University, Providence 12, Rhode Island. There is no application fee.

Credentials

The Admission Office provides every candidate with a school record blank and two reference blanks, which must be submitted to the Board for consideration.

Personal Interview

An applicant should, if possible, have a personal interview with an officer of the University or a designated alumnus. Applicants who are in Southern New England or in the New York City area should arrange for a personal interview with one of the Admission Officers at the University.

The Admission Office is open from 9 a.m. to 5 p.m. on weekdays throughout the year and from 9 a.m. to 12 noon on Saturdays when the University is in session. Student guides are usually on hand to conduct visitors on tours of the campus, and detailed maps of the campus are always available at the Admission Office.

Applicants living outside of the above area would gain by an interview on the campus. If this is not possible, an interview with an alumnus living near the applicant may often be arranged through the Admission Office. The lack of an interview will not, however, prejudice the chances of such an applicant.

Scholastic Aptitude Test

Every applicant for admission who has not previously attended college must take the Scholastic Aptitude Test of the College Entrance Examination Board, given in December, January, March, May, and August in many centers throughout the world. Achievement tests are not required.

Applicants who take the test in December or January may receive decisions in March, but no applicant who takes the test in March is at any disadvantage in competing for entrance. While the class is largely chosen before May 1, those who take the May test are given all possible consideration.

Each candidate must write directly to the College Entrance Examination

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Board requesting an application for the test. (Those in Eastern, Southern, or Central states should write to the office at P.O. Box 592, Princeton, New Jersey. Those in the Mountain or Pacific states should write to the office at P.O. Box 9896, Los Feliz Station, Los Angeles 27, California.) When the test application has been received it should be filled out and returned to the Board with a fee of \$6. The Board will then send a practice form and a ticket of admission which will give the exact time and place of the test.

Applications for tests must be made three weeks in advance. Late applications are subject to a fine of \$3, and no applications are accepted later than one week before the test date.

No special preparation is needed for the test other than a study of the practice form. Test scores are sent to the University and not to the applicant.

An applicant who applies after taking the test should write to the College Board requesting that his scores be mailed to the Board of Admission. It is expected that every applicant will take the test during the year in which he wishes to be considered for entrance.

Every applicant is urged to take, in addition, any College Board Achievement Tests in which he feels he may do well. By obtaining a sufficiently high score on any of the language reading tests or the biology, chemistry, or physics test a student may meet language or distribution requirements in college, thereby making it possible for him to take additional elective courses.

Admission with Advanced Standing

Brown is one of twelve colleges participating in the School and College Study of Admission with Advanced Standing. The purpose of this plan is to encourage more intensive academic work for very able students in strong secondary schools. Selected seniors in some schools are now pursuing advanced level studies for which they will eventually receive college credit if they are able to pass validating examinations.

Selection of the Freshman Class

As soon as all of an applicant's credentials are on file he is given careful consideration by the Board of Admission. Usually, the College Board test report is the last item received; it requires approximately one month for the College Board to report test scores to the Admission Office and three weeks thereafter for the Board of Admission to send notifications of decisions to applicants. Thus, a candidate who takes the January test is notified of his status early in March; one who takes the March test is notified early in May.

Acceptance of any candidate is always made subject to satisfactory completion of the school year. Therefore, a final credential blank is mailed to the secondary school at the close of the student's last school semester.

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Admission of Veterans

In addition to the usual requirements a veteran should send to the Admission Office a photostat or photoprint copy of his Certificate of Discharge (if an enlisted man) or Certificate of Service (if an officer). Arrangements for benefits under the G.I. Bill must be made by the applicant through his local Veterans Administration office.

Transfer Applicants

A transfer applicant should provide the Board of Admission with official transcripts of all previous college work. A statement of honorable dismissal should accompany each transcript. A tentative decision can be made by the Board on the basis of unofficial records provided by the applicant.

All transfer applicants are required to take the College Transfer Test of the College Entrance Examination Board, given on the same dates as the Scholastic Aptitude Test.

Because the number of transfer students who can be accepted is limited every such applicant should have had high standing in the college from which he wishes to transfer. Advanced standing for more than two years is not granted. An applicant who has completed less than one semester at another college must nevertheless present an official statement from the college to the effect that he left in good standing.

Admission of Special Students

A limited number of mature persons who desire to pursue special subjects and who have had the requisite training may, with the approval of the Board of Admission, enter the various courses of study without becoming candidates for degrees.

Special students are subject to the same regulations regarding attendance, examinations and fees as candidates for degrees.

Admission of Foreign Students

Applicants living outside the continental limits of the U. S. ordinarily complete the same admission credentials as other candidates. The Scholastic Aptitude Test described above is given in many foreign centers.

In addition, each student whose native language is *not* English should send a short autobiography (approximately 300 words) to the Admission Office.

Freshman Week

The program of Freshman Week, preceding the opening of college each September, includes aptitude tests, orientation lectures, medical examinations, conferences on course programs, and registration. All new entering students, freshmen and transfers, are expected to be present.

Detailed instructions are mailed to each entering student.

REGISTRATION AND ENROLLMENT

Registration and Enrollment

General Information

All candidates for admission to the freshman class and all other new students are expected to participate in the activities of Freshman Week. This program includes achievement tests, proficiency tests, placement tests, aptitude tests, orientation lectures, physical and medical examinations, registration and enrollment.

The student's account must be paid at the Business Office preceding the opening of each semester. (See Page 68.)

All new students, whether candidates for a degree or special students, must arrange their program of courses before the opening of each semester. Students must present at the time of registration (1) receipt for the required payments; (2) a certificate of admission; (3) a statement from the Medical Staff; (4) a completed course program blank; (5) receipt for \$15 student deposit.

Special instructions will be sent prior to the opening of each semester to members of all classes.

All undergraduate students previously in residence and students admitted to advanced standing must report for the final registration on one of the four days preceding the opening of the first semester. A receipt for the required payment must be presented. This payment must be made before close of business on the day preceding the opening of the semester. Students to be enrolled under Public Law 16, 346, 550, or 610 must present a statement from the Veterans Finance Office establishing eligibility. A fee of \$10 will be charged for late payment or late registration.

Changes in courses will be allowed only as approved by a student's counselor. A fee of \$10 may be charged for each change.

Registration at Midyear

Registration. Undergraduate men in good standing whose courses for the second semester are correct as listed on the registration cards completed during spring pre-registration, or whose courses for the semester can be arranged on consultation with their counselors, may register for the second semester by presenting the receipt for payment of the semester account.

Changes in Courses. An undergraduate who finds it necessary to make changes in registration for the second semester must secure permission to do so from his counselor. An early consultation is advised.

An undergraduate who is obliged to make changes because of academic failure at midyear must consult his counselor before reporting for the check-in registration.

Enrollment Without Academic Credit

Auditing. An auditor is a student who is enrolled in a course without credit

ATTENDANCE, GRADING, EXAMINATIONS

under the following conditions: (1) the student must be properly registered for it (this includes permission from the Dean and from the instructor of the course); (2) he must pay the usual course fee; (3) he is entitled to all instruction in the course, including conferences, the criticism of papers, tests, and examinations.

Vagabonding. A "vagabond" is a student who, with the permission of the instructor involved, visits a given course occasionally or regularly without payment of fee. It is understood that such a student will be entitled to participation in classes and activities, including discussions, conferences, and papers, *only* at the pleasure of the instructor.

Attendance, Grading, Examinations

Attendance

Every student is expected to attend every session of the classes in which he is registered, including the student recreation program and the chapel service. These regulations are modified for students who meet certain requirements regarding academic averages (see Dean's List, page 50).

For the dates of recesses and holidays see the University Calendar, page 3.

Grading System

At the end of each semester final grades are given in semester courses. A tentative grade is given at the end of the first semester in year courses (indicated by a dash between course numbers); at the end of the second semester, examinations in such courses cover the work of the two semesters, and a final grade for both is assigned at that time. An official report is sent to the parent or guardian of each student.

There are four passing grades: *A*, *B*, *C*, *D*. *D* is not considered a satisfactory (quality) mark.

E is assigned to those who have failed; or to those whose work during the semester has been so unsatisfactory that the instructor has notified them in advance that they will not be allowed a final examination; or to those whose absence from a final examination is not excused by the Dean; or to those who, in a laboratory course, have not completed half the work; or to those who have been absent one-half the time in a course.

F is assigned at the end of the first semester in a year course or a two-semester sequence to those who are not allowed to continue in the second semester of that course.

A student who receives the mark *E* or *F* in a required course must repeat the course unless the substitution of an equivalent course in the same department is recommended by the department concerned, or unless the Committee on Academic Standing, in conference with the department concerned, allows the deficiency to be made up by work at an approved summer school. A student who receives the mark *E* or *F* in an elective course may substitute some other course or may take an equivalent amount of work at an approved summer school.

ATTENDANCE, GRADING, EXAMINATIONS

I is assigned to those who have passed a final examination but whose work is incomplete but satisfactory so far as done. A student who receives the mark *I* must complete the work not later than the middle of the following semester; otherwise, unless an extension is granted by the Committee on Academic Standing, the mark *I* will become an *E*.

Abs. is assigned to a student who has been absent from a final examination unless he has been barred from the examination and a mark of *E* or *F* assigned on the basis of the regular work of the course. A student receiving the grade of *Abs.* must apply to the Recorder for a special examination (see below). His absence from the final examination must be excused by the Dean. If the student does not take the special examination, the grade of *Abs.* will become an *E* unless an extension is granted by the Committee on Academic Standing.

A student whose work is incomplete and who was absent from the examination is assigned the mark *I*, *Abs.*

If a student is withdrawn from a course after mid-semester on account of unsatisfactory work that is lower than *D*, the mark *E* for that course will be entered in the student's record. If a student is withdrawn for a similar reason before mid-semester, the mark *E* will be recorded if so recommended by the department concerned.

D is not considered a satisfactory mark. The action of the Committee on Academic Standing in placing students on "warning" or "probation" or in dismissing students is based on the amount of work of *D* grade as well as on actual failures.

A student must maintain the minimum standards set by the Faculty and Corporation for graduation. A student whose grades fall below these standards will be subject to dismissal from college.

Academic averages are based on the following: $A=4$; $B=3$; $C=2$; $D=1$; E and $F=0$.

Examinations

Final Examinations. Examinations are held in all semester courses at the close of each semester unless omitted by vote of the Committee on the Curriculum. Final examinations covering the work of both semesters are given at the end of the second semester in year courses. Examinations in such courses may be given at the end of the first semester if a department so desires. A student may be barred from the final examination by the instructor if his work during the semester is so unsatisfactory that he cannot pass the course.

For the dates of final examination periods see the University Calendar, page 5.

Special Examinations. These examinations are given only with the approval of the Dean to students absent from final examinations.

Special examinations on the work of the first semester are given during a special examination period, in the fifth week of the second semester. A student eligible for such a special examination must file an application,

ACADEMIC STATUS

accompanied by a fee of \$5 for each examination, with the Recorder, *not later than the second Wednesday of the second semester.*

Special examinations on the work of the second semester are given in the week preceding the opening of the academic year. A student eligible for such a special examination must file an application, accompanied by a fee of \$5 for each examination, with the Recorder, *not later than August 15.*

Placement and Achievement Tests in Foreign Language. Placement tests in the foreign languages are given on the first day of Freshman Week in the fall and during the first week of classes in each semester. Achievement tests in foreign language are given on the first day of Freshman Week in the fall and during the final examination period of each semester.

Distribution Tests. Examinations for Bachelor of Arts candidates who wish to satisfy distribution requirements by test (see page 57) are given during Freshman Week each fall and also early in the second semester. Candidates for any one of the Bachelor of Science degrees may take the anticipatory examinations. Bachelor of Science candidates who pass these examinations will not satisfy the requirements for electives in the Humanities and Social Studies, but they may satisfy the prerequisites for a more advanced course in the field of the distribution course and they will receive an additional grade point to be used in computing the graduation average.

Students who have audited or vagabonded Distribution Courses, and other students properly qualified, may apply for permission to take the final examinations in such courses as distribution tests.

Academic Status

Dean's List

The Dean of the College, at his discretion, may place on the Dean's List each semester those students in Semesters III through VIII whose academic performance for the previous semester is of high quality.

Students on the Dean's List are exempted from the regular requirements with regard to attendance in classes, but not in regard to Chapel. No student who abuses this privilege will be retained on the list.

Warning, Probation, Dismissal

An undergraduate with an unsatisfactory scholastic record will be placed in one of three categories—*Warning, Probation, Dismissal*—except under extenuating circumstances concerning the merit of which the Committee on Academic Standing shall be the sole judge.

Action by the Committee on Academic Standing will depend upon the extent of the student's deficiency. The general record of the student is taken

HONORS PROGRAM

into account in making decisions. His quality grades and his academic average are given special attention.

Warning serves to caution the student that his record is below the standard required for graduation. A student with more than one failure is subject to probation or dismissal.

Probation notifies the student that unless his record improves, he will be given a dismissal at the next marking period. Probation is viewed with seriousness by the University officers, and, during the period of probation, no student will be allowed to be absent from classes without excuse or to receive financial assistance.

Dismissal may be given at any time for a very unsatisfactory academic record, regardless of whether the student has previously been placed on warning or probation. If a student's academic average falls below 1.0, he will be subject to dismissal.

The privilege of enrollment in Brown University may be withdrawn at any time from a student who does not conform to the regulations and traditions of the University or who does not make a satisfactory adjustment to the University environment.

A student suspended or dismissed from the University, or withdrawing when under investigation for misconduct, is not entitled to any refund of tuition or room rent.

Honors Program

Individual Study Plans

Properly qualified students may elect in concentration and related fields an Honors Program of study, instead of the regular concentration program, leading to a Bachelor's degree. Honors study provides such students with freedom from certain routine academic requirements, closer association with the faculty, and exceptional opportunities for critically guided independent work. In turn it requires of students acceptance of a large measure of responsibility, development of intellectual initiative and self-reliance, and attainment of a considerable degree of mastery over the chosen field of study.

The Honors Program is provided to give superior students at Brown and Pembroke the opportunity to participate more fully in the process of their own education; it presents the student with an opportunity to think and judge for himself, and to work actively in his chosen field of study rather than merely to read about it or hear about it. The student following an Honors Program will achieve a wider degree of mastery in the field of his major interest and at the same time will be expected to undertake independent investigations of his own choosing relating to problems that attract him particularly.

HONORS PROGRAM

Each Honors student selects that field of concentration which best satisfies his own needs and, with the help of his Honors Supervisor, arranges a definite program of study covering the field. Such a program is not necessarily limited to any one department or division of the University. If the student has a clear idea of what he wants to study, he may arrange a program that cuts across traditional departmental lines. In most cases, however, a departmental program will meet his needs.

General Regulations

Eligibility. Any student with an academic average of 3.0 or above is eligible to elect the Honors Program. On special recommendation of his major department, the application of a student with a somewhat lower average will be considered.

Date of Enrollment. The student who chooses the Honors Program will normally enroll at the end of his fourth semester. In some cases he may delay enrollment until the fifth, or even sixth, semester, depending upon the requirements of the various departmental programs.

Supervision of Honors Students. Upon enrollment, each Honors student must file a program of study covering his work for Honors. This program must be approved by the Honors Supervisor in the student's major field of study and by the Director of the Honors Program. Each Honors student shall be assigned by his Honors Supervisor in his major field to a member of the faculty who will be in immediate charge of the student's plan of study for Honors.

Plans of Honors Study. Honors students will normally take at least ten semester courses (excluding elementary courses) within their field of concentration, whether this be departmental or interdepartmental. The plans of Honors study vary from field to field. In all departments preparation of a *Senior Thesis* constitutes part of the work of the student's final two semesters before graduation. Some departments provide special *Honors courses* exclusively for Honors students; some offer *tutorial courses* in which independent study of special topics under individual guidance is the rule; some make arrangements for *independent supplementary reading* or laboratory work or special reports. In each case some special Honors work is included in each semester of a student's candidacy.

The various departmental or interdepartmental plans of Honors study shall be as equal as possible in scope and standards. All plans of Honors study shall be subject to approval or rejection by the Honors Council and the Director of the Honors Program.

Candidates for Honors may be excused from not more than two courses required for distribution. The student's application for exemption from this requirement, with a full statement of his plan of study, should be presented by him to the Department of his major concentration, and, if approved by

this Department, should then be presented by his Department Supervisor to the Honors Council for final approval. Moreover, on recommendation of the Department Supervisor, the Honors Council may authorize a candidate for Honors to substitute for the normal distribution course (or courses) another course (or courses) more suited to his needs.

Recommendation for Honors. The three grades of Honors are designated as Honors, High Honors, and Highest Honors. Highest Honors are awarded only to students of exceptional performance and promise. Recommendations for Honors in any of these three grades must have the written approval of the Department or Departments concerned. Honors are awarded by the Honors Council.

The University publicly honors the successful candidate for Honors by the award, with his diploma, of a certificate of Honors, High Honors, or Highest Honors in his field of study.

Examinations. The work of every candidate for Honors will be reviewed by the Department or Departments concerned during the student's course of study.

Before the end of the senior year, every candidate for Honors is examined in the whole work of the Honors field. The examination shall be conducted by a committee of the Department or Departments concerned, and it will normally include both written and oral portions. Students failing to attain the standing requisite for Honors are nevertheless given credit for their concentration work toward their degree, in accordance with the regular requirements for graduation.

Discontinuance of Candidacy. Students may withdraw voluntarily from candidacy for Honors at any time. Candidates who are found not qualified for unusual achievement in the field chosen, or not taking advantage of the special opportunities offered, will be required to discontinue candidacy for Honors. Honors students are expected to maintain a *B* average (3.0) outside their Honors field and a *B* average (3.0) within that field. Candidates leaving the Honors Program before their completion of study are required to make up the equivalent of any course exemptions which they have been granted.

Honors in Departmental and Interdepartmental Fields

Honors work is normally available in every departmental field in which concentration is possible. Nearly every department includes a statement of the specific nature of Honors work in its field in the descriptive material at the head of its announcement of courses. In other cases Honors programs are arranged on an individual basis. More detailed information can be obtained from the Supervisor of Honors Students in the department concerned.

HONORS PROGRAM

Interdepartmental programs of Honors study will be arranged wherever feasible for students whose interests call for a concentration which cuts across departmental lines. Such programs will be arranged to suit the candidate's needs by the Supervisors of Honors Students in the candidate's major fields of study. Examples are the fields of Literature, History and Religions, Philosophy of Science, Social Psychology, American Civilization, and International Relations.

Interested students should consult with the Honors Supervisor in their field of concentration or with the Director of the Honors Program (Professor A. D. Van Nostrand, Department of English). The Honors Supervisors are:

Field of Concentration	Professor	Field of Concentration	Professor
<i>American Civilization</i>	D. H. FLEMING	<i>International Relations</i>	W. T. PERKINS
<i>Art</i>	G. E. DOWNING	<i>Mathematics</i>	F. M. STEWART
<i>Biology</i>	M. V. EDDS, JR.	<i>Modern Languages:</i>	
<i>Chemistry</i>	W. W. RUSSELL	<i>French</i>	A. J. SALVAN
<i>Classics</i>	H. N. COUCH	<i>German</i>	A. HOLSKE
<i>Economics</i>	H. P. MINSKY	<i>Italian</i>	L. H. GORDON
<i>Engineering</i>	D. C. DRUCKER	<i>Spanish</i>	J. LÓPEZ-MORILLAS
<i>English:</i>		<i>Music</i>	W. DINNEEN
<i>American Literature</i>	A. D. VAN NOSTRAND	<i>Philosophy</i>	R. C. TAYLOR
<i>English Expression</i>	B. W. BROWN	<i>Physics</i>	P. TAMARKIN
<i>English Literature</i>	E. M. BLISTEIN	<i>Political Science</i>	W. T. PERKINS
<i>Geology</i>	A. W. QUINN	<i>Psychology</i>	L. A. RIGGS
<i>History</i>	C. H. KIRBY	<i>Sociology</i>	K. B. MAYER

Identification and Criticism of Ideas

In the fall semester of 1953-54 Brown University launched a five-year program to develop a group of new courses for the freshman and sophomore years. The courses bear the common designation "The Identification and Criticism of Ideas." Initially, they are open only to students who stand in the upper half of the entering class. This program, which has aroused widespread interest because of its experimental nature, has been made possible by a grant from the Carnegie Corporation of New York in the amount of one quarter million dollars.

The courses in the Identification and Criticism of Ideas focus on original sources and classic expressions of vital ideas. Some courses center about a single work, others may use several; always the emphasis will be on depth. Instead of being given the outline survey contained in the usual textbook, the student is challenged to identify and interpret the concepts and theses of the scientific, philosophic, or creative genius.

In small discussion groups, the students analyze these ideas, examine

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their consistency and the principle of organization used by the author. Together they define the meaningfulness of the author's views and relate them to human experience. So that his criticism and evaluation may be mature, the student reads extensively outside the central text to see how other minds have dealt with the same problems.

In the use of primary sources and the small discussion class, the new courses have features in common with many "general education" courses introduced in the recent past at other institutions. The Brown program is radical in its intensive concern with the central text and in the subordination of topical coverage to the development of critical judgment at this early stage of the student's career.

Seventeen courses in the Identification and Criticism of Ideas are offered during the current year: Art, Biology, Classics (2), Economics, English (2), French (2), History, Mathematics, Philosophy, Political Science, Psychology, Sociology and Spanish (2). Course descriptions are given in the section, "Courses of Instruction," beginning on page 83.

These courses form an alternate pattern for meeting the distribution requirements for the Bachelor of Arts degree (see page 56).

Counseling

Upon being admitted to Brown, each student is assigned to a counselor. Counselors are members of the faculty who undertake to advise a small number of students. Together, student and counselor formulate the program of study best suited to the student's intellectual needs and capacities. Counselors are available to students at regularly scheduled office hours during the academic year. At the beginning of the Junior year, the student normally commences his concentration program, and thereafter receives educational advice and direction from members of the department in which he has elected to concentrate.

In addition to his counselor, each freshman has a student advisor whose function is to help him adjust himself to the University.

Requirements for Degrees

Quantity Requirements

The course requirements for the baccalaureate degrees with the exception of the Bachelor of Science (in Nursing) are four semester courses each semester for eight semesters, a total equivalent to thirty-two semester courses.

REQUIREMENTS FOR DEGREES

Quality Requirements

In order to meet the quality requirements for graduation, candidates for all baccalaureate degrees must obtain a final cumulative average of 1.75 or better based on all grades received.

General Requirements

In addition to the course requirements, all candidates for degrees must complete the prescribed work of the first two semesters in physical education, swimming and the orientation lectures.

Ordinarily, a minimum residence requirement of two academic years must be fulfilled.

BACHELOR OF ARTS

LANGUAGE REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or, for a student in the IC program, before the beginning of his third semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter his fifth semester until he has completed this requirement.
- B. A working knowledge of one foreign language—Greek, Latin, French, German, Italian, Russian, Spanish—to be demonstrated by passing an achievement test or by obtaining a grade of *C* or better in a language course on the fourth-semester (or higher) level. Each student who fails to pass this test at entrance shall enroll during his first semester in a foreign language course and shall continue with course work in that language until the requirement is met. A student who receives a *D* in a course on the fourth-semester level may repeat the course once without credit and satisfy the foreign language requirement if his work warrants a mark of *C* or better. A student who has not satisfied the language requirement by the beginning of the sixth semester will be refused registration until the requirement is met.

DISTRIBUTION REQUIREMENTS

Beginning in 1953-54, two alternate patterns are offered for meeting the distribution requirements: Pattern A-D courses, and Pattern B-IC courses.

Pattern A-D courses

Every student must complete a total of twelve semester courses in distribution: four in the Sciences, four in the Humanities, and four in the Social Studies.

Each of the three major divisions is subdivided as indicated below by italics. The figures in parentheses indicate the number of semester courses which are to be taken if the student elects to satisfy part of his distribution requirements from that particular subdivision. For example, (2) beside *Literature* means that a two semester

¹ See description of English 1 and English 2 on page 129.

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sequence from that subdivision must be completed; the remaining two distribution requirements in the Humanities would have to be elected from the other subdivisions.

1. Sciences—*Physical* (2): Physics D1, Chemistry D2; Physics D1, Astronomy D1; Chemistry D1, Geology D1. *Biological* (2): Biology D1; Psychology D1. *Mathematics* (1): Mathematics D1. *One of the following* (1): Physics D1; Chemistry D1; Biology D1; Psychology D1; Geology 1; Astronomy 1 or 2; Botany 4; Geology 41; any continuing science course.
2. Humanities—*Literature* (2): Classics D5, D6; English D27, D28 or D15, D16; French D11–D12; German D11, D12; Italian D107, D108; Spanish D11, D12. *Philosophy* (2): Philosophy D1, D2. *Art and Music* (1): Art D1; Music D1. *Religion* (1): Biblical Literature D1.
3. Social Studies—*History* (2): Classics D1, D2; History D1, D2. *Economics—Government—Sociology* (2 out of 3): Economics D1; Political Science D1; Sociology D1.

Pattern B-IC courses

This pattern shall be elective to freshmen who are in the upper half of the entering class on the basis of their secondary school rank and College Entrance Examination Board test results. Students who elect to satisfy their distribution requirements with this pattern must complete the equivalent of twelve semester courses, IC or D, of which there shall be at least one (two-semester) IC course in each of the three fields: Sciences, Humanities, and Social Studies. No student may take more than the equivalent of six, nor less than three, semester courses, IC or D, in any of these fields. Each student must take at least one semester course in Mathematics, Physics, or Chemistry.

All students in the IC program must take at least two (two-semester) IC courses in their freshman year, and at least two in their sophomore year. They may fulfill the remaining requirement of the equivalent of four semester courses by completing either IC or D courses. No IC course may be taken after Semester IV. No D course may be taken by a student in the IC program after Semester V without permission of the Dean. Without the permission of the Dean, no student in the IC program may take more than twelve semester IC and D courses combined. D courses may not be taken in a department in which IC courses have been elected, but continuing courses in the sciences may be taken. A student may not take IC or D courses in more than one Literature, unless the material is read in different languages.

In 1954–55, seventeen IC courses are offered as follows:

1. Sciences—Biology IC 1–2; Mathematics IC 1–2; Psychology IC 1–2.
2. Humanities—Art IC 1–2; Classics IC 3, 4; *Literature*: English IC 1–2, English IC 3–4, French IC 1–2 or IC 3–4, Spanish IC 1–2 or IC 3–4; Philosophy IC 1, 2.
3. Social Studies—Classics IC 1, 2; Economics IC 1–2; History IC 1, 2; Political Science IC 1, 2; Sociology IC 1, 2.

A student may satisfy certain distribution requirements by the successful passing of examinations. IC courses may not be anticipated by examinations. Examinations given for the purpose of satisfying distribution requirements may be taken during

REQUIREMENTS FOR DEGREES

Freshman Week and during a special period early in the second semester. The passing of an examination in meeting a distribution requirement does not give the student course credit but permits him to elect a course in lieu of the distribution course, thereby increasing the number of his free electives. This course he elects may be an advanced course for which the distribution course is a prerequisite, or it may be an additional course permitted in his field of concentration. Certain distribution requirements may be met by high scores on appropriate College Entrance Examination Board achievement tests, or on other approved tests. For each distribution requirement met by examination, a student's total number of points used in determining his graduation average will be increased by one.

CONCENTRATION REQUIREMENTS

Prior to his fifth semester, each candidate for the degree of Bachelor of Arts must prepare, in consultation with a departmental adviser, a plan of studies including a coordinated and progressive program of courses in concentration in some field of interest. Within this field the candidate for the degree shall take eight semester courses. The scope of the field of concentration and the program of courses is to be approved by the department or departments concerned and by the Dean of the College. The eight semester courses, and no others, taken by a student in concentration shall be the basis for a comprehensive examination at the end of his senior year.

The quality requirement in concentration is an academic average of 2.0 or better for all courses in a student's concentration program.

Courses in a student's concentration program may not be used to meet distribution requirements.

Specific statements regarding concentration precede the course descriptions in each department.

Elective Courses: Not more than two semester courses are allowed as electives in a departmental concentration; these, together with the eight semester courses required for concentration, permit a maximum of ten semester courses in one department, not including distribution or language achievement courses.

Interdepartmental Concentration Programs: Six programs of Interdepartmental Concentration are available: American Civilization, Ancient and Medieval Culture, International Relations, Mathematics and Economics, Mathematics and Physics, and Philosophy and Religion. Each program includes eight semester courses on which a comprehensive examination is given at the end of the senior year. Five of the programs list additional related courses as recommended electives but these, if taken, are not included in the comprehensive examinations. A detailed statement of each program is given below.

In order to assist students in synthesizing the several courses in their programs, they may be required in their junior year to attend, and in the senior year to participate in, a conference without academic credit, the nature and number of meetings of which will be determined by the faculty committee in charge of the program.

For a student who takes an IC course in place of a distribution course which is specified as a prerequisite in any of the programs, the prerequisites may be modified by the department concerned.

REQUIREMENTS FOR DEGREES

Students may be admitted to candidacy for Honors in an interdepartmental concentration on the approval of the Director of the Honors Program and the committee in charge of the particular concentration. Such candidates may be required to prepare an Honors thesis in the senior year and to take a special comprehensive examination, either written or oral, or both.

1. AMERICAN CIVILIZATION

Courses: History 151, *The Establishment of the American Colonies*; History 51, 52, *American History since 1763*, or History 161, 162, *The History of American Economic Life*; English 41-42, *American Literature*; American Civilization 191, conference course, to be taken in the senior year; and two of the following: Economics 131, *Labor Problems*; Philosophy 125, *History of Philosophy in America*; Political Science 124, *American Political Theory*; History 173, *Social and Intellectual History of the United States, 1789-1860*; History 186, *History of Science in America*.

Recommended Electives: English 172, *The Twentieth Century Novel, English and American*; English 187, *Twentieth Century American and European Drama*; History 152, *The American Revolution and the Forming of the United States, 1751-1788*; Political Science 115, 116, *American Constitutional Development*.

2. ANCIENT AND MEDIEVAL CULTURE

Qualification: A minimum average of 2.0 in those distribution courses of the participating Departments which are taken by a candidate for the concentration; at least one semester course of Latin, taken in college, beyond the elementary level.

Courses: Ancient Culture—Classics D5, *The Classical Epic: Destiny in Vergil's Aeneid*; Classics 118, *Classical and Hellenistic Archaeology*; Classics 122, *Roman History to 337 A.D.*; Medieval Culture—History 101, 102, *Europe in the Middle Ages*; Art 4, *Medieval Art*; also Philosophy 101, *Ancient and Medieval Philosophy*; and one of the following: Biblical Literature 111, *History of Christianity to the Reformation*; Biblical Literature 112, *History of Christianity: The Modern Period*; Biblical Literature 198, *Topics in the History of Religions*.

Recommended Electives: Classics 61, *Greek Literature, Exclusive of the Drama, in English*; Classics 117, *Prehistoric and Archaic Greek Art*; Classics 121, *Greek History to 146 B.C.*; Latin 201, *Seminar in Latin: Medieval Latin*; English 105-106, *Chaucer*; French 239, *Old French Literature*; German 153, *Middle High German*; Italian 161, 162, *Dante's Divina Commedia*.

3. INTERNATIONAL RELATIONS

Prerequisites: Completion, with a minimum average of 2.0, of four semesters of the following courses, including one semester of economics: Economics D1, *Elements of Economics*, or Economics IC 1-2, *Political Economy*; History D1, D2, *European History since the Fall of Rome*, or History IC 1, 2, *The Growth of the Modern State*; Political Science D1, *Principles of Political Science*, or Political Science IC 1, 2, *The Political Ideal of Freedom*. If a student has taken Classics D1, D2, *Ancient History*, instead of History D1, D2 or IC 1, 2, he may be admitted to the program if willing to take a semester of history as prerequisite.

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Courses: Economics 101, *Advanced General Economics* (special section for students in this concentration; to be taken if possible in the junior year); Economics 154, *International Economics* (should follow Economics 101); History 119, 120, *Europe in the Twentieth Century*; Political Science 117, 118, *International Politics and Organization*; Political Science 120, *Problems of International Policy* (to be taken in the senior year); either Economics 107, *Theories and Programs of Economic Reform*, Political Science 106, *Modern Dictatorship*, Political Science 122, *American Foreign Relations*, or Sociology 125, *Population and Migration* (Sociology prerequisite waived).

Recommended Electives: Economics 111, *Money and Banking*; History 51, 52, *American History since 1763*, or History 161, 162, *History of American Economic Life*; Political Science 105, *Parliamentary Government*; Sociology 137, *Social Organization*; Sociology 180, *A Sociological Analysis of American Life*; Economics 107, Political Science 106, 122, and Sociology 125 if not included in the concentration program.

4. MATHEMATICS AND ECONOMICS

Prerequisites: Mathematics 2, *Analytic Geometry and Calculus*, or its equivalent, or Mathematics IC 1-2, *A Modern Introduction to Analytic Geometry and Calculus*; Economics D1, *Elements of Economics*, or Economics IC 1-2, *Political Economy*. A grade of C or better in all prerequisite courses is required for joint concentration in Mathematics and Economics.

Courses: Mathematics 21-22, *Analytic Geometry and Calculus*; Mathematics 151, *Linear Equations and Matrices*; Mathematics 105, *Differential Equations*; either Mathematics 161, *Mathematical Statistics*, or Economics 161, *Statistical Method*; Economics 101, 102, *Advanced General Economics*; and Economics 192, *An Introduction to Mathematical Economics*.

Recommended Electives: Mathematics 121-122, *Advanced Calculus*; Mathematics 171, *Mathematical Theory of Investment*; Economics 71, *Accounting*; Economics 111, *Money and Banking*; Economics 154, *International Economics*; Economics 118, *Public Finance*; Economics 145, *Corporations and Government Control*.

Honors: Candidates for Honors in Mathematics and Economics jointly will normally include Economics 193-194, *Seminar on Economic Problems*, throughout their senior year. This course will culminate in a senior thesis concerned with mathematical economics or econometrics.

5. MATHEMATICS AND PHYSICS

Prerequisites: Mathematics 2, *Analytic Geometry and Calculus*, or Mathematics IC 1-2, *A Modern Introduction to Analytic Geometry and Calculus*; Physics 3, *Fundamental Physics* (or 2, *General Physics*).

Courses: Mathematics 21-22, *Analytic Geometry and Calculus*; Mathematics 105, *Differential Equations*; Mathematics 108, *Introduction to Partial Differential Equations* (to be taken in the senior year); Physics 4, *Fundamental Physics* (or 37, *Basic Principles of Laboratory Physics*); 38, *Intermediate Mechanics and Thermodynamics*; and two additional courses chosen from 37; 111, *Atomic Physics*; 114, *Intermediate Electricity and Magnetism*; 115, *Applied Optics*; 121, *Radiation Physics A*; 125, *Advanced Mechanics and Thermodynamics*.

REQUIREMENTS FOR DEGREES

6. PHILOSOPHY AND RELIGION

Courses: Philosophy (four courses): 101, *Ancient and Medieval Philosophy*; 58, *Ethics*; 151, *Philosophy of Religion*; and either 102, *Modern Philosophy*, or 122, *Recent and Contemporary Philosophy*. Biblical Literature (four courses): 1, *Old Testament Literature and History*; 2, *New Testament Literature and History*; 4, *History of Religions: Religions of the West*; and either 111, *History of Christianity to the Reformation*, or 112, *History of Christianity: The Modern Period*.

Recommended Electives: Biblical Literature 171, *Hellenistic Greek*; Philosophy 102 and 122; and Biblical Literature 103, 104, *Topics in the Bible and Its Background*, and 198, *Topics in the History of Religions*.

ELECTIVE REQUIREMENTS

Electives are required sufficient in number to complete the quantity requirement of thirty-two semester courses.

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS

SPECIFIC REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter his fifth semester until he has completed this requirement.
- B. A working knowledge of one foreign language—German or Russian—to be demonstrated by passing an achievement test, conducted by the Division of Modern Languages, or by obtaining a grade of *C* or better in a course in one of the languages cited on the fourth semester (or higher) level. Each student who fails to establish achievement by test shall enroll in a foreign language course as soon as possible and in any case not later than his third semester, and shall continue therein until the achievement requirement is met. A student who receives a *D* in a course on the fourth-semester level may repeat the course once without credit and satisfy the requirement if his work warrants a grade of *C* or better.
- C. Eight semester courses in mathematics.
- D. Four semester courses in applied mathematics.
- E. Eight semester courses in engineering, physics, and chemistry with a minimum of two semester courses in physics and two semester courses in chemistry. One of these eight semester courses must be a one semester course in Heat or Thermodynamics and one must be a one semester course in Fluid Dynamics.
- F. Electives to make a total of thirty-two semester courses with the requirement that at least six be in the Humanities and Social Studies jointly, with at least two in the Humanities and two in the Social Studies.

OPTIONS IN ENGINEERING OR PHYSICS

In addition to the program based on the requirements detailed above, the Bachelor of Science in Applied Mathematics also includes special programs with options in engineering and physics respectively. These permit the candidate to

¹ See description of English 1 and English 2 on page 129.

REQUIREMENTS FOR DEGREES

complete the major part of the Applied Mathematics curriculum with sufficient work in the field of concentration to constitute an adequate basic training also in that field.

For the degree with Engineering option, requirements A, B, and C remain the same. D is modified to require three courses, Applied Mathematics 26 no longer being required. E is replaced by a one semester course in chemistry and a one semester course in Physics, together with nine semester courses in engineering, one of which must be Engineering 40 (*Electrical Machinery*), Engineering 59 (*Mechanics of Materials and Introduction to Structures*) or Engineering 72 (*Thermodynamics*). The requirements for Heat and Thermodynamics and for Fluid Dynamics are maintained. F remains the same. However, in view of the additional requirements certain students may have difficulty in arranging for six electives in the Humanities and Social Studies. If such a student needs more than four semester courses to complete English and Language requirements, he may be permitted to reduce these electives to four, with at least two in the Humanities and two in the Social Studies.

For the degree with Physics option, requirements A, B, C, and D remain the same. E is replaced by a two semester course in chemistry, a one semester course in engineering, and six semester courses in physics. The requirements for Heat and Thermodynamics and for Fluid Dynamics are maintained. F remains the same. However, in view of the additional requirements certain students may have difficulty in arranging for six electives in the Humanities and Social Studies. If such a student needs more than four semester courses to complete English and Language requirements, he may be permitted to reduce these electives to four, with at least two in the Humanities and two in the Social Studies.

BACHELOR OF SCIENCE IN CHEMISTRY

SPECIFIC REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter his fifth semester until he has completed this requirement.
- B. A reading knowledge of French and of scientific German. This requirement may be met for either language by presenting two years of credit for that language upon entrance. Students not presenting entrance credits in these languages are required to take a year course in French and a year course in German plus German 3S.
- C. Twenty semester courses in chemistry, mathematics, and physics, with a minimum of ten semester courses in chemistry, four semester courses in mathematics, and two semester courses in physics.
- D. Electives to make a total of thirty-two semester courses.

BACHELOR OF SCIENCE IN ENGINEERING

SPECIFIC REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter his fifth semester

See description of English 1 and English 2 on page 129.

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until he has completed this requirement. If proficiency is established, a course other than Engineering or a Physical Science must be elected in place of English.

- B. Two semester courses in Chemistry (17, 18); three in Mathematics (9-10; 29); and two in Physics (61, 62).
- C. Seven semester courses of electives, two of which must be in the Humanities and two of which must be in the Social Studies.
- D. Sixteen semester courses in engineering.

FURTHER REQUIREMENTS

Students majoring in aeronautical, electrical, or mechanical engineering are required to take machine shop work. Students majoring in civil engineering are required to take training in surveying.

BACHELOR OF SCIENCE IN PHYSICS

SPECIFIC REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter his fifth semester until he has completed this requirement.
- B. Reading knowledge of one foreign language—French, German, Italian, Russian—to be demonstrated by an achievement test conducted by the Division of Modern Languages. Achievement tests will be given during Freshman Week and at the end of each semester. Each student who does not meet the language requirement at entrance shall enroll during his first semester in a foreign language course and shall continue therein until the requirement is met. In addition to demonstrating achievement in one foreign language, each student must pass two semesters of a *second* language (taken from the list above) at Brown or present two years of credit in this language on entrance. In the latter case he must take the Brown placement test and place at least in a two-level course. One of the two languages offered must be German or Russian.

In certain physics courses of the senior year foreign language material will be used freely. Assignments of foreign language material will also be made in connection with the senior thesis.

- C. Ten semester courses in physics, namely: 3, 4, 37, 38, 111, 114, 121, 122, 125, 198.
- D. Four semester courses in mathematics, including a course in partial differential equations.
- E. Two semester courses in chemistry.
- F. Two semester courses in astronomy, biological sciences, chemistry, engineering, or geology.
- G. Two semester courses in philosophy.
- H. Two semester courses in the social studies.
- I. Two semester courses in the humanities other than philosophy.
- J. A senior thesis (to be prepared in connection with part of course 198).
- K. A comprehensive examination to be passed at the end of the senior year.

¹ See description of English 1 and English 2 on page 120.

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COMBINED FIVE-YEAR PROGRAM LEADING TO A BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREE

Students who wish to earn both a Bachelor of Arts and Bachelor of Science in Applied Mathematics, Chemistry, Engineering, or Physics may do so in a five-year program in which the work for both degrees proceeds concurrently. Programs of students who elect this five-year plan will usually be arranged so that those who wish may change to a Bachelor of Arts degree candidacy alone prior to the fourth year.

SPECIFIC REQUIREMENTS

- A. The Bachelor of Arts requirements in English and in foreign language.
- B. The Bachelor of Arts requirements for distribution in Humanities and Social Studies. The purposes of distribution in the Sciences are considered as satisfied by the elementary science work the student takes to earn the Bachelor of Science degree.
- C. All requirements for the Bachelor of Science degree for which he is a candidate. The advanced work in science for the Bachelor of Science degree satisfies the purpose of concentration in the usual Bachelor of Arts program.
- D. A minor of at least three reasonably related courses above the introductory (D or IC) level. The selection must be approved by the Dean and by the department in which the student is working for the Bachelor of Science degree. This minor is normally to be completed in the Humanities, Social Studies, or Biological Sciences. A minor in any other area must be approved by the Committee on Academic Standing.
- E. Electives to make a total of forty semester courses.

Note: ROTC may not be combined with this five-year program for both the Bachelor of Arts and the Bachelor of Science degrees.

BACHELOR OF SCIENCE (IN NURSING)

SPECIFIC REQUIREMENTS

- A. Proficiency in English composition—to be demonstrated by a proficiency test at or before the beginning of the first semester or to be acquired by the successful pursuit of a course¹ in college. A student may not enter her fifth semester until she has completed this requirement.
- B. The equivalent of the prescribed courses in either Pattern A or Pattern B below:

PATTERN A

- 1. Biology D1, 4, 5, 10, 15, and 20
- 2. Chemistry D1 (with a grade of C or better) or D2, and Chemistry 5 and 41
- 3. Education 103
- 4. Psychology D1, 81, and 107
- 5. Sociology D1 and 105

REQUIREMENTS FOR DEGREES

PATTERN B

1. Humanities—four semester courses (distribution courses)
 2. Social Studies—four semester courses including either History D1, D2 or Classics D1, D2, and Sociology D1
 3. Sciences—Biology D1, 4, 5, 10, and 20
Chemistry D1 (with a grade of C or better) or D2, and Chemistry 5
Psychology D1
 4. Four additional semester courses in Sociology or four additional semester courses in Psychology.
- C. Additional courses to make a total equivalent to twenty-four semester courses.
- D. A program of study at the Rhode Island Hospital School of Nursing for two years and four months.

Regulations Governing Degrees

A candidate for a degree who has maintained a satisfactory standing in his studies may, with the consent of the Committee on Academic Standing, take work in addition to the regular number of courses prescribed.

A student who at the beginning of his seventh semester lacks less than eight semester courses of completing his course requirements may, with the consent of the Committee on Academic Standing, distribute his work over the last two semesters.

A student who lacks less than four semester courses of completing his course requirements may, with the consent of the Committee on Academic Standing, be excused from taking more than the required number of courses.

A student who at the close of his eighth semester lacks for his degree not more than three semester courses may make up the deficiency by any method approved in advance by the Committee on Academic Standing.

Degrees with Distinction

In addition to the regular degrees of Bachelor of Arts and Bachelor of Science, the same degrees are awarded with one or another of three grades of distinction, *cum laude*, *magna cum laude*, and *summa cum laude*. The award is based on the complete University scholastic record of the student, who must have been in residence for six semesters, unless exemption is voted by the Faculty on recommendation of the Committee on Academic Standing. The basis for the award of the three grades of distinction is as follows:

Cum laude, an average standing of 3.100

Magna cum laude, an average standing of 3.400

Summa cum laude, an average standing of 3.750

SUMMER SCHOOL CREDIT

Any degree requiring a comprehensive examination cannot be awarded with one of these grades of distinction, however, unless the student also passes the comprehensive examination with distinction.

Summer School Credit

Any student of Brown University who wishes to take summer school work must obtain *in advance* the approval of the appropriate Dean and the Chairmen of the Departments concerned or their authorized representatives. The latter will approve the content of the courses which should be in substance equal to courses offered at Brown University. The Recorder of The College and the Recorder of Pembroke College are authorized to determine equivalent quantity credit for summer courses.

The total summer credit offered toward a degree shall not exceed three semester courses or twelve semester hours except by special permission of the Committee on Academic Standing; in general, the Committee will not approve more than two semester courses (eight semester hours) in any one summer.

Except with the permission of the Committee on Academic Standing and the Department concerned, no concentration or distribution course may be taken as a summer course.

Credit for summer school courses will be given if a grade of *C* or better is earned. The grades received for summer school courses will not be computed in determining the graduation average (see page 56).

Transcripts for summer courses must be submitted within six weeks after completion of the course.

Financial Information



THE TUITION paid by the students covers part of the cost of their instruction and the operations of the University. Income from endowment and contributions from the alumni and alumnae and other public-spirited men and women meet the balances.

Tuition Fee. The undergraduate comprehensive tuition fee is \$350 a semester. This fee applies to all students carrying four courses. The tuition fee for students electing less than four courses is \$87.50 for each semester course. The tuition fee for extra courses above four is \$87.50 for each semester course or its equivalent.

General Fee. A general fee of \$50 a semester is charged each undergraduate.

Room Rental. The room rental fee in the College is \$155.00 a semester. Reservations in the dormitory system are made for the college year and no refund of room rental will be allowed unless the student who withdraws provides a satisfactory substitute. All students not living at home are required to live in University student residences.

Board. The board charge in the College is \$210.00 a semester for eighteen meals per week or \$225 a semester for twenty meals per week. These rates are established as low as possible consistent with quality and good service. The University reserves the right to change the rate according to the costs. An extra charge may be made for students requiring a special diet. All men living in University student residences have their meals in the Sharpe Refectory. In order to promote closer relationships between commuting students and students living on campus, the University requires all non-residents, except seniors, and all fraternity members, to arrange for a board contract entitling the student to eat five lunches (or dinners, if he prefers this type of contract) five days a week in Sharpe Refectory. Exceptions to this ruling may be made by the Dean of Students. The charge for the non-resident luncheons is \$65.00 a semester and for the non-resident dinners, \$85.00 a semester. In September, 1955 this requirement may include seniors who are non-resident students.

House Fee for Non-resident Students. A charge of \$10.00 a semester is made to all non-resident students who are not married or affiliated with a fraternity. This fee entitles the student to the use of Plantations House.

Dormitory Reservation Deposit. With each room application filed for a dormitory room a \$10 deposit is required. This deposit will apply to the room rental charge for the first effective semester. The deposit will be re-

PAYMENT OF CHARGES

funded to any student who cancels his room lease before August 15th. Deposits will not be refunded after August 15th.

Student Deposit. Each regular student, prior to registration for the first semester after admission or after readmission, is required to deposit \$15. This deposit serves for the duration of the student's enrollment in the University as a guaranty of payment of his account; it is not an account against which the student himself may make charges; it will be refunded in full upon the student's graduation or withdrawal from college, unless the University is forced to draw from it to clear his account, in which case any unused balance will be refunded.

Special Examinations. A fee of \$5 is charged for each special examination.

Registration Fees. A charge of \$10 will be made to each student who does not complete preliminary or final registration including the payment of tuition and other fees at the prescribed time.

A charge of \$10 will be made for each change in registration after the preliminary registration period has ended unless the change is required by action or regulations of the Faculty or of the Committee on Academic Standing.

Student Recreation Fee. A penalty of \$10 is charged in the succeeding semester to any undergraduate who has failed to fulfill the requirements of the Student Recreation Program unless excused from such requirements by the Dean of the College. This penalty is relieved each subsequent semester until the student recreation requirement has been fulfilled.

The University reserves the right to change the charges whenever it is deemed advisable, the new rates to apply to all students. Published notice of any change will normally be given in advance.

Payment of Charges

As a means of education in sound business practices, including accuracy and punctuality, the University deals directly with students. Charges for tuition, general fee, room, and board, are due and payable in advance of registration each semester. No bills will be sent by the University. When making payments students are requested to give their registration number.

Students who are unable to pay the balance due on their semester bills at the time of registration, but who expect regular income during the college year, may apply for use of the deferred payments plan. Arrangements for these deferred payments should be made in advance through the Director of Student Aid. Under this system a student may register by paying a minimum of one quarter of the amount due on the semester bill. The balance may be paid in three equal monthly installments, for which there is a \$2 service charge per installment. Thus a student may spread his annual charges over the academic year by making eight monthly payments.

The established schedule showing the adjustments of tuition charges available for students who withdraw from college during a semester or who, with Dean's permission, drop courses within the first five weeks of a semester is on file in the Office of the Controller.

No refund of room rental will be allowed unless the student who withdraws provides a satisfactory substitute. A refund for the unexpired portion of the board contract for the student who withdraws will be made in accordance with the schedule of adjustments on file in the Office of the Controller.

No diploma, certificate, transcript, letter of honorable dismissal or recommendation will be granted to any person who has an unadjusted indebtedness to the University.

Transcripts will be issued to other institutions at the request of students, former students, and graduates. The first transcript is furnished without charge. A charge of one dollar is made for each additional transcript. If more than one transcript is ordered at one time, the first will cost one dollar and each additional one will cost fifty cents.

Student Aid

Through a comprehensive program of scholarships, grants, remissions, loans, and student employment the University helps many students with limited funds to meet their college expenses. Student aid at Brown is based on the principle that men with promise of future usefulness must not be denied the opportunity to gain a university education because of financial difficulties. This program is administered through the Office of Student Aid. All inquiries concerning scholarships, loans, and student employment should be addressed to the Director of Student Aid, Brown University, Providence 12, R. I.

Scholarships, Grants, and Remissions

Each year the University grants a considerable number of scholarships ranging from \$100 to \$1500 a year and grants-in-aid of from \$50 to \$600 a year. The competition for these funds is, of course, keen, but over 25 per cent of each entering class receives financial aid. Awards are made on the basis of financial need, scholastic achievement, character, and promise of future usefulness.

Applicants for admission may obtain scholarship applications by writing to the Director of Student Aid, by indicating an interest in scholarship aid on the admission application, or by writing to the College Scholarship Service. The College Scholarship Service is a cooperative activity established in 1954 by over seventy colleges which believe that scholarships should be awarded to properly qualified students only after careful consideration of the financial need of the students and their families.

STUDENT AID

The Service provides for the duplication and distribution of a common application form, thus eliminating the need for students and their parents to fill out separate forms for each of the colleges to which they may be applying for financial aid. (Colleges may, however, require short, supplementary applications.) The form, called the *Parents' Confidential Statements in Support of Applications for Financial Aid*, may be obtained from any member college or from the College Scholarship Service, Box 176, Princeton, New Jersey (or, if the parents reside in or west of Montana, Wyoming, Colorado, or New Mexico, Box 27986, Los Angeles 27, California).

The completed form should be returned by the student directly to the College Scholarship Service—not to the college—at least one week before the deadline set by the college. The College Scholarship Service does not itself determine or award scholarships; this is done by the individual colleges. The Service duplicates the form photographically and sends copies of it to the colleges listed by the student at a cost to the student of \$1 per copy. The whole procedure is very similar to that used by the College Entrance Examination Board in handling admission tests.

Only one form need be filed with the College Scholarship Service by any one student. If a student wishes to have a copy sent to a college not originally listed on his form or if he or his parents wish to modify the form already on file, the Service should be notified by the parents; and it will in turn notify the colleges.

Scholarship applications should be returned by March 15 and will be given consideration very soon after the decisions regarding admission have been reached; applications filed after March 15 will be given every possible consideration, but it should be understood that almost all of the funds will have been awarded soon after the deadline. These awards are continued during subsequent years provided they are justified by the general college record of the recipient. It is necessary, however, that renewal applications be filed each year in the spring. Awards are subject to review at any time by the Committee and, in some cases, may be partially converted to loans during the last two years. The Committee reserves the right at any time to suspend or reduce a student's award if either his academic standing or personal conduct warrant.

Without special application, a number of scholarship winners will be awarded room remissions—reductions in room rental—of \$70 per year. Students receiving these remissions will be so notified when scholarship decisions are announced.

Some of the scholarships have been endowed and are usually named for the donors. Others are appropriated from general University funds, and some of these bear the names of distinguished Brown alumni of the past century: John Hay, 1858; Horace Mann, 1819; Benjamin Ide Wheeler, 1876; and Henry Wheaton, 1802.

Some of the funds are restricted to students with special qualifications, as, for example, those limited to students from particular areas, schools, or cities. No deserving student with limited funds should hesitate to apply, however, since a majority of the awards come from unrestricted funds and are awarded only on the regular scholastic, financial, and personal criteria.

ENDOWED SCHOLARSHIPS

Scholarships and other forms of financial aid have been made possible by gifts to the University for the establishment of scholarship funds. They represent the thoughtful interest of alumni and friends of the University who have manifested in this way their interest in education, their faith in the University, and their desire to be of service to the young men for whom it carries on its work.

The list of endowed scholarship funds follows:

THE EMILY F. ABBEY ENDOWMENT FUND established in 1943 by Emily F. Abbey Gill.

THE HARRY B. ABRAMSON FUND established in 1947 by Mrs. Claus B. Abramson in memory of her son Harry B. Abramson, 1925.

THE AID FUND established in 1868 by Miss Lydia Carpenter and other friends of the University.

THE E. BENJAMIN ANDREWS SCHOLARSHIP FUND OF THE CLASS OF 1898 established in 1911 in honor of E. Benjamin Andrews, 1870; President of the University, 1889-98.

THE ANONYMOUS SCHOLARSHIP FUND established in 1942 by an anonymous donor.

THE FRANCES R. ARNOLD SCHOLARSHIP established in 1863 by Mrs. Frances R. Arnold.

THE RUFUS BABCOCK SCHOLARSHIP established by Mrs. Caroline Vassar Babcock Jones in memory of her father, the Reverend Rufus Babcock, 1821; Trustee, 1828-75.

THE WILLIAM UPSON BAILEY SCHOLARSHIP FUND established in 1951 by bequest of Mrs. L. M. Bailey in memory of her son, William Upson Bailey, 1946.

THE MARY ELIZABETH BALDWIN SCHOLARSHIP FUND (Wickford, Rhode Island) established in 1947 by Mrs. Susan B. McCoid in memory of her sister Mary Elizabeth Baldwin.

THE BANIGAN SCHOLARSHIPS established in 1896 by Joseph Banigan.

THE E. LEO BARRY SCHOLARSHIP FUND established in 1953 by gift of Monroe E. Hemmerdinger, 1937, in memory of E. Leo Barry, former University swimming coach.

THE BARTLETT SCHOLARSHIP FUND established by Mrs. Slater Bartlett.

THE CHARLES L. BARTLETT FUND established in 1940 by bequest of Charles L. Bartlett, 1882; A.M., 1890.

THE GEORGE P. BECKFORD FUND established in 1936 by bequest of George P. Beckford, 1895.

THE TRUMAN BECKWITH SCHOLARSHIP FUND established in 1897 by bequest of Abby G. Beckwith in honor of Henry Truman Beckwith, 1838.

STUDENT AID

- THE WILLIAM H. BENNETT FUND established in 1930 by bequest of Ellen D. C. Bennett in memory of her husband, Dr. William H. Bennett, 1868; A.M. hon., 1884.
- THE GEORGE W. BERRIMAN SCHOLARSHIP FUND established in 1919 by bequest of George W. Berriman, 1920.
- THE CAPTAIN ARTHUR H. BIJUR SCHOLARSHIP established in 1945 by Nathan I. Bijur in memory of his son, Captain Arthur H. Bijur, 1941.
- THE JAMES FLETCHER BLACKINTON SCHOLARSHIP established by Mrs. Mary D. Blackinton in honor of her husband, James F. Blackinton, 1847; A.M. hon., 1867.
- THE ARTHUR H. BLANCHARD SCHOLARSHIP FUND established in 1953 by bequest of Caroline P. Blanchard in memory of Arthur H. Blanchard, 1899.
- THE LEONARD CARPENTER BLISS SCHOLARSHIP established in 1928 by Elmer Jared Bliss in memory of his father, Leonard Carpenter Bliss.
- THE GEORGE W. BRADBURN SCHOLARSHIP FUND established in 1948 by Mrs. W. Dorothea Bradburn in memory of her husband, George W. Bradburn.
- THE S. S. BRADFORD SCHOLARSHIPS established in 1863 by Shadrach Standish Bradford; Trustee, 1863-65; Fellow, 1865-74.
- THE BENJAMIN BRAMAN FUND established in 1911 by bequest of Chloe Braman in memory of the Reverend Benjamin Braman, 1854.
- THE JOHN S. BRAYTON FUND established in 1929 by Harriet H. Brayton in memory of her father, John S. Brayton, 1851; LL.D. hon., 1893; Fellow, 1898-1904.
- THE BRECKENRIDGE SCHOLARSHIP FUND established in 1941 by Mr. and Mrs. Harlin A. Breckenridge.
- THE JOSEPH BROWN SCHOLARSHIP established in 1861 by Mrs. Eliza B. Rogers in honor of her grandfather, Joseph Brown; A.M. hon., 1770; Trustee, 1769-85; Professor, 1784-85.
- THE NICHOLAS BROWN SCHOLARSHIPS established in 1858 by bequest of Nicholas Brown, 1786, for whom the University was named.
- THE BROWN ENGINEERING ASSOCIATION SCHOLARSHIP established in 1930 by gift from the Brown Engineering Association.
- THE WILLIAM BUCKNELL SCHOLARSHIP established by William Bucknell.
- THE CHESTER THOMAS CALDER SCHOLARSHIP established in 1940 by bequest of Mrs. Ida B. T. Calder in memory of Chester T. Calder, 1911.
- THE DR. ELBRIDGE CARPENTER SCHOLARSHIP FUND established in 1925 by Anna J. B. Carpenter in memory of Dr. Elbridge Carpenter.
- THE HAROLD P. CARVER SCHOLARSHIP FUND established in 1944 by Mr. Harold P. Carver, 1930.
- THE ALEXIS CASWELL SCHOLARSHIP established by Alexis Caswell, 1822; D.D. hon., 1841; LL.D. hon., 1865; Professor, 1828-63; President, 1868-72.
- THE ABBY WHEATON CHACE SCHOLARSHIP FUND established in 1893 by bequest of George I. Chace, 1830; LL.D. hon., 1853; Professor, 1833-72.
- THE GEORGE IDE CHACE SCHOLARSHIP FUND established in 1893 by bequest of George I. Chace, 1830; LL.D. hon., 1853; Professor, 1833-72.
- THE HEZEKIAH S. CHACE SCHOLARSHIP established in 1860 by Hezekiah S. Chace.
- THE CLARK SCHOLARSHIP established in 1863 by bequest of Moses B. Ives, 1812; Trustee, 1822-57; Treasurer, 1825-57.
- THE SCHOLARSHIP—CLASS OF 1838 established in 1874.

STUDENT AID

- THE CLASS OF 1895 SCHOLARSHIP FUND established in 1914.
- THE CLASS OF 1902 SCHOLARSHIP established in 1938.
- THE CLASS OF 1903 SCHOLARSHIP established in 1929.
- THE CLASS OF 1905 SCHOLARSHIP FUND established in 1916.
- THE CLASS OF 1907 SCHOLARSHIP established in 1923.
- THE CLASS OF 1908 AWARD established in 1933.
- THE CLASS OF 1912 SCHOLARSHIP established in 1938.
- THE CLASS OF 1921 ENDOWMENT FUND FOR SCHOLARSHIPS established in 1942.
- THE CLASS OF 1925 SCHOLARSHIP established in 1940.
- THE CLASS OF 1933 SCHOLARSHIP FUND IN MEMORY OF JAY BARRETT BOTSFORD established in 1938 in memory of Jay Barrett Botsford, Instructor and Professor, 1920-38.
- THE CLASS OF 1949 SCHOLARSHIP established in 1951.
- THE GARDNER COLBY SCHOLARSHIP established in 1862 by Gardner Colby; Trustee, 1855-79.
- THE KATE B. COLBY SCHOLARSHIP established in 1945 by bequest of Charles H. Hunkins in memory of his sister, Kate B. Colby.
- THE ELIOT LOOMIS COLLINS SCHOLARSHIP FUND established in 1909 by Clarkson A. Collins, 1876, in memory of his son, Eliot L. Collins, 1910.
- THE KING COLLINS MEMORIAL SCHOLARSHIP FUND established in 1953 by bequest of Mrs. Elizabeth King Collins in memory of her son, King Collins, 1914.
- THE JENNIE L. COMSTOCK SCHOLARSHIP established in 1926 by George F. Comstock, 1879, in memory of his wife, Jennie L. Comstock.
- THE CROCKER SCHOLARSHIP FUND established in 1863 by bequest of Moses B. Ives 1812; Trustee, 1822-57; Treasurer, 1825-57.
- THE JOHN P. CROZER SCHOLARSHIP established in 1866 by Mrs. Margaret C. Bucknell in memory of her father, John P. Crozer.
- THE REV. JOSIAH N. CUSHING SCHOLARSHIP FUND established in 1912 by Samuel H. Tingley in memory of the Reverend Josiah N. Cushing, 1862; D.D. hon., 1881; Ph.D. hon., 1898.
- THE ISAAC DAVIS SCHOLARSHIP established in 1861 by Isaac Davis, 1822; LL.D. hon., 1860; Trustee, 1838-51; Fellow, 1851-79.
- THE ALBERT DAY SCHOLARSHIP established in 1864 by Lieutenant Governor Day of Connecticut; Trustee, 1853-73.
- THE ALBERT CLIFTON DAY FUND established in 1920 by bequest of Mary E. Day.
- THE ROBERT HARVEY DAY SCHOLARSHIP FUND established in 1946 by bequest of Mrs. John L. T. Boomer in memory of her brother, Robert Harvey Day, 1896.
- THE FREDERIC DENISON SCHOLARSHIPS established in 1953 by bequest of Fredrica Denison in memory of her father, the Reverend Frederic Denison, 1847.
- THE DR. WILLIAM HOWARD DOANE SCHOLARSHIP FUND established in 1954 by gift of the Marguerite T. Doane Charitable Foundation.
- THE JAMES H. DUNCAN SCHOLARSHIP established in 1860 by the Honorable J. H. Duncan, 1849.
- THE SAMUEL WHITE DUNCAN SCHOLARSHIP established in 1900 by Mary Duncan Harris in honor of the Reverend Samuel W. Duncan, 1860; Fellow, 1889-98.
- THE DYER-GURNEY-REED SCHOLARSHIP FUND established in 1916 by Charles F. Reed, 1885; A.M., 1890.

STUDENT AID

- THE EATON SCHOLARSHIP FUND established in 1907 by bequest of Caroline B. Eaton confirming the will of her husband, the Reverend William Hadley Eaton, 1845; D.D. hon., 1867; Trustee, 1875-96.
- THE ROMEO ELTON SCHOLARSHIP established in 1864 by the Reverend Dr. Romeo Elton, 1813; Professor, 1825-43; Trustee, 1820-51.
- THE FAIN FAMILY ASSOCIATION FUND established in 1948 by the Fain Family Association.
- THE L. FAIRBROTHER SCHOLARSHIP established in 1865 by Mrs. Lewis Fairbrother.
- THE LESTER L. FALK SCHOLARSHIP established in 1934 by a member of his family in memory of Lester L. Falk, 1906.
- THE ALEXANDER FARNUM SCHOLARSHIP FUND established in 1910 by bequest of the Reverend Augustus Woodbury; D.D. hon., 1888.
- THE PERRY EDSON FAUNCE SCHOLARSHIP established in 1923 by Mrs. William Herbert Perry Faunce in memory of her son, Perry E. Faunce, 1919.
- THE ERWIN J. FRANCE FUND established in 1951 by bequest of Helen S. France in memory of her father, Erwin J. France, 1876.
- THE ANNIE FREEDMAN MEMORIAL FUND established in 1952 by Joseph Freedman, 1926, in memory of his mother, Annie Freedman.
- A FRIEND'S SCHOLARSHIP FUND established in 1907 by an anonymous donor.
- THE WILLIAM GASTON SCHOLARSHIP FUND established in 1899 by the widow and children of Governor William Gaston, 1840, of Massachusetts; LL.D. hon., 1875.
- THE MARY JANE BEMENT HUBBELL GEORGE MEMORIAL FUND established in 1950 by bequest of Daniel F. George, 1894, in memory of his mother, Mary Jane Bement Hubbell George.
- THE GLOVER SCHOLARSHIP FUND established by Henry R. Glover in memory of his father, the Reverend Samuel Glover, 1808, and his brother, Samuel Glover, Jr. 1839.
- THE NANCY GOODNOW FUND established in 1903 by bequest of Nancy Goodnow.
- THE CORNELIA E. GREEN SCHOLARSHIP established in 1863 by Mrs. Cornelia E. Green.
- THE CHARLES WARREN GREENE FUND established in 1939 by bequest of Elizabeth L. Chandler in memory of her father, Dr. Charles W. Greene, 1863; A.M. Hon. 1872.
- THE JAMES ALEXANDER HALL SCHOLARSHIP FUND established in 1937 by the Brown Engineering Association in honor of James A. Hall, 1908; Professor, 1912-36.
- THE HALL-MERCER SCHOLARSHIP FUND established in 1940 by bequest of Alexander G. Mercer.
- THE ALBERT HARKNESS SCHOLARSHIP FUND established in 1910 by bequest of Albert Harkness, 1842; LL.D. hon., 1869; Professor, 1855-92; Fellow, 1904-07.
- THE EDWIN A. W. HARLOW FUND established in 1906 by Edwin A. W. Harlow.
- THE ROBERT H. HARLOW FUND established in 1909 by bequest of Robert H. Harlow.
- THE JOSEPH C. HARTSHORN SCHOLARSHIPS established by the Reverend Joseph C. Hartshorn, 1841; Trustee, 1872-89.
- THE ANNIE M. HARVEY BEQUEST established in 1943 by bequest of Annie Mason Harvey.
- THE JOHN HESS FUND FOR STUDENTS established in 1919 by bequest of Iban Hess, 1867.

STUDENT AID

THE GEORGE WOODLEY HOGG SCHOLARSHIP FUND established in 1912 by an anonymous donor in memory of George W. Hogg, 1894.

THE HELEN F. HOPKINS SCHOLARSHIP FUND established in 1951 by Richard F. Hopkins, 1935, in memory of his mother, Helen F. Hopkins.

THE FRANCIS EDWIN HOPPIN SCHOLARSHIP established in 1928 by Mrs. Robert Ives Gammell in memory of her father, Francis E. Hoppin, 1839.

THE EDITH LEE HORTON SCHOLARSHIP established in 1933 by bequest of Edith L. Horton.

THE DAVID W. HOYT SCHOLARSHIP FUND established in 1912 by the Alumni Association of the Providence English High School in memory of David W. Hoyt, 1855; A.M. hon., 1872.

THE HENRY DWIGHT HUNT SCHOLARSHIP FUND established in 1951 by bequest of Henry Dwight Hunt.

THE GABRIEL J. JACK FUND established in 1948 by bequest of Mrs. Barbara Jackowitz in memory of her son, Gabriel J. Jack, 1906.

THE JACKSON MEMORIAL FUND established in 1943 by bequest of Florence E. Jackson in honor of her father, Joseph Jackson, 1868; A.M. 1879.

THE JACKSON SCHOLARSHIPS established by bequest of Henry Jackson, 1817; D.D. hon., 1854; Trustee, 1828-63.

THE JAMES RICHARD JEWETT SCHOLARSHIP FUND established in 1942 by James R. Jewett, Instructor and Professor in Semitic Languages and History, 1890-95.

THE JOHNSON SCHOLARSHIP established in 1948 by bequest of Alfred S. Johnson, 1890.

THE BENJAMIN HUTCHINSON JUDAH SCHOLARSHIP FUND established in 1900 by Charles L. Hutchinson in memory of his nephew, Benjamin H. Judah.

THE HENRY P. KENT SCHOLARSHIP established in 1864 by Henry P. Kent.

THE HENRY CLIFFORD KNIGHT SCHOLARSHIPS established by Miss Amelia S. Knight in memory of her brother, Henry C. Knight, 1875.

THE WEBSTER KNIGHT SCHOLARSHIP FUND established in 1933 by bequest of C. Prescott Knight, 1885, in honor of his brother, Webster Knight, 1876; Trustee, 1923-33.

THE GEORGE LAWTON SCHOLARSHIP established in 1865 by George Lawton.

THE J. L. LINCOLN SCHOLARSHIP FUND established in 1897 by bequest of Abby G. Beckwith in honor of John L. Lincoln, 1836; LL.D. hon., 1859; Professor, 1845-91,

THE WILLIAM EASTON LOUTTIT SCHOLARSHIP FUND established in 1950 by W. Easton Louttit, Jr., 1925, in memory of his father, William Easton Louttit.

THE CHARLES B. LUTHER FUND established in 1932 by bequest of Charles B. Luther, 1883.

THE DANIEL WANTON LYMAN FUND FOR STUDENTS established in 1890 by bequest of Daniel W. Lyman, 1865.

THE MICHAEL J. LYNCH SCHOLARSHIP established in 1929 by Mrs. Lynch in memory of her husband, Michael J. Lynch, 1904.

THE HENRY LYON SCHOLARSHIP established in 1914 by the Reverend William H. Lyon, 1868; D.D. hon., 1896.

THE HERBERT E. MAINE SCHOLARSHIP established in 1942 by bequest of Clara Horton Maine in honor of her husband, Herbert E. Maine.

THE SETH MANN SCHOLARSHIP FUND established in 1920 by bequest of Adelaide E. Mann in memory of her father, Seth Mann, II, 1839.

STUDENT AID

- THE FRANK STEAD MANTON SCHOLARSHIP established in 1942 by bequest of Edith Manton in honor of Frank S. Manton.
- THE GEORGE MARSDEN SCHOLARSHIP FUND established in 1946 by bequest of George Marsden, 1900.
- THE EARL P. MASON SCHOLARSHIP established in 1860 by Earl P. Mason; Trustee, 1866-76.
- THE EDWIN B. MAYER SCHOLARSHIP FUND established in 1949 by bequest of Edwin B. Mayer, 1909.
- THE ROBERT JAMES YORKSTON MECKEL MEMORIAL FUND established in 1914 by Mary Wehmeyer in memory of her nephew, R. J. Y. Meckel, 1912; A.M. 1913.
- THE AUSTIN MERRICK SCHOLARSHIP established by Mrs. Olive E. Merrick.
- THE DONALD G. MILLAR SCHOLARSHIP FUND established in 1951 by Donald G. Millar, 1919; Trustee, 1944-.
- THE PARDON MILLER SCHOLARSHIP established in 1861 by Mrs. Ann Eliza Miller.
- THE MUMFORD SCHOLARSHIP established by Mrs. Louisa D. Mumford.
- THE ELLEN READ NEWELL SCHOLARSHIP FUND established in 1910 by George W. Newell in memory of his wife, Mrs. Ellen R. Newell.
- THE NEWPORT SCHOLARSHIP established by William Sanford Rogers, nephew of William Rogers, 1769, the first student of Rhode Island College.
- THE J. EUGENE AND ANNIE E. OSGOOD TRUST FUND established in 1945 by bequest of J. Eugene Osgood.
- THE WILLIAM OVERTON SCHOLARSHIP established in 1924 by the Alumni of Central Falls High School in memory of William Overton, 1887.
- THE LYMAN PARTRIDGE SCHOLARSHIP FUND established by Dr. Herbert G. Partridge, 1892, in memory of his father, the Reverend Lyman Partridge, 1863.
- THE J. MILTON PAYNE FUND established in 1926 by bequest of J. Milton Payne, 1882.
- THE GEORGE K. AND H. A. PEVEAR SCHOLARSHIP established by G. K. Pevear and H. A. Pevear.
- THE WILLIAM T. PECK SCHOLARSHIP FUND established in 1925 by friends of William Thane Peck, 1870; A.M., 1873; Sc.D. hon., 1894; Trustee, 1906-39.
- THE S. DRYDEN PHELPS SCHOLARSHIP FUND established in 1896 by bequest of the Reverend S. Dryden Phelps, 1844; Trustee, 1879-95.
- THE FREDERICK WINTHROP PHILLIPS MEMORIAL established in 1926 by bequest of Charles Frederick Phillips in memory of Frederick W. Phillips, 1882.
- THE PRESIDENT'S SCHOLARSHIP established in 1859 by Barnas Sears, 1825; President 1855-67.
- THE QUINCY MANSION SCHOLARSHIP FUND established in 1923 by the former students and faculty of the Quincy Mansion School in memory of Mrs. Ruth S. Willard and Horace Mann Willard, 1864; Sc.D. hon. 1893,
- THE ABBOTT B. RICE FUND established in 1924 by Abbott B. Rice, 1884.
- THE RICHARDS SCHOLARSHIP established in 1893 by the Reverend William Coolidge Richards, 1837.
- THE RICHMOND SCHOLARSHIP established in 1950 by bequest of Dr. George N. Richmond, 1892.

STUDENT AID

THE ROGERS HIGH SCHOOL SCHOLARSHIP established by bequest of William Sanford Rogers, nephew of William Rogers, 1769, the first student of Rhode Island College. Formerly called the Newport Rogers High School Scholarship.

THE ROWLEY MEMORIAL SCHOLARSHIP (ROWLEY, MASSACHUSETTS) established in 1949 by Malcolm Smith, 1925, in memory of his parents, Willard Prescott Smith and Annie McClellant Smith.

THE SCHOLARSHIP REPAYMENT FUND established by gifts from former recipients of scholarships at the University.

THE JACOB SHARTENBERG SCHOLARSHIP established in 1930 by bequest of Jacob Shartenberg.

THE GEORGE J. SHERMAN SCHOLARSHIP FUND established in 1860 by George J. Sherman.

THE CARLETON F. SIMS SCHOLARSHIP FUND established in 1932 by bequest of Mrs. Laura B. Sims in memory of her son, Carleton F. Sims, 1913.

THE CHARLES P. SISSON 1911 SCHOLARSHIP FUND established in 1952 by Mrs. Charles P. Sisson in memory of her husband, Charles P. Sisson, 1911; Trustee, 1925-47.

THE SLATER SCHOLARSHIP established in 1860 by Horatio N. Slater, 1854.

THE GEORGE CARROLL SMITH SCHOLARSHIP FUND established in 1943 by bequest of Alice McKean Purinton Smith in memory of her husband, George C. Smith, 1876; A.M., 1890.

THE JAMES Y. SMITH SCHOLARSHIP established in 1863 by Governor J. Y. Smith.

THE KENDALL KERFOOT SMITH SCHOLARSHIP established in 1930 by Elemius W. Smith, Emma Louise Smith, Priscilla M. L. Smith, Harold Crocker Smith, Reginald H. Smith, and Cecil H. Smith in memory of Kendall Kerfoot Smith; Professor, 1915-29.

THE STANLEY B. SOVATKIN SCHOLARSHIP established in 1942 by Edward J. Sovatkin in memory of his son, Stanley B. Sovatkin, 1938.

THE OSCAR S. STRAUS FUND established in 1927 by bequest of Oscar S. Straus; Litt.D. hon., 1896.

THE RUTH ETTA TEMKIN SCHOLARSHIP FUND established in 1948 by Samuel Temkin, 1919, Trustee, 1950-, in memory of his wife, Ruth Etta Temkin, Pembroke, 1929.

THE JOSEPH THAYER SCHOLARSHIP FUND established in 1898 by Edward C. Thayer in memory of his father, Joseph Thayer, 1815.

THE CHARLES THURBER SCHOLARSHIP established in 1863 by Charles Thurber, 1827; Trustee, 1853-86.

THE THURSTON SCHOLARSHIP established by the Honorable Benjamin F. Thurston, 1849; LL.D. hon., 1888; Trustee, 1888-90.

THE JAMES HUMPHREY THURSTON SCHOLARSHIP established in 1922 by bequest of James H. Thurston, 1896.

THE WILMARTH HEATH THURSTON SCHOLARSHIP FUND established in 1922 by bequest of James H. Thurston, 1896, in memory of Wilmarth H. Thurston, 1877.

THE UNIVERSITY SCHOLARSHIPS established at various times from University funds.

THE UNIVERSITY SCHOOL SCHOLARSHIP established in 1939 by the University School, the chartered successor of the English and Classical School and the University

STUDENT AID

- Grammar School, which supervised the college preparatory work of several generations of young men in and about the City of Providence.
- THE ISABELLA M. WARDWELL FUND established in 1941 by bequest of Isabella M. Wardwell.
- THE JAMES WARING FUND established in 1923 by bequest of James Waring.
- THE GEORGE EDDY WARREN SCHOLARSHIP FUND established in 1938 by Mrs. Frances Knowles Warren in memory of her husband, George E. Warren, 1889.
- THE ANN E. WATERS SCHOLARSHIPS established in 1865 by Mrs. Ann E. Waters.
- THE WALTER G. WEBSTER SCHOLARSHIP FUND established in 1898 by the Reverend Walter G. Webster, 1878.
- THE EPHRAIM WHEATON SCHOLARSHIP established in 1862 by James Wheaton in memory of his grandfather, Ephraim Wheaton.
- THE JAMES WHEATON SCHOLARSHIP established by bequest of James Wheaton.
- THE WHEELER SCHOLARSHIP FUND established in 1895 by bequest of Rebecca B. Wheeler.
- THE ARNOLD WHIPPLE SCHOLARSHIP established in 1861 by Mrs. Phebe Whipple.
- THE WHITE SCHOLARSHIP FUND established in 1893 by bequest of Mrs. Abby S. A. White in honor of her husband William W. White, 1857.
- THE LUTHER WHITE SCHOLARSHIP FUND established in 1914 by Mabel Adaline White in memory of her father, Judge Luther White, 1864.
- THE WILLIAM J. WHITTLE, CLASS OF 1934 SCHOLARSHIP, established in 1953 by bequest of Ernest J. Whittle.
- THE CHARLETTE B. WILBOUR FELLOWSHIP IN ORATORY established in 1947 by bequest of Miss Theodora Wilbour in memory of her mother, Charlette B. Wilbour.
- THE FRED HOMER WILLIAMS SCHOLARSHIP FUND established in 1911 by Fred H. Williams, 1877; Trustee, 1922-28.
- THE FRED HOMER WILLIAMS (BROOKLINE, MASSACHUSETTS) HIGH SCHOOL SCHOLARSHIP FUND established in 1927 by Fred H. Williams, 1877; Trustee, 1922-28.
- THE FRED HOMER WILLIAMS (MILLIS, MASSACHUSETTS) HIGH SCHOOL SCHOLARSHIP established in 1930 by Fred H. Williams, 1877; Trustee, 1922-28.
- THE VIRGIL HOMER WILLIAMS SCHOLARSHIP established in 1928 by Fred H. Williams, 1877; Trustee, 1922-28; in memory of his father, Virgil H. Williams.
- THE FRANK EDWARD WINSOR SCHOLARSHIP FUND established in 1940 by Mrs. Winsor in memory of her husband, Frank E. Winsor, 1891; C.E., 1892; A.M., 1896; Sc.D. hon., 1929; Trustee, 1934-39.
- THE ALVA WOODS SCHOLARSHIPS established in 1859 by Alva Woods; A.M. hon., 1826; D.D. hon., 1828; Professor, 1824-28; Trustee, 1843-59; Fellow, 1859-87.

GIFT SCHOLARSHIPS

Scholarships also available for 1954-55 have been given by:

- An Anonymous Alumnus (The Midwest Scholarships)
- An Anonymous Educational Trust
- The Brown Daily Herald
- The Brush Development Company (The Charles Francis Brush Physics Scholarship)
- General Electric Company

Henry J. Hart, 1902
Interfraternity Council
Fred Knecht, 1953
The Lloyd Manufacturing Company
The Chicago Law Firm of Alheimer, Kabaker, Lipson, and Naiburg (The Edwin B. Mayer, '09, Memorial Scholarship)
The National Broadcasting Company (Used for scholarships at the request of the Brown-Pembroke College Quiz Bowl team: Jane L. Baltzell, Judith A. Thorsen, Thomas J. F. McCormack, and Caleb R. Woodhouse).
Fanny Barrows Reed (The Henry Francis Barrows Scholarship)
C. W. Riva Co.
The Universal Match Foundation
Westinghouse Educational Foundation
Mr. and Mrs. Alan J. Young (The Philip S. Young Memorial)

BROWN CLUB PRIZE SCHOLARSHIPS

Each year ten or more scholarships are made available by Brown Clubs to members of the entering class who reside or attend school in the territory of the Brown Club concerned. The scholarships usually cover full tuition and are awarded to students who combine in the highest degree scholastic ability, desirable qualities of character and personality, capacity for leadership, and promise of future usefulness.

The clubs which have made awards in recent years include:

THE BROWN CLUB OF BOSTON
THE BROWN CLUB OF CHICAGO
THE CONNECTICUT VALLEY BROWN CLUB
THE BROWN CLUB OF EASTERN MICHIGAN
THE HARTFORD BROWN CLUB
THE LACKAWANNA (N.J.) BROWN CLUB
THE LONG ISLAND BROWN CLUB
THE NEW BEDFORD BROWN CLUB
THE BROWN CLUB OF NEW YORK
THE NORTH SHORE BROWN CLUB
THE BROWN CLUB OF WESTCHESTER
THE BROWN CLUB OF WESTERN PENNSYLVANIA
THE BROWN CLUB OF RHODE ISLAND
THE BROWN CLUB OF TEXAS (The James Q. Dealey Scholarship)
THE BROWN CLUB OF WASHINGTON, D. C.

CORPORATION SCHOLARSHIPS

For the first time in 1954-55 thirty-nine tuition scholarships will be available to undergraduates in the College through the following corporations and individuals who have each made generous contributions of \$1250 or more to support the University's financial aid program:

STUDENT AID

Anonymous Donors
(Two scholarships)
American Silk Spinning Company
B-I-F Industries, Inc.
Mr. Lyman G. Bloomingdale
Bostitch, Inc.
Brier Manufacturing Company
(One scholarship for four years)
The Brown and Sharpe Manufacturing Company
(Two scholarships for 1955-56)
Capitol Cadillac Company
(One scholarship in memory of Mr. Alexander Adair)
Collyer Insulated Wire Company
Cranston Print Works Company
Elliott Lincoln Mercury Company and Union Mercury Company
Fram Corporation
Gilbane Building Company
Robert H. Ives Goddard
Hassenfeld Brothers, Inc.
International Business Machines Corporation
(Eight scholarships)
Mr. Meyer Jaffe
(One scholarship for four years in memory of his son, William Walter Jaffe)
Albert A. List Foundation
Mason Can Company
Mather & Company
Metals and Controls Corporation
(Two scholarships)
Mr. and Mrs. Samuel A. Rapaporte, Jr.
Newman-Crosby Steel Company
Rhode Island Hospital Trust Company
Mr. Harry A. Schwartz
The Sealol Corporation
The Speidel Corporation
United Public Markets
Edward H. Weeks
(Two scholarships)
Mr. and Mrs. Steven B. Wilson

These corporations and individuals are among the first to show effectively their awareness of the interdependence of industry and private collegiate education. Brown University and indeed all colleges are grateful to them for their interest and generous support.

Loans

To supplement possible income from employment and financial aid students are also permitted to borrow from the various University loan funds; freshmen and entering transfer students, however, are not expected to use these funds for the first semester in residence. For those whose needs are small and unexpected there are several emergency funds with no interest charge. Other funds have been established to help students finance a considerable part of their college education. Those who use these long-term loans are not required to repay principal when in residence, and there is an annual interest charge of only 2%. After the student leaves college, he may repay the principal over a convenient period, not exceeding five years, at an annual interest charge of 4%; the repayment schedule is determined by individual circumstances. Arrangements for loans should be made during the summer whenever possible.

STUDENT LOAN FUNDS

THE ALUMNI LOAN FUND established by the Alumni Association in 1900.

THE GEORGE HALE BACON MEMORIAL FUND established by George A. Bacon, 1867, in honor of his father, George H. Bacon.

THE HERBERT FRANKLIN DAVISON LOAN FUND FOR STUDENTS IN CHEMISTRY established in 1927 in honor of Herbert Franklin Davison, 1905; Professor, 1918-26.

THE ALEXANDER GRAHAM STUDENT LOAN FUND established in 1948 by the XYZ Club in memory of Alexander Graham, 1906.

THE STEPHEN W. GRIFFIN FUND established in 1941 by bequest of Ella F. Griffin in memory of Stephen W. Griffin.

THE WILLIAM GROESBECK GODDARD MEMORIAL FUND established in 1907 by Robert Hale Ives Goddard, 1858; Fellow, 1893-1916; in honor of William G. Goddard.

THE WALTER S. HACKNEY FUND established in 1918 by bequest of Walter S. Hackney.

THE HANNAH J. HARPER MEMORIAL FUND established in 1952 by bequest of Seth H. Chace, 1893.

THE JAMES STANTON KENYON MEMORIAL FUND established in 1912 by Elizabeth Burrows Kenyon Wilkinson and Mary Stanton Kenyon in memory of their father, James S. Kenyon.

THE NEW ENGLAND SOCIETY STUDENT LOANING FUND established in 1949 by the New England Society in the City of New York.

THE AARON LUCIUS ORDWAY MEMORIAL FUND established in 1906 by Samuel Hanson Ordway, 1880; LL.D. hon., 1917; Trustee, 1913-17; Fellow, 1917-34; in memory of his father, Aaron L. Ordway.

THE STUART FUND established in 1950 by Mr. and Mrs. Milton M. Stuart.

THE THOMAS J. WATSON STUDENT LOAN FUND established in 1937 by Thomas J. Watson.

Student Employment

Brown has always been proud of the many students who have earned a part of their college expenses through student employment. To help such students find jobs the Office of Student Aid makes every effort to refer properly qualified men to potential employers. Through term-time employment students usually earn from \$100 to \$400 a year by working from five to seventeen hours a week. No student should jeopardize his health or academic standing with employment involving long or irregular hours. It is, of course, desirable for entering students not to seek employment during the first year, but many freshmen have maintained satisfactory academic averages while working part time. Freshmen who do plan to work should file a preliminary application with the Office of Student Aid during the summer; in the fall after a student's schedule has been arranged, an interview is desirable to determine the type of employment best suited to the individual's previous experience, academic program, and financial need.

Whenever possible the University employs students for suitable work in its various departments and agencies, and in the city there are many opportunities for ambitious and deserving students. In addition, many undergraduates are successfully placed in a variety of summer jobs.

Placement

The University maintains a Senior Placement Office, the facilities of which are available to members of the senior class to assist them in obtaining positions following graduation. Information regarding employment opportunities in industry is presented, and interviews with representatives of interested concerns are arranged, either in the Senior Placement Office or at the source. Underclassmen are free to consult with the Placement Director regarding matters of vocational choice and guidance.

Courses of Instruction



THE SEMESTER COURSE is the unit of credit. This is defined as one fourth of a student's normal program of academic work for one semester and for purposes of evaluation may be considered the approximate equivalent of four semester hours.

A dash between course numbers (for example, English 41-42) indicates a year course in which the grade at the end of the first semester is normally a temporary one. The final grade submitted at the end of the course covers the work of the entire year and is recorded as the final grade for both semesters. A comma between course numbers (for example, History D1, D2) indicates a two-semester course, the first semester of which is normally prerequisite to the second semester. Two independent grades are submitted, one at the end of each semester.

Courses numbered 1 to 99 are open only to undergraduates. Courses numbered 100 to 199 are open to undergraduates and graduate students, with *B* as the graduate pass-mark. Courses numbered 200 to 299 are open to graduate students and, by special arrangement, to undergraduates.

Courses offered during the academic year 1954-55 are listed on page 199 with an explanation of Recitation and Examination Groups.

American Civilization

Members of related departments compose the Staff.

The field of American Civilization is designed to offer students at Brown University the opportunity to study intensively the history and culture of the United States. With the collections of Americana in the John Carter Brown Library and in the John Hay Library, Brown has extraordinary facilities for this type of study.

Undergraduates who elect this field of concentration will take the following courses: History 51, 52, *American History since 1763*, or History 161, 162, *The History of American Economic Life*; History 151, *The Establishment of the American Colonies, 1607-1751*; English 41-42, *American Literature*; American Civilization 191, *Problems in American Civilization*; and two of the following: Economics 131, *Labor Problems*; Philosophy 125, *History of Philosophy in America*; Political Science 124, *American Political Theory*; History 173, *The Social and Intellectual History of the United States*,

APPLIED MATHEMATICS

1789-1860; History 186, *History of Science in America*. Recommended electives: English 172, English 187, History 152, Political Science 115, 116. Honors students will take, in addition to the required courses, one additional course to be chosen from those listed above, and also American Civilization 192, which will consist of the preparation of an honors thesis. Honors students will take American Civilization 191 in the first semester of their senior year; regular students may take this course in either semester of their senior year.

The undergraduate program is under the direction of an interdepartmental committee composed of Donald Harnish Fleming, Associate Professor of History, (Chairman), Edmund Sears Morgan, Professor of History, Guy Howard Dodge, Professor of Political Science, and Vincent Anthony Tomas, Associate Professor of Philosophy.

For information on graduate study in this field see the catalog of the Graduate School.

191. *Problems in American Civilization*

The purpose of this course is to explore a few continuing problems in American Civilization from the colonial period to the present. Students will read primarily in original sources and meet in groups of five to ten under the direction of an instructor. Messrs. FLEMING and MORGAN, and others.

192. *Honors Thesis*

Preparation of a thesis on a topic in American Civilization, under the direction of an instructor. Messrs. FLEMING and MORGAN, and others.

201, 202. *Seminar*

Seminar on a selected topic in American Civilization. Required of all graduate students in the field of American Civilization. Messrs. FLEMING and MORGAN.

Applied Mathematics

Professors LEE (Chairman), DRUCKER, PRAGER, RIVLIN, SYMONDS, TRU-ELL; Associate Professors CHIARULLI, LÜCKE, MORGAN, MYLONAS, PELL; Assistant Professors MAXIMON, NEWELL, PROBSTEIN, YING; Visiting Lecturer, Mr. RADOK; Research Associates, Messrs. CHICK, DEKLERK, DETERT, FREIBERGER, GRANATO, LIN, ONAT, and WARNER; Research Assistants, Messrs. ANDERSON, BECKWITH, FLEMMING, GUNDERSEN, HIKATA, LANGLOIS, MARTIN, MENTEL, MILLER, MORRISON, PITULA, SEILER, G. F. SMITH, S. F. SMITH, STEINBERG, TAYLOR, TEUTONICO, TOPAKOGLU, WATERMAN, WEST, and WOODWARD, and Misses COTTER and HEYMAN, and Mrs. ROSS-BACH.

APPLIED MATHEMATICS

In the Fall of 1954 Brown University instituted courses leading to the degree of Bachelor of Science in Applied Mathematics. This program consists of a sequence of mathematics courses throughout four years, basic courses in science, and courses in applied mathematics during the final two years. This program is administered by the Division of Applied Mathematics with the cooperation of the Departments of Mathematics, Physics, and Chemistry and the Division of Engineering. This new curriculum is an outgrowth of the graduate work in applied mathematics which has been conducted continuously at Brown University since 1941.

For those students particularly interested in the applications of applied mathematics to physics or engineering, special options are available within the Bachelor of Science in Applied Mathematics as detailed in degree requirements.

Requirements for the degree of Bachelor of Science in Applied Mathematics are given in the section "Requirements for Degrees," page 61.

25. *Advanced Dynamics and Vibrations I*

Basic theorems of motion of a particle and of systems of particles. Motion of a rigid body with a fixed point. Generalized coordinates and Lagrange's equations. Free and forced oscillations of a particle and of systems with a finite number of degrees of freedom. Prerequisite: Physics 38 or Engineering 7. Mr. SYMONDS.

26. *Advanced Dynamics and Vibrations II*

More advanced discussion of topics treated in Applied Mathematics 25, including general kinematics and dynamics of a rigid body, variational principles, and general theorems of small oscillations of conservative systems. Vibrations and wave motion of taut strings, bars, and beams. Prerequisite: Applied Mathematics 25 and Mathematics 151. Mr. SYMONDS.

137. *Boundary Value Problems I*

Vector field theory. Solutions of Laplace's equations. Hydrodynamics of perfect fluid and electrostatics. Prerequisite: Applied Mathematics 25, 26, Mathematics 126, Engineering 52, Engineering 38 or Physics 114.

138. *Boundary Value Problems II*

Complex potential for the motion of irrotational incompressible fluids in two dimensions. Wave propagation. Heat conduction. Classification of second order linear partial differential equations. Prerequisite: Mathematics 127, Applied Mathematics 137.

ART

PRIMARILY FOR GRADUATE STUDENTS¹

203, 204. *Differential and Integral Equations of Mathematical Physics* (also Mathematics 237, 238). Miss ELLIOTT.

205, 206. *Probability and Statistics*. Mr. MAXIMON.

207, 208. *Special Topics in Mathematics*

Topic for 1954-55: *Mathematical Methods in Physical Theory of Solids*. Mr. TRUELL and STAFF.

209, 210. *Practical Analysis*

211, 212. *Mathematical Methods of Applied Science*. Mr. PELL.

213, 214. *Advanced Mathematical Methods of Applied Science*. Mr. NEWELL.

221, 222. *Methods of Technical Mechanics*

223, 224. *Theory of Vibrations*.

225. *Advanced Dynamics*. Mr. TRUELL.

232. *Theory of Structures*. Mr. PRAGER.

233, 234. *Elasticity*. Mr. RIVLIN.

235. *Advanced Elasticity*. Mr. RADOK.

237, 238. *Plasticity*

241, 242. *Fluid Dynamics*. Mr. CHIARULLI.

243, 244. *Dynamics of Viscous Fluids*

245, 246. *Dynamics of Compressible Fluids*. Mr. PROBSTEIN.

251, 252. *Electromagnetic Theory*

262. *Mathematical Optics*. Mr. TRUELL.

281, 282. *Seminars in Applied Mathematics*. The STAFF.

291, 292. *Research in Applied Mathematics*. The STAFF.

Art

Professor DOWNING (Chairman); Assistant Professors REED, LOERKE, FELDMAN; Instructor, Mr. BRINKERHOFF; Intern, Mr. KESSLER; Assistant, Mr. ZACHARIAS.

DISTRIBUTION REQUIREMENT. The distribution requirement in Art and Music under Humanities may be satisfied by taking Art DI or IC 1-2.

¹ For course descriptions see the Catalog of the Graduate School.

CONCENTRATION. Students concentrating in art will take Art D1 or IC 1-2, 7, 8, 21-22 or 31, 32; and will elect four other semester courses. Attention is called to the interdepartmental concentration in Ancient and Medieval Culture. See page 59.

RHODE ISLAND SCHOOL OF DESIGN. Through a coöperative arrangement between the School and the University the following courses are given at the School: Art 31, 32, 33, 34, 133, 134. The written permission of the chairman of the department is required for registration in these courses. Before beginning a program of courses at the School, a student must normally take an aptitude test in drawing and design administered by the School. Arrangements for this test are made through the Department of Art.

HONORS. Each candidate for Honors in art will take Art 195, 196, reading in the course on a selected topic and summarizing his results in a senior thesis.

D1. Introduction to the Visual Arts

A theoretical and historical introduction to architecture, sculpture, and painting; discussion of selected works of art from prehistoric times to the present, to demonstrate how the language of the visual arts expresses human history in the making. May be taken as one of the distribution courses in the Humanities. **THE STAFF.**

IC 1-2. The World of Art Today

The artist's quest for reality: Impressionist painting, Greek sculpture, the art of Chartres Cathedral, selected sculpture of Michelangelo, selected examples from the world of art today. As much class time as possible is spent in front of originals. A few elementary exercises in design help pose artistic problems more vividly. May be taken as one of the distribution requirements under Humanities. **MESSRS. LOERKE, FELDMAN, REED, and KESSLER.**

4. Medieval Art

The visual arts, c. 300-c. 1400, as they describe the interplay between three component elements in European civilization: the classical heritage, Christianity, and the contribution of the Northern peoples. Prerequisite: Art D1 or IC 1-2; or History D1, D2 and Philosophy D1, D2.

6. Renaissance Art

The meaning of the Renaissance in the architecture, sculpture, and painting of Western Europe, c. 1400-c. 1600. The revision of the classical and the medieval heritages in the arts of the emergent modern world. Prerequisite: Art D1 or IC 1-2; or History D1, D2 and Philosophy D1, D2. **MR. REED.**

ART

7. *Baroque and Early Modern Art*

The architecture, sculpture, and painting of Western Europe and the United States, c. 1600–c. 1850. Baroque arts and ideologies in the 17th and 18th centuries; the Enlightenment and Romanticism in the arts of the 18th and early 19th centuries. Prerequisite: Art D1 or IC 1–2; or History D1, D2 and Philosophy D1, D2. Mr. REED.

8. *Modern Art*

The visual arts of Western Europe and the United States, c. 1850–the present. Evolving conceptions of truth, and of the place of the artist in society: Realism, Impressionism, Expressionism, and Abstract Art in painting and sculpture; in architecture, Eclecticism, and the advent of a new architecture. Prerequisite: Art D1 or IC 1–2; or History D1, D2 and Philosophy D1, D2. Mr. DOWNING.

21–22. *Introductory Design, Drawing, and Painting*

Elementary studio work in the use of the language of the visual arts. Messrs. FELDMAN and ZACHARIAS.

108. *Topics in Modern Art*

Topic for 1954–55: Studies in 20th century art. Prerequisite: Art D1 or IC 1–2, 7, 8, and written permission of the instructor. Mr. DOWNING.

109. *American Art of the 17th and 18th Centuries*

Prerequisite: Art D1 or IC 1–2 and written permission of the instructor.

117. Same as Classics 117. See page 100. Art 117 may not be counted toward concentration in art unless Art 4 and 6 are also counted.

118. Same as Classics 118. See page 100. Art 118 may not be counted toward concentration in art unless Art 4 and 6 are also counted.

121. *Problems in the Practice of Art*

Prerequisite: Art D1, or IC 1–2, 7, 8, 21–22, and written permission of the instructor. Art 121 may be repeated with the consent of the Department. Mr. FELDMAN.

191. *Topics in Art History*

Reading, reports, and discussion on selected topics. Prerequisite: written permission of the Department. The STAFF.

195–196. *Honors Reading*

The content of this course will be determined by the needs of individual students, each working under a designated member of the faculty. The STAFF.

COURSES AT THE RHODE ISLAND SCHOOL OF DESIGN

31, 32. *Foundation Design*

Lectures and laboratory work in design as practiced in modern industry and the fine arts. Not open to freshmen. Prerequisite: written permission of the Department.

33. *Advanced Design*

Prerequisite: Art D1 or IC 1-2, 31, 32, and written permission of the Department.

34. *Advanced Design*

Prerequisite: Art D1 or IC 1-2, 31, 32, 33, and written permission of the Department.

133. *Advanced Design*

Prerequisite: Art D1 or IC 1-2, 31, 32, 33, 34, and written permission of the Department.

134. *Advanced Design*

Prerequisite: Art D1 or IC 1-2, 31, 32, 33, 34, 133, and written permission of the Department.

Note: The work in Art 33, 34, 133, 134 will be determined by the needs of individual students, and will be arranged in consultation with the Chairmen of Divisions of the Rhode Island School of Design. This work may be directed toward one of several fields, including Architecture, Painting, Advertising and Industrial Arts, Costume Illustration, Ceramics, and Textile Design.

Astronomy

Professor SMILEY (Chairman).

DISTRIBUTION REQUIREMENT. The distribution requirement in Physical Sciences under Sciences may be met by taking Astronomy D1 and Physics D1. Astronomy 1 or 2 may be taken as an independent course to satisfy a distribution requirement in the Sciences provided Astronomy D1 has not previously been taken.

CONCENTRATION. In addition to the elementary course (Astronomy D1 or 1, 2), Astronomy 17, 107, 108, 173-174, and three semester courses of the four following: Mathematics 22, 105, Physics 4, 37.

ASTRONOMY

D1. *Descriptive Astronomy*

An examination of the principal objects of the solar system and of the stellar universe, the fundamental theories concerning them, with something of the means and methods which led to the known facts and accepted theories. Prerequisite: Physics D1. Mr. SMILEY.

1. *The Solar System*

A study of the members of the solar system, their properties and motions, and of the historical development of modern concepts and theories concerning them. Lectures, supplemented by visits to Ladd Observatory. The normal election sequence is Astronomy 1, 2; but students in good scholastic standing may elect the courses in the other order. Mr. SMILEY.

2. *The Stellar System*

A study of the stars, nebulae, the galactic system and external galaxies, with special emphasis on the instruments and methods used by the astronomer. Lectures, supplemented by visits to Ladd Observatory. The normal election sequence is Astronomy 1, 2; but students in good scholastic standing may elect the courses in the other order. Mr. SMILEY.

17. *Elementary Astrophysics*

The application of physical theories and optical instruments to the determination of physical properties of celestial bodies. Prerequisite: Astronomy D1 or 1, 2. Mr. SMILEY.

107, 108. *Practical Astronomy*

Theory of astronomical instruments, with practice in their use; determination of time, geographical position, and similar problems. Elective by written consent of the instructor. Mr. SMILEY.

173-174. *Selected Topics in Theoretical Astronomy*

An introduction to the fundamental problems of dynamical astronomy with special reference to the problem of n bodies, Hamiltonian systems, perturbation theory, and some problems of modern quantum-mechanics. Elective by written consent of the instructor. Mr. SMILEY.

Biblical Literature and History of Religions

Associate Professor ROBBINS (Chairman); Assistant Professors SMITH, RECKARD; Instructor, Mr. FRERICHs.

DISTRIBUTION REQUIREMENT. The distribution requirement in Religion under Humanities may be satisfied by taking Biblical Literature D1. Seniors who need distribution credit in Biblical Literature must substitute 1, 2, 111, or 112 for D1.

CONCENTRATION. In addition to the introductory course (Biblical Literature D1), the requirement for concentration in Biblical Literature is eight semester courses or equivalent.

PREPARATION FOR SPECIAL FIELDS. Students planning to study theology should elect the Biblical language courses, beginning with Biblical Literature 171 or 151.

D1. History of Religions

In this course a sampling will be made of decisive moments in the history of Judaism and Christianity. Some attention will be given to primitive and Oriental materials for comparative purposes. The cultural importance of religion in the development of the western tradition will be stressed and the influence of religion in political and social life and on art will be indicated. Satisfies distribution requirement in Religion under Humanities. Not open to seniors. Mr. ROBBINS and STAFF.

1. Old Testament Literature and History

History and religion of the Jews from the conquest of Canaan to the birth of Jesus. Mr. FRERICHs.

2. New Testament Literature and History

The life of Jesus and the beginnings of Christianity. Mr. FRERICHs.

3. History of Religions: Primitive Religions. Mr. ROBBINS.

4. History of Religions: Religions of the West

Greek and Roman religions. Mr. ROBBINS.

5. Religious Classics

The reading of several masterpieces of western religious literature, ancient, medieval, and modern. These works will be studied as immediate sources

BIBLIOGRAPHY

of religious insight, perennially pertinent to an understanding of the mature religious life. Mr. ROBBINS.

103, 104. *Topics in the Bible and Its Background*

Prerequisite: Biblical Literature 1 and 2 or equivalent. Mr. FRERICHs.

111. *History of Christianity to the Reformation*

Offered in 1954-55 and alternate years. Mr. RECKARD.

112. *History of Christianity: The Modern Period*

Offered in 1954-55 and alternate years. Prerequisite: Biblical Literature 111 or written permission of instructor. Mr. RECKARD.

113. *Contemporary Religions*

The present phase of some of the great religions and religious movements in the East and West. Offered in 1955-56 and alternate years. Mr. RECKARD.

151, 152. *Elementary Hebrew*. Mr. SMITH.

153, 154. *Advanced Hebrew*. Mr. FRERICHs.

171. *Hellenistic Greek*

Selections from the Septuagint and New Testament. Special attention is paid to the peculiarities of translational Greek and Koine. Elective by written consent of the instructor. Prerequisite: an elementary knowledge of Greek. Mr. ROBBINS.

198. *Topics in the History of Religions*

Elective for properly qualified students with written permission of the chairman. The STAFF.

209, 210. *Research*

Special topics to meet the needs of advanced students in the history of religions. The STAFF.

217, 218. *Oriental Languages: Arabic*

219, 220. *Oriental Languages: Syriac*

221. *Seminar*

Bibliography

Professor JONAH (Chairman); Assistant Professors BROWN, GOODING; Instructor, Mr. MOORE.

201. *General Introduction to Bibliographical Studies*

The chief purpose is to familiarize the student with the most important

sources of bibliographical information in the various fields of study. Library practice and library resources will be studied from the point of view of the advanced student in special subject fields. Elective by written consent of the instructor. Not offered in 1954-55. Messrs. JONAH and BROWN.

Biology

Professors WILSON (Chairman), STUART, CHASE, MONTAGNA, FENTON; Associate Professors EDDS (Executive Officer), SHERMAN, WEISZ; Assistant Professors BEAMS, RICHARDSON, HATCH, LEDUC, GOSS, KENWORTHY; Instructors, Messrs. PETERS and JAFFE; Lecturer, Mr. LOWNES; Research Associates, Messrs. BELL, BRADNER, and CURTIS; Intern, Mr. WHEATLEY; Teaching Associates, Messrs. HEMS and QUEVEDO, and Miss HICKSON; Research Assistants, Messrs. BERNSTEIN, MCCARTHY, and MARSH, and Misses CAMP, CHANG, HALD, LUSTIG, MERRILL, POWELL, POZZI, RADEMACHER, SPAZIANO, TORRES, and VAN HEMERT, and Mesdames BLISS, MITCHELL, POST, and STUART; Assistants, Messrs. ALMEIDA, FRAIR, MULLIGAN, PIERRO, REUTER, and STRAILE, and Misses BARKER, BROWN, LIVINGSTONE, SMITH, and WARREN.

PREREQUISITES. Either Biology D1 and 4 or Biology IC 1-2 are satisfactory prerequisites for advanced courses in biology. Either sequence also satisfies the admission requirement of medical and dental schools for a one-year course in general biology. However, participation in the IC program makes necessary a particularly careful arrangement of the pre-medical student's entire program so that all required courses can be included.

DISTRIBUTION REQUIREMENT. The distribution requirement in the Biological Sciences under the Sciences may be satisfied by taking Biology D1 and Psychology D1, Biology IC 1-2, or Psychology IC 1-2. Biology D1 may be taken as an independent course to satisfy a distribution requirement in the Sciences. Biology 4 may also be taken as a continuation distribution course in the Sciences.

Junior and senior students who find it necessary to take a distribution course in Biology may satisfy the requirement by taking any advanced course in place of Biology D1. Students wishing to take advantage of this opportunity must obtain the permission of the instructor in the course they plan to elect.

CONCENTRATION. In addition to the elementary courses, Biology D1 and 4, or IC 1-2, the concentration program in biology will include the following courses: Biology 5, 6, 7, 8, 10, and 15, and two other semester courses from the 100 group.

BIOLOGY

NURSING. To help in meeting the need for graduate nurses with an academic background, Brown University has joined with the Rhode Island Hospital School of Nursing to offer qualified young women at Pembroke College a five-year program (first six semesters to be completed at Pembroke College and the last two years and four months to be completed at the School of Nursing). This program is planned to provide a liberal education and preparation for positions in professional nursing. See page 64.

HONORS. All senior candidates for Honors in biology must elect Biology 195.

D1. *Principles of Biology*

The more important generalizations of biology and the phenomena upon which they are based with particular emphasis upon: the universal phenomena characteristic of all living things; the fundamentals of plant and animal structure, nutrition, reproduction and the integration of the organism as a whole. Lectures, conferences, and laboratory. Six hours of attendance. Mr. WEISZ and STAFF.

IC 1-2. *Basic Ideas in Modern Biology*

An investigation, evaluation, and criticism of Darwin's *Origin of Species* by means of discussion, laboratory, and field experience. This book is of fundamental significance in the development of modern biology and many of its ideas are subject to critical appraisal on the basis of scientific evidence. Some of these ideas will be related to ideas in other fields of human thought and will be evaluated accordingly. Messrs. CHASE and PETERS.

4. *General Zoology*

An extension of Biology D1 with emphasis placed upon the animal world. A more exhaustive treatment of animal structure and function from a comparative point of view. Lectures and laboratory. Six hours of attendance. Prerequisite: Biology D1. Mr. KENWORTHY.

5. *Comparative Anatomy of Vertebrates*

The structure and significance of the organs of vertebrates with particular reference to function. Six hours of attendance. Prerequisite: Biology D1 and 4 or IC 1-2. Mr. MONTAGNA.

6. *Genetics*

Study and discussion of variation, the laws of inheritance as found in animals and plants, and of their application in human relations including the observational, experimental, cytological, statistical, and developmental approaches. Six hours of attendance. Prerequisite: Biology 5 or written consent of the instructor. Mr. PETERS.

7. *Embryology*

The origin of the individual and the developmental process from the egg to the formation of the body and the establishment of the principal organ systems. A comparative study of the morphology and physiology of the reproductive process. Six hours of attendance. Prerequisite: Biology 5. Mr. EDDS.

8. *Histology*

A survey of the microscopic anatomy of the tissues and organs of vertebrates. Six hours of attendance. Prerequisite: Biology 5. Mr. Goss.

10. *Introductory Physiology*

Vital activities of living cells and tissues and the associated physico-chemical phenomena; the physiological significance of factors such as water and other electrolytes, hydrogen and other ions, surface forces, colloidal state, osmotic pressure, membrane permeability, and electrical forces. Six hours of attendance. Prerequisite: Chemistry DI; Biology IC 1-2, or Biology DI and either Biology 4 or Botany 4. Mr. SHERMAN.

15. *Bacteriology*

A general discussion of bacteria in all their relations, with special attention to laboratory methods of studying bacteria, including the isolation and determination of unknown species. Six hours of attendance. Prerequisite: Biology 5 and 10; for students concentrating in Botany, Biology 5 and Botany 105, 106. Mr. HATCH.

20. *Community Aspects of Professional Nursing*

An introduction to the field of nursing, stressing the philosophy of nursing-for-health; historical aspects and general trends; changing health problems of the nation; the present day National Health Program. Open only to and required of candidates for the degree of Bachelor of Science (in Nursing). Miss RICHARDSON.

103-104. *Cytology*

The structure of the cell and of protoplasm considered in relation to general functions; cytogenetics, and the cytology of nuclear phenomena. Prerequisite: Biology 7, 8. Mr. WILSON and Miss LEDUC.

107-108. *Experimental Morphogenesis*

Experimental embryology and regeneration. Six hours of attendance. Prerequisite: Biology 7, 8. Mr. EDDS.

121. *General Physiology*

Excitation, contraction, reflexes, circulation, physiology of the heart, respiration, internal secretion. Prerequisite: Biology 5, 10. Mr. SHERMAN.

BIOLOGY

122. *Physiological Chemistry*

Metabolism of carbohydrates, fats, and proteins; enzymes; gastrointestinal tract; nutrition; internal secretion. Prerequisite: Biology 5, 10. Mr. FENTON.

152. *Advanced Bacteriology*

A more detailed discussion of certain bacterial phenomena—growth, death, metabolism, genetics, action of antibiotics. Antigens, antibodies, and their reactions. Brief consideration of some pathogenic bacteria. Prerequisite: Biology 15. Mr. HATCH.

195. *Honors Thesis*

At least one semester required of senior candidates for Honors in biology.

203. *Research in Zoology*

Research arranged to meet the needs of individual students.

205. *Physiological Genetics*

The nature of the gene and its action in the developmental and physiological processes of the organism. Prerequisite: Biology 6 or equivalent. Mr. CHASE.

206. *Histochemistry*

The application of chemical tests to tissues to identify, in situ, cellular products, lipids, carbohydrates, nucleoproteins, enzymes, pigment, and other chemical substances. Prerequisite: Biology 103-104 or equivalent. Mr. MONTAGNA.

207, 208. *Seminar in Genetics*

Half-course. Elective for approved graduate students. Mr. CHASE.

209, 210. *Seminar in Cytology*

Half-course. Elective for approved graduate students. Mr. WILSON and Miss LEDUC.

211, 212. *Seminar in Experimental Embryology*

Half-course. Elective for approved graduate students. Mr. EDDs.

223, 224. *Biochemistry*. Mr. FENTON.

225, 226. *Biophysics*

231. *Research in Physiology*. Messrs. FENTON and SHERMAN.

233, 234. *Seminar in Physiology*

Half-course. Elective for approved graduate students. Messrs. FENTON and SHERMAN.

251, 252. *Immunology*. Mr. STUART.

253. *Research in Bacteriology and Immunology*. Messrs. STUART and HATCH.

261, 262. *Seminar in Bacteriology and Immunology*

Elective for approved graduate students. Messrs. STUART and HATCH.

Biology Colloquium

A weekly meeting of the Staff and graduate students for discussion of research problems and fields of current biological interest.

Botany

Professors SNELL (Chairman), CHURCH; Assistant Professor DYER; Assistants, Misses DICK and DONNELLY.

DISTRIBUTION REQUIREMENT. Botany 4 may be taken to satisfy a distribution requirement in the Sciences.

CONCENTRATION. In addition to the elementary course, Botany 4, the requirements for concentration in botany are eight semester courses from the following: Botany 105, 106, 111, 113-114, 197, and a choice of two from the following (upon consultation with the department): Botany 121, 123, Biology 6, 15, 103-104, 122, 152, Geology 114, 118. In preparation for Botany 111, Physics D1 and Chemistry D2 should be taken as early as possible and Chemistry 5 and 28 are recommended.

RELATED SUBJECTS. Botany 121 and 123 are recommended for students interested in forestry, agriculture, or scientific botany. Botany 121 is suited for students specializing in bacteriology. Botany 105, 106, and 113-114 are useful to students specializing in genetics, cytology, or general biology.

4. *General Botany*

A comprehensive study of the structure of plants, their physiology and general ecology, and a survey of the principal groups of the plant kingdom, including their relations to human welfare and civilization. Designed to follow Biology D1 but may be taken independently. May be counted for distribution as an independent or a continuation course in the Sciences. Six hours of attendance. Mr. SNELL.

9. *Dendrology*

The nature of trees from every biological point of view, structure and functions, the products of trees, diseases and insect pests, importance to the

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human race as individuals and forests, including certain elements of forestry and conservation; the laboratory and field trips will consist of the identification of trees in summer and winter condition, and possibly identification of some woods. Six hours of attendance. No knowledge of botany is required. Mr. SNELL.

105. *Evolution of the Spore-bearing Plants*

The life cycles of the algae, liverworts, mosses, ferns, and fern allies. Field trips will include identification and ecological studies of local species. Six hours of attendance. Offered in alternate years. Mr. CHURCH.

106. *Growth and Speciation in the Seed Plants*

A study of the development of form in higher plants as controlled by hereditary and environmental factors. Variation and evolution of new species. Six hours of attendance. Offered in alternate years. Mr. CHURCH.

111. *Plant Physiology*

The physiological processes peculiar to plants and the physiological basis of plant ecology. Eight hours of attendance. Prerequisite: Botany 4 or its equivalent; Physics D1, Chemistry D2; and if possible Chemistry 5 and 28. Mr. DYER.

113-114. *Taxonomy of the Seed Plants*

The taxonomy, phytogeography, ecology, and cytogenetics of the more important genera and species. Laboratory and field studies will stress identification. Eight hours of attendance. Offered in alternate years. Either semester may be elected independently by consent of the instructor. Mr. CHURCH.

121. *Mycology*

The fungi, including the slime molds and slime bacteria, but not the bacteria proper. Lectures on the morphology and taxonomy of the fungi; laboratory work in morphology and identification; field trips to study the fungi in their natural habitats. Six hours of attendance. Mr. SNELL.

123. *Forest Pathology*

The diseases of trees, both as individuals and as forests: forest tree rusts; diseases of shade trees; heart rots; wood decay and wood preservation; control methods. Mr. SNELL.

197. *Senior Conference*

Required of students concentrating in botany. Mr. SNELL.

221, 222. *Advanced Mycology and Pathology*

To be given for the benefit of graduate students as the occasion demands;

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open to undergraduates only upon written permission of the instructor. Eight hours of attendance. Each semester may be elected independently by consent of the instructor. Mr. SNELL.

231, 232. *Seminar in Botany*

No course credit. Required of all students concentrating in Botany. The STAFF.

291, 292. *Reading and Research.* The STAFF.

Chemistry

Professors ARNOLD, RUSSELL, COLE (Chairman), HORNIG (Director of Metcalf Research Laboratory); Associate Professors CLAPP, NACE; Assistant Professors CARPENTER, TRUMBULL, GREENE, EDWARDS, ROSS; Instructors, Messrs. PALMER, FREEDMAN, and MAISCH; Research Associates, Messrs. ANDERSON and McKEAN; Assistants, Messrs. ATEN, CAPSTACK, EARLEY, FORTNUM, HANKS, HARRIS, H. F. KING, K. F. KING, LEE, LESEVICIUS, ROWLAND, ROY, SCHULTZ, and YOUNG; Research Assistants, Messrs. BALL, HAVRILIAK, HEIART, MERCIER, TOENNIES, and WRAY.

DISTRIBUTION REQUIREMENT. By taking Physics D1 and Chemistry D2 or by taking Chemistry D1 followed by Geology D1, a student may satisfy the distribution requirement in Physical Sciences under Sciences. Chemistry D1 may be taken as an independent course to satisfy a distribution requirement in the Sciences.

CONCENTRATION. The requirements for concentration in chemistry are Chemistry 28, 41, 42, 63-64, and three advanced elective courses in chemistry; or Chemistry 12, 13-14, 16, 133, and three advanced elective courses in chemistry. It is assumed that students concentrating in chemistry will have elected the physics-chemistry distribution sequence in their freshman year. Students intending to elect physical chemistry should anticipate the prerequisite of differential and integral calculus.

Requirements for the degree of *Bachelor of Science in Chemistry* are given in the section "Requirements for Degrees," page 62.

HONORS. Candidates for Honors should enroll at the close of the sophomore year. The program will normally include Chemistry 97-98 or Chemistry 86 in the senior year.

CHEMISTRY

D1. *Structure and Chemical Behavior of Matter*

Application of the classical and modern atomic theories to the study of chemical properties and changes. Interpretation of natural phenomena in terms of the behavior of atoms and molecules. Lectures with experimental demonstrations, and four hours of laboratory attendance. Distribution course in Physical Science under the Sciences. This course is a prerequisite for Geology D1. Students intending to take a continuing course in chemistry should not register for Chemistry D1, but for the Physics D1-Chemistry D2 distribution sequence. Mr. FREEDMAN.

D2. *Structure and Chemical Behavior of Matter*

Similar to Chemistry D1, with changes in subject matter depending upon the content of the preceding course in Physics D1. Lectures and four hours of laboratory attendance. Distribution course in Physical Science under the Sciences. Prerequisite: Physics D1. Mr. CARPENTER.

5. *General Chemistry and Qualitative Analysis*

Descriptive study of the metals and certain other elements and their compounds. Consideration of several fundamental principles of chemical behavior, especially that of chemical equilibrium. Lectures with experimental demonstrations, and four hours of laboratory attendance comprising the analytical separation and detection of the principal cations and anions by semi-micro methods. Prerequisite: Chemistry D2 or equivalent. Mr. EDWARDS.

11, 12. *Fundamentals of Chemistry, I and II*

Reactions of the compounds of carbon, hydrogen, oxygen, and a limited number of other elements; a brief survey of atomic structure and types of chemical bonds formed. The constitution and properties of the different classes of organic compounds are considered in detail; the topics included are not limited to organic chemistry, other concepts being introduced as are pertinent. Laboratory work includes basic techniques common to all branches of chemistry, preparation of representative organic compounds, and the experimental determination of their properties. Introductory course for all candidates for the degree of Bachelor of Science in Chemistry. Four hours of lecture and recitation, and six hours of laboratory attendance. Prerequisite: entrance credit in chemistry, Chemistry D1 or D2, or equivalent. Mr. CLAPP.

13-14. *Fundamentals of Chemistry, III and IV*

An introduction to the physical and quantitative principles of chemistry, the relation of these principles to the development of modern chemical

theory and to the solution of chemical problems. The physical properties of representative chemical systems will be determined in the laboratory. Second year course for all candidates for the degree of Bachelor of Science in Chemistry. Lectures plus seven hours of laboratory attendance. Prerequisite: Chemistry 12, Physics 12, and Mathematics 10. Mr. COLE.

16. *Fundamentals of Chemistry, V*

A study of the chemical elements, their compounds, and the reactions in which these substances take part, exemplifying the fundamental principles of chemical behavior. The laboratory work will include quantitative studies of typical equilibria of essentially inorganic systems. Second year course for all candidates for the degree of Bachelor of Science in Chemistry. Lecture plus five hours of laboratory attendance. Prerequisite: Chemistry 13; co-requisite: Chemistry 14. Mr. GREENE.

17, 18. *General Chemistry*

An introduction to modern chemical theory. A study of the properties of substances in terms of atomic and molecular structures, and the periodic system. Four hours of lecture and recitation, and four hours of laboratory attendance. Required of candidates for the degree of Bachelor of Science in Engineering. Mr. PALMER.

28. *Elementary Quantitative Analysis*

The theory and practice of typical gravimetric and volumetric analytical procedures. Lectures, recitations, problems, and laboratory analyses of salt mixtures, minerals, alloys, and industrial products. Two hours of lecture plus six hours of laboratory attendance. Prerequisite: Chemistry 5. Mr. RUSSELL.

41. *Organic Chemistry*

An elementary survey of organic chemistry from the point of view of the constitution and properties of the different classes of organic compounds; preparation of representative compounds; experimental determination of their properties. Lectures plus five hours of laboratory attendance. Prerequisite: Chemistry 28 which may be taken concurrently. This course fulfills the organic chemistry requirement of most medical schools. Mr. TRUMBULL.

42. *Organic Chemistry*

A more advanced treatment of the contents of Chemistry 41, with additional material. Lectures plus five hours of laboratory attendance. Prerequisite: a grade of C or better in Chemistry 41. Mr. TRUMBULL.

CHEMISTRY

63-64. *Physical Chemistry*

Lectures plus five hours of laboratory attendance. Prerequisite: Physics 12, Differential and Integral Calculus, Chemistry 28 and 41. Mr. COLE.

80. *Chemical Literature*

Classification of chemical literature, use of the library, reports on special topics. Required of all candidates for the degree of Bachelor of Science in Chemistry and of all students concentrating in chemistry. No course credit. Mr. NACE and STAFF.

86. *Advanced Laboratory Techniques in Chemistry*

Laboratory work designed to give the student training in advanced types of laboratory technique. Ten hours of attendance. Elective for qualified students by consent of an instructor. The STAFF.

97-98. *Experimental Problems*

Special projects in the various fields of chemistry supervised individually by members of the Staff. Reading and literature work required. Weekly meetings with the Staff devoted to reports from literature and progress on problems. Prerequisite: permission of the Staff. The STAFF.

106. *Advanced Inorganic Chemistry*

Correlation of the facts of inorganic chemistry by means of the periodic law and thermodynamic data, with emphasis on the use of half reaction potentials. Rate of reactions, atomic structure, and recent theories of valence. Prerequisite: Chemistry 63-64. Mr. EDWARDS.

113-114. *Unit Operations*

Lectures and five hours of laboratory on unit operations. Applications of unit operations to unit processes are also discussed. Prerequisite: permission of the instructor.

133. *Quantitative Analysis*

A study of the fundamental operations in the analysis of inorganic and organic substances, comprising consideration of the theory and practice of gravimetric, volumetric, and colorimetric methods on macro, semi-micro, or micro scale. To illustrate the foregoing, typical materials such as ores, ferrous and non-ferrous alloys, and organic compounds will be analyzed. Two hours of lecture plus eight hours of laboratory attendance. Third year course for all candidates for the degree of Bachelor of Science in Chemistry. Elective for others. Prerequisite: Chemistry 14 and 16, or Chemistry 28, 41, and 63-64. Mr. RUSSELL.

134. *Instrumental Methods in Quantitative Analysis*

A study of the more important instrumental methods in quantitative analysis, comprising consideration of the theory and practice of electrical, optical, and other physico-chemical methods, and based largely on the analytical implications of phenomena studied in physical chemistry. Numerous analyses will be carried out in order to familiarize the student with the instruments, and to develop technique and confidence. Two hours of lecture plus eight hours of laboratory attendance. Third year course for all candidates for the degree of Bachelor of Science in Chemistry. Elective for others. Prerequisite: Chemistry 133, or Chemistry 28, 41, and 63-64. Mr. RUSSELL.

145. *Identification of Organic Compounds*

Methods of organic qualitative analysis. Nine hours of laboratory attendance. Prerequisite: grade of C or better in Chemistry 12 or 42. Mr. NACE.

146. *Advanced Organic Chemistry*

A study of the synthesis and reactions of organic compounds from the viewpoint of modern theories. Prerequisite: grade of C or better in Chemistry 145 or permission of the instructor. Mr. NACE.

151. *Elements of Chemical Thermodynamics*

A treatment of thermodynamics as applied to chemical problems, with emphasis on sound formulation from first principles. Prerequisite: grade of C or better in Chemistry 14 or Chemistry 63-64. Mr. GREENE.

162. *Advanced Physical Chemistry*

Modern theoretical developments, including the elements of quantum mechanics, kinetics, and photochemistry, and their application to problems in physical chemistry. Prerequisite: Chemistry 63-64 or permission of the instructor. Mr. GREENE.

201. *Thermodynamics.* Mr. GREENE.

212. *Theory of Dielectrics and Electrolytes.* Mr. COLE.

221. *Applications of X-Ray Diffraction to Chemistry.* Mr. CARPENTER.

241. *Advanced Organic Chemistry.* Mr. NACE.

243. *Advanced Organic Chemistry.* Mr. CLAPP.

244. *Advanced Organic Chemistry.* Mr. TRUMBULL.

264. *Molecular Structure*

277, 278. *Modern Theories of Chemistry.* Mr. ROSS.

CLASSICS

281, 282. *Departmental Seminars*

287, 288. *Departmental Colloquia*

291, 292. *Special Topics in Chemistry*

297, 298. *Research*

Classics

Professors ROBINSON, COUCH (Chairman), LYNCH; Associate Professor WORKMAN; Instructor, Mr. LUCK.

GENERAL NOTE. The Department offers courses in the principal fields of Greek and Latin language and literature, including elementary courses in both languages, and also courses in ancient classical culture for which no knowledge of the languages is required.

PREREQUISITES. Students presenting one or two years of Latin for admission may elect Latin 5, 6; those presenting three or four years may elect Latin 11, 12 or Latin 105, 106. Students presenting one year of Greek may elect Greek 5, 6; those presenting two or three years may elect Greek 105, 106 or 125, 126.

The arrangement of courses in Greek and Latin is consecutive and normally implies that a course with a lower number is prerequisite to one with a higher number, but this rule may be waived by written permission of the chairman of the department.

DISTRIBUTION REQUIREMENT. The distribution requirement in History under Social Studies may be met by taking Classics D1, D2 or IC 1, 2. Classics D5, D6 or IC 3, 4 may be taken to meet distribution requirements in the Humanities.

LANGUAGE REQUIREMENT. The foreign language requirement may be satisfied by passing an achievement test in Greek or Latin or by completing Greek 6 or Latin 6, or a more advanced course, with a quality grade. Students who wish to prepare for the test in a classical language in college should elect Greek 5 or Latin 5.

CONCENTRATION. The requirement for concentration is eight semester courses, including at least two semester courses of ancient language study taken in college. Programs of concentration may be arranged with emphasis on the Greek or Latin language or on the general field of classical antiquity.

The Department of Classics also participates in the interdepartmental concentration program in Ancient and Medieval Culture.

HONORS. Students may become candidates for Honors in any of the fields of emphasis acceptable for concentration. During the junior year each Honors student will follow a tutorial program under the guidance of a member of the department; during the senior year an Honors thesis will be written.

Attention is called to the possibility of arranging other interdepartmental Honors programs in addition to that listed above.

RELATED COURSES. Attention is called to Art D1 and IC 1-2; Biblical Literature 4; Philosophy 101.

PROSE COMPOSITION. This subject may be pursued in Classics 199 or through tutorial work in Honors by students for whom the department approves such arrangement.

GREEK

1, 2. *The Essentials of the Greek Language; Selected Simple Passages from Greek Prose*

Intensive study of Attic Greek. Analysis of forms and syntax. Readings from Theophrastus, Aesop, Xenophon, and others. No prerequisite. Mr. LYNCH.

5. *Socratic Dialogues of Plato*¹

A study of Plato's biographical dialogues, directed toward a rapid reading facility in Greek prose and eligibility for the Greek achievement test. Prerequisite: Greek 1, 2 or one year of Greek for admission. Mr. LUCK.

6. *Homer and the Lyric Poets*¹

The first, third, sixth, and twenty-fourth books of the *Iliad*. A study of the form, literary style, and structure of the earliest European epic. Also selections from the principal lyric poets of the Archaic Age. The transition from a patriarchal to an individualistic society. Prerequisite: Greek 5 or its equivalent. Mr. LYNCH.

105. *Euripides and Aristophanes*¹

Greek tragedy and comedy, their origin and development. Four plays will be read in whole or in part, the *Alcestis*, *Medea*, and *Hecuba* of Euripides, and the *Clouds* of Aristophanes.

106. *Herodotus and Thucydides*¹

A study of two contrasting philosophies of history, the inclusive and the critical, respectively. The episodic and informal style of Herodotus stands in contrast to the meticulous purpose of Thucydides. Some of the principal events of Greek history will be studied in their original recorded form.

¹ Course will be conducted by the conference method.

CLASSICS

108. *Demosthenes*

110. *Advanced Homer*

111. *Selections from Greek Authors*

125. *Aeschylus and Sophocles*¹

Advanced study of Greek tragedy, with reference to the environment of its growth and maturity in Athens. MR. LUCK.

126. *Plato and Aristotle*¹

Selected reading from the *Republic* of Plato and the *Nicomachean Ethics* and the *Politics* of Aristotle; a study of the thought and the exposition of the humanistic philosophers. MR. LYNCH.

191. See *Classics 191* on page 109.

199. See *Classics 199* on page 109.

201. *Seminar in Greek: Studies in Homeric Literature*

Elective for graduate students of Classics. Qualified students from other departments who wish to pursue this topic in English may also be admitted. MR. COUCH.

202. *Seminar in Greek: Studies in the Greek Drama*

Elective under the same conditions as Greek 201. MR. COUCH.

LATIN

5. *Rapid Review of Latin Grammar; Selections from Prose Authors*

This course is designed especially for students who have entrance credit for only two years of Latin or whose study of Latin may have been interrupted. A rapid review of the essentials of Latin grammar from the beginning, with early and continued reading of extracts from Latin authors. At the end of this course students will be eligible to try the Latin achievement test. MR. WORKMAN.

6. *Vergil and Other Roman Poets*

A study of the mature works of Vergil, with extracts from the *Eclogues*, *Georgics*, and *Aeneid*; selections from various other Roman poets. Discussion of content, purpose, poetic form, and metre. The relation of Latin poetry to its environment. MR. LUCK.

11. *Roman Letter Writers: Cicero and Pliny*

A study through the letters of Cicero and Pliny of the social, political, and personal interests of two men who in different ages came closely in touch with the principle characters of their day. MR. WORKMAN.

¹ Course will be conducted by the conference method.

12. *Horace and Catullus*

Horace represents the humanistic philosopher, moralizing on the vagaries of life, counseling moderation in conduct, genial but not profound, amused by the pageant of contemporary society. Catullus illustrates intense individualism and the excess of emotion in poetry. Mr. WORKMAN.

105. *Plautus and Terence*

A study of the form, plot structure, and language of Roman comedy as evidence alike of the Roman sense of humor, the conscious borrowing from Greek models, and the manners and morals of a vigorous and boisterous society. Three plays of Plautus and one of Terence will normally be read. Mr. WORKMAN.

106. *Livy and Tacitus*

The scope, purpose, style, methods, and sources of two historians. The criteria of history. LIVY, Book I, and TACITUS, *Germania* and *Agricola*, will be read. Mr. LYNCH.

111. *Selections from Latin Authors*

114. *History of the Latin Language*

191. See *Classics 191* on page 110.

199. See *Classics 199* on page 110.

201. *Seminar in Latin: Medieval Latin*

Selections from a variety of authors, with extensive individual assignments for detailed study. Mr. LYNCH.

202. *Seminar in Latin: Juvenal and the Art of Satire*

A study of the origin and development of satire, with emphasis on its peculiar manifestations in Roman society and letters. Mr. WORKMAN.

CLASSICS¹

D1. *Great Periods in the Ancient History of the Near East and of Greece*

The significance of the Ancient Near East. A study of the political and cultural achievement of the Greek city-state. With Classics D2 this course fulfills the distribution requirement in History under the Social Studies. May also be taken as an independent elective. No prerequisite. Mr. ROBINSON.

¹ The courses under this heading, which include Ancient History, Classical Art and Archaeology, and Greek and Roman Literature in English, require no knowledge of Greek or Latin. See Greek 201 and 202.

CLASSICS

D2. *Great Periods in the Ancient History of the Hellenistic Age and of Rome*

The transition from Greek to Roman dominance of the ancient world. A study of the political and cultural achievement of the Roman Republic and Empire. With Classics D1 this course fulfills the distribution requirement in History under the Social Studies. May also be taken as an independent elective. No prerequisite. Mr. ROBINSON.

IC 1, 2 *Humanism and Human Conduct*

The course will deal with vital and persistent ideas relating to the social, ethical, and political responsibility of man in antiquity and in the modern world. Human behavior will be evaluated through Aristotle's *Ethics*, with collateral reference to the *Bible*, Shakespeare, Francis Bacon, Milton, and Whitehead. The positive effect of attained knowledge on the conduct of man is the central theme. This course fulfills one of the distribution requirements under the Social Studies. No prerequisite. Mr. COUCH.

IC 3, 4 *The Iliad of Homer and the Growth of Fiction*

A study of the romantic epic of early Greece. Homer's *Iliad* will be interpreted as a work of art; the freshness of its vision and the richness of its craftsmanship will be explored. Comparisons with the later development of the classical epic will be made. The technique of fiction in antiquity and its value for practical criticism is the central theme. This course fulfills one of the distribution requirements under the Humanities. No prerequisite. Mr. LUCK.

D5. *The Classical Epic: Destiny in Vergil's Aeneid*

An intensive study of the theme of individual and national destiny in one form of literature. With Classics D6 this course fulfills the requirement in Literature under the Humanities. May also be taken as an independent elective. No prerequisite. Mr. WORKMAN.

D6. *The Influence of the Classics on English Literature*

The classical spirit as manifested in English letters, with special emphasis on artistic form and philosophical content. The more influential Greek and Roman authors will be considered and their impact upon subsequent English writers studied. With Classics D5 this course fulfills the requirement in Literature under the Humanities. May also be taken as an independent elective. No prerequisites. Mr. WORKMAN.

61. *Greek Literature, Exclusive of the Drama, in English*

A study of the origin and growth of the major forms of European literature against a background of the epic. Individualism, perspective, moral debate, argument, and self-consciousness will be examined as they are successively

revealed in literature. May be taken as an independent elective; no prerequisite. Mr. LYNCH.

62. *The Greek Drama in English*

A study of the origin and development of the earliest European drama, with special attention to the literary criticism of Aristotle. The theories of imitation and purification as applied to various types of tragic literature. A critical study of the place of Aeschylus, Sophocles, and Euripides. The appearance and growth of comedy. The place of Aristophanes and Menander. May be taken as an independent elective; no prerequisite. Mr. COUCH.

117. *Greek Art and Archaeology: Prehistoric and Archaic*

The adventure in culture in prehistoric Crete and Mycenae. The Dorian Invasion and the rise of Hellenism. The exuberant Archaic Age of historical Greece, with special emphasis on architecture, sculpture, vases, and coins. The exhibition and study rooms of the Museum of the Rhode Island School of Design are used in connection with both Classics 117 and 118. No prerequisite. Mr. ROBINSON.

118. *Greek Art and Archaeology: Classical and Hellenistic*

The architectural, plastic, and pictorial art of the fifth and fourth centuries before Christ and of the Hellenistic Age. The excavations at Olympia and Delphi; the current work in the Athenian Agora. The monuments on the Athenian Acropolis. No prerequisite. Mr. ROBINSON

121. *Greek History to 146 B.C.*

The political, social, and economic history of ancient Greece until the Roman conquest. Special emphasis is laid on certain great problems, such as the significance of Greek tyranny, the winning of democracy at Athens, Plato's view of the state, the idea of the Inhabited World during the Hellenistic Age. No prerequisite.

122. *Roman History to 337 A.D.*

The political, social, and economic history of Rome from earliest times to the death of Constantine. Special emphasis is laid on certain great problems, such as the struggle for democracy at Rome, the winning of a world and its effect on character, the fall of the Roman Empire. No prerequisite.

131. *Greek Non-Dramatic Literature in English*

132. *Roman Literature in English*

134. *Greek Dramatic Literature in English*

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141, 142. *History of the Ancient Orient: Mesopotamia*

A brief survey of the political history and culture of Mesopotamia, and the surrounding countries. For fuller description see *History of Mathematics* 141, 142. Mr. SACHS.

143, 144. *History of the Ancient Orient: Egypt*

A cultural approach. The sequence of political and military events will be broadly outlined to provide the necessary background. Especial emphasis will be laid on the artistic, literary, scientific, social, and economic manifestations which make up the cultural pattern of Pharaonic Egypt.

191. *Senior Conference*

199. *Conference for Honors Students and Prospective Teachers*

The content of the conference will vary with individual needs. May be repeated for credit.

202. *Seminar: Problems in Archaic Greek Sculpture*

Designed as an introduction to the methods of critical research. Mr. ROBINSON.

Economics

Professors KILLOUGH (Chairman), BOSLAND, TAFT, STOLTZ; Visiting Professor MUDGETT; Associate Professor SMITH; Assistant Professors BORTS, MINSKY; Instructors, Messrs. STEIN, FARMANFARMAIAN, and CARSON; Teaching Intern, Mr. TERRELL; Assistants, Miss CRONIN, and Mrs. CUDHEA, and Messrs. EBENFIELD and GOODMAN.

GENERAL PREREQUISITE. Economics DI or IC 1-2 is prerequisite to all advanced courses in economics, except by written consent of the respective instructors.

DISTRIBUTION REQUIREMENT. The distribution requirement in Economics under Social Studies may be met by taking Economics DI or IC 1-2.

CONCENTRATION. A grade of C or better in Economics DI or IC 1-2 is required of students who concentrate in economics.

In addition to the elementary course (Economics DI or IC 1-2), the requirement for concentration in economics is: Economics 71, 101-102, 111, 154, 161, plus *two* of the following: Economics 104, 107, 118, 131, 145.

The Department recommends that each program also contain two semester courses or equivalent in a related field.

HONORS. Candidates for Honors in economics must include Economics 101-102 in their programs for the junior year, Economics 104 in their

junior or senior year, and in their senior year Economics 193-194 throughout the year; the latter course culminates in a senior thesis.

DI. *Elements of Economics*

An introduction to economic principles which gives consideration to the structure of economic life and the analysis of value, production, and distribution of income. Economic institutions and problems will be surveyed on an elementary level. Elective for sophomores, juniors, and seniors. The STAFF.

IC 1-2. *Political Economy*

This course deals with the social organization of economic activity. The dominant modern form of organization in western countries is the free-enterprise system. Since Adam Smith was a foremost advocate of economic liberalism, his book, *An Inquiry into the Nature and Causes of the Wealth of Nations*, will serve as the initial source of economic ideas. The impact of Smith's ideas on economic policy and on subsequent economic thought will be analyzed. Alternative methods of social organization, such as Marxist socialism, which arose in opposition to Smith's system of natural liberty, as well as the gradual evolution in the concept of free-enterprise itself, will be examined in the writings of leading authors. Emphasis will be placed on the relationship between economic ideas and the problems of the times. Messrs. STOLTZ, MUDGETT, STEIN, and TERRELL.

71. *Accounting*

An introductory course dealing with the principles of debit and credit, the recording of data, the preparation of income statements and balance sheets, and the analysis of financial statements. Prerequisite: Economics DI or IC 1-2 or written permission of the instructor. Mr. SMITH.

91. *The Economics of Area Studies: The New England Economy*

Location theory, interregional payments problems, and regional economic geography will be analyzed using the New England economy as a case study. The directions in which solutions of regional economic problems should be sought will be examined. Prerequisite: Economics DI or IC 1-2. Not open for concentration credit in Economics. Mr. SMITH.

101, 102. *Advanced General Economics*

An advanced course in economic theory dealing with value, distribution, national income, imperfect competition, and economic dynamics. Messrs. BOSLAND, STOLTZ, STEIN, and CARSON.

104. *History of Economic Thought*

A systematic study of the writings of those who have contributed to the development of economic thought. Mr. SMITH.

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107. *Theories and Programs of Economic Reform*

A study of economic reform from the beginning of the nineteenth century to the present time, including an examination of the radical indictments of the existing economic order and a survey of proposed substitutes. Critical analysis of current experiments in economic control. Mr. TAFT.

111. *Money and Banking*

The currency system of the United States. Commercial banking. The Federal Reserve Banks. Principles of monetary theory. Mr. MINSKY.

118. *Public Finance*

The principles of government finance; public revenues and expenditures; public enterprises; taxation; the growth and significance of public debt; fiscal policy. Mr. BOSLAND.

131. *Labor Problems*

Nature and development of the labor problem. Unemployment, its problems and solutions; the allocation of labor; wage determination; structure and functions of labor and employer organizations; collective bargaining procedures; development of the laws governing labor relations. Mr. TAFT.

145. *Corporations and Government Control*

A study of the modern business corporation, its economic and financial aspects, and the problems and methods of government regulation of corporation activities. Mr. BOSLAND.

154. *International Economics*

Industrial foundations of international trade; foreign trading principles and practices; international prices; nature and effects of international trade restrictions. Mr. KILLOUGH.

161. *Statistical Method*

The collection, reduction, and analysis of statistical data; the theory of errors and statistical induction; small sample theory; the measurement of association. Mr. MUDGETT.

192. *An Introduction to Mathematical Economics*

A study of the principal mathematical techniques in economic analysis with some emphasis on the limitations and conditions for the use of mathematical methods. Prerequisite: Mathematics 21-22, 105, 151; Economics 101, 102, and either Mathematics 161 or Economics 161. Mr. STOLTZ.

193-194. *Seminar on Economic Problems*

Course work includes the preparation of a thesis. Required for seniors in the Honors Program. The STAFF.

FOR GRADUATE STUDENTS

205, 206. *Problems in Economic Theory*

Advanced economic analysis. Mr. MINSKY.

214. *Advanced Monetary Theory*

Problems in monetary theory and international finance. Mr. MINSKY.

219. *Problems in Public Finance*

The growth of public expenditures, efficiency in government, distribution of the tax burden and its economic effects, federal-state-local fiscal relationships, proposals for tax reform, the public debt, fiscal policy, and economic stability. Mr. BOSLAND.

232. *Problems in Labor Organization and Collective Bargaining*

An examination of a number of systems of collective bargaining, both here and abroad, and an analysis of some policies and problems of American and European labor. Mr. TAFT.

247. *Problems in Corporations and Public Control*

Social and legal problems of the modern corporation, particularly those arising from financial operations; government regulation of corporation activities. Mr. BOSLAND.

257. *International Trade*

Advanced theory. Mr. KILLOUGH.

258. *International Value and Exchange*

Advanced theory.

261, 262. *Theory of Statistics*

The theory of samples; regression analysis; the analysis of variance; frequency functions. Attention will be given to the statistical-quantitative problems of economics. Mr. STOLTZ.

266. *Business Cycle Theory*

The origin, nature, and phases of the business cycle and its social and economic consequence. Attention will be given to conditions of recent years and their relation to the present tendency toward conscious control of economic action. Mr. STOLTZ.

272. *Problems in Income, Value, and Cost*

Consideration of the economic and accounting concepts of income, value, and cost will be the core of the study undertaken. The course will also

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explore some of the economic implications of the generally accepted accounting principles and conventions. Mr. SMITH.

298, 299. *Research in Special Problems*

Special work supervised by the instructors in the field in which the research is done. The STAFF.

Seminar

No course credit. Required of graduate students in economics. Offered every semester. The STAFF.

Education

Professors CASE (Chairman), MACPHAIL, EKSTROM; Instructor, Miss DUNN; Lecturer, Miss CAMPBELL.

PREPARATION FOR TEACHING. Preparation for public school teaching requires: (1) a background of broad general education, (2) specialization in one or more subjects in which the teaching is to be done, and (3) study in the field of education. Complete preparation in the latter two is not feasible in the undergraduate years and the prospective teacher should therefore plan for graduate study in the subjects he is to teach and in professional courses. The undergraduate preparation in the field of education should be:

- (1) Education 101, 102 in the junior year
- (2) Education 103, 104 in the senior year
- (3) Education 111, 112 in the senior year for those interested in elementary education.

CONCENTRATION. Concentration in the field of education is not possible.

STATE CERTIFICATES. In Rhode Island certificates are required of all teachers in schools supported in whole or in part by public money; to secure certificates college graduates must have credit for the subjects covered by Education 101, 102, 103, 104, and a number of other courses, including practice teaching. Due credit toward certificates is given for separate courses. Those who seek to meet the requirements for other states should consult the Department.

101. *Principles of Education*

The meaning and scope of education; its function as a social institution; a comprehensive view of present problems of education and an evaluation of the solutions offered. Elective for juniors and seniors. Mr. MACPHAIL.

102. *History of Education*

A study of the historical backgrounds of modern education, elementary, secondary, and higher; the relation of education to other historical developments; emphasis on the modern period and the evolution of present-day American educational institutions. Elective for juniors and seniors. Mr. CASE.

103. *Educational Psychology*

The principles of psychology applied to the problems of teaching and learning; man's native endowment; laws of learning; individual differences; mental tests. Elective for seniors. Normally preceded by Education 101, 102. Mr. EKSTROM.

104. *Methods of Teaching*

A course in the principles of method in the secondary schools. Organized observation of teaching; evaluation and use of textbooks; lesson planning; methods appropriate to the major subjects; class management. Elective for seniors. Normally preceded by Education 103. Mr. EKSTROM.

105. *Foundations of Junior High School Education*

A study of the conditions resulting in the development of the junior high school unit; changing social and economic factors affecting the education of adolescents; an evaluation of present policies in the light of the basic purposes of public education.

106. *The Junior High School: Administration and Methods*

Problems incident to the organization of the junior high school program; administrative and supervisory procedures; individualization of instruction; the place and function of guidance; curricula and courses of study; appropriate methods; textbooks.

111, 112. *Elementary Education*

A general course in the field of elementary education intended primarily to meet the needs of juniors and seniors at Pembroke and Brown who are interested in preparing for elementary school service. Open also to graduate students. This course will consider the basic principles concerned with the operation of the elementary school. Special emphasis will be placed upon techniques and practices; study of the development of children in learning situations; observation and conference periods; and use of supplementary materials. Miss CAMPBELL.

201. *Public School Administration*

The organization and operation of a school system. Relation of the local

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unit to the state system; the school board; school finance; state aid; business administration; the curriculum; the teaching staff; supervision; teacher participation in administration; pupil attendance and classification; special departments. Elective for graduate students. Mr. CASE.

202. *Principles of Secondary Education*

The place and function of secondary education in the United States: comparative secondary education; curriculum construction and revision; extra-class activities; educational and vocational guidance; pupil personnel; problems of articulation: the senior high school and the lower schools; the senior high school and college. Elective for graduate students. Mr. CASE.

203. *Fundamentals of Measurement*

Basic principles of measurement and their application; historical and theoretical background; characteristics of a good testing device; various test forms, their construction and evaluation; analysis and interpretation of results; tabular, graphic, and statistical methods. Elective for graduate students. Normally followed by Education 204. Mr. MACPHAIL.

204. *Educational Testing*

A study of the various kinds of tests and scales, their uses and limitations; achievement tests in school subjects; general intelligence and special ability tests; analysis and interpretation of results; procedures in educational investigation; tabular, graphic, and statistical methods. Elective for graduate students who have credit for Education 203. Mr. MACPHAIL.

207, 208. *Special Methods and Practice Teaching*

A course in teaching methods in schools, given with the assistance of supervising teachers in neighboring schools to whom individual students are assigned for guidance and practice teaching. The work of the course is coordinated with the practice teaching in the schools. Observations, reports, and conferences. Required of graduate students who have been approved for practice teaching. Mr. EKSTROM.

211. *Principles and Practices of Guidance and Student Personnel Work*

A broad survey of guidance and personnel work in school, college, and community: the philosophy and scope of guidance, fundamental concepts underlying personnel procedures, use and interpretation of tests, methods and techniques of educational and vocational guidance at various school levels. Elective for graduate students. Miss DUNN.

212. *Counseling and Guidance Techniques*

Interviewing and counseling methods, use of tests and records in understanding the individual student, the function of teacher, administrator and

specialist in the guidance services, special phases of guidance (for example, community, evaluation, and placement), organizing the guidance program. Elective for graduate students. Prerequisite: Education 211. Miss DUNN.

215, 216. *Problems in Education, Thesis Course*

No course credit. Required of candidates for the degree of Master of Arts. The STAFF.

217, 218. *Experimental Education*

For students prepared for the investigation of major problems in measurement in education; critical evaluation of current contributions in this field.

221, 222. *Lecture Series for Teachers*

Ten weekly lectures each semester in subject matter of current interest to teachers. Each lecture is followed by a discussion period. Each lecture is given by a specialist in the subject-matter field of the series. The lecturers are from the Brown University faculty and from other leading institutions. Credit for a half-course per semester will be granted to qualified students upon special arrangements with the Registrar of the Graduate School. No student will be allowed to present credit for more than two of these half-courses toward the master's degree at Brown University. The first series was held during Semester II, 1949-50. Topics for 1953-54: I, Psychology Today and Natural Resources of Rhode Island; II, The Art of Communications. Topics for 1954-55: I, The Far East; II, To be announced.

Egyptology

Professor PARKER (Chairman); Visiting Professor ČERNÝ; Assistant Professor CAMINOS; Research Associate, Mr. GOEDICKE; Assistant, Mrs. PECK.

120. *An Introduction to the Material Culture of Ancient Egypt*

A statement of the principles of archaeology as they apply to Egypt and a survey of the material remains of its civilization from the earliest period to the Christian era. Mrs. PECK.

131, 132. *Middle Egyptian*

An introduction to Egyptian hieroglyphic writing, based on Gardiner, *Egyptian Grammar*, and de Buck, *Egyptian Readingbook*. Elective by written permission of the instructor. Mr. CAMINOS.

201. *Reading of Middle Egyptian Texts*

Selections from the stories of *Sinuhe*, *The Eloquent Peasant*, *The Shipwrecked Sailor* and others. Introduction to hieratic. Mr. CAMINOS.

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221. *Introduction to Coptic*. Mr. PARKER.

241. *Introduction to Late Egyptian*

Reading of texts in both hieratic and transcription. Mr. ČERNÝ.

261. *Introduction to Demotic*. Mr. PARKER.

281. *Introduction to Old Egyptian*

Reading of texts in both hieroglyphic and hieratic. Mr. PARKER.

291, 292. *Reading and Research*

Topics for 1954-55: Reading of late Egyptian texts. Mr. ČERNÝ.

Engineering

Professors BLISS, BOHL, DRUCKER (Chairman), FINDLEY, KISTLER, MAEDER, MARCHANT, PRAGER, SCHILHANSL, SYMONDS, TOMPKINS; Associate Professors BENFORD, KESTIN, MORGAN, MYLONAS, PELL; Assistant Professors ANGULO, DUFFY, FOULKES, HAYTHORNTHWAITE, LERNER, PROBSTEIN; Lecturer, Mr. EDWARDS; Research Associates, Messrs. ANDERSON, DEGEN, and SCHAFRANIK; Instructors, Messrs. ALVERSON, BICK, CHANG, HIGGINS, SMALL, and YOULA; Research Assistants, Messrs. ABRAHAM, AI, CARROLL, COMETTA, HALL, HETZLER, JOHNSON, MARSDEN, PIETRASZ, SOMM, WANG, WOO, and WOOD; Assistant, Mr. DAY.

GENERAL REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN ENGINEERING. Students are required to take engineering courses numbered from 7 to 118 inclusive, or the equivalent, with the following exceptions: (1) Civil engineering majors are not required to take Engineering 26 and 31; (2) Aeronautical, electrical, and mechanical engineering majors are not required to take Engineering 23 and 31. Further requirements are given on page 62.

HONORS. Candidates for Honors in engineering are chosen at the end of the junior year. Each will have the opportunity to work under the direction of the member of the staff he chooses on a project of experimental or analytical nature or a combination of both. An Honors report or thesis summarizing the results is required.

CONCENTRATION. Candidates for the Bachelor of Arts degree intending to concentrate in engineering should have Mathematics 9-10 and 29 in addition to the minimum engineering course requirements set in conference with the Division of Engineering and the Dean.

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COMBINED PROGRAM FOR THE DEGREES OF BACHELOR OF ARTS AND BACHELOR OF SCIENCE IN ENGINEERING. Students may take part in a program leading to the degrees of Bachelor of Arts and Bachelor of Science in Engineering at the end of five years. In this program all requirements for both degrees must be met.

7. *Mechanics*

Fundamentals of statics and dynamics with application to problems of engineering interest. Topics include forces in space, center of mass, moment of inertia, general motion of particles and rigid bodies; principles of virtual displacement, work and energy, impulse and momentum, vibrations, balancing, and gyroscopic motion. Considerable use is made of vector algebra and geometry. Lectures, recitations, and laboratory work. Prerequisite: Engineering 9-10; Mathematics 9-10. Mr. MORGAN.

9-10. *Numerical and Graphical Methods (including Engineering Drawing, Descriptive Geometry, and Elementary Statics)*

Numerical and graphical methods of importance to the engineer: engineering drawing and the elements of descriptive geometry, graphs, functional scales, nomograms, slide rules, methods of graphical and numerical solution of simple algebraic and transcendental equations will be considered. Appreciable time will be devoted to vector algebra and geometry and their application to statics. Lectures, recitations, and drafting-room work. Mr. PELL.

23. *Surveying*

Theory and practice of plane surveying; use of the tape, compass, level, and transit. Lectures, field work, and drafting. Must be completed by the end of the third year. No course credit. Mr. LERNER.

26. *Mechanical Technology*

Shop practice by individual arrangement. The machine shop work must be completed by the end of the third year. No course credit.

31. *Surveying, Second Course*

A continuation of Engineering 23. Use of the tape, level, transit, stadia, and plane table; triangulation, topography, and railroad curves. Lectures, field work, and drafting. No course credit. Mr. LERNER.

38. *Electricity and Magnetism*

A study of the fundamental concepts of electrostatics and magnetostatics and their applications to field and circuit problems involving linear and

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non-linear elements. Differential and integral calculus, differential equations, and vector notation are used freely. Lectures, laboratory work, and computation period. Prerequisite: Mathematics 29; Engineering 7. Mr. ANGULO.

39. *Electric Circuits*

Extension of the basic concepts to include time-varying fields; transients and the use of operational techniques; alternating current circuit analysis. Lectures, laboratory work, and computation period. Prerequisite: Engineering 38. Mr. ANGULO.

40. *Electrical Machinery*

A study of the fundamental principles of direct and alternating current machinery. The construction, operation, and application of direct current motors, generators and specialized types, and of alternating current motors, generators, transformers, and allied apparatus. Lectures, recitations, and work in the electrical machinery laboratory. Prerequisite: Engineering 39 or equivalent. Mr. TOMPKINS.

52. *Fluid Mechanics*

The principles of conservation of energy, mass, and momentum are applied to an incompressible fluid. The fundamental equations of hydrostatics and hydrodynamics are derived and used to calculate and explain some of the flow phenomena encountered in engineering. The laws of dynamic similarity are stressed. Lectures, computation period, and laboratory work. Prerequisite: Mathematics 29; Engineering 7. Mr. MAEDER.

58. *Mechanics of Materials*

The elements of mechanics of materials with emphasis on the fundamental concepts of stress and strain and the rational development and application of shaft, beam, and column formulas. A discussion of bending about non-principal axes, shear center for profile sections, elastic stability, and theories of strength is included. Lectures, computation period, laboratory work. Prerequisite: Engineering 7. Mr. FINDLEY.

59. *Mechanics of Materials and Introduction to Structures*

The theorem of virtual displacement, Castigliano's Theorem and its various modifications, and the reciprocal theorem are derived and applied to trusses, rigid frames, rings, and arches. Much emphasis is placed on influence lines. Three moment equation, slope deflection, and moment distribution procedures are established. Riveted and welded joints, curved beams, reinforced concrete beams, and space structures are also studied. Lectures and computation period. Prerequisite: Engineering 58. Mr. MYLONAS.

71-72. *Thermodynamics*

Major emphasis is placed upon the First and Second Laws of Thermodynamics and their application to systems undergoing reversible or irreversible processes. The concepts of thermal equilibrium and temperature scale are established and applied to the study of the properties of substances. Combustion phenomena and the fundamentals of heat transfer are included. The basic laws and concepts are applied to the study of the most important prime movers and thermal machines. The one-dimensional theory of flow of a compressible fluid is also studied. Lectures, computation period, and laboratory. Prerequisite: Engineering 52 or equivalent and a course in Chemistry. Mr. KESTIN.

118. *Engineering Economy*

The importance of economic factors in engineering projects and the methods of analysis to be followed in making an economy study. The basic elements of cost and their relative importance. Economic equivalence and its importance in comparisons between available alternatives. Accepted methods of financing a proposed project. The basic principles of the law of contracts. Required of candidates for the degree of Bachelor of Science in Engineering. Elective, by written consent of the instructor, for junior and senior candidates for the Bachelor of Arts degree. Not open to graduate students for credit. Mr. BLISS.

193, 194. *Special Topics in Engineering*

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119. *Structural Analysis*

Concepts and theorems basic in analysis of plane and space structures with applications particularly to structural types important in civil and aeronautical engineering, including general work-energy theorems, slope-deflection equations, and numerical methods for continuous beams and frames; bending and torsion of thin-walled open and closed sections with one or more cells; stability problems, including beam-columns and frames; introduction to plates and shells, and elements of plastic or limit analysis. Prerequisite: Engineering 59 or equivalent. Mr. SYMONDS.

130. *Design of Civil Engineering Structures*

Loadings of different types, riveted and welded connections; design of steel members, frames, and arches; design and selection of concrete mixes; reinforced concrete beams, columns, frames, and arches. Prerequisite: Engineering 119 or equivalent. Mr. LERNER.

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131. *Highway Engineering*

Economics, construction, and design of roads and pavements; methods of testing road materials; systems of administration and maintenance; inspection trips to examine the various types of city and state highways and bridges under construction, and also to manufacturing plants for materials. Prerequisite: Engineering 59 or equivalent.

133, 134. *Hydraulic and Sanitary Engineering*

Water supply and sewerage from a sanitary and an engineering standpoint. First semester: the chemical, biological, and meteorologic aspects. Second semester: engineering construction and design. Inspection trips and laboratory. Prerequisite: Engineering 52 and 59. Mr. BENFORD.

137. *Soil Mechanics and Foundation Engineering*

Classification and identification of soils; mechanical and physical properties and methods of testing. Analysis of stress and strain in soil masses; theories of failure, theory of seepage. Problems of building foundations; consolidation and settlement; stability of earth slopes and embankments. Lectures, laboratory experiments, and inspection of projects. Mr. BENFORD.

138. *Building Construction*

Application of the theory of structures to buildings of different types; study and discussion of building practices, augmented by experiments on building materials and by inspection trips. Prerequisite: Engineering 119 or equivalent. Mr. LERNER.

ELECTRICAL ENGINEERING

157. *Electrical Network Theory*

Two-terminal network theory, steady state and transient analysis with an introduction to transform methods. Four-terminal network theory, design of equalizers and filters. Lectures and laboratory. Prerequisite: Engineering 40 or equivalent. Mr. YOULA.

158. *Electrical Transmission*

Theory of the general transmission line, transmission line constants, telephone and power lines, radio frequency lines, wave guides. Lectures and laboratory. Prerequisite: Engineering 157 or equivalent. Mr. YOULA.

161. *Fundamentals of Electronics*

Fundamentals of electron ballistics, electron emission, and gaseous conduction. A study of electron tubes, vacuum and gaseous and allied apparatus; the circuits for the application of these devices as amplifiers, oscillators,

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modulators and demodulators at low, intermediate, and high frequencies; the general application to engineering work. Lectures and work in the electronics laboratory. Prerequisite: Engineering 40 or equivalent. Mr. TOMPKINS.

162. *Power Electronics*

Further study of the arc discharge, electrical conduction in gases, arc cathodes, grid control, and gas tubes in general. Fundamentals and applications of low and high power rectifiers, control circuits, inverters, barrier layer rectifiers, electronic sources of light, photoelectric devices. General applications of electronics to industry. Lectures and work in the electronics laboratory. Prerequisite: Engineering 161 or equivalent. Mr. TOMPKINS.

164. *Communication Electronics*

Fundamentals of the application of electronics to the transmission of intelligence. A study of video amplifiers, modulation, demodulation, pulse techniques, general communication and television systems. Lectures and work in the electronics laboratory. Prerequisite: Engineering 161 or equivalent. Mr. TOMPKINS.

167. *Alternating Current Machinery I*

Fundamental theory applied to the analysis of operation and determination of the characteristics of alternating current generators, operating singly and in parallel, synchronous motors, and allied apparatus. Study of the internal reactions, calculation, applications, operation, and control apparatus applicable to these machines; methods of testing. Lectures and work in the electrical machinery laboratory. Prerequisite: Engineering 40 or equivalent. Mr. TOMPKINS.

168. *Alternating Current Machinery II*

A continuing study of the fundamental theory applied to the analysis of operation, determination of characteristics, methods of testing, and application of transformers, polyphase and single-phase induction motors, and allied apparatus. Lectures and work in the electrical machinery laboratory. Prerequisite: Engineering 167 or equivalent. Mr. TOMPKINS.

MECHANICAL ENGINEERING

171-172. *Turbomachines*

Applications of fluid mechanics and thermodynamics to turbomachinery operated by liquids, steam, or gas. Description of the different types and their elements. Analysis of flow and the aerodynamical design of the blades. Performance characteristics and efficiency. Special structural design problems and stress analysis of the most significant parts of stationary turbomachines

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and of jet engines. Prerequisite: Engineering 59 and 71-72 or equivalent. Mr. MARCHANT.

173. *Steam Power Plants—Components*

A study of the component parts of steam power plants including fuels, fuel-burning equipment, furnaces, boilers, turbines, condensers, and heaters. Prerequisite: Engineering 71-72. Mr. KISTLER.

174. *Steam Power Plants—Design and Performance*

A study of the relation of components and operating conditions to the economic design of a power plant, including the selection of station cycles, station heat balances, and rate making. Prerequisite: Engineering 173. Mr. KISTLER.

175-176. *Mechanism and Design of Machine Elements*

A study of the fundamental problems arising in the design of machines, including kinematics, lubrication, force and stress analysis, rigidity, strength, and vibration. Linkages, cams, gears, bearings, frames, joints, and connections will be analyzed. Lectures and drafting-room work. Prerequisite: Engineering 7 and 58. Mr. BLISS.

178. *Internal Combustion Engines*

The principles of thermodynamics and mechanics applied to the design of internal combustion engines. Lectures, laboratory, and drafting-room work. Prerequisite: Engineering 71-72. Mr. KISTLER.

AERONAUTICAL ENGINEERING

119. *Structural Analysis*

Concepts and theorems basic in analysis of plane and space structures with applications particularly to structural types important in civil and aeronautical engineering, including general work-energy theorems, slope-deflection equations, and numerical methods for continuous beams and frames; bending and torsion of thin-walled open and closed sections with one or more cells; stability problems, including beam-columns and frames; introduction to plates and shells, and elements of plastic or limit analysis. Prerequisite: Engineering 59 or equivalent. Mr. SYMONDS.

187. *Aerodynamics I*

The basic concepts of aerodynamics are studied, including: kinematics of the fluid element; deformation forces, continuity, Navier-Stokes equation, energy equation, laws of dynamic similarity, singularities in the flow field, two dimensional potential flow; complex potential, conformal transformation, Joukowski airfoil, lifting line theory for the finite wing; the wing of

minimum induced drag, inviscid steady linearized compressible subsonic flow. Parallel to this fundamental treatment of aerodynamics, a design project extending well into Engineering 190, *Aerodynamics II*, is carried out by the student. Prerequisite: Engineering 71-72. Mr. MAEDER.

190. *Aerodynamics II*

Theory of thin airfoils in steady and unsteady flow is studied, as is blade element, momentum, and vortex theory for propellers. Major emphasis is on airplane stability and control, including equations of motion of the rigid airplane, the meaning of stability and methods for its investigation, static and dynamic longitudinal stability and control, directional stability and control. Prerequisite: Engineering 187. Mr. MARCHANT.

192. *Aircraft Structural Design*

General design procedure. Weight estimation. Loading specification. Distribution of loads. Analysis of different types of wing structures. Design of compression members. Design of webs. Bending and torsion of wings. Analysis of semimonocoque structures. Cutouts. Stability and deflections of structures. Design of frames and ribs. Static tests. Lectures, laboratory, aircraft design project. Prerequisite: Engineering 119. Mr. PRAGER.

PRIMARILY FOR GRADUATE STUDENTS

207, 208. *Mathematical Methods for Engineers*

Mathematical treatment of representative engineering problems. The mathematical discipline is stressed but its relationship with physical reality is shown. The main topics are: Complex function theory (including conformal mapping and contour integration), ordinary and partial differential equations (including initial and boundary value problems), Bessel and Legendre functions, Sturm-Liouville theory. Fourier and Laplace transforms, vector analysis. Mr. FOULKES.

211. *Linear Circuit Analysis I*

Formulation of integro-differential equations of electrical systems. Transient and steady state analysis. Fourier and Laplace transform methods, including requisite complex function theory. Applications to circuit theory and servomechanisms. Mr. ANGULO.

212. *Linear Circuit Analysis II*

Two and four terminal network theory. Network synthesis. Physical realizability. Feedback systems, stability criteria. Mr. ANGULO.

213. *Electronic Circuits*

Analysis and design of system elements; multivibrators, Miller integrators,

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counters, switches, pulse circuits, delay lines and wave shaping circuits, video and pulse amplifiers, and other system components.

214. *Electronic Engineering*

General aspects of communication. Amplitude, frequency, and pulse modulation. Applications to telemetering, radar and communications systems.

231, 232. *Advanced Theory of Structures*

A study of the general analytical and numerical methods for the analysis of structures. The structures and components considered will include beams, trusses, rigid frames, flat plates, thin shells, and suspension systems. Major emphasis will be on usual elastic behavior under static loading, but appreciable time will be devoted to buckling, vibration, and plastic action. Mr. HAYTHORNTHWAITE.

251. *Advanced Engineering Mechanics*

Kinematics and dynamics of systems of particles, including Lagrange's equations, energy principles, and applications to problems of variable mass and gyroscopic effects. Introduction to theory of vibrations. Free and forced vibrations of coupled masses with application to engine balancing and vibration absorption. Vibrations of bars, beams, plates, and frame structures, including approximation techniques. Shock and impact problems. Mr. DUFFY.

252. *Advanced Strength of Materials*

Solution of technical problems of stress analysis and deformation under load. Introduction to theory of elasticity including general theorems of work and energy. Applications to torsion and bending of beams (including thin-walled sections, curved beams, beams on elastic foundation), and to rotating disks and thick tubes under internal pressure. Theories of failure and introduction to analysis of plastic deformations and to limit analysis and design. Mr. DUFFY.

253. *Advanced Machine Design*

The principles of the fundamental courses applied to advanced problems in design. Mr. BLISS.

273. *Advanced Technical Aerodynamics*

Selected topics relating to the fields of incompressible and compressible aerodynamics, including design problems in modern aircraft power plants. Prerequisite: Engineering 187. Mr. MAEDER.

274. *Gas Dynamics*

The fundamentals of dynamics of compressible fluids are shown. Some approximate methods are discussed for obtaining the compressible flow

around airfoils and similar obstacles. Appropriate attention is given to similarity laws and experimental research methods. Prerequisite: Engineering 187. Mr. MAEDER.

291. *Special Topics in Engineering: Advanced Theory, Design, and Vibration Problems in Turbomachinery I*

Two-dimensional theory of straight and of radial flow cascades; cascade experiments; some three-dimensional aspects of the theory of turbomachinery; effects of the Reynolds and Mach number on performance characteristics. Mr. SCHILHANSL.

292. *Special Topics in Engineering: Advanced Theory, Design, and Vibration Problems in Turbomachinery II*

Stress analysis of the component parts of turbomachines, as for instance, blades, discs, drums, scroll cases; thermal stresses; vibrations of shafts and blades. Mr. SCHILHANSL.

297, 298. *Reading and Research*

Work with individual students in connection with special reading or problems of research. The STAFF.

It is expected that graduate courses in the following subjects will be offered in two or three year cycles: Soil Mechanics, Electromagnetic Theory and Application; and Power System Networks. Attention is directed to courses in Mathematics and Physics and to Elasticity, Plasticity, Vibrations, and Fluid Mechanics offered in Applied Mathematics.

English

Professors DAMON, STEWART, S. BROWN, BRADNER, ANDERSON (Chairman), B. W. BROWN, NOYES, KAPSTEIN, KENNY; Associate Professors BLANCHARD, WEBSTER, VAN DE WATER; Assistant Professors JONES, BLOOM, SABOL, VAN NOSTRAND, BESSINGER, PHILBRICK, BLISTEIN; Instructors, Messrs. COMERY, WATTS, GOSSE, COOLIDGE, PERLUCK, BRADY, YOKELSON, DOENGES, MEIXNER, BARNHILL, HUGHES, KRAUSE, and R. M. BROWN, and Misses SOIREF and MAHON, and Mesdames MEADER and BELL; Assistants, Messrs. SHAWCROSS, SCHROEDER, DEMINOFF, and O'DONNELL, and Miss SULLIVAN.

PREREQUISITES. Demonstrated proficiency in English composition is prerequisite to concentration in English and to all courses in composition except English 1, 2.

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The program in English Expression is limited to candidates for Honors in English Expression. No student may be enrolled in this concentration without the written permission of Professor Benjamin W. Brown. No student may begin a concentration in English Expression after the opening of the Junior Year.

DISTRIBUTION REQUIREMENT. The distribution requirement in Literature under Humanities may be met by taking English D15, D16, or IC 1-2, or IC 3-4. During the academic year 1954-55, English D28 will be accepted as a distribution requirement in Literature under Humanities, provided English D27 has already been passed.

CONCENTRATION.

- I. English Literature: A) English 29, 30, 31, and 32 (in that order); B) English 41-42; and C) two semester courses from the following: English 73-74, 105-106, 125-126, 133-134, 141-142, 171, 172, 181, 182, 186, 187, or (with the written consent of the instructor) an appropriate 200-course.
- II. American Literature: A) English 30, 31, 32, and 29 (in that order); B) English 41-42; C) English 141-142 or (with the written consent of the instructor) 279, 280.
- III. English Expression: See "Honors in English Expression" below. No student may be enrolled in this concentration without written permission from Professor Benjamin W. Brown. No student may begin the concentration after the opening of the junior year.

HONORS IN ENGLISH LITERATURE. Candidates should consult the Department Advisor of Honors Students before the end of the sophomore year at the latest.

Each candidate for Honors will be expected to familiarize himself with certain portions of the field of English literature and language. It is recommended that ordinarily the student present six subjects, of which one should be American literature and one should be Shakespeare. The remaining four subjects must be chosen from the following:

- | | |
|--|-----------------------------|
| 1. Old English Language and Literature | 6. The Drama since 1660 |
| 2. Middle English Language and Literature, including Chaucer | 7. The Eighteenth Century |
| 3. The Fifteenth and Sixteenth Centuries | 8. The English Novel |
| 4. The Drama to 1642 | 9. The Age of Romanticism |
| 5. The Seventeenth Century | 10. The Victorian Age |
| | 11. Contemporary Literature |

HONORS IN AMERICAN LITERATURE. Candidates should consult the Department Advisor of Honors Students before the end of the sophomore year at the latest.

The Honors Program in American Literature requires ten semester courses in concentration divided into four semester courses of English literature and

six semester courses of American literature as follows: 1. The Honors Conference Group in Shakespeare; 2. Any other Honors Conference Group in English literature, upon the advice of the Department Advisor of Honors Students; 3. The Honors Conference Group in American literature; 4. English 141-142; and 5. English 191-192.

In addition it is recommended, although not required, that candidates should include at least one of the three following courses in English and American literature: English 171, 172, or 187.

HONORS IN ENGLISH EXPRESSION. Candidates for Honors in English Expression must concentrate in *either* Composition *or* Speech-Dramatics.

I. Composition: Ten semester courses are required, classified as follows: (1) English 3; (2) English 29, 30, 31, and 32; (3) Two semester courses from the following: English 4s, 4e, 4d, 4v, and 7; (4) two semester courses from the following: English 5-6, 4s, 4v, 4d, and 7; and (5) English 5 (repeated if necessary) in preparation for the Honors Thesis.

II. Speech-Dramatics. Ten semester courses are required, classified as follows: (1) English 21; (2) English 29, 30, 31, and 32; (3) two semester courses from the following: English 22, 23-24, and 4d; (4) two semester courses from the following: English 23-24, 22, and 4d; and (5) an Honors Thesis.

PREPARATION FOR GRADUATE WORK. Students intending to take graduate work in English are advised to elect as undergraduates one of the following courses in order that they may be prepared for advanced courses which presuppose an historical knowledge of the English language: English 105-106; 125-126; 201, 202; 203, 204; 205, 206. A knowledge of French, German, and Latin is required for the degree of Ph.D.; of French or German for the degree of A.M.

1. *English Composition*

Training in the fundamentals of prose composition. Required of all degree candidates in the freshman year, unless excused on the basis of the English proficiency test or the IC program. If the grade of *E* is assigned, the course must be repeated. Mr. S. BROWN and others.

2. *English Composition*

Training in the fundamentals of prose composition, in continuation of the work in English I. Required of all degree candidates, who after completion of English I are not excused from further work in composition on the basis of the English proficiency test. For such students English I followed by English 2 is considered a year-course; the final grade in English 1 becomes a tentative grade only, and the final grade in English 2 is the permanent grade for the entire course. Mr. S. BROWN and others.

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IC 1-2. *Man's Faith and Fate*

The core of this course is the idea of man's faith and fate as presented in the following major poems of the 19th and 20th centuries: *Lines Composed a Few Miles above Tintern Abbey* (1798) by William Wordsworth; *Manfred* (1817) by Lord Byron; *Prometheus Unbound* (1819) by Percy Bysshe Shelley; *In Memoriam* (1850) by Lord Tennyson; *The Rubaiyat of Omar Khayyam* (1859), as translated by Edward Fitzgerald; *Rabbi Ben Ezra* (1864) by Robert Browning; *The Rock* (1934) by T. S. Eliot. The course will consider the poets' answers to these questions: What is the nature of Man? What is the nature of Nature? What is the nature of the Power that moves in Man and Nature? What is or may be Man's conduct or fate in relation to this Power? The poems will be studied as works of art as well as vehicles of ideas. MESSRS. KAPSTEIN, PHILBRICK, BLISTEIN, and KRAUSE.

IC 3-4. *The Problem of American Individualism*

An inquiry into the concept of the free individual in a free society, based upon the critical reading of five major novels: Hawthorne's *The Marble Faun* (1860), Melville's *Pierre* (1852), James's *The Ambassadors* (1903), Dreiser's *An American Tragedy* (1925), and Faulkner's *Light in August* (1932). The course will include a study of the intellectual background of this theme as reflected in certain historical and philosophical writings. The work of the course will consist of (1) informal class discussions and (2) frequent critical papers and individual conferences. MESSRS. STEWART, VAN NOSTRAND, and WATTS.

3. *English Composition, Second Course*

An intermediate course, with work chiefly in the essay, for students who have met the English proficiency requirement. Mr. BLANCHARD.

4. *English Composition, Second Course (continued)*

With the consent of the instructor any of the four divisions of English 4 may be repeated for credit, or a student who has completed one division of English 4 may elect one of the others. No student, however, can take more than two divisions of English 4.

4d. Play Writing. Prerequisite: a grade of *B* or better in English 3, or written consent of the instructor. Mr. B. W. BROWN.

4e. Advanced Exposition. Prerequisite: English 3, or written consent of the instructor. Mr. PERLUCK.

4s. The Short Story. Prerequisite: a grade of *B* or better in English 3, or written consent of the instructor. Mr. WEBSTER.

4v. Verse Writing. Prerequisite: English 3, or written consent of the instructor. Mr. DAMON.

5-6. *English Composition, Advanced Course*

A course for practiced writers, which demands originality and substantial interest. English 6 is devoted to one long piece of fiction or drama. Elective by written consent of the instructor for a limited number of juniors and seniors. With the consent of the instructor the course may be repeated. MESSRS. S. BROWN and B. W. BROWN.

7. *Principles of Argumentation*

A course in the principles of analysis, evidence, and the technique of brief-drawing, designed to train students in the fundamentals of an orderly and convincing presentation of their views. MR. GOSSE.

D15. *Introduction to English and American Literature: Fiction and Drama*

A course designed to serve as a general introduction to the reading and analysis of English and American literature, arranged by types of literature rather than by a chronological survey. MR. BLOOM and others.

D16. *Introduction to English and American Literature: Poetry*

This course is a continuation of English D15; it will be devoted to the reading and analysis of all types of poetry. Prerequisite: English D15. MR. BRADNER and others.

21. *Public Speaking*

Fundamentals of public speaking: voice, phonetics, and diction. MR. B. W. BROWN and others.

22. *Debate and Discussion*

A course in the oral presentation of argumentative material; practice in analysis and brief-drawing, with training in clear, concise, and forceful discussion. Prerequisite: English 7 or 21. MR. B. W. BROWN and others.

23-24. *Play Production*

The elements of dramatic analysis and interpretation, acting, diction, and stagecraft. Elective for a limited number of students by written consent of the instructor. With further consent in special cases, the course may be repeated. Eight hours of attendance. MISS VAN DE WATER and MR. JONES.

D28. *Introduction to English Literature*

A course combining the historical and the analytical approach to a study of the principal English authors from 1800 to the present. English D27, no longer offered, is prerequisite to D28. MR. KENNY and others.

29. *English Literature from the Beginnings to 1625*

A study of English literature of the Middle Ages and the Renaissance, with special emphasis on Chaucer, Spenser, and Shakespeare. Elective for

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undergraduates; required of all concentrators in English Literature, American Literature, or English Expression. Mr. ANDERSON and others.

30. *English Literature, 1625-1784*

A study of English literature of the seventeenth century and the Neo-Classical Age, with special emphasis on Donne, Dryden, Swift, and Pope. Elective for undergraduates; required of all concentrators in English Literature, American Literature, or English Expression. Students concentrating in American Literature should take this course in the first semester of their junior year. Mr. KENNY and others.

31. *English Literature, 1784-1832*

A study of English literature of the Age of Romanticism. Elective for undergraduates; required of all concentrators in English Literature, American Literature, or English Expression. In 1954-55 this course will be required of all seniors concentrating in English and American Literature who need a "period"-course to complete their concentration program. Mr. BLOOM and others.

32. *English Literature, 1832-1900*

A study of English literature of the Victorian Age. Elective for undergraduates; required for all concentrators in English Literature, American Literature, or English Expression. In 1954-55 this course will be required of all seniors concentrating in English and American Literature who need a "period"-course to complete their concentration program. Mr. S. BROWN and others.

41-42. *American Literature*

A survey of American literature, with emphasis upon the principal writers of the nineteenth century. Elective for sophomores, juniors, and seniors. Mr. VAN NOSTRAND and others.

73-74. *Shakespeare: Complete Works*

A general course, with reading of all of Shakespeare's works. Elective for sophomores, juniors, and seniors. Mr. B. W. BROWN.

105-106. *Chaucer*

Reading of Chaucer's works; discussion of the chief types of medieval literature. Elective for juniors, seniors, and graduate students. Mr. ANDERSON.

125-126. *Shakespeare: Selected Plays*

Careful study of a few plays, with special attention to exact interpretation. In 1954-55 the plays to be studied are *A Midsummer Night's Dream*; *Henry V*; *The Merchant of Venice*; *Troilus and Cressida*; *Antony and Cleopatra*; and *Cymbeline*. Elective for juniors, seniors, and graduate students,

and for sophomores by written consent of the instructor. The course may be repeated. Mr. SABOL.

133-134. *The English Novel*

Reading and discussion of the more important writers of fiction from 1700 to 1900. Elective for juniors, seniors, and graduate students. Mr. NOYES.

141-142. *American Prose Fiction*

The important writers of fiction before 1900. Elective for juniors, seniors and graduate students. Mr. STEWART.

171. *Twentieth Century Poetry, English and American*

Tendencies in the form and thought of English and American poetry since 1900. Elective for juniors, seniors, and graduate students. Mr. S. BROWN.

172. *The Twentieth Century Novel, English and American*

A critical study of the novel since 1900; reading of selected English and American novelists of the present generation. Elective for juniors, seniors, and graduate students. Messrs. KAPSTEIN and BLOOM.

181. *English Drama to 1580*

Development of the drama from medieval beginnings to the Renaissance.

182. *English Drama, 1580-1642*

The great Elizabethan dramatists and their successors to the closing of the theaters. Mr. BRADNER.

186. *English and American Drama of the Eighteenth and Nineteenth Centuries*

Reading and discussion of plays by the chief dramatists from the breakdown of classicism to Pinero, Thomas, and Shaw; the failure of the poetic tradition; the naturalistic movement. Elective for juniors, seniors, and graduate students. Mr. B. W. BROWN.

187. *Twentieth Century American and European Drama*

Reading and discussion of plays by the chief dramatists after 1914; current tendencies in the theater. Elective for juniors, seniors, and graduate students. Mr. B. W. BROWN.

191-192. *Senior Honors Conference in American Literature.* Mr. VAN NOSTRAND.

201, 202. *History of the English Language*

The development of English pronunciation, grammar, syntax, and vocabulary. Elective for graduate students and for juniors and seniors by written consent of the instructor.

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203, 204. *Old English Language and Literature*

Essentials of Anglo-Saxon grammar; poetry and prose selections; *Beowulf*. Elective for graduate students, and for juniors and seniors by written consent of the instructor. Mr. BESSINGER.

205, 206. *Middle English Language and Literature*

A study of Middle English language and literature to 1500, exclusive of the works of Chaucer and of medieval drama.

221, 222. *Sixteenth Century Literature, exclusive of the Drama*

A survey of the main types of sixteenth century literature in England, with emphasis on their Continental sources; all of Spenser's principal works will be included. Mr. BRADNER.

223. *The Continental Renaissance Epic*

Prerequisite: a command of two of the following languages: Latin, Italian, French. Elective for graduate students and for seniors by written consent of the instructor.

247, 248. *English Literature of the Eighteenth Century*

A consideration of the main types of literature in England from 1660 to 1784. Elective for graduate students and for seniors by written consent of the instructor. Mr. KENNY.

249, 250. *Studies in English Literature of the Nineteenth Century*

Elective for graduate students and for seniors by written consent of the instructor.

273, 274. *Studies in the Elizabethan Drama*

Topic for 1954-55: Shakespeare and his early predecessors. Elective for graduate students and for seniors by written consent of the instructor. Mr. BLISTEIN.

279, 280. *Studies in American Literature*

Topic for 1954-55: The literature of the South. Elective for graduate students and for seniors with written consent of the instructor. Mr. STEWART.

281. *Introduction to the Bibliography of English Literature*

The history of English studies; sources of English bibliography; the history of printed books; problems in bibliographical research. Required, without credit, of graduate students in their first year. The STAFF.

289, 290. *Problems in English and American Literary Research*

Work with individual students in the following fields: Old and Middle English, including Chaucer, Messrs. ANDERSON and BESSINGER; The Renaissance, including Shakespeare and the history of the drama, Messrs. BRADNER and SABOL; The Seventeenth Century, Messrs. WEBSTER and DAMON; Neo-Classicism, Messrs. BRADNER and BLOOM; Nineteenth and

Twentieth Centuries, Messrs. ANDERSON, S. BROWN, B. W. BROWN, and KAPSTEIN; American Literature, Messrs. STEWART and VAN NOSTRAND. Elective for approved graduate students and at the pleasure of the instructor.

291. *Seminar: Literary Criticism since 1700*

Elective for graduate students, and for seniors by written consent of the instructor. Mr. BLOOM.

292. *Seminar: Symbolism and Allegory*

Elective for graduate students, and for seniors by written consent of the instructor. Mr. DAMON.

293. *Seminar: Dryden*

Elective for graduate students, and for seniors by written consent of the instructor. Mr. NOYES.

294. *Seminar: Ballads and Romances*

Elective for graduate students, and for seniors by written consent of the instructor. Mr. BESSINGER.

CONFERENCE GROUPS

The following conference groups are provided primarily to meet the requirement of special Honors courses for candidates for Honors in English or American Literature. They are also open, however, to candidates for Honors in Literature, and so far as numbers permit, they may be elected by candidates for Honors in other departments of literature and by graduate students.

H1-2. *Shakespeare*. Mr. NOYES.

H3, 4. *The Seventeenth and Eighteenth Centuries*. Messrs. KENNY and WEBSTER.

H5-6. *Age of Romanticism*. Mr. KAPSTEIN.

H7-8. *The Victorian Period*. Mr. PHILBRICK.

H9-10. *American Literature*. Mr. WATTS.

Geology

Professor QUINN (Chairman); Assistant Professor OLIVER; Instructor, Mr. CHORLEY; Research Associate, Mrs. ROSS; Assistants, Messrs. ERWIN and KOZAK.

GENERAL PREREQUISITE. Geology 1 or DI is prerequisite to all other courses in the Department except Geology 41 and 42 and those courses for which other provision is made in the course statement.

GEOLOGY

DISTRIBUTION REQUIREMENT. The distribution requirement in Physical Sciences under Sciences may be met by taking Chemistry D1 and Geology D1. Geology 1, 2, 41, 117, or 118 may be taken as an independent or a continuation course to satisfy a distribution requirement in the Sciences.

CONCENTRATION. In addition to the elementary course (Geology 1 or D1), the requirements for concentration in geology are: Geology 2, 41, 42, 105, 113, 117, 118, 198. Those who plan to become professional geologists are urged to elect Geology 109 in addition. The Department should be consulted by those planning a concentration program.

The Department recommends that at least four semester courses be elected in related sciences such as chemistry, mathematics, physics, and biology; the Department should be consulted with respect to which related courses are suitable for each student.

HONORS. Honors work in geology may include special reading or laboratory work in regular courses and a senior thesis on some special laboratory or field problem. Two courses in geology in addition to the usual concentration program are required of Honors students.

GRADUATE WORK. Graduate study is necessary as a preparation for professional work in geology. For such advanced study a reading knowledge of French and German is necessary.

D1. *Elementary Physical and Historical Geology*

An introductory course concerned with the classification and origin of the materials of the earth's crust, the origin and interpretation of its land forms, and the use of geologic features for determining events and sequences of events in geologic history. A brief view of geologic history will be included. A distribution course integrated with Chemistry D1. Prerequisite: Chemistry D1 or equivalent. May not be taken in addition to Geology 1. Mr. CHORLEY.

1. *Physical Geology*

An introductory course in the interpretation of geological evidence; the materials of the earth; its land forms and structure; the agencies active in their production. May be taken as an independent course to satisfy a distribution requirement in the Sciences. May not be taken in addition to Geology D1. Mr. CHORLEY.

2. *Historical Geology*

The geological history of the earth from its origin to recent times, with emphasis on North America, its dynamic, geographic, and climatic changes; animals and plants of the past; the evolution of life. Prerequisite: Geology 1 or D1. Mr. OLIVER.

41. Mineralogy

Introductory study of minerals. Crystallography, physical properties, and chemical tests as methods of identification of minerals. The uses and geologic occurrence of minerals. Prerequisite: Chemistry D1 or equivalent. Mr. QUINN.

42. Petrography

Study of the optical properties of minerals and the use of the polarizing microscope. Microscopic study of the main types of rocks and discussion of the classification and the origin of rocks. Prerequisite: Geology 41. Six hours of attendance. Mr. QUINN.

105. Structural Geology

Original forms of igneous and sedimentary rocks and the structures produced by earth movements and metamorphism; the mechanics of rock deformation; the interpretation of topographic and geologic maps. Laboratory work in the three-dimensional visualization of folds and faults; practice in determining structures in the field. Prerequisite: Geology 1 and 2, or D1. Mr. OLIVER.

109. Field Geology

Supervised geological mapping of the rocks and drift of a small area near Providence, guided and amplified by one discussion period each week on methods. Final work in the course consists of a carefully drawn geological map and a written report of the area. Mr. QUINN.

113. Paleontology

A study of the morphology, evolution, classification, and paleoecology of the major groups of fossil invertebrates. Stratigraphic application will be emphasized. Prerequisite: Geology 2, or four semester courses of biology or botany. Mr. OLIVER.

116. Stratigraphy

Description and interpretation of the rock succession in certain important and typical areas, particularly in North America. Paleogeography, paleoecology, and stratigraphic paleontology will be emphasized. Prerequisite: Geology 113. Mr. OLIVER.

117. Geomorphology

A study of the processes and resulting topographic forms associated with erosion, transportation, and deposition by running water. Discussion of historical backgrounds, the work of W. M. Davis, the approach of W. Penck, rock disintegration, mass wasting, stream flow and transport, steady state in open systems and the concept of grade, transverse and longitudinal valley profiles, development of drainage basins, slope development, the pene-

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plain, structural controls, the place of geomorphology in the geologic sciences. Laboratory work will be concerned with principles of morphometry and simple statistical analysis of geomorphic data. Mr. CHORLEY.

118. *Glacial Geology*

A study of the three interrelated fields together comprising glacial geology:

- (a) Glaciology—the study of the physics of glacial ice; the nature of glacial movement and transportation; the regime of past and present glaciers.
- (b) Glacial Geomorphology—the study of landforms associated with the erosion, transportation and deposition by glaciers.
- (c) Glacial Stratigraphy—the study of glacial deposits. Mr. CHORLEY.

123. *Sedimentation*

A survey of the methods of accumulation of sediments and of their alteration and consolidation; laboratory work with sedimentation tank. Prerequisite: Geology 1 or D1. Mr. OLIVER.

126. *Economic Geology of the Non-metals*

A study of the nature, occurrence, distribution, and exploitation of deposits of petroleum and natural gas, coal, building materials, salt, and other non-metallic mineral resources. Prerequisite: Geology 1 and 2, or D1. Mr. OLIVER.

141. *Economic Geology of the Metals*

A study of the origin, classification, and distribution of ore deposits. Readings, discussions, and laboratory work. Prerequisite: Geology 1 and 41, or D1 and 41. Mr. QUINN.

191, 192. *Individual Study of Geologic Problems*

Library, laboratory, or field study; includes preparation of thesis. Required of seniors in Honors Program; open to others by written permission of Chairman of Department. The STAFF.

198. *Fundamental Theories of the Geologic Sciences*

A discussion of the changing concepts in the different fields of geology. Assigned readings, discussions, and reports. For seniors and graduate students. The STAFF.

209. *Geochemistry*

A study of the distribution and abundances of the elements in nature in accordance with their chemical properties and of mineral paragenesis, which treats the physico-chemical aspects relating to the formation, separation,

and association of minerals. Prerequisite: permission of the Department. Mrs. Ross.

210. *Crystal Chemistry of Minerals*

A survey and correlation of the crystal structures of the common ore and rock-forming minerals, including x-ray analysis of minerals for identification and structure determination. Prerequisite: permission of the Department. Mrs. Ross.

211. *Research in Geology*

Elective for graduate students, and for undergraduates by written consent of the Department. May be repeated for credit. The STAFF.

212. *Research in Geology*

Elective for graduate students, and for undergraduates by written consent of the Department. May be repeated for credit. The STAFF.

243. *Petrology of the Igneous Rocks*

A study of the mineralogical and chemical nature of igneous rocks, the principles of their classification, and the problems of magmatic differentiation. Readings, discussions, and petrographic study of thin sections. Prerequisite: Geology 42 and permission of the instructor. Mr. QUINN.

244. *Petrology of the Metamorphic Rocks*

Types of metamorphism, mineral zones and mineral facies, metamorphic differentiation and metasomatism, structures and fabric of metamorphic rocks. Prerequisite: Geology 42 and permission of the instructor. Mr. QUINN.

History

Professors HEDGES, GEORGE, WROTH,¹ BIGELOW, ARMSTRONG, KIRBY, KEENEY, MORGAN (Chairman), CHURCH; Associate Professor FLEMING; Instructors, Messrs. DOUGLAS, THOMPSON, and OSGOOD; Intern, Mr. WRIGHT; Assistants, Mr. SELBY and Miss JACOBS.

PREREQUISITES. History D1, D2 or IC 1, 2 is elective without prerequisite and is a prerequisite for concentration in history. Any other course in the Department (except IC 1, 2, honors courses, and graduate courses) is elective without prerequisite for juniors and seniors and is elective for freshmen and sophomores who have credit for History D1, D2 or IC 1, 2 or Classics D1, F2 or by written consent of the instructor.

¹ Mr. Wroth is Librarian of the John Carter Brown Library of Americana, which is available for the use of advanced students in the field of American History.

HISTORY

DISTRIBUTION REQUIREMENT. Freshmen and sophomores may satisfy the Social Studies distribution requirement in History by History D1, D2, or IC 1, 2. Students who find that they must take distribution courses after their fifth semester may satisfy this requirement by taking any two semester courses or any two-semester course in history.

CONCENTRATION. The requirements for concentration in history are History D1, D2 or IC 1, 2 as a prerequisite; 51, 52; 101, 102 or 107, 108; and four advanced semester courses, only two of which may be in the field of American history. The program is to be arranged in consultation with the Department supervisor. Seniors are required to take a comprehensive examination on courses included in their concentration programs.

The History Department participates in the interdepartmental concentration programs in American Civilization, Ancient and Medieval Culture, and International Relations.

HONORS. History Honors offers qualified students an opportunity to do individual work in fields of particular interest under the supervision of members of the department and to familiarize themselves with historical materials and the methods employed by the historian.

In addition to the courses required for concentration, each student will take the Honors reading course (History 191, 192) both in the fifth and sixth and in the seventh and eighth semesters. Preparation of an Honors thesis will be included in this work. Programs are to be arranged, and a special field of interest determined, in consultation with the Department supervisor.

Honors will be awarded upon the basis of the course record, the Honors thesis, and the Honors examinations.

HONORS EXAMINATIONS. Comprehensive Examinations shall be taken by all candidates for Honors. The first will cover the general field of European history since the Fall of Rome and American history since 1783; the second, the special field of European or American history chosen by the student when he formulates his Honors program.

RELATED COURSES. Attention is called to courses related to the study of history in art, economics, English and foreign literatures, philosophy, and sociology, and to the following specific courses: Classics 117, 118, 121, 122, 141, 142; Political Science 105, 106, 109, 110, 115, 116, 117, 118, 122. Attention is invited to the program of study in American Civilization on page 59.

D1, D2. *European History since the Fall of Rome*

A general survey of European development since the fifth century. Satisfies the Social Studies distribution requirement in History. Messrs. GEORGE, KIRBY, ARMSTRONG, SELBY, and WRIGHT, and Miss JACOBS.

IC 1, 2. *The Growth of the Modern State*

The central theme of the course will be the growth of the modern state from the Middle Ages to the present. The concept of the state will be analyzed within the historical context provided by the social structure, economic currents, and institutional developments in selected periods since the thirteenth century. The liberal idea of the state will be examined by reading works of Burke, Paine, and Mill, while the intellectual bases of the communist, fascist, and welfare states will be studied in appropriate authors and recent historical experience. Messrs. CHURCH, DOUGLAS, THOMPSON, OSGOOD, and WRIGHT.

51, 52. *American History since 1763*

A general survey of American society, politics, and institutions, and of the relations of the United States with other countries. Messrs. HEDGES and THOMPSON.

101, 102. *Europe in the Middle Ages*

A survey of the political, constitutional, intellectual, and social-economic history of Europe from the late Roman Empire to the Renaissance. Mr. KEENEY.

103, 104. *History of European Economic Life*

The evolution of economic life and institutions from the feudal age, dominated by agriculture, to the contemporary age, dominated by commerce and industry. Mr. KIRBY.

107, 108. *The Renaissance and the Reformation*

The emergence of the modern era in Europe, from the thirteenth to the seventeenth century. Messrs. DOUGLAS and CHURCH.

109. *English Constitutional History in the Middle Ages*

A detailed examination of the medieval development of the English Constitution. Emphasis will be placed on the development of a strong monarchy, on the one hand, and on the growth of local institutions of self-government and of representation in a central parliament, on the other hand. Mr. KEENEY.

111, 112. *European History in the Seventeenth and Eighteenth Centuries*

The social, political, and intellectual development of Europe during the Age of Absolutism and the Enlightenment. Mr. CHURCH.

HISTORY

113, 114. *Europe in the Nineteenth Century, 1789-1905*

The Old Regime in decline; French Revolution and Napoleon; liberalism and the economic revolutions; new social movements and nationalism; Revolutions of 1848; democracy and progress, or failure to progress, toward social and political stability; imperialism; science, religion, and anti-intellectualism; the Concert of Europe and the system of alliances. Mr. ARMSTRONG.

119, 120. *Europe in the Twentieth Century*

Nineteenth century origins; the last decade of peace; First World War and Peace Settlement; Democratic, Communist, and Fascist states between the wars; decline of the Peace Settlement and rise of the Axis; Second World War; post-war questions. Mr. ARMSTRONG.

141, 142. *English History since 1485*

The political and cultural development of England and Greater Britain in the modern period. Mr. KIRBY.

151. *The Establishment of the American Colonies, 1607-1751*

The origin and development of American civilization up to the middle of the eighteenth century. Mr. MORGAN.

152. *The American Revolution and the Forming of the United States, 1751-1788*

The origins of the American Revolution and of the federal union. Mr. MORGAN.

161, 162. *The History of American Economic Life*

An historical treatment of such topics as manufacturing, agriculture, foreign and internal commerce, labor, immigration, and city growth and life; the effect of these factors upon the ideals, problems, and society of the United States, past and present. Messrs. HEDGES and THOMPSON.

173. *The Social and Intellectual History of the United States, 1789-1860*

An examination of American social development with emphasis on the relationship between ideas and society. Special attention will be given to ideas about nature, ideas about social equality, and ideas about community. Mr. MORGAN.

174. *The Social and Intellectual History of the United States since 1860*

183, 184. *History of Science*

The Pre-Socratics to Newton; Newton to the present. Proficiency in the natural sciences is not required. Mr. FLEMING.

HISTORY OF MATHEMATICS

186. *History of Science in America*

Its achievements, its relation to European science, its conditioning by American society at large, and its own impact on society. Proficiency in the natural sciences is not required. Mr. FLEMING.

191, 192. *Honors Reading*

The precise nature of this course will be determined with reference to the individual programs of candidates for Honors in history. It is designed to supplement a student's experience in a course, or to open new fields, or to promote acquaintance with various forms of historical material. The STAFF.

201. *Seminar in Modern European History*

Problems in European History since 1789. Mr. ARMSTRONG.

209. *Seminar in Medieval English History*

Problems in Medieval History. Mr. KEENEY.

211. *Seminar in Early Modern European History*

Problems in the Reigns of Louis XIII and Louis XIV. Mr. CHURCH.

241, 242. *Seminar in English History*

Topics in the history of nineteenth century England. Mr. KIRBY.

251. *Seminar in American Colonial History*

Topics in American history in the seventeenth century. Mr. MORGAN.

261, 262. *Seminar in American History since 1783*

289. *Historiography and Historical Criticism*

Introduction to the history of historical writing; aids to research; and experience in textual criticism. Mr. FLEMING.

291, 292. *Reading and Research*

Work with individual students in connection with special reading, problems of research, or preparation of theses. The STAFF.

History of Mathematics

Professors NEUGEBAUER (Chairman), SACHS.

141, 142. *History of the Ancient Orient* (Classics 141, 142)

A brief survey of the political history of Egypt, Mesopotamia, and the surrounding countries, followed by a study of their culture. Emphasis is placed

LINGUISTICS

on the analysis of the literature, art, religion, science, legal institutions, and economic phenomena of the Ancient Orient. May count for concentration in Ancient and Medieval Culture. Mr. SACHS.

151, 152. *History of Mathematics*

Special topics in the development of mathematics. Prerequisite: a knowledge of calculus and analytic geometry. Mr. NEUGEBAUER.

211, 212. *History of Ancient Astronomy*

Discussion of the development of Greek and Near Eastern mathematical astronomy. Mr. NEUGEBAUER.

213, 214. *Seminar in the History of the Exact Sciences*

Discussion and reading of special topics in the history of ancient and medieval mathematics and astronomy. Mr. NEUGEBAUER.

291, 292. Reading and Research. The STAFF.

Linguistics

Professor TWADDELL and members of related departments compose the Staff.

GENERAL LINGUISTICS

151. *Phonetics*

Sketch of acoustics and physiology of speech. Transcription. American English sounds. Phonetic and phonemic structure. Illustrative material from other languages. Elective for juniors and seniors. Mr. TWADDELL.

156. *Introduction to Linguistic Science*

The elements, the structure, and the history of language: sounds, inflections, word-formation, vocabulary, sentence structure. The origin of dialects and the development of standard languages. Elective for juniors and seniors. Mr. MINSHALL.

161. *Principles of Historical Linguistics: Introduction to Indo-European Philology*

The objects and methods of historical and comparative linguistics; linguistic change; linguistic relationships; reconstruction; the Indo-European group of languages. Mr. TWADDELL.

213. *Linguistic Geography*

The methodology of linguistic geography and its application to the investigation of American English. The phonetic recording of speech; preparation

of the questionnaire; field technique; the interpretation of the geographical distribution of dialectal features in the light of population history and cultural history. Preparation of a study in American English.

251. *Seminar in Linguistics*. Mr. TWADDELL.

CLASSICAL LANGUAGES¹

201. *Seminar in Latin*

EGYPTOLOGY¹

131, 132. *Middle Egyptian*

201. *Reading of Middle Egyptian Texts*

221. *Introduction to Coptic*

281. *Introduction to Old Egyptian*

291, 292. *Reading and Research*

ENGLISH LANGUAGE¹

105-106. *Chaucer*

125-126. *Shakespeare: Selected Plays*

201. *History of the English Language*

202. *Modern English*

203, 204. *Old English Language and Literature*

205, 206. *Middle English Language and Literature*

GERMANIC LANGUAGES¹

153. *Middle High German*

154. *History of the German Language*

201. *Gothic*

202. *Old High German*

211, 212. *Problems in Historical and Comparative Grammar of the Germanic Languages*

291, 292. *Reading and Research*

¹ For full description of the courses see departmental statements in this catalog. For the time at which these courses are given, see the section *Courses of Instruction Offered*.

MATHEMATICS

ROMANCE LANGUAGES¹

French 221. *French Stylistics*

Spanish 231. *History of the Spanish Language*

General Romance 237. *Introduction to Romance Linguistics*

French 238. *History of the French Language*

French 239. *Old French Literature*

General Romance 240. *Problems in Romance Linguistics*

French 291, 292. *Reading and Research*

Spanish 291, 292. *Reading and Research*

Mathematics

PROFESSORS BENNETT, ADAMS (Chairman), HEINS, FEDERER; Associate Professor MASSEY; Assistant Professors JONSSON, STEWART, GALE, LISTER, WERMER; Visiting Assistant Professor ELLIOTT; Research Associates, Messrs. CURTISS and WEHAUSEN; Instructor, Mrs. BRUNSCHWIG; Assistants, Messrs. BRENNAN, EISENBERG, FRINK, HOWARD, KAMOWITZ, LIGHTHALL, MALM, MULHERN, SILVER, and SLEPIAN, and Mrs. O'DELL.

DISTRIBUTION REQUIREMENT. The distribution requirement in Mathematics for candidates for the degree of Bachelor of Arts is met by passing Mathematics DI or IC 1-2, or by passing the distribution examination in mathematics.

CONCENTRATION. Freshman candidates for the degree of Bachelor of Arts, who plan to continue work in mathematics or the natural sciences, are advised to register for Mathematics DI and 2, or IC 1-2, in their freshman year, and for Mathematics 21-22 in their sophomore year. Each candidate for the degree of Bachelor of Arts, who concentrates in mathematics, pursues one of the following concentration programs, terminating in the senior year in a comprehensive examination uniform for all students enrolled in the program concerned. Additional related courses may be taken in mathematics or other fields, either as free electives or as part of an Honors Program subject to general University regulations stated elsewhere.

1. *Concentration in Mathematics:* Mathematics 2 or IC 2, 21-22, 105, and one of the following concentration sequences, A: 101-102, 121-122; B: 101-102, 104, 161; C: 108, 121-122, 151.

2. *Joint Concentration in Mathematics and Economics:* Mathematics 2 or

¹ For full description of the courses see departmental statements in this catalog. For the time at which these courses are given, see the section *Courses of Instruction Offered*.

IC 1-2, and Economics D1 or IC 1-2 as prerequisites; Mathematics 21-22, 105, and 151, Economics 101-102, and 192, and either Mathematics 161 or Economics 161.

3. *Joint Concentration in Mathematics and Physics*: Mathematics 2, or IC 1-2, and Physics 3 (or 2) as prerequisites; Mathematics 21-22, 105, and (in the senior year) 108, Physics 4 (or 37), 38, and two additional courses chosen from 37, 111, 114, 115, 121, and 125.

HONORS. Candidates for Honors in mathematics are normally enrolled in an Honors Program at the end of the sophomore year. The Honors Program usually consists of a concentration program plus at least two but not more than six additional semester courses in mathematics or related subjects. An Honors Thesis must be submitted as a part of the program.

The Honors Program in mathematics is extremely flexible. Some students take Mathematics 197 in one or more semesters. This course consists of independent reading and conferences with a faculty member. The Honors Thesis may be prepared as a part of the work in Mathematics 197. Some students take a graduate course (usually Mathematics 225, 226). This is particularly valuable for those who contemplate graduate study. The Honors Thesis may consist of a report on a problem, or set of related problems, studied in connection with a graduate course.

At the end of the senior year the candidate takes his comprehensive examination and a Senior Honors Examination consisting of his regular course examinations and an oral examination of unrestricted scope.

GRADUATE CREDITS AND COURSES. Mathematics 197, normally taken by senior Honors students, is open to approved graduate students. Mathematics 201 to 292 are designed primarily for graduate students.

D1. *Fundamentals of Mathematics*

An introduction to the logical structure which underlies mathematical procedures. Prerequisite: Elementary Algebra 1 and 2 and Plane Geometry. May be taken to satisfy a distribution requirement in Mathematics under Sciences. Messrs. ADAMS and BENNETT, and others.

IC 1-2. *A Modern Introduction to Analytic Geometry and Calculus*

Real numbers, sets, relations, and functions; subsets of the plane; limits and continuity; differentiation; maxima and minima; superpositions and inverses. Mr. LISTER and others.

2. *Analytic Geometry and Calculus*

Inequalities, functions, limits, differentiation of algebraic functions, maxima and minima, graphing. May be taken as a distribution continuation course

MATHEMATICS

under Sciences. Prerequisite (waived for upperclassmen): Mathematics D1. An exceptional student may, by permission of the Department, take Mathematics D1 and 2 concurrently in Semester II. Mr. WERMER and others.

5N. *Trigonometry, Analytic Geometry and Introductory Calculus*

Required of Naval Reserve Officer's Training Corps students who have not presented trigonometry on entrance, and whose programs do not include Mathematics 2 and 21. Not open to others. Mrs. BRUNSCHWIG.

9-10. *Analytic Geometry and Calculus*

Fundamental principles of analytic geometry and calculus. Exponential and trigonometric functions and their inverse functions. Applications. Growth and vibration problems. Multiple integrals. Required in the freshman year of candidates for the degree of Bachelor of Science (except those taking the Nursing course) and of students planning to concentrate in Chemistry, Engineering, or Physics. Not open to others. Mr. GALE and others.

21-22 *Analytic Geometry and Calculus*

Trigonometric, exponential, and logarithmic functions. Integration, geometrical applications, polar coördinates, Taylor's Theorem. Prerequisite: Mathematics 2 or IC 1-2. Mr. FEDERER and others.

29. *Calculus*

Linear differential equations with constant coefficients, series, partial differentiation, line integrals. Prerequisite: Mathematics 9-10. Required in the sophomore year of candidates for the degree of Bachelor of Science (except those taking the Nursing course) and of students planning to concentrate in Chemistry, Engineering, or Physics. Not open to others. Mr. HEINS and others.

101-102. *Fundamental Problems of Algebra*

Induction, polynomials, groups, rings, fields, linear transformations. Required of students following concentration sequence A or B in mathematics. Prerequisite: Mathematics 2, IC 1-2, or 9-10. Mathematics 21-22 or 29, if not previously taken, must be taken concurrently. Mr. BENNETT.

104. *Fundamental Problems of Geometry*

Topics in projective, Euclidean, and non-Euclidean geometry. Required of students following concentration sequence B in mathematics. Prerequisite: Mathematics 101 or 151. Mr. STEWART.

105. *Differential Equations*

A sequel to Mathematics 21-22. Required of all students concentrating in mathematics, in mathematics and physics jointly, or in mathematics and economics jointly; elective for others. Prerequisite: Mathematics 21-22. Mr. ADAMS.

106. *Vector Analysis*

Elementary operations with vectors, tensors, differential operations, and quaternions. Recommended for all students concentrating in mathematics. Prerequisite: Mathematics 21-22 or 29. Mr. BENNETT.

108. *Introduction to Partial Differential Equations*

Fourier expansions, Laplace equations. Equations for heat and wave motion. Required in the senior year of students following concentration sequence C in mathematics, or concentrating in mathematics and physics jointly; elective for others. Prerequisite: Mathematics 29 or 105. Mr. HEINS.

121-122. *Advanced Calculus*

Convergence, continuity, Fourier series, functions of several variables, multiple integrals, line integrals. Required of students following concentration sequence A or C in mathematics. Prerequisite: Mathematics 21-22 or 29. Mathematics 105 is normally taken previously or concurrently. Messrs. HEINS and LISTER.

126. *Elementary Complex Analysis*

Complex numbers, Cauchy-Riemann differential equations, power series, contour integration, ordinary linear differential equations in the complex plane, conformal mapping, Poisson integral, solution of elementary Dirichlet problems. Prerequisite: Mathematics 121. Mr. GALE.

151. *Linear Equations and Matrices*

Simultaneous linear equations, matrices, and quadratic forms. Required of students following concentration sequence C in mathematics or concentrating in mathematics and economics jointly. Prerequisite: Mathematics 2, IC 1-2, or 9-10. Mathematics 21 or 29, if not previously taken, must be taken concurrently. May not be taken for credit in addition to Mathematics 101-102. Mr. STEWART.

161. *Mathematical Statistics*

Theory of elementary statistical measures, theory of frequency curve formulas, random sampling. Required of students following concentration sequence B in mathematics; elective for others. Prerequisite: Mathematics 21-22 or 29. Mr. LISTER.

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171. *Mathematical Theory of Investment*

An advanced course in compound interest, annuities, extinction of debts, bonds, depreciation, and life insurance. Prerequisite: Mathematics 2, IC 1-2, or 9-10. Mr. BENNETT.

197. *Senior Honors Conference*

Collateral reading, individual conferences. Messrs. BENNETT, HEINS, and FEDERER.

201, 202. *Differential Geometry*

Introduction to the differential geometry of Euclidean and Riemannian spaces, from the point of view of Cartan. Offered in alternate years.

205, 206. *Algebraic Geometry*

Offered in alternate years.

221, 222. *Real Function Theory*

Fundamentals of the theory of functions of a real variable. Elective for approved graduate students.

225, 226. *Complex Function Theory*

Elective for approved graduate students. Mr. HEINS.

227, 228. *Advanced Topics in Mathematics*

Devoted to special topics which usually are not treated in a general course in the theory of functions. Topic for 1954-55: Banach spaces. Mr. WERMER.

231. *Theory of Nonlinear Differential Equations*

Elective for approved graduate students. Mr. STEWART.

232. *Theory of Differential Equations, Advanced Topics*

237, 238. *Differential and Integral Equations of Mathematical Physics*. Miss ELLIOTT.

241, 242. *Introduction to Topology*

Offered in alternate years. Mr. FEDERER.

251, 252. *Modern Algebra*

Set theory, groups, fields, linear dependence, linear transformations, and Galois theory. Elective for approved graduate students. Mr. GALE.

281, 282. *Seminar*

The work in this course is with individual students in connection with special reading. Half-course.

291, 292. *Reading and Research*

Special reading, problems of research, and, in some cases, preparation of theses. Either semester may be elected independently by approved graduate students. The STAFF.

Military Science

NAVY—Captain LAING, U.S.N., Lieut. Colonel RAUCHLE, U.S.M.C., Major JESCHKE, U.S.M.C., Lieut. Comdr. CAYCE, U.S.N., Lieut. Comdr. ELDRIDGE, U.S.N., Lieut. Comdr. WILLEY, U. S. N., Lieut. (j.g.) CUNNINGHAM, U.S.N., and Lieut. (j.g.) KINNEBREW, U.S.N.

AIR FORCE—Colonel GOODMAN, U.S.A.F., Lieut. Colonel DOLAN, U.S.A.F. Major SANDS, U.S.A.F., Captain HARRIS, U.S.A.F., and Captain SANTONE, U.S.A.F.

NAVAL SCIENCE

GENERAL NOTE. Mission—The mission of the Naval Reserve Officer's Training Corps is to provide by a permanent system of training and instruction in essential Naval subjects at civil educational institutions a source from which qualified officers may be obtained for the Navy and the Marine Corps and their reserve components.

ORGANIZATION. As an agency of the Navy Department and as a department of Brown University, established in September 1940, the Department of Naval Science provides instruction in all basic Naval subjects necessary to a graduate to perform successfully the duties of an officer in the U. S. Navy or Marine Corps. Graduates who complete the Naval Science curriculum normally receive Line (general service) commissions. Individuals less frequently qualify for and receive commissions in the Civil Engineer's Corps or the Supply Corps of the Navy. Graduates who are ordered to active duty after commissioning are eligible to apply for training in aviation, submarine or other specialties attained through the Navy's school system.

REQUIREMENTS. The physical requirements for acceptance into the Department are the same as those for entrance into the U. S. Naval Academy. Students majoring in art, music, pre-dentistry, pre-medicine, or pre-theology may not be enrolled.

Officer Candidates in the NROTC are of two types:

(a) *Regular NROTC Students* are appointed Midshipmen in the USNR. Such students assume obligations to make three required summer cruises

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(including one aviation summer cruise). Students agree to remain unmarried until commissioned and to serve at least fifteen months, or, at the discretion of the Secretary of the Navy, three years, on active duty after commissioning as Ensigns USN or Second Lieutenants Marine Corps, and to remain in the Naval Reserve until the eighth anniversary of their commission. They may apply for retention as career Officers in the Regular Navy or Marine Corps. They will have their tuition, fees, and text books paid for by the Government, will be uniformed at government expense, and will receive retainer pay at the rate of \$600 a year.

(b) *Contract NROTC Students* have the status of civilians who enter into a mutual contract with the Navy and who pay their way through the University. For administrative purposes they are referred to as Reserve Midshipmen. They are uniformed at government expense similar to the Regular Students and during their junior and senior years are paid a commuted ration (current ninety cents a day) during the two year period. To provide for deferment from the provisions of the Selective Service Act of 1948 the Contract student must agree prior to enrolment to accept a commission after graduation, if tendered, and to serve on active duty for two years, if called. He must be and remain unmarried until graduation. He is obligated to take the Naval Science curriculum prescribed for the Regular Students, make one summer cruise of approximately three weeks, and accept a commission, if offered, in the Naval Reserve or the Marine Corps Reserve.

With the approval of academic authorities, any student may be permitted to pursue Naval Science Courses for college credits, provided acceptance of such students will not adversely affect the instruction given NROTC students and providing permission in writing is given by the Department of Naval Science. They are not eligible to take NROTC practice cruises nor to be paid any compensation or benefits.

Under the present arrangement all members of the Naval ROTC Unit will take one Naval Science course each semester.

CONCENTRATION. Students may not concentrate in Naval Science.

NS101. *A History of Sea Power*

This course is designed to stimulate an interest in, and appreciation for the contribution of sea power to world history, particularly pointing up the history of the U. S. Navy, and the United States' place in the world. Not open to juniors and seniors.

NS102. *Naval Orientation*

Naval Orientation, basic principles of naval administration and seamanship.

This course is designed to introduce the student to naval nomenclature, custom, and practice. Not open to juniors and seniors.

NS201. *Naval Weapons*

Fundamental principles of naval weapons and fire control. This course is designed to develop in the prospective naval officer the ability to assist in the supervision of the departmental functions of naval ordnance.

NS202. *Naval Weapons*

Prerequisite: Naval Science 201. Continuation of Naval Science 201. Concerned with the general nature and basic principles of employment and control of naval surface and anti-aircraft weapons, ordnance organization of a combatant ship, the control of torpedo fire, and the utilization of naval gunfire in support of amphibious operations.

NS301. *Naval Machinery*

This course introduces the student to a broad general conception of the fundamentals of a typical naval engineering installation, and shows the relation of the elements of such an installation one to another. It further introduces the student to a basic knowledge of theory, construction and operation of the diesel engine, and the elements of ship stability.

NS302. *Navigation*

This course is designed to familiarize the student with instruments and equipment used in navigation, and to develop a firm understanding of dead reckoning, using terrestrial objects. It acquaints the student with the theory of celestial navigation by means of a study of the components of the celestial astronomical triangle, preparatory to obtaining a fixed position on the surface of the earth by observation of celestial bodies. The student is taught to complete a typical navigator's day's work at sea.

NS301M. *Evolution of the Art of War*

This course is designed to survey the historical development of weapons, tactics, and material and to illustrate the classic principles of war by a study of selected battles and campaigns. For Marine Corps candidates.

NS302M. *Basic Strategy and Tactics*

This course is designed to survey modern strategical and tactical principles, using contemporary historical events as illustrative material. Prerequisite: 301M.

NS401. *Naval Operations*

Designed to prepare the young officer for the responsibilities facing him in shipboard operations. Includes the basic principles of aerology from an

MILITARY SCIENCE

Operations point of view, tactical communications and instructions, Rules of the Nautical Road and fleet communications. Particular emphasis is placed on the use of the maneuvering board and the Rules of the Road so that he may qualify in Operations billets afloat with a minimum of additional studies. Not offered in 1955-56.

NS402. *Naval Administration*

Naval Justice; human relations preparatory for commissioned officer service. The course is designed to acquaint the student with the procedures used by, and the responsibilities of, an officer in the administration of naval affairs, and by discussion to aid him in understanding military psychology. Not offered in 1954-55.

NS401M. *Amphibious Warfare*

This course begins with a brief history of amphibious warfare and its development, and analyzes the modern amphibious operation. It further examines the application of principles derived from this study, in selected examples from modern history. Prerequisite: 302M.

NS402M. *Amphibious Warfare Part II, Leadership and the Uniform Code of Military Justice*

This course is a continuation of the analysis of modern amphibious operations and is designed to acquaint the student with the procedures for, and responsibilities of an officer in the administration of naval justice. Prerequisite: 401M.

AIR SCIENCE

The Air Force Reserve Officers' Training Corps at Brown University was established in July 1951 under authority of Congress to provide a source from which qualified officers may be obtained for the Regular Air Force and the Air Force Reserve.

MISSION. The Mission of the Air Force Reserve Officers' Training Corps is to train selected students for positions of leadership in time of national emergency. It offers instruction in essential air science subjects and elementary military training to all physically and mentally qualified male students, and advanced training to a limited number of selected students, to produce junior officers who have the qualities and attributes essential to their progressive and continued development as officers in the United States Air Force.

ORGANIZATION AND STAFF. The United States Air Force details five officers and four enlisted airmen as the instructional staff at Brown University. The senior officer is designated as Professor of Air Science. All other officers are designated Assistant Professors of Air Science.

FACILITIES. The United States Air Force provides all specialized equip-

ment for aids in instruction; these aids are placed in the custody of Brown University authorities for issue to the cadets as required. All Air Science textbooks and aids are loaned to the cadets on hand receipt.

INSTRUCTION. As an agency of the United States Air Force and as a department of Brown University, the Department of Air Science provides a peacetime course of instruction of four years in Air Science for which academic credit is given. The first two years consists of a basic course, the last two years of an advanced course. The advanced course is offered to selected students who are physically and mentally qualified and who have indicated a desire to attend flight training after graduation. In addition a limited number may be selected from students majoring in Engineering and Physical Sciences. Subjects covered in the basic course and advanced course appear under course description. Completion of the basic course allows the student four semester courses toward graduation. Completion of the advanced course allows four semester courses toward graduation.

The advanced students are required to attend one summer camp for six weeks between the Junior and Senior year of college for which they are paid \$75 a month, and are furnished subsistence, housing, medical care and necessary uniforms. Transportation in kind is provided for travel to and from summer camp.

OTHER BENEFITS. Advanced students are paid a commuted value of the military ration for 590 days (now approximately \$.90 a day). The United States Air Force also furnishes without charge a complete uniform to each cadet.

All qualified Air Force ROTC graduates are commissioned as Second Lieutenants in the Air Force Reserve. Upon receiving their commission they will attend the Air Force Flight training program. The flying trainees will receive the pay and allowances of their respective rank during this course of instruction, in addition to incentive pay.

Upon completion of flying training he will be required to serve with a tactical unit for 2 years at which time he may apply for a regular commission in the USAF, revert to inactive status for the balance of his reserve commitments, or be transferred to the active reserve program or Air National Guard in his home area where he may voluntarily receive training and promotion.

Under the present arrangements all members of the Air Force ROTC Unit will take one Air Science course each semester.

CONCENTRATION. Students may not concentrate in Air Science.

BASIC COURSES (FRESHMAN)

AIR ROTC 11. *Introduction to Aviation and Military Global Geography*

This course is designed to give the AF ROTC student a general knowledge

MILITARY SCIENCE

of History and Development of Aviation and to provide the student with a general knowledge of Military Geography and geopolitics which will serve as a background for subsequent Air Force subjects. This course presents features of History, Geography, Resources, Transportation, Government, Economy, Political trends, etc., that are important in our military defense planning. Drill and basic military training.

AIR ROTC 12. *National Defense and the Air Force*

This course is designed to familiarize the student with the instruments of National Defense and to develop a better understanding of the role of the Air Force in National Defense. This course also covers international tensions and Security Structures, factors that contribute to the status of a nation as a world power, factors that develop tensions between world powers, and international security structures that have been established to deal with the problems of security and the role of the United States in world leadership. Drill and basic military training.

BASIC COURSES (SOPHOMORE)

AIR ROTC 21. *Elements of Aerial Warfare*

The objective of this course is to acquaint the student with all the elements of warfare to include aerial warfare, atomic, rocket-propelled, chemical, biological, and psychological. The study of the delivery of aircraft dealing with factors governing design and type according to the type mission they are to perform. This also includes the study of military targets, target reconnaissance, air bases, defense of air base of operation and other problems associated with any type air operation. Leadership, drill and exercise of command.

AIR ROTC 22. *Elements of Aerial Warfare*

This course further considers the topics in AIR ROTC 21, introducing the student to the basic organizational structure of the Air Force. The structure of the USAF combat and support organizations. The development of air power, the strategic concepts of air operations and the tactical employment of air power. The responsibility of each officer and airman in accomplishing the mission of the Air Force. Leadership, drill and exercise of command.

ADVANCED COURSES (JUNIOR)

AIR ROTC 31. *The Air Force Commander and His Staff, Problem Solving and Military Law*

The objective of this course is to acquaint the student with the factors of command and associated staff functions. It will further provide the student with a basic understanding of the Uniform Code of Military Justice and an introduction to the laws of learning and problem solving. Leadership laboratory.

MODERN LANGUAGES

AIR ROTC 32. *Air Force Base Functions, Navigation and Weather, and Communicating in the Air Force*

The purpose of this course is to introduce the student to the basic principles of aerial navigation and weather, to acquaint the student with the major functions of an Air Force base, and to develop in the student an understanding of the nature of communication and its function in Air Force management and operations. Leadership laboratory.

AIR FORCE SUMMER CAMP

All advanced students who have successfully completed their Junior year of Air Force ROTC are required to attend one Air Force ROTC Summer Camp for a six week period. No credit. (see page 155).

ADVANCED COURSES (SENIOR)

AIR ROTC 41. *Principles of Military Management and the Psychology of Leadership*

The objective of this course is to provide the student with a basic knowledge of human relations and the psychology of leadership and to develop those qualities of leadership that are essential to Air Force officers.

AIR ROTC 42. *Military World Political Geography*

To provide the AF ROTC student with a general knowledge of political geography; to include its significance to the USAF, power patterns and geopolitical concepts. The framework of international policies, the anatomy of political power, geographical basis of power to include case studies in factors of powerhood of nations. Duties of the new Air Force officer are studied and the attributes and qualities essential to leadership in the United States Air Force are further developed.

Modern Languages

Professors HARCOURT BROWN, FICHTER, TWADDELL, KELLENBERGER (Chairman), LÓPEZ-MORILLAS, SALVAN; Associate Professors HOLSKE, GORDON, JAMES, E. J. BROWN, BERGETHON, SCHNERR, WEIMAR; Assistant Professors ECHEVERRIA, TRUEBLOOD, DEWART, RIDGELY, CASSIRER, KOSSOFF; Lecturer, Mrs. KOSSOFF; Instructors, Messrs. BARENBAUM, GOCHBERG, HALEY, MINSHALL, and ZELLJADT; Assistants, Messrs. AMOR, BENAY, BENTLEY, FLECK, ILIE, KAISER, KIRKCONNELL, MÜLLER-VOLLMER, SCUNGIO, SUDBOROUGH, and WASHBURN, and Miss MAHLENDORF and Mrs. McCLOSKEY.

PLACEMENT TESTS. All students who wish to take college courses in a modern language in which they presented entrance credit must take a

MODERN LANGUAGES

placement test in that language. On the basis of these tests, which are given in Freshman Week, students are assigned to the language courses for which they are best qualified.

LANGUAGE REQUIREMENT. In Modern Languages, students may meet the language requirement in either of two ways: (1) by passing an achievement test, which is given three times a year; or (2) by obtaining a grade of C or better in French 4, German 4, Italian 4, Russian 4, Spanish 4, or in a higher level course in any of these languages. See page 56 for a complete description of the language requirement for the Bachelor of Arts degree.

GENERAL PREREQUISITES. In French, German, and Spanish, advanced literature courses are elective for students who have taken the appropriate D11-D12 or IC 1-2 course. This prerequisite may also be met by passing the distribution test. A qualified student who lacks exact course prerequisites may be admitted to any advanced course with written permission of the instructor.

DISTRIBUTION REQUIREMENT. The distribution requirement in Literature under Humanities may be met by taking French D11-D12, French IC 1-2, French IC 3-4, German D11, D12, Italian D107, D108, Spanish D11, D12, Spanish IC 1-2, or Spanish IC 3-4. This requirement may also be satisfied by test (see page 57).

CONCENTRATION. Students may concentrate in French, German, Italian, Spanish, or in any two of the modern languages. The minimum requirement for concentration is eight semester courses (or their equivalent) above the D11-D12 level. Students planning to concentrate in modern languages should consult the authorized representative of the Division for each language.

Candidates in *French* will be expected to have a sound knowledge of French literature since 1600.

Candidates in *German* will arrange a program which will acquaint them with the main writers and movements in German literature, particularly after 1750.

Candidates in *Italian* will arrange a program to acquaint them with (a) the period from Dante to the end of the sixteenth century and (b) the nineteenth century.

Candidates in *Spanish* will place special emphasis on (a) the Golden Age and (b) modern and contemporary literature of Spain or Spanish-American literature.

HONORS. Candidates for Honors in the Modern Languages should consult the Honors representative for each language in order to arrange a program which will (a) acquaint them with the main writers and movements in the language of their choice and (b) permit them to do intensive work in a field

MODERN LANGUAGES—FRENCH

of special interest to them. This will normally involve readings and reports in connection with selected courses during the last half of their college course and, where advisable, supervised additional readings in fields of special interest or value to them. In the seventh and eighth semesters they will prepare a thesis for which they will receive course credit.

RELATED COURSES. Students concentrating in modern languages should consider the election of one or more courses in the principal periods of other literatures, in linguistics, and in related fields such as philosophy, art, and history.

FRENCH

IC 1-2. *Man, Nature, and Society, from Pascal and Voltaire to the Twentieth Century*

An enquiry into some of the major problems that have interested French writers from the Renaissance to modern times. Through the reading of such books as *Candidé*, *Les Pensées*, *Les Réveries du Promeneur Solitaire*, and *La Peste*, various lines of development will be brought to light; the student will be encouraged to discuss such questions as the place of man in nature, among his fellows, and in the sight of the infinite, the nature of knowledge and the contribution made by different philosophic outlooks—humanism, scientific relationalism, Jansenism, individualism, existentialism—to the development of the modern mind. Discussions, reports and essays, individual conferences. Open to students in the IC program who have met the language requirement in French. Occasionally, with written permission, this course may be taken concurrently with French 3. Mr. H. BROWN.

IC 3-4. *Man, Nature, and Society, from Pascal and Voltaire to the Twentieth Century*

A course largely paralleling French IC 1-2, with the reading done in English translation rather than in French. The course may draw in part from other literatures than that of France. Open to all students in the IC program except those eligible for French IC 1-2. Mr. H. BROWN.

1-2. *Basic French*

A course for beginners: fundamentals of grammar and basic vocabulary. Lectures two hours weekly; intensive oral drill and supervised reading practice in small sections four hours weekly in the first semester and three hours weekly in the second semester. Elective for students who have not presented French for admission. No credit is given for the first semester alone, but with written permission a qualified student may elect the latter half of the sequence. Mr. CASSIRER and STAFF.

MODERN LANGUAGES—FRENCH

1R-2R. *Beginning French*

Brief survey of the elements of the language, practice in reading. Three hours per week. Open to approved juniors and seniors who have met the language requirement in another foreign language. No credit is given for French 1R alone, but with written permission of the instructor a qualified student may elect French 2R. The STAFF.

2. *Elementary French B*

Reading and drill in grammar. Four hours per week. Prerequisite: placement.¹ The STAFF.

3. *Intermediate French A*

Intensive and extensive reading in modern prose authors. Grammar review for reading purposes. Four hours per week. Prerequisite: French 2 or placement.¹ The STAFF.

4. *Intermediate French B*

Readings in modern prose authors. Grammar review for reading purposes; training in sentence analysis. Three hours per week. Prerequisite: French 3. The STAFF.

9. *Writing and Speaking French A*

Practice in writing and speaking French. Four hours per week: two hours of discussion and analysis plus two hours of oral practice. Open to students who have met the language requirement in French. Mr. BARENBAUM.

D11-D12. *French Literature: Introductory Course*

Intensive reading of a limited number of important works from such authors as Corneille, Molière, Racine, Voltaire, Rousseau, Hugo, Balzac, and Flaubert. May be taken to satisfy the distribution requirement for a two-semester course in Literature under Humanities. Open to students who have met the language requirement in French. The STAFF.

51. *Writing and Speaking French B*

Emphasis given to the idiomatic use of the language. Four hours per week: two hours of discussion and analysis plus two hours of oral practice. Prerequisite: French 9 or D11-D12 or IC 1-2. The approval of the instructor is required. Mr. SALVAN.

109. *Romanticism and Realism*

The development of literature from Chateaubriand to Flaubert: drama, novel, poetry. Prerequisite: French D11-D12 or IC 1-2. Mr. JAMES.

¹See statement on Placement Tests, p. 157.

MODERN LANGUAGES—FRENCH

110. *Modern French Literature*

An introduction to the ideas and movements of the last ninety years. Prerequisite: French D11–D12 or IC 1–2. Mr. CASSIRER.

131. *The Classical Theater in France*

The development of tragedy and comedy in the seventeenth century. Prerequisite: French D11–D12 or IC 1–2. Mr. KELLENBERGER.

134. *The Novel in France in the Nineteenth Century*

Representative fiction of the nineteenth century. Prerequisite: French D11–D12 or IC 1–2. Mr. DEWART.

141. *French Literature of the Seventeenth Century*

A study of representative works of the major writers from Montaigne to Boileau and La Bruyère. Prerequisite: French D11–D12 or IC 1–2. Primarily for juniors and seniors. Mr. RIDGELY.

142. *French Literature of the Eighteenth Century*

Study of the Enlightenment; the novel and drama. Prerequisite: French D11–D12 or IC 1–2. Primarily for juniors and seniors. Mr. KELLENBERGER.

170. *Advanced Written and Oral French*

Designed to develop skill and accuracy in literary composition and oral expression. Prerequisite: French 51 with grade of *A* or *B*, or the written consent of the instructor. Elective for juniors and seniors. Mr. SALVAN.

174. *Littérature du vingtième siècle*

Proust, Gide, Mauriac, Romain, and others. Conducted in French. Prerequisite: two semesters of French beyond French D11–D12 or IC 1–2. Elective for juniors and seniors. Mr. SALVAN.

191. *Studies in French Poetry*

Prerequisite: French D11–D12 or IC 1–2 and written permission of the instructor. Students may receive credit for this course in two successive years. Primarily for seniors. Mr. H. BROWN.

194. *The Literature of Ideas in France*

Prerequisite: two semesters of French beyond French D11–D12 or IC 1–2. Students may receive credit for this course in two successive years. Primarily for seniors.

198. *Senior Conference*

Special work or preparation of Honors thesis under the direction of a member of the Staff.

MODERN LANGUAGES—FRENCH

201. *Studies in French Prose*

Topic for 1954-55: Studies in the relations between art and literature in France from Diderot to Baudelaire. Mr. JAMES.

211. *Seventeenth Century French Literature*

214. *French Literature from 1800 to the Present*

Topic for 1954-55: Le roman naturaliste. Mr. SALVAN.

221. *French Stylistics*

The expression of affective and artistic values in French. A study of stylistic procedures and comparison with English usage. Offered in alternate years. Topic for 1954-55: French prose and poetry of the seventeenth century: Pascal, Molière, Racine, and others. Mr. KELLENBERGER.

238. *History of the French Language*

The development of the French language from the *Oaths of Strasbourg* to the modern period. Lectures, readings, and discussion. This course should be taken after General Romance 237. Offered in alternate years. Mr. SCHNERR.

239. *Old French Literature*

The history of Old French Literature from the *Chanson de Roland* to Villon. Offered in alternate years. Mr. GORDON.

252. *Research in Eighteenth Century French Literature*

Topic for 1954-55: Political and social thought of the eighteenth century. Mr. ECHEVERRIA.

261. *Problems in French Literary History*

262. *Problems in French Literary History*

291, 292. *Reading and Research*

Work with individual students in connection with special reading, problems of research, or preparation of theses. The STAFF.

GENERAL ROMANCE

202. *Problems in Comparative Literature*

The study of special topics involving literary relationships and movements in the Romance literatures. Not offered every year.

MODERN LANGUAGES—GERMAN

237. *Introduction to Romance Linguistics*

Elements of the historical and comparative grammar of the Romance languages, with special attention to the Latin period. Lectures, readings, and discussion. This course should be taken before French 238 or Spanish 231. Offered in alternate years. Mr. SCHNERR.

240. *Problems in Romance Linguistics*

Studies in the history of the Romance languages. Offered in alternate years. Mr. SCHNERR.

GERMAN

1-2. *Basic German*

A course for beginners: fundamentals of grammar and basic vocabulary. Lectures two hours weekly; intensive oral drill and supervised reading practice in small sections four hours weekly in the first semester and three hours weekly in the second semester. Elective for students who have not presented German for admission. No credit is given for the first semester alone, but with written permission a qualified student may elect the latter half of the sequence. Mr. MINSHALL and STAFF.

1R-2R. *Beginning German*

Brief survey of the elements of the language, practice in reading. Texts from the sciences, social studies, literature, philosophy. Three hours per week. Open to approved juniors and seniors who have met the language requirement in another foreign language. No credit will be given for German 1R alone, but with written permission of the instructor a qualified student may elect German 2R. The STAFF.

2. *Elementary German B*

Reading of easy German prose. Written exercises and oral practice. Four hours per week. Prerequisite: placement.¹ The STAFF.

3. *Intermediate German A*

Reading of modern German prose. Intensive vocabulary expansion and training in reading technique. Four hours per week. Prerequisite: German 2 or placement.¹ No credit if student has credit for German 3S. The STAFF.

3S. *Intermediate Scientific German*²

Reading of scientific texts; grammar for reading. Five hours per week during

¹ See statement on Placement Tests, p. 157.

² This course is not designed to prepare students to meet the language requirement for the A.B. degree.

MODERN LANGUAGES—GERMAN

the first half of the semester, three hours per week after mid-semester. In the second half of the semester classes are divided into two groups: (1) Chemistry-Physics, (2) Biology-Medicine-Psychology, and each reads material in its field. During this period, the two groups meet together one hour per week and meet separately for two hours each per week. Prerequisite: German 2 or placement¹ by test. No credit if student has credit for German 3. The STAFF.

4. *Intermediate German B*

Readings in modern authors with practice in translation techniques. Three hours per week. Prerequisite: German 3, or German 3S with a grade of C or better. The STAFF.

9. *Composition and Conversation*

Practice in writing and speaking German. Four hours per week: two hours of discussion and analysis, plus two hours of oral practice. Open to students who have met the language requirement in German. Mr. ZELLJADT.

DI1, DI2. *German Literature: Introductory Course*

Reading of representative works since the late 18th century. Discussion of important aspects of German literary history. May be taken to satisfy the distribution requirement for a two-semester course in Literature under Humanities. Open to students who have met the language requirement in German. The STAFF.

29. *German Literature in English Translation A*

German literature from the beginnings to Goethe in its relation to other literatures and to its general cultural background. Readings include selections in English translation from medieval literature and from the works of Lessing, Goethe, and Schiller. Mr. BERGETHON.

30. *German Literature in English Translation B*

German literature from Romanticism to the modern period (ca. 1800-1950), in its relation to other literatures and to its general cultural background. Readings include selected works in English translation of the Romanticists, of Heine, Hebbel, Schopenhauer, Wagner, Nietzsche, Hauptmann, Rilke, Kafka, Werfel, Thomas Mann, and others. Mr. WEIMAR.

110. *Advanced Composition and Conversation*

Designed to develop facility in oral and written German. Discussion of significant aspects of contemporary Germany. Four hours per week. Prerequisite: German 9 or DI1, DI2. Offered in alternate years.

¹ See statement on Placement Tests, p. 157.

MODERN LANGUAGES—GERMAN

121. *German Literature before Goethe*

The development of German literature from the early Middle Ages to the second half of the eighteenth century. Extensive reading of works by the principal writers, with an intensive study of Lessing. Lectures in German and English. Offered in alternate years. Prerequisite: German D11, D12. Mr. BERGETHON.

124. *Studies in German Literature*

Prerequisite: German D11, D12 or, with written approval of the instructor, this course may be taken after German 9 or concurrently with German D11 or D12. Students may receive credit for this course in successive years.

131. *Goethe and Schiller*

A study of works representing the Storm and Stress movement, the classical period of Goethe and Schiller (to 1805), and the preparation of Romanticism. Prerequisite: German D11, D12 or written permission of the instructor. Offered in alternate years. Mr. BERGETHON.

132. *Goethe and Romanticism*

Goethe's *Faust*, Kleist and Romanticism, Schlegel, Novalis, Tieck, and Hoffmann. Prerequisite: German D11, D12 or written permission of the instructor. Offered in alternate years. Mr. BERGETHON.

143. *Realism*

German Literature from the decline of Romanticism to the end of the nineteenth century. A study of trends and representative works of Grillparzer, Heine, Hebbel, Keller, Meyer, and others. Prerequisite: German D11, D12. Offered in alternate years. Mr. HOLSKE.

144. *Modern German Literature*

A study of trends and writers after Nietzsche: Impressionism, Expressionism, and subsequent developments; George, Rilke, Kafka, Thomas Mann, Werfel, and others. Prerequisite: German D11, D12. Offered in alternate years. Mr. WEIMAR.

153. *Middle High German*

The elements of the language. Reading of the *Nibelungenlied* and selected *Minnelieder*. Prerequisite: two semesters beyond German D11, D12. Not offered every year. Mr. TWADDELL.

154. *History of the German Language*

The development of German pronunciation, the inflections, word-formation, syntax. Special emphasis on the modern period. Prerequisite: German 153. Not offered every year. Mr. MINSHALL.

MODERN LANGUAGES—ITALIAN

198. *Main Trends in German Literature*

Major developments and writers from pre-Christian period to the present. Primarily for seniors, open occasionally to graduate students. If an Honors Thesis is written in addition to the course work, double credit will be given. The STAFF.

201. *Gothic*

An introduction to the historical and comparative grammar of the Germanic languages with Gothic as a basis. Reading of selections from Wulfila's translation of the Gospels. Not offered every year. Mr. MINSHALL.

202. *Old High German*

Phonology, morphology, etymology, syntax. Reading of Franconian, Bavarian, and Alemannic texts. Not offered every year. Mr. TWADDELL.

211. *Problems in the Historical and Comparative Grammar of the Germanic Languages*

212. *Problems in the Historical and Comparative Grammar of the Germanic Languages*

Topic for 1954-55: Old Saxon. Mr. MINSHALL.

225. *Problems in German Literature*

226. *Problems in German Literature*

Topic for 1954-55: Aspects of nineteenth century prose. Mr. HOLSKE.

231. *Seminar in German Literature*

Topic for 1954-55: Religious ideas in German literature since Nietzsche. Mr. WEIMAR.

232. *Seminar in German Literature*

291, 292. *Reading and Research*

Work with individual students in connection with special reading, problems of research, or preparation of theses. The STAFF.

ITALIAN

1-2. *Elementary Italian A and B*

Grammar, oral practice, reading, written exercises. Four hours per week. Elective for students who have not presented Italian for admission. No credit is given for Italian 1 alone, but with written permission of the instructor a qualified student¹ may elect Italian 2. Mr. GORDON.

¹ See statement on Placement Tests, p. 157.

MODERN LANGUAGES--ITALIAN

3. *Intermediate Italian A*

Reading of modern prose. Grammar review, oral practice. Four hours per week. Prerequisite: Italian 2 or placement.¹ Mr. GORDON.

4. *Intermediate Italian B*

Readings in modern authors. Grammar review and composition. Three hours per week. Prerequisite: Italian 3. The STAFF.

51. *Writing and Speaking Italian*

Open to students who have met the language requirement in Italian, or with written permission of the instructor. Four hours per week: two hours of discussion and analysis plus two hours of oral practice. Not offered every year. The STAFF.

D107, D108. *General Survey of Italian Literature*

A general view of Italian literature to 1870, with emphasis on the more important writers and literary movements. May be taken to satisfy the distribution requirement for a two-semester course in Literature under Humanities. Offered in alternate years. Mr. GORDON.

133, 134. *Studies in Modern Italian Literature*

The most significant writers and literary movements of Italy from the Counter-Reformation to the present. Offered in alternate years. Mr. GORDON.

155, 156. *Humanism and Renaissance*

An interpretative reading of the most representative authors of the Trecento, Quattrocento, and Cinquecento and a study of their influence on European literature. Offered in alternate years. Mr. GORDON.

161, 162. *Dante's Divina Commedia*

The *Divina Commedia* treated as a representative monument of medieval culture. A knowledge of Italian is not required. Majors in Italian will read the *Divina Commedia* in the original. Prerequisite: permission of the instructor. Offered in alternate years. Mr. GORDON.

198. *Senior Conference*

Each student concentrating in Italian will work under the direction of a member of the Staff. If an Honors Thesis is written in addition to the course work, double credit will be given.

215, 216. *Research in Italian Literature*

¹See statement on Placement Tests, p. 157.

MODERN LANGUAGES—RUSSIAN

RUSSIAN

1-2. *Elementary Russian A and B*

A course for beginners: fundamentals of grammar and basic vocabulary. Lectures three hours weekly; intensive oral drill and supervised reading practice two hours weekly in small sections. Elective for students who have not presented Russian for admission. No credit is given for Russian 1 alone, but with written permission of the instructor a qualified student¹ may elect Russian 2. Mr. E. J. BROWN and STAFF.

3. *Intermediate Russian A*

Intensive reading of Russian prose, including selections from the works of Pushkin, Chekhov, Tolstoy, and others. Grammar review and oral practice. Four hours per week. Prerequisite: Russian 2 or placement.¹ Mr. E. J. BROWN.

4. *Intermediate Russian B*

A course intended primarily to develop reading fluency in a variety of fields. Selections include readings in literature, literary criticism, history, and other subjects. One hour per week is given to composition and conversation. Four hours per week. Prerequisite: Russian 3 or placement.¹ Mr. E. J. BROWN.

29. *Russian Literature in English Translation A*

Russian literature from the earliest times through Tolstoy, with particular attention to the nineteenth century. Selected works of Pushkin, Lermontov, Gogol, Turgenev, Dostoyevsky, Tolstoy, and others will be read. Elective for juniors and seniors. No knowledge of Russian is required; however, students who have met the language requirement in Russian will read designated portions of the assigned work in Russian. Mr. E. J. BROWN.

30. *Russian Literature in English Translation B*

Russian literature from Tolstoy to the present. The works of Chekhov, Gorky, Bunin, and selected Soviet writers will be read. Cultural and intellectual development in the twentieth century will be stressed. Elective for juniors and seniors. No knowledge of Russian is required; however, students who have met the language requirement in Russian will read designated portions of the assigned work in Russian. Prerequisite: Russian 29 or written permission of the instructor. Mr. E. J. BROWN.

191, 192. *Readings in Russian Literature*

Prerequisite: Russian 29, 30 with readings in Russian. Reading programs will be arranged on individual authors or special topics. Mr. E. J. BROWN.

¹ See statement on Placement Tests, p. 157.

291, 292. *Reading and Research*

Work with individual students in connection with special reading or problems of research. Mr. E. J. BROWN.

SPANISH

IC 1-2. *The Interplay of the Real and the Ideal in Cervantes' Don Quixote*

Ideas in *Don Quixote*, forerunner of the modern novel, will be discussed as they function dynamically through character and situation. The course will explore many of the perspectives which this masterpiece offers on human motives, values, and purposes, on the individual's relations with society, his place in the outer world of Nature, and his participation in the inner one of the spirit and of art. Through additional readings, other views on questions raised by Cervantes will be considered, and his impact upon later writers and thinkers discussed. A substantial amount of the material will be read in Spanish. Open to students in the IC program who have met the language requirement in Spanish. Occasionally, with written permission, this course may be taken concurrently with Spanish 3. Mr. TRUEBLOOD.

IC 3-4. *The Interplay of the Real and the Ideal in Cervantes' Don Quixote*

The course will pursue the same objectives as Spanish IC 1-2, but the material will be read entirely in English. Open to all students in the IC program except those eligible for Spanish IC 1-2. Mr. TRUEBLOOD.

1-2. *Basic Spanish*

A course for beginners: fundamentals of grammar and basic vocabulary. Lectures two hours weekly; intensive oral drill and supervised reading practice in small sections four hours weekly in the first semester and three hours weekly in the second semester. Elective for students who have not presented Spanish for admission. No credit is given for the first semester alone, but with written permission a qualified student¹ may elect the latter half of the sequence. Mr. KOSSOFF and STAFF.

2. *Elementary Spanish B*

Grammar, oral practice, written exercises. Reading of simple texts. Four hours per week. Prerequisite: placement.¹ The STAFF.

3. *Intermediate Spanish A*

Reading of modern prose: intensive drill in translation, extensive practice in reading for comprehension. Oral practice. Four hours per week. Prerequisite: Spanish 2 or placement.¹ The STAFF.

¹See statement on Placement Tests, p. 157.

MODERN LANGUAGES—SPANISH

4. *Intermediate Spanish B*

Readings in modern authors: reading for comprehension and practice in translation techniques. Three hours per week. Prerequisite: Spanish 3. The STAFF.

9. *Spanish Composition and Conversation*

Practice in writing and speaking Spanish. Four hours per week: two hours of discussion and analysis, plus two hours of oral practice. Open to students who have met the language requirement in Spanish. Mr. AMOR.

D11, D12. *Spanish Literature: Introductory Course*

Intensive and extensive reading and discussion of representative works by outstanding authors of the Golden Age and of the modern period. May be taken to satisfy the distribution requirement for a two-semester sequence in Literature under Humanities. Open to students who have met the language requirement in Spanish. The STAFF.

51. *Advanced Composition and Conversation*

Intensive practice in writing and speaking Spanish. Oral and written reports. Four hours per week: two hours of discussion and analysis plus two hours of oral practice. Prerequisite: Spanish 9 or D11, D12, or IC 1-2. Mr. AMOR.

107. *Survey of Spanish Literature to 1700*

A study of the main literary *genres* and the more important writers from the beginnings to the end of the seventeenth century. Prerequisite: Spanish D11, D12, or IC 1-2, or written permission of the instructor. Mr. LÓPEZ-MORILLAS.

108. *Survey of Spanish Literature after 1700*

A study of the main literary *genres* and the more important writers from the eighteenth century to the present. Prerequisite: Spanish D11, D12, or IC 1-2, or written permission of the instructor. Mr. LÓPEZ-MORILLAS.

115. *Spanish-American Literature of the Colonial Period*

The main literary trends and the more important writers. Reading of representative texts, discussion, and reports. Not offered every year.

116. *Modern and Contemporary Spanish-American Literature*

The main literary trends and *genres* and the more important writers. Reading of representative texts, discussion, and reports. Prerequisite: Spanish D11, D12, or IC 1-2. Offered in alternate years. Mr. LÓPEZ-MORILLAS.

MODERN LANGUAGES—SPANISH

120. *Novel of the Nineteenth Century*

The development of the novel from Fernán Caballero to Pardo Bazán with special emphasis on Galdós. Prerequisite: Spanish D11, D12, or IC 1-2. Offered in alternate years. Mr. LÓPEZ-MORILLAS.

121. *Contemporary Spanish Literature*

A study of the *Generación del 98*, with special emphasis on its contributions to the novel and essay. Prerequisite: Spanish 108 or written consent of the instructor. Mr. LÓPEZ-MORILLAS.

141. *Cervantes*

An introduction to the study of Cervantes, with special attention to *Don Quixote*. Prerequisite: Spanish 107. Offered in alternate years. Mr. KOSOFF.

142. *The Drama of the Golden Age*

A study of some of the masterpieces of the classic theater from Lope de Vega to Calderón. Prerequisite: Spanish 107. Offered in alternate years. Mr. FICHTER.

151. *Studies in Spanish Literature after 1700*

Prerequisite: Spanish 108; occasionally, Spanish D11, D12 or Spanish IC 1-2 with written permission of the instructor. Students may receive credit for this course in different years. Offered in alternate years. Mr. LÓPEZ-MORILLAS.

152. *Studies in Spanish Literature before 1700*

Topic for 1944-55: The picaresque novel and related prose writings. Prerequisite: Spanish 107; occasionally, Spanish D11, D12, or Spanish IC 1-2 with written permission of the instructor. Students may receive credit for this course in different years. Offered in alternate years. Mr. FICHTER.

170. *Advanced Written and Oral Spanish*

Designed to develop skill and accuracy in literary composition and oral expression. Prerequisite: Spanish 51 with a grade of *A* or *B* or written approval of the instructor. Offered in alternate years. Mr. LÓPEZ-MORILLAS.

198. *Senior Conference*

Special work or preparation of Honors Thesis under the direction of a member of the Staff.

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213. *Cervantes A*

A study of Cervantes' works exclusive of *Don Quixote*. Offered in alternate years. Mr. FICHTER.

214. *Cervantes B*

A study of *Don Quixote*. Offered in alternate years. Mr. FICHTER.

219. *The Spanish Drama to 1635*

The development of the *comedia*, with special emphasis on Lope de Vega. Offered in alternate years. Mr. FICHTER.

220. *The Spanish Drama from 1635 to 1681*

The later development of the *comedia*, with special emphasis on Calderón. Offered in alternate years. Mr. FICHTER.

221. *Problems in Spanish and Spanish-American Literature*

Topic for 1954-55: The non-dramatic works of the Lope de Vega. Mr. TRUEBLOOD.

223. *Seminar*

Special topics and problems in Spanish and Spanish-American literary history. Topics for 1954-55: I, Problems of research in *Siglo de Oro* drama. Mr. FICHTER; II, Literature of social criticism in the eighteenth and nineteenth centuries. Mr. LÓPEZ-MORILLAS.

231. *History of the Spanish Language*

Outline of historical phonology and morphology. Offered in alternate years. This course should be taken after General Romance 237. Mr. SCHNERR.

291, 292. *Reading and Research*

Work with individual students in connection with special reading, problems of research, or preparation of theses. The STAFF.

Music

Professor COOLIDGE (Chairman); Associate Professor DINNEEN; Assistant Professors FISCHER, VAN KOPPENHAGEN, THOMSON; Visiting Assistant Professor MADEIRA; Instructor, Mr. LAURENT.

DISTRIBUTION REQUIREMENT. The distribution requirement in Art and Music under Humanities may be satisfied by taking Music D1.

CONCENTRATION. In addition to the elementary course (Music D1), the requirement for concentration in music is: eight semester courses or equivalent, including Music 3, 15-16, and 197-198. The Department recommends that ordinarily the program contain eight semester courses or equivalent in addition to Music 197-198. Membership in one of the recognized choral groups or the orchestra is required.

HONORS. A student may enroll for Honors in Music at the end of his sophomore year. A topic for a four-semester project of study is selected in consultation with the Honors Advisor of the department. The student works independently, reporting regularly to the advisor. A critical written report of the entire project is required in the senior year. Suitable topics include:

Music in France from 1800 to the present
 Chamber Music including the Piano
 Sacred Choral Music
 Keyboard Music of the Twentieth Century
 Music of the Renaissance
 Studies in American Music

D1. *Introduction to Music*

A variety of masterpieces, including symphonies, an opera, and works for piano, presented with a view to intelligent listening. Emphasis on a keener grasp of rhythms, harmonies, forms, and other elements. Recordings and reading assigned for outside study. May be taken to satisfy the Art-Music distribution course requirement under Humanities. Not generally recommended for freshmen in the first semester. Messrs. FISCHER and VAN KOPPENHAGEN, and STAFF.

2. *Survey of Music for Keyboard Instruments*

Study of the nature of the harpsichord, clavichord, piano, and organ and of the music written for them from the Elizabethan period to the present. Illustrations at the harpsichord, piano, and organ; recordings and reading assigned for outside study.

3. *Survey of Orchestral and Operatic Music*

Symphonies, orchestral suites, and operas from various periods including the contemporary. Lectures; recordings and reading assigned for outside study. Prerequisite: Music D1 or the written consent of the instructor. Mr. LAURENT.

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4. *Nineteenth Century Composers*

Significant works by Beethoven, Schumann, Mendelssohn, Berlioz, Liszt, Wagner, Brahms, Tchaikovsky, and others. Orchestral, choral, operatic, and chamber compositions. Lectures; recordings and reading assigned for outside study. Prerequisite: Music D1 or the written consent of the instructor.

15-16. *Elementary Theory*

Fundamentals of musicianship including formation and connection of chords; harmonization of melodies and basses; harmonic and form analysis; ear training and keyboard harmony. Elective by written consent of the instructor. Laboratory section to be arranged. Mr. THOMSON.

17. *Advanced Theory*¹

Secondary sevenths, ninths, chromatic harmony; harmonic and form analysis. Elective by written consent of the instructor. Prerequisite: Music 15-16. Mr. THOMSON.

18. *Counterpoint*¹

Introduction to contrapuntal thinking, both strict and free. Writing of two-part and three-part counterpoint and analysis of contrapuntal textures. Elective by written consent of the instructor. Prerequisite: Music 15-16. Mr. THOMSON.

23. *Beethoven and Brahms*

A study of symphonies, concerti, choral, solo, and chamber works, with emphasis on analysis. Lectures; recordings and reading assigned for outside study. Elective by written consent of the instructor. Prerequisite: Music D1.

51-52. *Instruction in Vocal or Instrumental Music; or Instrumental Ensemble Music*²

For students who wish to continue their study of voice or instrument or to study by means of performance the literature of chamber music. (See statement on page 178 regarding opportunities for instruction on a non-credit basis). To receive permission to enroll in this course, the student confers with the chairman of the Department concerning an informal audition for members of the Department, choice of teacher, and other details. One hour of instruction weekly. Public auditions are scheduled regularly and, in

¹ Either Music 17 or 18 (or both) may be elected by students who have satisfied the requirements for Music 15-16.

² Permanent credit only when Music 15-16 is completed or proficiency in Theory is established by passing an examination given by the Department.

some instances, a student may prepare for a Senior Recital. Half-course each semester. Elective by written consent of the chairman of the Department. Only four semesters of this work may be credited toward concentration. Mr. VAN KOPPENHAGEN and STAFF.

53-54. *Instruction in Vocal or Instrumental Music; or Instrumental Ensemble Music* (second year)

Half-course each semester. Elective by written consent of the chairman of the Department. Only four semesters in the sequence 51-58 may be credited toward concentration. Mr. VAN KOPPENHAGEN and STAFF.

55-56. *Instruction in Vocal or Instrumental Music; or Instrumental Ensemble Music* (third year)

Half-course each semester. Elective by written consent of the chairman of the Department. Only four semesters in the sequence 51-58 may be credited toward concentration. Mr. VAN KOPPENHAGEN and STAFF.

57-58. *Instruction in Vocal or Instrumental Music; or Instrumental Ensemble Music* (fourth year)

Half-course each semester. Elective by written consent of the chairman of the Department. Only four semesters in the sequence 51-58 may be credited toward concentration. Mr. VAN KOPPENHAGEN and STAFF.

71. *Choral Music*

An historic survey of choral literature including a consideration of program building and elementary conducting. Bibliography of choral literature. Prerequisite: Music D1 and membership for one year in the Brown University Chorus, the Chapel Choir, or the Glee Club. Elective by written consent of the instructor. Messrs. DINNEEN and LAURENT.

105. *Twentieth Century Composers*

Developments in contemporary music illustrated through a study of important orchestral works, operas, ballets, and other forms as used by Debussy, Sibelius, Strauss, Schoenberg, Stravinsky, Bartok, Milhaud, Walton, Hindemith, Prokofieff, Harris, Copland, and others. Lectures; recordings and reading assigned for outside study. Each student will investigate the work of a composer not included in the lectures and report in a term paper. Prerequisite: Music D1 or the written consent of the instructor. Mr. COOLIDGE.

119. *Elements of Orchestration*

Introduction to standard instrumentation and the basic principles of orches-

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tration. Elective by written consent of the instructor. Prerequisite: Music 17. Mr. THOMSON.

120. *Advanced Counterpoint and Fugue*

Continuation and expansion of material in Music 18. Imitation, canon; fugal exposition in three and four parts; analysis of fugues in *The Well-Tempered Clavier* by Bach. Elective by written consent of the instructor. Prerequisite: Music 18. Mr. THOMSON.

121. *The Life and Works of Bach*

Consideration of the life of Bach in relation to family, predecessors, and contemporaries, and influences which operated on the composer. Consideration of the keyboard, chamber, orchestral, and choral works as well as combined forms. Lectures, field trips, and individual research projects. Elective by written consent of the instructor.

131. *American Music; the Colonial Era and through the Civil War*

Psalmody, Secular Songs, Folk and Dance Music, Plays with Music, Operas. The Concert Life and Music Publishing. Research in the collections of the libraries. Mr. DINNEEN.

132. *American Music; 1865 to the Present*

Songs and Piano Compositions, Operas, Oratorios, Orchestral Works, Music in Education, the American "Schools" of Composition. Research in the collections of the libraries. Messrs. COOLIDGE and DINNEEN.

191-192. *Special Topics*

Individual topics in advanced theory, composition, or history. Elective for qualified students by permission of the department chairman. Required for Honors students in music in the senior year. Available for Honors students in related fields by arrangement with Honors Counselors. Messrs. COOLIDGE, DINNEEN, THOMSON, and LAURENT.

197-198. *Senior Conference*

Correlation and amplification of material in other literature and theory courses; study of music of types not previously included; general historical summary. Required for concentration. Messrs. DINNEEN, COOLIDGE, and LAURENT.

291, 292. *Reading and Research*

Special topics in European or American music. Messrs. COOLIDGE, DINNEEN, THOMSON, and LAURENT.

The Brown University Chorus. Mr. LAURENT, Director.

The Chorus performs major choral works with the University Orchestra and

the Rhode Island Philharmonic Orchestra, presents special programs at the Rhode Island School of Design Museum, and combines with other college choruses for cantatas and oratorios with outstanding soloists. Membership is open to undergraduate and graduate students who qualify by passing an audition requirement. Auditions are scheduled during the registration period. Two rehearsals are held each week.

The Brown University Orchestra. Mr. FISCHER, Conductor.

Numbering some 70 players, the orchestra gives four to six concerts each season, including one which features outstanding student soloists. Membership is open to all students, faculty, administrative officers, and qualified amateurs from the community. One rehearsal is held each week, with extra rehearsals scheduled before concerts.

The Brown University Band. Mr. FISCHER, Director.

The Band functions as a marching band of undergraduate men during the football season and accompanies the team to all but one game. Awards are made for participation in three marching seasons. During the rest of the season the band is a concert group and includes Pembroke students as well as undergraduate men. Admission to the band is by audition during the registration period. Two rehearsals are held each week.

The Pembroke Glee Club. Mr. THOMSON, Director.

Activities include two joint concerts each year with the glee clubs of such colleges as Bowdoin, Wesleyan, Amherst, Yale, or Dartmouth, participation in the annual Latin Carol Service, and presentation of one on-campus concert. Membership is open to undergraduate women who pass the audition requirement. Tryouts for freshmen and transfer students are scheduled during the first week of the semester. Two rehearsals are held each week.

The Brown University Glee Club. Mr. LAURENT, Director.

The Glee Club presents both on-campus and out-of-town concerts and features a Spring Tour during the vacation period in most years. Membership is open to all undergraduates who qualify by passing audition requirements. The audition schedule is announced during the registration period. Four rehearsals are held each week.

The Chapel Choirs. Mr. DINNEEN, Director. Miss PAULINE HEDGES DAVIS, Student Director, Pembroke Choir.

All students are eligible to sing in the Chapel Choirs. In addition to regular Chapel and Vesper services, the Choirs present an annual mid-winter concert of sacred music and appear on regional and coast-to-coast radio broadcasts. Auditions are held the first week in May. Two rehearsals are held each week.

PHILOSOPHY

Additional Opportunities for Study of Voice or Instrument

Any student, regardless of technical proficiency, who wishes to receive instruction in piano, organ, violin, viola, cello, voice, or other standard instruments will be assisted in doing so by members of the Department.

Philosophy

Professors DUCASSE, CHISHOLM (Chairman); Visiting Professor DUNCAN-JONES; Associate Professors TOMAS, TAYLOR, LADD; Assistant Professors LENZ, MADDEN; Interns, Messrs. KIRKPATRICK and WHEATLEY; Assistants, Messrs. AMMERMAN, ANDERSON, and DUGGAN.

DISTRIBUTION REQUIREMENT. The distribution requirement in Philosophy under Humanities is met by taking Philosophy D1, D2 or IC 1-2. Alternatively, this requirement may be met by passing a distribution examination in Philosophy. This will be given, on application, in September of each year, and will be based on a reading list available at the Office of the Recorder.

CONCENTRATION. The requirement for concentration in philosophy is: eight semester courses or equivalent, which must include Philosophy 58, 101, 102, and 122. Philosophy D1, D2 or IC 1-2 does not count toward concentration.

HONORS. The following courses are required: Philosophy 55, 58, 101, 102, 122, 191, and three other courses in philosophy, including either Philosophy 151 or 153.

During the senior year candidates will write a Senior Thesis on a subject to be selected with the approval of the department. This work will be done in connection with Philosophy 191 for one or more semesters. Senior candidates will also participate in the work of the department colloquium.

At the end of their senior year candidates will take a Senior Honors examination consisting of three parts as follows:

Part I. History of Philosophy (from ancient Greeks to present): 3 hours.

Part II. Systematic Philosophy (elements of logic, of ethics, and of either aesthetics or the philosophy of religion): 3 hours.

Part III. Two philosophical classics selected by the student from a list available at the office of the Department: 3 hours.

D1. *Philosophy and the Types of Human Experience*

A study of ethics, aesthetics, and political philosophy. Critical examination of the basic assumptions of each, and of the functions of each in the life of man. Elective for freshmen and sophomores. Satisfies the first half of the Philosophy distribution requirement under Humanities. To be followed by D2. Messrs. DUNCAN-JONES, and MADDEN.

D2. *Philosophy and the Types of Human Experience*

Critical examination of the basic philosophical assumptions of science, religion, and metaphysics, and of the functions of each in the life of man. The nature of reality as conceived by a number of the great philosophers. Elective for freshmen and sophomores. Satisfies the second half of the Philosophy distribution requirement under Humanities. Prerequisite: Philosophy D1. Messrs. CHISHOLM, KIRKPATRICK, and MADDEN.

IC 1-2. *The Philosophy of Justice and Knowledge*

A study and critical evaluation of the basic philosophical ideas expressed in Plato's *Republic* and in John Locke's *Essay Concerning Human Understanding* or Spinoza's *Ethics*. The philosophical problem of the nature of human knowledge and of ultimate reality and the relevance of this problem to morals, education, politics, and religion. Collateral reading in related philosophical literature. I, 1, Messrs. LENZ, LADD, and KIRKPATRICK; II, 2, Messrs. TAYLOR, LADD, and KIRKPATRICK.

CONTACT COURSES

These courses deal with branches of philosophy which have specially close relations with certain other subjects, such as art and religion.

55. *Logic and Scientific Method*

The conditions of clear statement and valid argument; definition and classification; syllogism and other types of formal reasoning; detection of fallacies. The methods of natural sciences: observation and experiment; explanation and theory; probable inference. Elective for sophomores, juniors, and seniors. Mr. CHISHOLM.

58. *Ethics*

The nature of good and evil, right and wrong, duty, social obligation. A survey of possible views. Their bearings on problems of the individual and of the state and other social institutions. Mr. DUNCAN-JONES.

61. *Philosophical Analysis of Current and Classical Literature*

Exercise of the analytical and evaluative apparatus acquired through other study of philosophy. Reading and philosophical criticism of essays, articles,

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novels, dramas, poems, or other works of current or classical literature containing ideas significant for ethics, social policy, religion, art, science, education, or other major human interests. Mr. MADDEN.

151. *Philosophy of Religion*

A critical and constructive study of the nature of religion, of its various forms and manifestations, and of its functions in human life. Consideration of special topics. Elective for sophomores, juniors, and seniors. Mr. DUCASSE.

153. *Philosophy of Art*

The nature of art and beauty, their relations, and their functions in society, aesthetic contemplation, the aesthetic feelings, and the aesthetic object. Standards of criticism. Elective for sophomores, juniors, and seniors. Mr. TOMAS.

159. *Philosophy of History*

The nature of historical knowledge and its relation to the social sciences; some theories of the world historical process; the use and abuse of history, especially as a mode of understanding reality, art, religion, and human experience in general. Elective for sophomores, juniors, and seniors. Mr. LADD.

HISTORICAL AND SYSTEMATIC COURSES

101. *Ancient and Mediaeval Philosophy*

A survey of the development of occidental philosophy from early Greek times to the Renaissance. Elective for juniors and seniors. Mr. TAYLOR.

102. *Modern Philosophy*

A survey of the development of occidental philosophy from the time of the Renaissance to Schopenhauer. Prerequisite: Philosophy 101. Elective for juniors and seniors. Mr. LENZ.

122. *Recent and Contemporary Philosophy*

A survey of the development of occidental philosophy from Schopenhauer to the present time. Prerequisite: Philosophy 101, 102 or their equivalent. Elective for juniors and seniors. Mr. CHISHOLM.

125. *History of Philosophy in America*

A survey of the development of philosophy in America from the colonial period to 1900. Elective for juniors and seniors. Mr. MADDEN.

191. *Topical Investigations*

Tutorial course designed primarily for Honors students. Independent study

under individual guidance. Problems or topics for study are assigned to each student, who will report in writing and orally. Elective by written consent of the Department for seniors who have credit for not less than two years of philosophy. The STAFF.

GRADUATE COURSES

Advanced graduate instruction in the Department of Philosophy is carried on mainly by independent investigation of special topics under individual supervision. Any of the courses listed below may be elected more than once.

201. *Research in Philosophy*

Research under individual guidance by special arrangement with members of the Department. The STAFF.

203. *Advanced Study of Special Topics*

Topics for 1954-55: I, Mathematical Logic, Mr. CHISHOLM; II, Philosophy of Science, Mr. MADDEN.

205. *Metaphysics*

Topic for 1954-55: Wittgenstein's *Philosophical Investigations*. Mr. DUNCAN-JONES.

206. *Metaphysics*

Topics for 1954-55: Plato and Whitehead, Mr. LENZ; Philosophy, Religion, and Psychical Research, Mr. DUCASSE.

207. *Seminar in Philosophy*

Topics for 1954-55: The Philosophy of Meaning and Truth, Mr. TAYLOR; British Moral Philosophy from Hobbes through Mill, Mr. LADD.

208. *Seminar in Philosophy*

Topic for 1954-55: The Nature of Moral Judging. Mr. DUNCAN-JONES.

209. *Theories of Knowledge*

A survey and critical discussion of the chief contemporary theories of knowledge. Mr. CHISHOLM.

221. *Department Colloquium*

Discussion by the Staff and advanced students of research problems and current technical literature in philosophy and allied fields. Presentation and criticism of original papers. Required without credit of all graduate students in philosophy and of all senior candidates for Honors in philosophy. Ordinarily meets twice a month. The STAFF.

Physics

Professors LINDSAY, FARNSWORTH, MILLER, WILLIAMS (Chairman of Executive Committee); Associate Professors BEYER, MORSE, NYBORG, PECK; Assistant Professors MINTZER, KORNHAUSER, WESTERVELT, TAMARKIN, EUBANK, DILLON; Research Associates, Miss LEWIS, and Messrs. RANEY and SCHLIER; Visiting Lecturer, Mr. MACKINNON; Technical Assistant, Mr. LUBRANO; Research Assistants, Messrs. ALLEN, BURGER, FLAD, GEORGE, HALING, KLINE, LACASCE, LEE, H. H. MADDEN, O'DELL, and OVERSETH, and Miss M. F. MADDEN; Assistants, Messrs. BARNES, BOHM, BRACKENRIDGE, BRICKL, BRUNSCHWIG, EBY, EDEN, ELDER, GOULD, GREEN, JACKSON, LANE, MEHLHORN, PRATT, PROUD, STERN, and WASHINGTON.

DISTRIBUTION REQUIREMENT. The distribution requirement in Physical Sciences under Sciences may be met by taking Physics D1 and Chemistry D2 or Astronomy D1. Physics D1 may be taken as an independent course to satisfy a distribution requirement in the Sciences.

CONCENTRATION. In addition to the elementary course (Physics D1), the requirements for concentration in physics are Physics 3, 4, 37, 38, 111, plus two semester courses (to be chosen from 114, 115, 121, 122, 125) and Mathematics 10 or 22. With written permission of the department the following may be accepted: 2, 37, 38, 111, plus three courses (to be chosen from 114, 115, 116, 121, 122, 125) and Mathematics 10 or 22.

The *Joint Concentration in Mathematics and Physics* is described on page 60. Requirements for the degree of *Bachelor of Science in Physics* are given in the Section "*Requirements for Degrees.*"

Students intending to concentrate in physics should consult the chairman of the Department for advice in arranging their programs.

HONORS. Candidates for Honors in physics will be expected to pursue a more rigorous and extensive program than those merely concentrating in the subject. In addition they will be required to take a diagnostic examination at the end of the sixth semester, to begin an Honors thesis during the seventh semester and complete it (as a part of Physics 198) during the eighth semester. Honors candidates are also expected to participate in a special Honors seminar throughout their period of participation in the program and to take a special written comprehensive examination in general physics and an oral examination on the thesis at the end of the eighth semester. Further details about the program may be obtained from the chairman of the department or the departmental Honors committee.

PREPARATION FOR SPECIAL FIELDS. Students planning to study medicine may satisfy the requirement in physics for most medical schools by taking Physics D1, 2.

D1. *Elementary Physics*

Distribution course in physics designed to acquaint the student with the fundamental method of physical science by means of lectures with experimental demonstrations, conferences for discussion of problems and tests, and laboratory work. There will be considerable emphasis on the contemporary aspects of physics. Messrs. PECK and EUBANK, and STAFF.

2. *General Physics*

More rigorous treatment of the topics introduced in Physics D1 with greater attention to the quantitative aspects of mechanics, heat, electricity, and optics. Lectures, conferences, and laboratory work. This course is primarily designed as a second semester of physics for pre-medical, navy, and air force students who need a year of elementary physics. Elective for undergraduates who have credit for Physics D1 either by taking the course or by establishing proficiency through examination. May be taken as a continuation course fulfilling a distribution requirement in Physics under Sciences. Mr. PECK and STAFF.

3, 4. *Fundamental Physics*

Basic course in physics for those intending to do further work in the physical sciences. Lectures, conferences, and laboratory. Six hours of attendance. Required in the freshman year of all candidates for the degree of Bachelor of Science in Physics or in Chemistry. Elective for sophomores, juniors, and seniors who are candidates for the degree of Bachelor of Arts and who have had Physics D1, or have established proficiency therein by examination, and Mathematics 2 or equivalent and are pursuing Mathematics 21-22 concurrently. Mr. BEYER and STAFF.

37. *Basic Principles of Laboratory Physics*

Intermediate course required in the first semester of the sophomore year of candidates for the degree of Bachelor of Science in Physics. The primary emphasis is on laboratory work, including graphical methods, theory and recording of measurements, and the estimation of errors in connection with experiments drawn from all basic fields of physics. Calculus is used freely. Six hours of attendance. Elective for sophomores, juniors, and seniors who are candidates for the degree of Bachelor of Arts. Prerequisite: Physics

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3, 4 or Physics 2 and written consent of the instructor. Two class hours plus two 2-hour laboratory meetings. Mr. MACKINNON.

38. *Intermediate Mechanics and Thermodynamics*

Basic concepts of mechanics, the motion of particles, properties of aggregates of particles, kinetic theory, and elementary thermodynamics. Five hours of attendance. Required in the second semester of the sophomore year of candidates for the degree of Bachelor of Science in Physics. Elective for sophomores, juniors, and seniors who are candidates for the degree of Bachelor of Arts. Prerequisite: Physics 3 or 37 and Mathematics 9-10 or 22 concurrently.

61. *Modern Physics for Engineers A*

Wave motion, geometrical and physical optics, and origins of electromagnetic radiation. Laboratory work is provided. Six hours of attendance. Required in the sophomore year of all candidates for the degree of Bachelor of Science in Engineering. Elective for other students by written consent of the department. Messrs. KORNHAUSER and DILLON.

62. *Modern Physics for Engineers B*

This course supplements Physics 61 and covers kinetic theory of gases and elementary statistical reasoning in physics, atomic theory and atomic structure, nuclear physics. The calculus and differential equations are used freely. Laboratory work is provided. Six hours of attendance. Required in the senior year of all candidates for the degree of Bachelor of Science in Engineering. Elective for other students by written consent of the department.

111. *Atomic Physics*

Elementary charged particles, radioactivity, atomic models, the Bohr theory of atomic structure, elementary wave mechanics, quantum theory of solids, nuclear physics. Laboratory work is provided. Six hours of attendance. Prerequisite: Physics 38 or approved equivalent and Mathematics 9-10, or 21-22. Messrs. NYBORG and WESTERVELT.

114. *Intermediate Electricity and Magnetism*

A systematic treatment from both classical and modern standpoints. Laboratory work is provided. Six hours of attendance. Prerequisites: Physics 37 and Mathematics 9-10 or 21-22.

115. *Applied Optics*

Photography, geometrical optics, telescopic and microscopic systems. Laboratory work is provided. Six hours of attendance. Offered in alternate years.

Prerequisite: Physics D1, 2 or 3, 4 and Mathematics D1, 2 or 9-10 or approved equivalent. Mr. MILLER.

116. *Introduction to Nuclear Physics*

A descriptive survey of nuclear phenomena; origin, properties, and effects of nuclear radiations; artificial transmutation of the elements; nuclear binding forces; energy levels; cosmic rays; nuclear biophysics. Laboratory work will be provided. Five hours of attendance. Prerequisite: Physics 111. Mr. PECK.

117. *Electric Circuits and Electronics*

Methods of circuit analysis, basic electronics, and application to electronic devices. Laboratory work is provided. Six hours of attendance. Prerequisite: Physics 114 or approved equivalent. Mr. TAMARKIN.

121. *Radiation Physics A*

The wave equation in physics and its solutions, application to problems in electromagnetic theory, microwaves, physical optics, acoustics, thermal conduction, and elastic waves in solids. Laboratory work is provided. Six hours of attendance. Prerequisite: Physics 38 or approved equivalent and Mathematics 29 or approved equivalent. Mr. LINDSAY.

122. *Radiation Physics B*

Radiometry, production of radiation by incandescent sources, by gaseous conduction of electricity, and by atomic sources, X-rays, antenna radiation, wave and particle theories of radiation. Laboratory work is provided. Six hours of attendance. Prerequisite: Physics 121 or approved equivalent. Mr. LINDSAY.

125. *Advanced Mechanics and Thermodynamics*

Hamilton's principle, Lagrange's equations, canonical equations, phase spaces, statistical ensembles, principles of thermodynamics, physical applications of thermodynamics. Prerequisite: Physics 38 and Mathematics 108 or approved equivalent.

128. *Acoustics*

Sound waves in air and other media. Laboratory work is provided. Six hours of attendance. Prerequisite: Physics 37, 38 or approved equivalent and Mathematics 29 or approved equivalent.

198. *Senior Conference*

Required of candidates for the degree of Bachelor of Science in Physics. Elective for other undergraduates.

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199. *Special Topics in Experimental and Theoretical Physics*

Special projects directed by staff members. Elective by special permission of the department. During 1954-55 this will be a course in solid state physics. Three hours of attendance. Mr. TAMARKIN.

201, 202. *Advanced Experimental Physics*

A systematic development of advanced experimental procedure, designed for the first-year graduate student. The purpose is to acquaint the student with equipment and procedures used in experimental research in various fields of physics. The course thus serves as a foundation for subsequent experimental research in any field. The project method of treatment is used. Six or more hours of attendance. Elective by written consent of the department. Mr. FARNSWORTH.

203, 204. *Introduction to Theoretical Physics*

A systematic development of the fundamental concepts and methods of theoretical physics. Five hours of attendance. Prerequisite: Physics 101, 102 or approved equivalent and Mathematics 108, 121 or approved equivalent. Mr. MINTZER.

208. *Physical Properties of Solids*

Selected topics in electrical and thermal properties including both volume and surface characteristics such as specific heats, elasticity, conduction, magnetism, and thermionic and photoelectric effects. Three hours of attendance. Prerequisite: Physics 101, 102 or its equivalent and Mathematics 108, 121. Alternates with Physics 210.

210. *X-rays*

Methods of X-ray analysis, scattering of X-rays and electrons by crystals with applications to atomic structure determinations, spectroscopy of X-rays. Three hours of attendance. Prerequisite: Physics 101, 102 or its equivalent and Mathematics 108, 121. Alternates with Physics 208.

211, 212. *Quantum Mechanics and Atomic Structure*

Theory of quantum mechanics with applications to atomic structure and allied physical problems. Three hours of attendance. Alternates with Physics 213, 214. Prerequisite: Physics 203, 204 and Mathematics 108, 121. Mr. WILLIAMS.

213, 214. *Physical Statistics*

Statistical distributions, kinetic theory, and statistical mechanics with applications to thermodynamics; quantum statistics with application to

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radiation, atomic structure, and the properties of gases and solids. Three hours of attendance. Alternates with Physics 211, 212. Prerequisite: Physics 203, 204 and Mathematics 108.

215, 216. *Special Topics in Theoretical Physics*

Advanced reading and research. Topics for 1954-55: Advanced Nuclear Theory and Physical Optics. Elective by written consent of the department. The STAFF.

223, 224. *Seminar Course*

Weekly lectures and discussions on contemporary problems. The STAFF.

Political Science

Professors MITCHELL, DODGE (Chairman); Associate Professor PERKINS; Assistant Professors RACKOW, McCONNELL; Instructor, Mr. BLUHM; Intern, Mr. McLoughlin; Assistants, Messrs. DREHER and SWANSON.

GENERAL PREREQUISITE. Political Science DI or IC 1, 2 is prerequisite to all other courses in political science, except where other provision is made in the course statement, or by written consent of the instructor.

DISTRIBUTION REQUIREMENT. The distribution requirement in Government under Social Studies may be met by taking Political Science DI or IC 1, 2.

CONCENTRATION. Except by permission of the Department, granted upon formal application, a student must obtain a grade of C or better in the introductory course (Political Science DI or IC 1, 2) in order to concentrate in political science.

In addition to the introductory course, to be completed by the end of the fourth semester, the requirements for concentration in political science may be met by either of the following patterns: I, Political Science 103, 104, 105, 106, 109, 110, 117, and 118; II, Political Science 103, 104, 107, 111, 115, 116, 122, and 124.

HONORS. For admission to Honors in political science a student must have obtained a grade of B or better in the introductory course.

The Honors program will comprise, in addition to the introductory course, at least ten semester courses in political science, including Political Science 191, 192 to be taken in the seventh and eighth semesters. The last-named courses cover the preparation of a thesis on a selected topic within the special field of interest.

POLITICAL SCIENCE

D1. *Principles of Political Science*

A study of the basic concepts of political science as illustrated in political institutions and practices. May be taken to satisfy a distribution requirement in Government under Social Studies. Prerequisite to all other courses in political science. Messrs. MITCHELL and McCONNELL, and STAFF.

IC 1, 2. *The Political Ideal of Freedom*

An introduction to the study of the interrelations of political ideas and institutions in ten selected historical periods through an analysis of three classics of Government: Lord Acton, *Essays on Freedom and Power*; Alexis de Tocqueville, *Democracy in America*; Alexis de Tocqueville, *The Old Regime and the Revolution*. Concentration of attention upon three great themes: power, equality, and liberty. Collateral reading in western political thinking from Plato to Lenin. Messrs. DODGE, BLUHM, and McCONNELL.

103. *American National Government*

The basic principles of the American governmental system, with special emphasis on the national government. Mr. RACKOW.

104. *American State and Local Government*

The development, organization, and functioning of American state and local governments, and their relations to each other. Political Science 103, 104 is a normal sequence. Mr. MITCHELL.

105. *Parliamentary Democracy*

A study of the British and French governmental systems, their historical foundations, and their contemporary problems. Attention will also be given to parliamentary government in the British Dominions and in Sweden. Mr. McCONNELL.

106. *Modern Dictatorship*

A study of the historical and ideological foundations, the organization, and the techniques of the Soviet system. Attention will also be given to the totalitarian regimes in Nazi Germany and Fascist Italy. Mr. McCONNELL.

107. *Political Parties and Pressure Groups*

The functions, history, organization, and activities of political parties and the nature and activities of pressure groups in modern states, with special reference to the United States. Mr. RACKOW.

109. *History of Political Theory*

Ancient and medieval political thought; early modern political theory from the Renaissance and Reformation to the seventeenth century. Mr. DODGE.

110. *History of Political Theory*

An historical survey of political thought from the beginning of the seventeenth century to the contemporary period. Mr. DODGE.

111. *Principles of Public Administration*

The role of administration in modern government with particular reference to problems of organization, personnel management, budgeting and accounting, purchasing and planning. Mr. RACKOW.

115. *American Constitutional Development*

The outlines of the constitutional system as determined by the Constitution, developed by formal amendment, statutory elaboration, executive action, judicial interpretation, and custom or usage. Emphasis is on the Constitution as public law. Mr. MITCHELL.

116. *American Constitutional Development*

The English and colonial origins of the American Constitution and the course of its growth since 1787 as portrayed in constitutional history. Mr. MITCHELL.

117. *International Politics*

Political and legal principles underlying the modern state system. Material and ideological factors which influence state policies. Analysis of the power, position, interests, and policies of key states. Consideration of selected conflict situations. Mr. PERKINS.

118. *International Organization*

The development of international organization. The structure and functioning of the United Nations and other intergovernmental organizations. Mr. PERKINS.

120. *Problems of International Policy in Special Areas*

Analysis of the problems arising from the impact of *Western* ideas, institutions, and industrialism upon under-developed areas and their significance for the foreign policy of the United States and the international position of the areas concerned. Representatives of the American Universities Field Staff will participate in the course. Elective for seniors in the International Relations concentration, for other undergraduates who have taken or are taking Economics 101, 154, and Political Science 117, 118, and for graduate students with equivalent qualifications. Mr. PERKINS.

POLITICAL SCIENCE

122. *Foreign Relations of the United States*

The means by which United States foreign relations are conducted. Analysis of United States policies in terms of historical development and conditioning factors. Some problems facing the United States in its foreign relations today. Mr. PERKINS.

124. *American Political Theory*

Study of the development of American political thought: the colonial period; the Revolution; Jeffersonian Democracy; Jacksonian Democracy; the slavery controversy; the nature of the Union; the newer currents between 1865 and the present. Mr. DODGE.

191. *Individual Study Project*

Directed reading and preparation of a thesis on an approved subject. Required of all seniors who are candidates for Honors in political science in the last two semesters of their course. The STAFF.

192. *Individual Study Project*

Continuation of 191.

PRIMARILY FOR GRADUATE STUDENTS

201. *Problems of Contemporary International Relations*

Topic for II, 1954-55: Case studies in the adjustment of conflicting national interests. Mr. PERKINS.

203. *Problems in Modern Political Thought*

Topic for I, 1954-55: Aspects of nineteenth century European political thought. Mr. DODGE.

205. *American Politics and Administration*

Topic for I, 1954-55: The American Congress, with special attention to the Congress and the Presidency, and the Congress and political parties. Mr. RACKOW.

206. *Problems of American Constitutional Government*

Topic for II, 1954-55: Problems arising under the fiscal powers of the national government. Mr. MITCHELL.

208. *Problems of Contemporary European Governments*

209, 210. *Reading and Research*

Work with individual students in connection with special reading, research problems, or preparation of theses. The STAFF.

Psychology

Professors SCHLOSBERG (Chairman), RIGGS, PFAFFMANN; Assistant Professors STANLEY, KLING, LEVY; Instructors, Messrs. BOSQUET, ENGEN, and RUBIN, and Miss PIERREL; Intern, Mr. LATIES; Research Associates, Messrs. BROWN and WARREN, and Mesdames CORNSWEET and WARREN; Research Assistants, Messrs. DZENDOLTE, HAGSTROM, and MILLER; Assistants, Mrs. MEIXNER and Miss FLEISHER and Messrs. CAVONIUS, CHAPMAN, CORNSWEET, ERICKSON, GOFF, HULSE, and MOZELL.

PREREQUISITE. The following courses are prerequisite to all other courses in the Department: Psychology D1 and Biology D1, or Psychology IC 1-2.

DISTRIBUTION REQUIREMENT. The distribution requirement in Biological Sciences under Sciences may be met by taking Biology D1 and Psychology D1, or Psychology IC 1-2, or Biology IC 1-2. Students who wish a continuing psychology course in order to fulfill distribution requirements should take Psychology 6 or 81.

CONCENTRATION. In addition to the elementary courses (Psychology D1, Biology D1, or Psychology IC 1-2), the requirements for concentration in psychology are: 81, 101, 104, 105, 106, 107, 198, and one optional course. Elementary courses in biology, mathematics, and physics furnish a useful background for work in psychology.

HONORS. The Honors program in psychology offers exceptional students an opportunity to perform semi-independent research on topics of their own choosing. This research starts as independent reading during the junior year and culminates in a Senior Honors Thesis. Any member of the Staff may direct this research, but the student must present semi-annual reports and his thesis directly to the departmental supervisor of Honors work. Honors candidates are also expected to attend the weekly meetings of the Colloquium during the senior year.

Course Requirements. Honors Candidates will take the basic concentration courses (Psychology 81, 101, 104, 105, 106, 107, and 198), a thesis course (199), and at least two additional courses which may be in psychology or in related fields. Students who contemplate graduate work should consult the section below on "Graduate Studies."

Examinations. At the end of the senior year, candidates will be excused from course examinations in psychology and will take the following Honors examinations: (1) General principles of psychology, 3 hours, written; (2) Special fields of psychology, 3 hours, written; and (3) Thesis problem in its special and general aspects, 1 hour, oral.

PSYCHOLOGY

GRADUATE STUDIES. Students contemplating eventual graduate work in psychology should, as undergraduates, secure a reading knowledge of two of the following languages: German, French, and Russian. They should also have credit for at least a two-semester course each in biology, mathematics, and physics, plus one course in chemistry. Certain aspects of psychology are also related to sociology.

DI. *Elementary Psychology*

An outline of the major facts and principles of human behavior. Lectures, demonstrations, and laboratory. This course may be taken to fulfill one of the distribution course requirements in the Biological Sciences. Prerequisite: Biology DI or IC 1-2. The STAFF.

IC 1-2. *Psychology as the Science of Behavior*

A critical study of the concepts underlying the definition of Psychology as the Science of Behavior. The writings of Pavlov on conditioned reflexes and of Freud on psychoanalysis will be used as original sources. These will be supplemented by writings and experimental studies of other workers up to the present day. Class and discussion meetings, laboratory experiments, and demonstrations. Messrs. SCHLOSBERG, PFAFFMANN, and LATIES, and Miss PIERREL.

6. *Applied Psychology*

The study of psychological principles and techniques of measurement as they are used in solving problems in industry, business, military affairs, vocational selection, and individual adjustment. This course will usually not be included as a part of concentration. Mr. KLING.

8I. *Child Psychology*

A study of the developing patterns of behavior in the child from the pre-natal period to adolescence. Particular emphasis will be placed on the physical and mental growth of the child and the modifications of behavior in the course of development and learning. Mr. RUBIN.

101. *Statistical Methods in Psychology*

A study of quantitative methods in psychology as applied to the theory of test scores and to the statistical analysis of group and trait differences. Mr. RIGGS.

104. *Psychological Testing*

An introduction to the study of psychological tests, methods, and results in the measurement of intelligence, achievement, personality, and other psychological factors. Prerequisite: Psychology 101. Mr. RUBIN.

105. *Experimental Psychology: Behavior Processes*

An experimental study of the psychological and physiological bases of behavior: reflexes, reaction time, learning, memory, association, and emotion. Mr. KLING.

106. *Experimental Psychology: Receptive Processes*

An experimental study of vision, audition, touch, taste, smell, and perception. Mr. RIGGS.

107. *Normal and Abnormal Personality*

A study of normal and abnormal behavior of persons. Following an introduction to fundamentals of learning, particular emphasis will be placed on the behavioral consequences of frustration, conflict, and anxiety. Elective for juniors and seniors. Mr. STANLEY.

111. *Advanced Psychological Testing*

The application of psychological test methods in the measurement of various aspects of behavior and intelligence in normal and abnormal children and adults. Class meetings and field work. Prerequisite: Psychology 104 and written consent of the instructor. Mr. BOSQUET.

112. *Social Psychology*

Cultural and social processes are described from the standpoint of the individual. Data from cultural anthropology, psychological experiments, and clinics will be assembled to show social influences on motivation, emotional expression, perception, and thinking. Language and its acquisition, propaganda, attitude measurement, the methods of polling public opinion, and problems of morale will be examined. Elective for juniors and seniors. Mr. ENGEN.

134. *Advanced Abnormal Psychology*

A study of the mechanisms and determinants of abnormal behavior, with special emphasis on methods of investigation. This course will utilize the case method in the local hospitals. Prerequisite: Psychology 107 and written consent of the instructor. Mr. STANLEY.

198. *Advanced General Psychology*

This course is designed to help the student in integrating his knowledge of psychology. Conducted in general by the seminar method. Required of seniors concentrating in psychology. Other students admitted only by written consent of the instructor. The STAFF.

199. *Special Problems*

Individual undergraduate research studies. Required of all Honors candidates in the senior year. The STAFF.

PSYCHOLOGY

203. *Research in Experimental Psychology*

Elective by written consent of the instructor. The STAFF.

206. *Seminar in Systematic Psychology*

A detailed consideration of theoretical and historical problems. Offered in alternate years.

207. *Advanced Quantitative Methods in Psychology*

A study of the mathematical techniques required in advanced psychological and physiological research. Offered in alternate years. Mr. RIGGS.

208. *Advanced Statistical Methods in Psychology*

A study of small sample techniques and of factor analysis. Offered in alternate years. Mr. LEVY.

209. *Sensory Psychophysiology*

A study of the afferent-neural processes in hearing, touch, smell, and taste. Particular attention is paid to the similarities and differences among these senses and to the general principles of sensory function. Offered in alternate years. Mr. PFAFFMANN.

210. *Vision*

A study of the literature concerned with the problems of photo-reception and the nervous processes involved in vision. Particular attention is paid to the more exact theoretical aspects of the problems. Offered in alternate years. Mr. RIGGS.

212. *Perception*

The study of the problems in visual, auditory, and tactual perception. Particular attention will be devoted to those problems that involve several sense fields. Offered in alternate years. Mr. SCHLOSBERG.

213. *Seminar in Experimental Psychology*

Offered in alternate years. Mr. PFAFFMANN.

214. *Conditional Reflexes*

Offered in alternate years. Mr. SCHLOSBERG.

228. *Personality*

The seminar will consider the operational meaning and possible experimental analysis of concepts and principles widely used in accounting for normal and abnormal behavior. Offered in alternate years. Mr. STANLEY.

229. *Neural Foundations of Behavior*

The anatomical and functional study of the brain, spinal cord, and peripheral nervous system. Laboratory includes dissection, use of histological materials, and demonstrations. Offered in alternate years. Mr. PFAFFMANN.

231. *Learning I*

A critical study of the Drive-Reduction Theory of Learning. Offered in alternate years. Mr. STANLEY.

232. *Learning II*

An examination of the facts of human and animal learning from the standpoint of several current theories. Offered in alternate years. Mr. KLING.

Instrumentation for Psychological Research

Demonstrations and practical work covering the basic mechanical, electrical, optical, and photographic techniques used in psychological research. Students will be excused from those portions in which they are already proficient. No credit. Offered in alternate years. Mr. KLING and STAFF.

Psychological Colloquium

Weekly meetings for the discussion of research problems presented by visiting scholars and members of the department. No credit.

Sociology

Professor WHITNEY (Chairman); Associate Professor MAYER; Assistant Professors GRIGG, PFAUTZ; Instructor, Mr. SCHNORE; Intern, Mr. PARKE; Assistants, Mr. NALBANDIAN, and Miss HALLAHAN.

GENERAL PREREQUISITE. Sociology DI or IC 1, 2 is prerequisite to all other courses in sociology except by written consent of the instructor involved, and except that students in Semesters VI, VII, and VIII may elect without prerequisite the following courses: 106, 111, 125, 127, and 139.

DISTRIBUTION REQUIREMENT. The distribution requirement in Sociology under Social Studies may be met by taking Sociology DI or IC 1, 2.

CONCENTRATION. Except by permission of the Department, granted upon written application, a student must obtain a grade of C or better in Sociology DI or IC 1, 2 in order to concentrate in sociology.

In addition to the introductory course (Sociology DI or IC 1, 2) to be completed by the end of the fourth semester, the requirements for concentration in sociology are eight semester courses including 105 and 111 (both ordinarily in Semester V) and 182 and 198 (both ordinarily in Semester VIII). A comprehensive examination must be passed in the senior year.

HONORS. For admission to candidacy for Honors in sociology a student must have obtained a grade of B or better in the introductory course; and

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must have a general average in the University of at least 3.0. All programs must be approved by the Honors advisor for the Department.

The Honors program will comprise, in addition to the introductory course, at least ten semester courses in sociology including, in addition to the concentration requirements, Sociology 196 and 191, 192 to be taken during the seventh and eighth semesters. Course 191, 192 includes the preparation of a thesis on a selected topic within the student's special field of interest. An Honors examination, written and oral, must be passed in the eighth semester.

DI. *Social Groups and Social Change*

An analysis of human groups and social relations and an examination of the processes and consequences of social change. May be taken to satisfy the distribution requirement in sociology under the Social Studies. Lecture and discussion meetings. Mr. MAYER (I) and Mr. PFAUTZ (II).

IC 1, 2. *Man and Society*

An orientation to the nature of society and of interpersonal relations. Society is viewed first (Semester I) as a population whose form and distribution influence the lives of individuals; and second (Semester II) as a series of relationships among men based upon communication and some degree of consensus. Critical examination is made of Malthus' *Essay on Population* (Semester I) and of the collected writings of Georg Simmel (Semester II). Mr. WHITNEY (I) and Mr. MAYER (II).

105. *The Community*

Human ecology and interpersonal relations in a community setting. Country, city, and region as social structures and human environments. Mr. SCHNORE.

106. *The Family*

The structure and functioning of the family in various cultures, its relation to other social institutions, and its part in social change. The family as a primary group; an analysis of status and roles of the family members, personal development in the family, conflict and cooperation in family relationships. No prerequisite for students in Semesters VI, VII, and VIII. Mr. SCHNORE.

111. *Methods of Social Research*

A beginning survey of the principal research methods employed in the social sciences, especially in sociology. Evaluation of existing research; exercises and projects. No prerequisites for students in Semesters VI, VII, and VIII. Mr. GRIGG.

120. *Culture and Personality*

The general significance of culture and interaction for an understanding of personality; the relation between variation in social structure and variation in personality type. Mr. PFAUTZ.

125. *Population and Migration*

An analysis of the causes and consequences of major population trends throughout the world; of changes in birth and death rates; and of the mobility and migration of peoples. Attention is given to population in relation to economic systems, international relations, and war. No prerequisites for students in Semesters VI, VII, and VIII. Mr. SCHNORE.

127. *Races and Minority Groups*

A study of the concept *race* and the sociology of minority relations. Negro-white relations in the United States relative to the phenomena of discrimination and prejudice. No prerequisites for students in Semesters VI, VII, and VIII. Mr. PFAUTZ.

137. *Social Organization*

A detailed consideration of the nature of social structure, types of social relationships and societies, and the problem of social order. Mr. PFAUTZ.

138. *Social and Personal Disorganization*

An examination of the concepts of social and personal disorganization; a study of some of the major forms of social disorganization and their relation to personal disorganization. Mr. GRIGG.

139. *Social Classes*

The division of society into castes, estates, and classes, and its consequences in terms of the distribution of power. Patterns of stratification in various parts of the world. Analysis of significant empirical studies of the American stratification system. The relation of ethnic groups to the class structure. No prerequisites for students in Semesters VI, VII, and VIII. Mr. MAYER.

148. *Collective Behavior*

An analysis of crowds, publics, and social movements; public opinion, propaganda, and communication agencies and their function in modern society. Mr. PFAUTZ.

180. *A Sociological Analysis of American Life*

An analysis of various aspects of contemporary American life on the basis of sociological principles and concepts. Open only by permission of the instructor. Mr. WHITNEY.

SOCIOLOGY

182. *Sociological Theory*

A systematic study of writings of importance in the development of sociological thought; emphasis is placed upon contributions to conceptual frames of analysis and to their place in research. Mr. SCHNORE.

191, 192. *Individual Research Project*

Intensive supervised reading, ordinarily culminating in a research project. A specific program will be arranged in terms of the student's individual needs and interests. Required of all students who are candidates for Honors in sociology; open to others only by written consent of the chairman of the department. The STAFF.

196. *Process and Analysis in Social Research*

A seminar examination of the research process utilizing scientific method; analysis and use of the more important techniques employed in social science research, with emphasis upon sociological materials; critical examination of research monographs. A research topic will be formulated and investigated by each student. Open to graduate students; and to senior students who have completed Sociology 111 or its equivalent. Mr. GRIGG.

198. *Senior Conference: Principles of Sociology*

An intensive consideration of the principles and major concepts of sociology. Required of all concentrators in their senior year. Not open to others except by written permission of the chairman of the department. The STAFF.

PRIMARILY FOR GRADUATE STUDENTS

201. *Seminar on Social Organization*

Topic for 1954-55: Small Groups. Mr. GRIGG.

202. *Seminar on Population and Ecology*

Topic for 1954-55: Mobility and Migration. Mr. WHITNEY.

205. *Seminar on the Sociological Aspects of Contemporary Institutions*

291, 292. *Reading and Research*

Work with individual students in connection with special reading, research, or preparation of theses. The course program will be suited to the requirements of the student. Intensive study of theory, data, and research methods (stressing one of these) may ordinarily be undertaken in any field in which courses are offered by the Department and in a number of others, for example, Regional Sociology, The Sociology of Knowledge, and Communication. The STAFF

Courses of Instruction Offered in 1954-1955

RECITATION AND EXAMINATION GROUPS

The figure in parenthesis at the right of the letter giving the recitation group of the course indicates the number of its examination group. A student may take only one course in a given examination group. "Arr." means "Hours to be arranged."

LIST OF RECITATION GROUPS

Group A:	8 A.M.—Mon., Wed., Fri.	Group H:	11 A.M.—Tue., Thur., Sat.
Group B:	8 A.M.—Tue., Thur., Sat.	Group I:	1:10 P.M.—Mon., Wed., Fri.
Group C:	9 A.M.—Mon., Wed., Fri.	Group J:	2:10 P.M.—Mon., Wed., Fri.
Group D:	9 A.M.—Tue., Thur., Sat.	Group K:	3:10 P.M.—Mon., Wed., Fri.
Group E:	10 A.M.—Mon., Wed., Fri.	Group L:	4:10 P.M.—Mon., Wed., Fri.
Group F:	10 A.M.—Tue., Thur., Sat.	Group M:	5:10 P.M.—Mon., Wed., Fri.
Group G:	11 A.M.—Mon., Wed., Fri.		

For schedule of recitation groups arranged according to hours see inside of back cover.

Department and Course Number	Semester I	Semester II
AMERICAN CIVILIZATION		
191	Arr.	Arr.
192	—	Arr.
201, 202	Arr.	Arr.
APPLIED MATHEMATICS		
25, 26	C (Arr.)	C (Arr.)
203, 204	J (Arr.)	J (Arr.)
205, 206	I (Arr.)	I (Arr.)
207, 208	H (Arr.)	H (Arr.)
211, 212	F (Arr.)	F (Arr.)
213, 214	F (Arr.)	F (Arr.)
223, 224	D (Arr.)	D (Arr.)
225	G (Arr.)	—
232	—	G (Arr.)
233, 234	E (Arr.)	E (Arr.)
235	G (Arr.)	—
241, 242	C (Arr.)	C (Arr.)
245, 246	E (Arr.)	E (Arr.)
262	—	G (Arr.)
281, 282	Arr.	Arr.
291, 292	Arr.	Arr.

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number	Semester I	Semester II
ART		
D1	F or H (15)	F, G, or H (15)
IC 1-2	C, E, or I (16)	C, E, or I (16)
6	D (6)	—
7	—	D (6)
8	G (9)	—
21-22	Mon. 2:10-5:10 and Wed. 1:10-3:10 or Tues. 2:10- 5:10 and Wed. 3:10-5:10	Mon. 2:10-5:10 and Wed. 1:10-3:10 or Tues. 2:10- 5:10 and Wed. 3:10-5:10
108	Wed. 7:30-9 p.m. and Thur. 4:30-6:00 p.m.	—
117	G (9)	—
118	—	G (9)
121	—	Thur. and Fri. 1:10-5:10
191	Arr.	Arr.
195	Arr.	—
196	—	Arr.

At Rhode Island School
of Design

31, 32	Mon. through Thur. 1:30-4 . .	Mon. through Thur. 1:30-4
33	Arr.	—
34	—	Arr.
133	Arr.	—
134	—	Arr.

ASTRONOMY

D1	—	E (7)
1	C (5)	—
2	—	C (5)
17	Arr.	—
173-174	Arr.	Arr.

BIBLICAL LITERATURE

D1	E (7)	E (7)
1	G (9)	—
2	—	G (9)
4	I (11)	—
5	—	Mon. 2:10-4:10 (17)
103, 104	Arr.	Arr.
111	E (7)	—
112	—	E (7)
151, 152	Arr.	Arr.
153, 154	Arr.	Arr.
171	—	Arr. (17)
198	Arr. (12)	Arr. (12)
209, 210	Arr. (17)	Arr. (17)

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
BIOLOGY		
DI	A or B (14) Lab. Mon., Tue., Wed., or Thur. 1:30-4:30	A or B (14) Lab. Mon., Tue., or Wed. 1:30-4:30
IC 1-2	Mon., Tues., or Wed. 1:10- 5:10 (14)	Mon., Tues., or Wed. 1:10- 5:10 (14)
4	—	G (9) Lab. Thur. or Fri. 1:30-4:30
5	B (4) Lab. Mon., Tue., or Wed. . . 1:30-4:30	—
6	—	B (4) Lab. Wed. or Thur. 1:30-4:30
7	D (6) Lab. Tue. or Thur. 1:30-4:30	—
8	—	D (6) Lab. Mon., Tue., or Thur. 1:30-4:30
10	—	A (3) Lab. Wed., Thur., or Fri. 1:30-4:30
15	G (9) Lab. Mon., Tue., or Wed. 1:30-4:30	—
20 (Pembroke).	—	Arr. (16)
103-104	E (7)	E (7)
108	—	D (6)
121	H (10) Lab. Tue. or Thur. 1:30-4:30	—
122	—	H (10) Lab. Mon. or Tue. 1:30-4:30
152	—	G (9) Lab. Mon. or Tue. 1:30-4:30
195	Arr.	Arr.
205	Arr.	—
206	—	Arr.
223, 224	Arr.	Arr.
251, 252	Arr.	Arr.

BOTANY

4	—	C (5) Lab. Wed. or Thur. 2:10-5:10
9	H (10) Lab. Wed. and Fri. 2:10-5:10 (first 8 weeks only)	—
105	Arr.	—
106	—	Arr.

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number	Semester I	Semester II
BOTANY (<i>cont'd</i>)		
111	—	Arr. (17)
121	Arr. (18)	—
197	Arr.	Arr.
221, 222	Arr.	Arr.
231, 232	Arr.	Arr.
291, 292	Arr.	Arr.
CHEMISTRY		
D1	C (5) Lab. Mon. 1:10-5:10	—
D2	—	C (5) Lab. Mon. 1:10-5:10
5	D (6) Lab. Tue. or Thur. 1:10-5:10	—
9	H (10) Rec. Mon., Wed., or Fri. at 8. Lab. Wed. or Fri. 1:10-5:10	—
11, 12.	E (7) Rec. Tue. at 1:10 Lab. Tue. and Thur. 2:10-5:10	E (7) Rec. Tue. at 1:10 Lab. Tue. and Thur. 2:10-5:10
13-14	D (6) Lab. Mon. 2:10-5:10 and Wed. 1:10-5:10	D (6) Lab. Mon. 2:10-5:10 and Wed. 1:10-5:10
16	—	E (7) Lab. Thur. 1:10-6:10
17, 18	F (8) Rec. 1 hr. arr. Lab. Tue. and Thur. 1:10-5:10	F (8) Rec. 1 hr. arr. Lab. Tue. and Thur. 1:10-5:10
28	—	F (8) or H (10) ex. Sat. Lab. Mon. and Wed. 2:10-5:10
41	E (7) Lab. Fri. 1:10-6:10	—
42	—	E (7) Lab. Fri. 1:10-6:10
63-64	D (6) Lab. Wed. 1:10-6:10	D (6) Lab. Wed. 1:10-6:10
80	—	Fri. at 10
86	Arr.	Arr.
97-98	Arr.	Arr.
106	—	C (5) Lab. arr.
113-114	G (9) Lab. Fri. 1:10-5:10	G (9) Lab. Fri. 1:10-5:10
133	E (7) ex. Fri. Lab. Tue. and Thur. 1:10-5:10	—
134	—	E (7) ex. Fri. Lab. Tue. and Thur. 1:10-5:10

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
CHEMISTRY (cont'd)		
145	F (8) Lab. Mon. and Wed. 1:10-6:10	—
146	—	F (8)
151	H (10)	—
162	—	H (10)
201	Arr.	—
212	—	Arr.
241	Arr.	—
244	—	Arr.
263	Arr.	—
277, 278	Arr.	Arr.
281, 282	Tue. 7:30 p.m.	Tue. 7:30 p.m.
287, 288	Arr.	Arr.
291, 292	Arr.	Arr.
297, 298	Arr.	Arr.
CLASSICS		
D1	C (5)	—
D2	—	C (5)
IC 1, 2	F, G, or Tue. and Thur. at 11 and Fri. at 1:10 (15)	F, G, or Tue. and Thur. at 11 and Fri. at 1:10 (15)
IC 3, 4	D or G (15)	D or G (15)
D5	A (3)	—
D6	—	A (3)
61	E (7)	—
62	—	E (7)
117	G (9)	—
118	—	G (9)
141, 142	Arr.	Arr.
191	Arr.	Arr.
199	Arr.	Arr.
GREEK		
1, 2	G (9)	G (9)
5	Arr. (17)	—
6	—	Arr. (17)
125	Arr. (17)	—
126	—	Arr. (17)
191	Arr.	Arr.
199	Arr.	Arr.
LATIN		
5	I (17)	—
6	—	I (17)
11	G (9)	—
12	—	G (9)

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number	Semester I	Semester II
LATIN (<i>cont'd</i>)		
105	F (8) 3rd hr. arr.	—
106	—	F (8) 3rd hr. arr.
191	Arr.	Arr.
199	Arr.	Arr.
201	Arr.	—
202	—	Arr.
ECONOMICS		
D1	A, C, D, E, F, G, or H (15) . .	A, C, D, E, F, G, or H (15)
IC 1-2	Tue. and Thur. 8:30-9:50 or 10:00-11:20, or Mon. and Wed. 8:30-9:50 or 11:00- 12:20 (15)	Tue. and Thur. 8:30-9:50 or 10:00-11:20, or Mon. and Wed. 8:30-9:50 or 11:00- 12:20 (15)
71	D (6) Lab. Arr.	D (6) Lab. Arr.
91	F (8)	—
101, 102	C, E, G, or I (14)	C, E, or G (14)
104	—	F (8)
107	D (6)	—
111	G (9)	G (9)
118	—	H (10)
131	F (8)	F (8)
145	C (5)	C (5)
154	E (7)	E (7)
161	C (5)	C (5)
192	—	Arr.
193, 194	Arr.	Arr.
199	Arr.	Arr.
205, 206	Arr.	Arr.
214	—	Arr.
219	Arr.	—
232	—	Arr.
247	Arr.	—
257	Arr.	—
258	—	Arr.
261, 262	Arr.	Arr.
266	—	Arr.
272	—	Arr.
EDUCATION		
101	G (9)	E (7)
102	E (7)	G (9)
103	C (5) or G (9)	—
104	—	C (5) or G (9)
111, 112	Arr.	Arr.

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number	Semester I	Semester II
EDUCATION (cont'd)		
201	Wed. 4:10-6:10	—
202	—	Wed. 4:10-6:10
203	Thur. 4:10-6:10	—
204	—	Thur. 4:10-6:10
207, 208	Arr.	Arr.
211	Mon. 4:10-6:10	—
212	—	Mon. 4:10-6:10
215, 216	Arr.	Arr.
221, 222	Arr.	Arr.
EGYPTOLOGY		
120	—	Arr.
131, 132	Arr.	Arr.
201	Arr.	—
221	Arr.	—
241	Arr.	—
261	—	Arr.
281	—	Arr.
291, 292	Arr.	Arr.
ENGINEERING		
7	A (3)	—
	Rec. Tue., Thur., and Sat. at 9.	
	3 hr. lab. Arr.	
9-10	D (6) and Wed. at 8	D (6) and Wed. at 8
	Drafting period Mon. or Wed.	Drafting period Mon. or Wed.
	1:10-3:10	1:10-3:10
38	—	E (7)
		Comp. Mon., Wed., or Thur.
		1:10-3:10
		Lab. Mon., Wed., or Thur.
		1:10-5:10
39	C (17)	—
	Comp. Mon., Wed., or Fri.	
	1:10-3:10	
	Lab. Mon., Wed., or Fri.	
	1:10-5:10	
40	—	C (5)
		Lab. Mon., Tue., or Wed.
		2:10-5:10
52	—	Mon., Tue., Fri., and Sat. at 8
		(17)
		Comp. Mon., Wed., or Thur.
		1:10-3:10
		Lab. Mon., Wed., or Thur.
		1:10-5:10

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
ENGINEERING (cont'd)		
58	—	F (8) and Wed. at 8 Comp. Mon., Wed., or Thur. 1:10-3:10 Lab. Mon., Wed., or Thur. 1:10-5:10
59	A (3) Comp. Tue. and Thur. at 11.	—
71-72	D (6) Comp. Tue. or Thur. 2:10-4:10 Lab. Mon., Wed., or Fri. 2:10-5:10	D (6) Comp. Tue. or Thur. 2:10-4:10 Lab. Mon., Wed., or Fri. 2:10-5:10
118	—	H (10) and Fri. at 1:10
193	Arr.	—
Civil Engineering		
119	A (3) 1 hr. comp. arr.	—
130	—	B (4) Lab. Arr.
133, 134	C (5) Lab. Wed. 2:10-5:10	C (5) Lab. Wed. 2:10-5:10
137	Arr.	—
138	—	Arr.
Electrical Engineering		
157	C (5) Lab. Arr.	—
158	—	C (5) Lab. Arr.
161	G (9) Lab. Arr.	—
162	—	G (9) Lab. Arr.
164	—	D (6) Lab. Arr.
167	F (8) Lab. Arr.	—
168	—	F (8) Lab. Arr.
Mechanical Engineering		
171-172	F (8) Comp. Wed. 2:10-5:10	F (8) Comp. Wed. 2:10-5:10
173	E (7) Comp. arr.	—
174	—	E (7) Comp. Arr.
175-176	C (5) Draft and Comp. Thur. 2:10- 5:10	C (5) Draft and Comp. Thur. 2:10- 5:10

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
ENGINEERING (cont'd)		
178	—	G (9) Lab. Arr.
Aeronautical Engineering		
119	A (3) 1 hr. comp. arr.	—
187	H (10) Lab. Arr.	—
190	—	D (6) Lab. Arr.
192	—	Arr.
Primarily for Graduate Students		
207, 208	Arr.	Arr.
211	Arr.	—
212	—	Arr.
213	Arr.	—
214	—	Arr.
231, 232	Arr.	Arr.
251	Arr.	—
252	—	Arr.
273	Arr.	—
274	—	Arr.
291, 292	Arr.	Arr.
297, 298	Arr.	Arr.
ENGLISH		
1	A, B, C, D, E, F, G, H, or I (18)	I (18)
2	I (18)	E, F, G, H, or I (18)
IC 1-2	C, E, or G (2)	C, E, or G (2)
IC 3-4	C, E, or G (2)	C, E, or G (2)
3	I	I
4 (4e)	Arr.	Arr.
(4s)	Arr.	Arr.
5-6	Wed. 3:10-5:10	Wed. 3:10-5:10
7	F (8)	—
D15	C, D, E, F, G, or H (2)	C, D, E, F, G, or H (2)
D16	—	C, D, E, F, G, or H (2)
21	E, F, G, or H plus one hour arr. (18)	E, F, G, or H plus one hour arr. (18)
22	—	F (8) or H (10)
23-24	Mon. through Thur. 2:10-4:10	Mon. through Thur. 2:10-4:10
D28	C, D, E, F, G, or H (2)	—
29	C or E (2)	—
30	C or E (2)	C or E (2)
31	D (6)	—
32	—	D (6)
41-42	F or H (13)	F or H (13)
73-74	C (5)	C (5)

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
ENGLISH (cont'd)		
105-106	F (8)	F (8)
125-126	E (7)	E (7)
133-134	F (8)	F (8)
141-142	F (8)	F (8)
171	G (9)	G (9)
172	G (9)	G (9)
186	I (11)	—
187	—	I (11)
201, 202	Tue. 2:10-4:10; Fri. at 2:10	Tue. 2:10-4:10; Fri. at 2:10
203, 204	Mon. 2:10-4:10; Thur. at 4:10	Mon. 2:10-4:10; Thur. at 4:10
222	—	Tue. 2:10-4:10
247, 248	Thur. 2:10-4:10	Thur. 2:10-4:10
273, 274	Mon. 2:10-4:10	Mon. 2:10-4:10
279, 280	Wed. 4:10-6:10	Wed. 4:10-6:10
281	Thur. at 5:10	—
289, 290	Arr.	Arr.
291	Mon. 4:10-6:10	—
292	—	Mon. 4:10-6:10
293	Fri. 4:10-6:10.	—
294	—	Fri. 4:10-6:10
H1-2.	Arr.	Arr.
H3, 4.	Arr.	Arr.
H5-6.	Arr.	Arr.
H7-8.	Arr.	Arr.
H9-10	Arr.	Arr.

GEOLOGY

D1	—	C (5) Lab. Mon. or Tue. 2:10-5:10
1	E (7)	— Lab. Wed. or Thur. 2:10-5:10
2	—	E (7) Lab. Thur. 2:10-5:10
41	H (10)	— Lab. Arr.
42	—	H (10) ex. Sat. Lab. Arr.
105	G (9)	— Lab. Arr.
109	Arr. (14)	—
113	D (6).	— Lab. Arr.
117	F (8)	— Lab. Tue. 2:10-5:10
118	—	F (8) Lab. Wed. 2:10-5:10

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number	Semester I	Semester II
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GEOLOGY (cont'd)

123	Arr.	—
126	—	Arr.
191, 192	Arr.	Arr.
198	—	Arr.
209	Arr.	—
210	—	Arr.
211	Arr.	—
212	—	Arr.
243	Arr.	—
244	—	Arr.

HISTORY

D1, D2	G (9)	G (9)
IC 1, 2	C, D, G, or H (12)	C, D, G, or H (12)
51, 52	G (9)	G (9)
101, 102	J (12)	J (12)
107, 108	D (6)	D (6)
119, 120	C (5)	C (5)
141, 142	H (10)	H (10)
151	E (7)	—
152	—	E (7)
161, 162	D (6)	D (6)
173	—	I (11)
183, 184	F (8)	F (8)
186	—	H (10)
191, 192	Arr.	Arr.
201	Arr.	—
209	—	Arr.
241, 242	Arr.	Arr.
251	—	Arr.
289	Arr.	—
291, 292	Arr.	Arr.

HISTORY OF MATHEMATICS

211	Arr.	—
213	Arr.	—

LINGUISTICS

156	—	D (6)
251	—	Arr.

MATHEMATICS

D1	C (5), D (6), or H (10)	C (5), D (6), or H (10)
IC 1-2	E, F, G, or J (16)	E, F, G, or J (16)
2	C or D (16)	C, D, or H (16)
5N	C (5)	—

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and
Course Number

Semester I

Semester II

MATHEMATICS (cont'd)

9-10	E or G (16)	E or G (16)
	Lab. Sat. at 8: together with	Lab. Sat. at 8: together with
	Tue. and Thur. at 8 or at 11	Tue. and Thur. at 8 or at 11
21-22	H (10)	H (10)
29	E or G (16)	—
	Lab. Tue. and Thur. at 8, at 10,	
	or at 1:10; also Sat. at 8	
101-102	E (7)	E (7)
104	—	F (8)
105	C (5)	—
106	—	H (10)
108	—	C (5)
121-122	G (9)	G (9)
126	—	F (8)
151	F (8)	—
161	J (12)	—
171	D (6)	—
197	Arr.	Arr.
221, 222	C (5)	C (5)
225, 226	F (8)	F (8)
227, 228	F (8)	F (8)
237, 238	J (12)	J (12)
241, 242	J (12)	J (12)
251, 252	K (13)	K (13)
291, 292	Arr. (18)	Arr. (18)

MILITARY SCIENCE

NAVAL SCIENCE

(Laboratory in all courses, Mon., Wed., and Thur. 1:10-3:10)

101	A, C, D, E, or F (11)	—
102	—	A, C, D, E, or F (11)
201	A, C, D, or F (4)	—
202	—	A, C, D, or F (4)
301	—	C, D, or F (11)
301M	Arr.	—
302	A, C, or E (1)	—
302M	—	Arr.
401	C, D, or F (11)	A, C, or E (1)
401M	Arr.	—
402M	—	Arr.

AIR SCIENCE

(Laboratory in all courses, Tue. 1:10-3:10, or Wed. 3:10-5:10)

11	A or C (4)	—
12	—	A or C (4)

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
MILITARY SERVICE (cont'd)		
21	E or G (11)	—
22	—	E or G (11)
31	D or F (4)	—
32	—	D or F (4)
41	B or D (15)	—
42	—	B or D (15)
MODERN LANGUAGES		
FRENCH		
IC 1-2	C or D (1)	C or D (1)
IC 3-4	E (1)	E (1)
1-2	D (6) plus A, I, or J	D (6) plus A, I, or J
1R-2R	H (10)	H (10)
2	B, C, F, H, or I (1) and a 4th hour	J (1) and a 4th hour
3	C, D, E, F, G, or I (17) and a 4th hour	A, C, D, F, or I (17) and a 4th hour
4	H (17)	E, F, or H (17)
9	C (5) and a 4th hour arranged	H (10) and a 4th hour arranged
D11	—	E (16)
D11-D12	D, E, or G (1)	D, E, or G (1)
D12	J (16)	—
51	D (6) and a 4th hour arranged	D (6) and a 4th hour arranged
109	F (8)	—
110	—	G (9)
134	—	F (8)
141	C (5)	—
142	—	C (5)
170	—	Arr.
174	Arr.	—
191	—	Arr.
198	Arr.	Arr.
201	—	Arr.
214	—	Arr.
221	Arr.	—
238	Arr.	—
239	—	Arr.
252	Arr.	—
291, 292	Arr.	Arr.
GERMAN		
1-2	H (10) plus A, I, or J	H (10) plus A, I, or J
1R-2R	C or D (16)	D (16)
2	I (1) and a 4th hour	—
3	G or H (17) and a 4th hour	F (17) and a 4th hour
3S	A (3) plus 2 hrs. arr.	—

COURSES OF INSTRUCTION OFFERED IN 1954-1955

Department and Course Number

Semester I

Semester II

GERMAN (*cont'd*)

4	E (17)	E (17)
9	—	F (8) and a 4th hour
D11	—	E (7)
D12	E (7)	—
29	F (8)	—
30	—	F (8)
121	—	C (5)
124	G (9)	—
143	Arr.	—
144	—	Arr.
154	—	Arr.
198	—	Arr.
212	—	Arr.
226	—	Arr.
231	Arr.	—
291, 292	Arr.	Arr.

ITALIAN

1-2	D (6) and a 4th hour	D (6) and a 4th hour
3	G (17) and a 4th hour	—
4	—	G (17)
133, 134	Arr.	Arr.
155, 156	Arr.	Arr.
198	—	Arr.
215, 216	Arr.	Arr.

RUSSIAN

1-2	C (5) plus 2 hrs. arr.	C (5) plus 2 hrs. arr.
3	Arr.	—
4	—	Arr.
29	D (6)	—
30	—	D (6)
191, 192	Arr.	Arr.
291, 292	Arr.	Arr.

SPANISH

IC 1-2	E (1)	E (1)
IC 3-4	F (1)	F (1)
1-2	F (8) plus A, I, or J	F (8) plus A, I, or J
2	C, E, H, or I (1) and a 4th hour	A (1) and a 4th hour
3	D, G, or H (17) and a 4th hour	D, F, or G (17) and a 4th hour
4	A (17)	C or H (17)
9	F (8) and a 4th hour	—
D11	—	E (7)
D12	E (7)	—
51	—	F (8)

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
SPANISH (cont'd)		
107, 108	E (7)	E (7)
120	Arr.	—
121	Arr.	—
141	—	Arr.
152	G (9)	—
170	—	Arr.
198	—	Arr.
219	Arr.	—
221	—	Arr.
223	Arr.	Arr.
231	—	Arr.
291, 292	Arr.	Arr.
MUSIC		
D1	C (5)	C (5)
3	H (10)	—
15-16	E (7)	E (7)
17	G (9)	—
18	—	G (9)
51 through 58	Arr.	Arr.
71	Arr.	—
105	—	H (10)
119	Mon. and Thur. at 1:10	—
120	—	Mon. and Thur. at 1:10
131	Arr.	—
132	—	Arr.
191, 192	Arr.	Arr.
197, 198	Arr.	Arr.
291, 292	Arr.	Arr.
PHILOSOPHY		
D1	C, D, or F (13)	—
D2	—	C, D, or F (13)
IC 1, 2	C, D, E, G or H (13)	D, G, or H or Mon., 1:10-4:10 or Wed., 2:10-5:10 (13)
55	D (6)	—
58	—	D (6)
61	G (9)	—
101	H (10)	—
102	—	H(10)
122	—	F (8)
125	I (11)	—
151	J (12)	—
191	Arr.	Arr.
201	Arr.	Arr.
203	Arr.	Arr.

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
PHILOSOPHY (<i>cont'd</i>)		
206	—	Arr.
207	Arr.	—
208	—	Arr.
PHYSICS		
D1	C, G, or I (15) Lab. and conf. Arr.	—
2	—	C (5) Lab. and conf. arr.
3, 4	F (8) Lab. arr..	F (8) Lab. arr.
37	C (5) 2-two hr. labs. arr.	—
38	—	F (8) 2 hr. conf. arr.
61	G (9) Lab. Arr.	—
62	—	G (9) Lab. Arr.
111	E (7) Lab. Arr.	—
114	—	E (7) 3 hr. lab. arr.
115	Arr.	—
116	—	Arr.
117	Arr.	—
121	F (8) Lab. Arr.	—
122	—	G (9) Lab. Arr.
125	E (7)	—
128	—	Arr.
198	Arr.	Arr.
199	Arr.	—
201, 202	Arr.	Arr.
203, 204	D (6) and Wed. and Fri. at 12	D (6) and Wed. and Fri. at 12
208	—	Arr.
211, 212	Arr.	Arr
215, 216	Arr.	Arr.
223, 224	Wed. at 4:10	Wed. at 4:10
POLITICAL SCIENCE		
D1	H (10)	H (10)
IC 1, 2	C, D, E, or H (1)	C, D, E, or H (1)
103	F (8)	—
104	—	F (8)
105	E (7)	—
106	—	E (7)

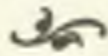
COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
POLITICAL SCIENCE (cont'd)		
107	G (9)	—
109	G (9)	—
110	—	G (9)
111	—	G (9)
115	E (7)	—
116	—	E (7)
117	D (6)	—
118	—	D (6)
120	—	Arr.
122	F (8)	—
124	—	C (5)
191	Arr.	—
192	—	Arr.
201	—	Arr.
203	Arr.	—
205	Arr.	—
206	—	Arr.
209, 210	Arr.	Arr.
PSYCHOLOGY		
D1	D or F (14) Lab. Tue., Thur., or Fri. 1:10-3:10; Tue. or Thur. 3:30-5:30	D or F (14) Lab. Tue., Wed., Thur., or Fri. 1:10-3:10; Tue. or Thur. 3:30-5:30
IC 1-2	Tue., Wed., or Thur. 10-12, or Fri. 9-11 (14) Lab. Mon. 1:10-3:10 or 3:30-5:30	Tue., Wed., or Thur. 10-12, or Fri. 9-11 (14) Lab. Mon. 1:10-3:10 or 3:30-5:30
6	—	C (5)
81	D (6)	—
101	E (7) Lab. Tue. or Wed. 2:10-4:10	—
104	—	A (3)
105	G (9) Lab. Mon. or Thur. 2:10-5:10	—
106	—	G (9) Lab. Mon. or Thur. 2:10-5:10
107	C (5)	—
111	Tue. 2:10-4:10 (18)	—
112	—	D (6)
134	—	Mon. 2:10-4:10 and Thur. 2:10-5:10 (16)
198	—	Arr.
199	Arr.	Arr.
203	Arr.	Arr.
208	Arr.	—

COURSES OF INSTRUCTION OFFERED IN 1954-1955

<i>Department and Course Number</i>	<i>Semester I</i>	<i>Semester II</i>
PSYCHOLOGY (cont'd)		
212	—	Arr.
213	—	Arr.
228	—	Arr.
229	Arr.	—
231	Tue. 2:10-4:10	—
SOCIOLOGY		
D1	C (5)	C (5)
IC 1, 2	C, G, or J (13).	C, G, or J (13)
105	C (5)	—
106	—	K (12)
111	Tue. and Thur. 1:10-2:40	—
125	G (9)	—
127	A (3)	—
137	E (7)	—
138	—	C (5)
139	J (12)	—
148	—	F (8)
180	—	Tue. and Thur. 2:10-3:40
182	—	I (11)
191	Arr.	Arr.
196	—	Mon. 2:10-4:40
198	—	Tue. or Thur. 7:00-10:00 p.m.
201	Arr.	—
202	—	Wed. 2:10-4:40
291	Arr.	Arr

Student Life and Organizations



Chapel

A chapel service is held in Sayles Hall on Wednesday, Thursday, and Friday at noon. These services, directed by the Chaplain of the University, recognize the unique values of corporate worship in a university community and are intended to enrich the moral and religious life of the University.

The Chapel Choir sings daily under the leadership of the Director of Chapel Music. Each student is required to attend once a week.

The Brown Christian Association

The Brown Christian Association, founded in 1802, is a voluntary religious society. The purpose of the Brown Christian Association is to lead men to God through faith in Jesus Christ. It bases its program on worship, fellowship, study, and social action; and it welcomes the participation of men of all faiths and of those without church affiliation who wish to take part in any phase of its program. Membership is open to those who accept the purpose of the Association and wish to participate actively in its program.

The program is planned and directed by a cabinet of undergraduates with the aid of a Graduate Advisory Committee. It seeks to meet some of the social and religious needs of the campus and community through several commissions. These are concerned with Christian faith and heritage, work with overseas students, international and domestic problems, and a special program for freshmen, including the Freshman Handbook, Bear Facts. Together with Faunce House, it conducts the annual Freshman Week. The community program includes work projects in a blighted area, Christmas parties for underprivileged children, and Boys' Club leadership. The annual Brown Religious Embassy is a combined effort on the part of the three major faiths to present a significant program at the beginning of the second term. This program is made possible by undergraduate contributions raised annually through the Brown Charities Fund Drive.

STUDENT LIFE AND ORGANIZATIONS

Dining Rooms

Brown University operates the Dining Rooms for the accommodation of students and other members of the University Community. They include on the main campus the Sharpe Refectory, the Coffee Lounge in Faunce House; also the Gate and Andrews Hall Dining Room on the campus of Pembroke College.

All students living in the College dormitories have their meals in the Sharpe Refectory on a room and board arrangement. Students who do not live on campus have their lunches or dinners with the resident students on a special board plan, unless they have special permission from the Dean for other arrangements.

Student Residences

The College provides living quarters for undergraduates in Adams House, Ames House, Caswell Hall, Edwards House, Hegeman Hall, Hope College, Horace Mann House, Judson House, Littlefield Hall, Maxcy Hall, and Slater Hall, all of which are on or very near the campus, and in the Quadrangle, which includes nine dormitories (Buxton, Chapin, Diman, Goddard, Harkness, Marcy, Olney, Sears and Wayland Houses) and seventeen national fraternities. The fraternities are: Alpha Delta Phi, Beta Theta Pi, Delta Kappa Epsilon, Delta Phi, Delta Tau Delta, Delta Upsilon, Kappa Sigma, Lambda Chi Alpha, Phi Delta Theta, Phi Gamma Delta, Phi Kappa Psi, Pi Lambda Phi, Psi Upsilon, Sigma Chi, Sigma Nu, Theta Delta Chi, and Zeta Psi. The Quadrangle, dedicated in 1952, is located just south of the main campus and is traditional Georgian-Colonial in architectural style. Each dormitory and fraternity house in it is provided with a lounge room and a game room.

It is a University rule that all students who do not live with their parents or guardians must live in dormitories or fraternity houses unless excused by the Dean.

Accommodations are of three types—suites for three, double rooms, and singles. Each student is provided with a bed, including a mattress, pillow, and bed linens, a chest of drawers, a desk, a desk chair, and a lounge chair. Bed linens (sheets and pillow cases) are laundered by the University. Blankets, desk lamps, and curtains are not provided by the University. Each student is responsible for damages to his room and furnishings beyond ordinary wear. Sub-rental of rooms is not permitted.

The University is not responsible for loss of students' personal property. Adequate insurance coverage is advised for each individual.

The University housing accommodations are under the direction of the Office of Student Residences.

STUDENT LIFE AND ORGANIZATIONS

Faunce House

Faunce House is the headquarters for the social and recreational activities of undergraduate men and for student organizations. The building was erected and equipped by the generous gifts of Mr. John D. Rockefeller, Jr., of the class of 1897 and, at his request, it was named in memory of the late Dr. William Herbert Perry Faunce, President of Brown University. In Faunce House are numerous offices and service facilities; the offices of the Brown Christian Association, the offices and working quarters of student organizations, fountain service in the Coffee Lounge, the Theater, Central Post Office, the Art Gallery, and the study of the Chaplain of the University. The immediate administration of Faunce House is delegated to the Director of Faunce House.

The Faunce House Theater offers ample facilities for the dramatic productions of Sock and Buskin and other undergraduate dramatic organizations, and for the showing of motion pictures. It is also used for concerts and lectures.

Faunce House is designed to provide undergraduate men with facilities for the social and recreational activities essential to a well-rounded college life. Assisting in this objective is the Faunce House Advisory Board which includes representatives from the corporation, faculty, alumni, and undergraduates.

Faunce House maintains reading rooms and lounging rooms; it operates a bookstore, a billiard room, a barbershop, a post office, facilities for table tennis, dark rooms, a sign and poster service, and other service units; it provides space for formal or informal meetings of student groups; and it encourages and facilitates social contacts through receptions for the students and the faculty, concerts, dances, tournaments, movies, and other social events.

All communications regarding Faunce House should be addressed to the Office of the Director.

Picture Lending Library

The Picture Lending Library was founded in 1933 and endowed in 1937 as the William Carey Poland Memorial Collection. From the funds available more than eight hundred pictures, representative of all periods, techniques, and "schools," have been acquired and may be borrowed by the students for their rooms at a nominal cost. This Picture Lending Library is under the auspices of Faunce House. At the beginning of each semester the pictures in the collection are placed on display in the Faunce House Art Gallery.

STUDENT LIFE AND ORGANIZATIONS

Student Recreation

All Freshmen are required to attend classes in Student Recreation twice a week during the freshman year unless excused by the University Health Department. Veterans may be excused from this requirement if they have completed basic training. All students must report for the Swimming Test. The Student Recreation requirements are as follows:

- 1) To be able to swim 100 yards.
- 2) To take a series of physical tests.
- 3) To take a body mechanics or posture test.

All students in Student Recreation engage in a Sports and Recreational Program. This program includes team and individual sports and games, many with carry-over possibilities, under close supervision and instruction.

Members of intercollegiate athletic squads may, during the sport season, substitute attendance at practices, but, at the end of the season, or if they leave a squad during the season, they must report again for classes.

The Swimming Test is given during the registration period and regular periods for Student Recreation classes are assigned at that time. Special corrective classes are provided under the direction of the University Health Department for students with remediable physical defects.

Intramural Athletics

Intramural athletics are voluntary and include fraternity and club-dormitory leagues in badminton, basketball, foul shooting, handball, horse-shoes, paddle tennis, sailing, softball, squash, swimming, tennis, touch-football, track, volley ball, and wrestling. College championships are held in each of the above sports. Interclass competition between freshman and sophomore classes is conducted for the Brown Jug trophy.

Intercollegiate Athletics

Intercollegiate athletics are under the management of the Director of Athletics and the Brown University Athletic Advisory Council. The Faculty Committee on Student Organizations determines the eligibility of the members of the various teams. Varsity and freshman teams are maintained in the following sports: baseball, basketball, cross country, track, football, hockey, soccer, swimming, tennis, and wrestling. A varsity team is maintained in golf.

Undergraduate Organizations

Fraternities, dormitories, class organizations, and extra-curricular student activities are under the general supervision of the Office of the Dean of Students.

STUDENT LIFE AND ORGANIZATIONS

The Committee on Student Organizations determines, for the University, minimum eligibility requirements for membership in the more than one hundred student organizations and fraternities. This Committee, jointly with the Cammarian Club, also determines the status of both existing and proposed student organizations.

For further information on student activities and fraternities see the Brown University bulletins: "General Information Regarding Admission to the College" and "Student Life at Brown."

University Health Service

CHARLES J. HUTCHINSON, M.D., *Director*

STAFF OF ANDREWS HOUSE

HENRY H. BABCOCK, M.D., *Psychiatrist*

G. EDWARD CRANE, M.D., *Athletic Surgeon*

JOHN S. DZIOB, M.D., *Surgeon*

CHARLES J. HUTCHINSON, M.D., *Physician*

THOMAS PERRY, JR., M.D., *Surgeon*

FRANCES F. S. KORAN, R.N., *Superintendent of Andrews House*

Medical Examinations

The Medical Staff of Andrews House, assisted by a group of medical specialists, gives complete medical tests to every new student during Freshmen week and appropriate follow-up examinations thereafter.

Every new student is required to present satisfactory evidence of successful vaccination against smallpox.

Medical Care in Andrews House

A student who is a house patient in Andrews House will receive medical care, nursing care, and board without charge for a period not exceeding fourteen days during the academic year. A student who is an outpatient at Andrews House for illness will receive medical care without charge. The Athletic Surgeon cares for students participating in intercollegiate athletics and sports.

General Hospital Care

When it is necessary to transfer a student to the Rhode Island Hospital or to the Charles V. Chapin Hospital for special care, a member of the Andrews House Staff may so recommend, and the Superintendent of Andrews House will make the arrangements.

STUDENT LIFE AND ORGANIZATIONS

Charges

No fees will be charged by members of the Medical Staff for professional services to students, unless the medical care is given in a hospital or a private home.

If a student is a house patient in Andrews House for more than fourteen days during any one academic year, he will be charged by the University at the rate of \$5 for each extra day.

If a member of the Medical Staff is called to Andrews House or to a dormitory or fraternity house for the medical care of a student between the hours of 6 p.m. and 8 a.m., the University may make a charge of \$10 for such services.

If a specialist, other than one on the Medical Staff at Andrews House, is needed, the arrangement between the specialist and the student is private, and the financial responsibility is the student's.

Every bill submitted to a student by a member of the Medical Staff is to be sent through Andrews House.

Students Participating in Intercollegiate Athletics

Special provisions have been made by the University for the medical examination and care, by the Athletic Surgeon, of students participating in intercollegiate athletics.

Graduate School



DETAILED INFORMATION concerning the Graduate School (admission, requirements for degrees, fellowships, etc.) will be found in the Catalog of the Graduate School, which may be obtained by writing to the Registrar of the Graduate School.

It is the aim of the Graduate School to serve the needs of men and women of college training who desire a broader and deeper acquaintance with the ideals and methods of modern scholarship and research. It seeks to give its students a discipline that will equip them not only to pass on to others the accumulated treasures of the world's knowledge, but also to increase that store. It offers programs of study leading to the degree of Master of Arts or Master of Science in nearly all departments. It also offers opportunities for study leading to the doctorate in approximately half of the departments. Instruction is offered and the master's degree and the doctorate are awarded in American Civilization and in Applied Mathematics. Work in Egyptology is being developed.

The Graduate School is administered by the Faculty of the University which delegates certain of its powers to the Graduate Council. The Council consists of the President, the Provost, and the Dean of the Graduate School, *ex-officiis*, and six members elected annually.

Graduate work was formally established in 1887, although before that time requests for graduate instruction had been received and met in part. During the following years graduate work increased in quality and importance and in 1927 the Corporation established the Graduate School to take care of the need for a more formal organization. In 1929 a limitation was set to the number of students to be admitted.

Graduate courses in Engineering are offered in the late afternoon and evening. Individual courses may be selected or a program leading to the degree of Master of Science or Master of Engineering may be worked out with the Division of Engineering and the Graduate School.

Admission and Fees

Because the number of students that Brown University is prepared to admit to its Graduate School is set at a definite figure, both according to departments and in the total, only a portion of those applicants meeting the formal requirements, as stated below, can be admitted. In this selection

GRADUATE SCHOOL

the ability to do graduate work of a high quality will be the main criterion. As a general rule, a person is accepted as a candidate for a degree only if he stood in the upper third of his class as an undergraduate; exceptions are made only under special circumstances.

Subject to the above limitation of numbers and selection, the following classes of students can be admitted to the Graduate School:

(1) Students who have received the bachelor's degree from Brown University, or from a college of liberal arts and sciences or a college of engineering whose requirements for the degree are substantially equivalent.

(2) Students who have received the bachelor's degree from a college whose requirements for the degree have been evaluated by the Graduate Council as less than one year short of the requirements at Brown University. Such a student must make up the deficiency in his undergraduate training before he can be accepted as a candidate for an advanced degree.

A student seeking admission should make application at as early a date as possible. He should obtain from the Registrar of the Graduate School an application blank to be filled out and returned together with an official transcript of his undergraduate record, transcripts of record of any graduate work done, and two letters of recommendation from professors in the field in which graduate work is contemplated.

The tuition fee in the Graduate School is \$260 for a full semester of work. For part-time work the charge is in proportion.

Requirements for Degrees

Candidates for the masters' degrees are accepted in almost all departments of the University, but admission to the Graduate School does not imply acceptance as a candidate. The ordinary requirement for a master's degree (A.M., Sc.M.) for a graduate of an approved college, who is well prepared in his special subject, consists of eight semester courses in advanced work and the preparation of a thesis or report. The program of study, whether it lies in one department or in a group of departments, must represent some definite aim. Ordinarily at least one-half of the student's work must be done in one department. A reading knowledge of French or German is required.

Candidates for the doctor's degree are accepted only in such departments as are adequately equipped for such work. The requirements for the degree of Doctor of Philosophy are qualitative rather than quantitative, and no definite statement of the time necessary for obtaining the degree can be made, but in no case will the degree be granted for less than the equivalent of three years of graduate study (or twenty-four semester courses including the thesis). The student must devote at least one year exclusively to work

in residence at Brown University. Final acceptance for the degree takes place only after the successful completion of the language examinations and the preliminary examination, which is designed to test the student's mastery of his field of study and is ordinarily held not earlier than toward the close of the second year of work. The candidate must present a thesis on a topic related to his major subject, which shall embody the results of original research and give evidence of high scholarship. He must also pass a final examination conducted by the Dean of the Graduate School or his representative, the officers of professorial rank in the departments concerned, and such other members of the Faculty as may be appointed.

Fellowships, Scholarships, and Assistantships

Fellowships are designed for those who have already demonstrated capacity of a high order for graduate study and the larger ones are assigned to persons who have had at least the equivalent of one full year of graduate work. Preference is given to those who plan to proceed to the doctorate. Scholarships are available for first-year students whose undergraduate records in their chosen fields are exceptionally good. Fellowships and scholarships are in general open to men and women alike. Two fellowships are designated especially for award to members of the graduating class at Brown University. Several post-doctoral fellowships are open to persons with Brown University degrees. Supplements to Veterans' grants are in some cases available.

About \$60,000 is available annually for fellowships and scholarships. Fellowships range in value from \$600 up. Scholarships cover the tuition fee and sometimes there is a small additional stipend.

There is \$1500 available annually for scholarships for students from the University of Texas, Baylor University, William Jewell College, and Hardin-Simmons University.

In most departments appointments as assistants, teaching associates, or half-time instructors, which enable the holders to study part time, are available. Appointees teach half time, assist in laboratories, read papers, or help in the departmental libraries; the remuneration depends upon the amount of assistance rendered.

Official forms for applications may be obtained from the Registrar of the Graduate School; no application will be considered unless made on this form.

Pembroke College in Brown University



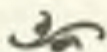
PEMBROKE COLLEGE is the undergraduate college for women in Brown University and offers the same courses of study under the same faculty and the same degrees which the University offers to undergraduate men. A Junior year of study in American Civilization is open to a limited number of well qualified women undergraduates who have completed their sophomore year in accredited colleges or universities located outside the New England area.

As a coordinate college within Brown University, Pembroke College is under the control of the Corporation and general Administration of the University, but the immediate direction and supervision are vested in the Dean of Pembroke College. The Faculty of Brown University is responsible for instruction in Pembroke College as well as in the College for men and in the Graduate School which offers courses to both men and women. The college has a campus of its own and the distinct extracurricular and social life of a separate college.

Pembroke College was organized as The Women's College in Brown University in 1891 and the first women received their degrees in 1894. Pembroke Hall, which now contains offices of administration, classrooms, and the Pembroke College Library, was built in 1897. In 1928 the name of the college was changed to "Pembroke College in Brown University." The campus is an eighth of a mile from the University campus and the buildings at present include, in addition to Pembroke Hall, Alumnae Hall, Sayles Gymnasium, a center for non-resident students, a health center, a field house, and twelve residence halls: East Andrews Hall, West Andrews Hall, Miller Hall, Metcalf Hall, Bates House, Mary Woolley House, Allison House, Angell House, King House, Sharpe House, Snow House, and Whittier House.

Catalogs of Pembroke College may be obtained from the Dean of Admission of Pembroke College in Brown University. Requests for information not contained in this catalog, or in the bulletins, should be addressed to the Dean of Pembroke College in Brown University.

The University Libraries



ADMINISTRATION

DAVID ALONZO JONAH, Sc.M., *Librarian*

CHRISTINE DROWNE HATHAWAY, *Administrative Assistant*

REFERENCE AND CIRCULATION

HARRY GLENN BROWN, A.M., M.A. in L.S., *Supervisor of Readers' Service*

JOHN GEORGE BUEHLER, A.B., M.S., *Reference Assistant*

HELEN THOMPSON, A.B., *Head of Circulation Department*

WINFIELD SCOTT KENNEDY, B.S., A.M., *In Charge, Humanities Reading Room*

DOROTHY DAY, A.B., B.L.S., *In Charge, Arthur M. Allen Reading Room*

PREPARATIONS DIVISION

KAY KIRLIN MOORE, A.B., B.S., *Head Cataloger*

HAROLD EDWIN CLARK, A.M., B.S., *Head of Order Department*

SPECIAL COLLECTIONS

MARION ELIZABETH BROWN, B.L.S., A.M., *In Charge*

SAMUEL FOSTER DAMON, A.M., *Curator of the Harris Collection*

WILLIAM EASTON LOUTTIT, JR., Ph.B., *Archivist*

BIOLOGICAL AND PHYSICAL SCIENCES LIBRARIES

MARGARET ELIZABETH DREWETT, A.M., *In Charge of Physical Sciences Library*

JOSEPHINE RUSSO CARSON, A.B., *In Charge of Biological Sciences Library*

PEMBROKE COLLEGE LIBRARY

CAROL MARY MORSE, A.B., *Acting In Charge*

University Library

The University Library, containing 807,000 bound volumes and adding fifteen to twenty thousand volumes each year, includes the John Hay Library, two divisional libraries, and the Pembroke College Library.

The Main Library building, erected in 1910 as a memorial to John Hay, of the class of 1858, and enlarged in 1939, houses the general collection of books, general reading rooms, divisional reading rooms and seminaries in

THE UNIVERSITY LIBRARIES

the Humanities and in History and Social Studies, and many special collections: Chambers Dante Collection, George Earl Church Collection on South America, Foster Horace Collection, Harris Collection of American Poetry and Plays, Lamont Library of English Literature, McLellan Lincoln Collection, Knight and Peltz Postage Stamp Collections, Bullard and Hoffman Napoleon Collections, Rider Collection of Rhode Island History, Edward North Robinson Collection on college athletics, Ward Library of Sociology and Paleobotany, Wheaton Collection of International Law, and others.

All these collections contain rare and unique materials in their specialties. The Harris Collection of American Poetry and Plays, the Knight Stamp Collection, and the McLellan Lincoln Collection are among the leading collections in the world in their respective subjects.

Divisional Libraries located in other buildings on the campus are as follows: Biological Sciences (biology, botany, psychology) in the Arnold Laboratory; Physical Sciences (astronomy, chemistry, geology, mathematics, physics, and the Corthell Library of Engineering) in the Metcalf Research Laboratory; and the Pembroke College Library.

John Carter Brown Library

LAWRENCE COUNSELMAN WROTH, A.B., LITT.D., L.H.D., *Librarian*

The John Carter Brown Library is a growing collection of about thirty thousand volumes relating to the history of North, South, and Central America. It was begun about 1846 by John Carter Brown of Providence and continued by his son, John Nicholas Brown, at whose death in 1900 it passed, with building and an endowment, into the possession of the University. Composed of source material printed before 1801, the collection bears in Europe and in America a deserved renown for completeness as well as for its possession of some of the most coveted individual treasures of Americana. A history of the Library with a guide to its collections has been published. Students of the University, under direction, and other accredited investigators have the privilege of using the collection. Exhibitions are announced in the University's *Weekly Bulletin*. The Associates of the John Carter Brown Library was organized in 1944 to aid in enlarging the collection.

The Annmary Brown Memorial

LYDIA MARIAN GOODING, PH.B., M.S., *Curator*

The Annmary Brown Memorial on Brown Street, near the southwest corner of the new Quadrangle, contains a world-famous collection of 15th-century books, known as incunabula, valuable in the studies of Renaissance

THE UNIVERSITY LIBRARIES

and Mediaeval culture and of the earliest known printing presses. Collected and housed by General Rush Christopher Hawkins, Commander of the Hawkins Zouaves in the Civil War, the books were assembled for the purpose of illustrating the spread of printing from its birthplace in Mainz about the middle of the 15th century. Items in the collection, many of them exceedingly rare if not unique, date between 1460 and 1500. The Memorial, dedicated to General Hawkins' wife, Annmary Brown, after whose grandfather this University is named, also contains two art galleries, one of old masters and one of later artists. It was acquired by Brown in early 1948 by court order, when it was deeded to the University by the Memorial's Board of Trustees. Fifteenth and sixteenth century books from the University's general collection are now being transferred here, in order that the building may serve as a center for Renaissance studies. Since 1924, the Memorial has served as national headquarters for the records of incunabula owned in the United States, Mexico, and Canada.

Providence Libraries

The seven collections of books named below comprise, with the University Libraries, nearly two million volumes in the city at the service of the students.

The Providence Public Library, at Empire and Washington Streets, offers to all students at Brown University the free use of more than 540,000 volumes. The following departments and collections are available: *Art and Music Department* with book collections on Architecture and Jewelry, sheet music and recordings, and over 150,000 pictures; *Business-Industry-Science Department* with a complete file since 1876 of Specifications and Drawings of the U. S. Patent Office, Alien Custodian Patents, standard business and financial services, and important collections on Textiles and Printing; *Reference Department* with Providence newspapers on microfilm back to 1820, city and telephone directories for 1,000 American cities and towns, U. S. Documents depository collection, The Rhode Island Index—a subject index to persons, places, and events in Rhode Island found in books, pamphlets, periodicals, and the files of the *Journal and Bulletin*; microfilm and photostat services; *The Williams Memorial on Irish Culture* containing, in addition to books and periodicals, a reproduction of the "Book of Kells," a Celtic hand-illuminated manuscript of about the 7th Century A.D.; *The Fox Collection* of over 400 pamphlets covering Irish history, religion, and education from 1740–1890, and a large collection of Irish street ballads; *The Fiske Harris Collection on the Civil War and Slavery* containing more than 10,000 items on regimental histories, early works on slavery, Confederate and Union Ballads, general histories, Lincoln, naval and military tactics, Civil War belles-lettres, and editions of "Uncle

THE UNIVERSITY LIBRARIES

Tom's Cabin" in over 30 languages. Also available are representative Rhode Island imprints before 1800, current subscriptions to over 800 periodicals with back files of major trade and general periodicals.

The Tockwotton Branch at 121 Hope Street and the Rochambeau Branch at 708 Hope Street are near the University Campus and are available to students. Applications for borrowers' cards may be obtained at the Reference Desk at the University Library.

The Library of the Providence Athenaeum is a collection of general literature numbering over 138,000 volumes. Professors or teachers may become annual subscribers on the payment of six dollars in advance, and any student of Brown University may become a subscriber for three months on the payment of two dollars and a half; but the rights of such subscribers are personal only and do not extend to their families.

The Library of the Rhode Island Historical Society, 52 Power Street, comprises 100,000 bound volumes, 50,000 pamphlets, about one million manuscripts on all aspects of Rhode Island history, and a practically complete file of Rhode Island newspapers, beginning with 1758. By the courtesy of the Society this collection is accessible, free of charge, to members of the University.

The Library of the Rhode Island Medical Society contains approximately 40,000 volumes on medical science and receives current medical periodicals. It is open to any person for consultation; circulation is restricted to members only.

The State Law Library is a collection of 75,000 volumes devoted wholly to law. It is open to any person for consultation.

The State Library, in addition to United States, state, and legislative documents, has volumes in the field of constitutional and statutory law, political and social science, economics, general history and biography, and Rhode Island history, including the Preston collection of Rhode Island material. It is the exchange authority for state documents with other nations, states, and some municipalities. Its Legislative Reference Bureau does law drafting and special legislative reference for the General Assembly. It has a division for the collecting and filing of records of our several World Wars. The State Librarian is, *ex officio*, State Record Commissioner.

The Library of the Rhode Island School of Design contains about 24,000 volumes and an extensive list of periodicals dealing with the practice and history of all the arts, fine and applied. Mounted photographs of works of art are available for study, and a clipping collection is maintained for the use of students of design and illustration. The library is open to all students for reference. Full privileges are accorded to those who are registered for courses at the School.

Buildings and Grounds



BROWN UNIVERSITY is located in the City of Providence at the head of Narragansett Bay. The campus of the University is on College Hill, in a residential area overlooking the center of the city.

The main campus of the University occupies an area of approximately forty acres. In close proximity are athletic fields and recreational facilities covering more than thirty-five acres and, within ten miles of the campus, there is an outing reservation with more than 80 acres of clearing, woodland, and water.

University Hall, constructed in 1770 and originally known as The College Edifice, is an excellent example of early colonial architecture, a monument to the founders and to the cultural interests of the colony. Near it on the Front Campus are Hope College erected in 1822, another example of early college architecture, and Manning Hall erected in 1834, an early American revival of the classical form. Surrounding these historic buildings, on or near the main campus, are more than one hundred buildings now devoted to university purposes.

The offices of administration of the University are located in University Hall.

The John Hay Library, erected in 1910 and named for a distinguished son of Brown, houses the general library collections of the University. The John Carter Brown Library of Americana is separately housed in its own building on the College Green. The Annmary Brown Memorial, housing a collection of incunabula and paintings, is on nearby Brown Street. Divisional Libraries occupy space in other buildings.

Over fifty buildings are devoted to classroom, laboratory, research, library, office, and conference use by the departments of instruction, including Manning Hall, Rhode Island Hall, Sayles Hall, Wilson Hall, Rogers Hall, Van Wickle Hall, Marston Hall, Arnold Biological Laboratory, Metcalf Chemical Laboratory, Metcalf Research Laboratory, the Engineering Building, the Engineering Laboratories, the Psychological Laboratories, the Ladd Astronomical Observatory, Appleton House, the Art Studio, the Music Building, The Cabinet, Robinson Hall, Lyman Hall, Engineering Research Laboratory, The Nuclear Physics Laboratories, Barus Hall, Whitehall, Richardson Hall, Angell Hall, Photographic Laboratory, Prospect House, Waterman House, and Wilbour Hall.

The Herbarium in Rogers Hall contains over 100,000 specimens from all parts of the world, but mainly from New England. The Geological Museum is housed in Rhode Island Hall. Greenhouses near Arnold Laboratory are

BUILDINGS AND GROUNDS

used for experimentation, laboratory, and classroom work by the Botany Department.

The University maintains many student residences. Those for students in the College are listed in the section entitled, Student Life and Organizations. The dormitories for women are listed in the section on Pembroke. There is a separate dormitory for graduate students located at 69 Manning Street. It is called the Graduate Center. The dining hall for men is called Sharpe Refectory and is part of the Quadrangle. Andrews Hall contains the dining hall for Pembroke. Faunce House, the student center on the Brown campus, is described in the section entitled Student Life and Organizations.

The Colgate Hoyt Swimming Pool is located on Lincoln Field, and Marvel Gymnasium, erected in 1928, is located on Aldrich Field near the Brown Stadium. The Intramural Playing Field and the Thayer Street Tennis Courts are located within five minutes' walk of the campus. The Nicholson Memorial Tennis Courts on Manning Street are adjacent to the campus. Brown Field with its football stadium and Aldrich Field with its baseball diamond, soccer, and other playing fields are located on Elmgrove Avenue approximately a mile and a half from the campus.

The Brown University Outing Reservation is located on Upper Sprague Reservoir in the town of Smithfield and is equipped with one lodge and a cabin.

The Brown University Boat House, located a mile from the campus on the Seekonk River north of the Red Bridge, provides headquarters for the Brown University Yacht Club and facilities for intramural and intercollegiate boat races on Narragansett Bay.

Other University Activities



Teaching Internships

A PROGRAM OF INTERNSHIPS in college teaching was instituted in 1954-55 under a grant from the Fund for the Advancement of Education. The purpose of the program is to introduce young scholars to teaching in a university.

Arrangements with Other Institutions

RHODE ISLAND SCHOOL OF DESIGN

As a result of a cooperative arrangement approved students of Brown University may elect certain courses in art at the Rhode Island School of Design in addition to the courses offered by the Department of Art of the University. This arrangement makes studio courses at an art school of high standing available to Brown students.

In order to elect courses given at the Rhode Island School of Design for credit at Brown University, a student must first have the written permission of the chairman of the Department of Art. Before beginning a program of courses at the School, a student must normally take an aptitude test in drawing and design administered by the School. Arrangements for this test are made through the Department of Art.

AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS

Free tuition in the School is available for all adequately prepared graduates of Brown University. Arrangements may also be made for undergraduates to attend the Summer Session at the end of their junior year. Further information may be obtained from the chairman of the Department of Classics.

AMERICAN ACADEMY IN ROME

Free tuition in the School of Classical Studies in the Academy is available for all adequately prepared graduates of Brown University. Arrangements may also be made for undergraduates to attend the Summer Session at the end of their junior year. Further information may be obtained from the chairman of the Department of Classics.

OTHER UNIVERSITY ACTIVITIES

ART COLLECTIONS

In Sayles Hall at the University there is a collection of portraits of notable men associated with Brown University and with the State of Rhode Island. The Annmary Brown Memorial contains a collection of paintings by historical masters. The Faunce House Gallery Lounge shows, during the college year, exhibitions representative of various phases of art.

The Museum of Art of the Rhode Island School of Design owns important collections of Oriental, European, and American art.

Concerts

Students may attend at student rates the concert series of the Boston Symphony Orchestra, the Rhode Island Philharmonic Orchestra, the Community Concert Association, the Rhode Island School of Design, and other musical events.

An annual schedule of musical programs at the University is arranged by the Department of Music. The performing groups are the Brown University Chorus, Brown University Orchestra, Brown Glee Club, Brown Band, the Pembroke Glee Club, the Brown and Pembroke Chapel Choirs, and the University String Quartet. The members of the Quartet are Professors Coolidge, Fischer, and van Koppenhagen of the Department of Music, and Mr. Charles Dickerson of the Rhode Island Philharmonic Orchestra.

Monthly informal concerts are presented in the Art Gallery of Faunce House under the combined sponsorship of the Board of Governors of Faunce House and the Department of Music.

Concerts are given on the large organ in Sayles Hall by the University Organist and Choir Director, Professor William Dinneen, and by other recitalists in coöperation with the Rhode Island Chapter of the American Guild of Organists. A visiting organist is presented each season on the occasion of the Memory Day for Edgar John Lownes.

The Department of Music makes it possible for selected students to appear in Senior Recital, and each semester a group of students of the Department is heard in audition-recital as a part of the work in course.

Training of Teachers

ARRANGEMENTS WITH THE STATE OF RHODE ISLAND

The Department of Education of the State of Rhode Island under act of the Legislature coöperates with Brown University for the professional instruction of college graduates who desire to become teachers in schools,

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principals of high schools or elementary schools, or superintendents, and of those who already hold such positions. For this purpose the State appropriates annually ten thousand dollars for scholarships covering tuition for graduate courses in education pursued by candidates for the degree of Master of Arts. Scholarships are also granted for individual courses. The courses must be approved by the chairman of the Education Department of the University. Appointment to these scholarships is made by the State Department of Education. Candidates must fulfill the requirements for graduate students regularly determined by the University.

PROVISIONS FOR PRACTICE TEACHING

The School Committees of the City of Providence and other neighboring communities, by special agreement, appoint as student-teachers in public schools a limited number of graduate students who are pursuing courses in education at Brown University. By this arrangement the student may meet the State certificate requirement for practice teaching. The student-teachers are occupied in the schools each day for about half the usual school session. Each is placed under the guidance of a supervising teacher. An opportunity is thus afforded graduate students to gain at the same time a knowledge of the theory of education and experience in the art of teaching.

Photographic Laboratory

The University operates a photographic laboratory fully equipped for the making of microfilms, positives, photoprints, copy negatives, enlargements, black and white and color slides, news and commercial photographs, 16 mm. motion pictures, photofinishing, dry mounting, portraits, application and passport pictures, ozalid and ozaprints, and photochemical stencils. Its services are available to students and to departments for the preparation of teaching materials and the microfilm reproduction of manuscripts, scholarly publications, and other materials. It is also used by scholars outside the University who desire reproductions of materials in the library collections. Among its major projects are the Mathematical Reviews microfilm service and the microfilm collection of books on South American History and Hispanic Culture.

Public Lectures

THE MARSHALL WOODS LECTURESHIP was established in 1871 by Marshall Woods of the class of 1845, but the income from the fund first became available in 1919. The income was to be employed "in supplying lectures on

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the Fine Arts as applied broadly to human life and lectures on the Arts and Sciences as applied to all human progress." The series for 1953-54 included the following lectures on *The Fine Arts in Our Time*:

Mr. ELIOTT NORTON (Drama Critic): *The Theater*

Mr. AARON COPLAND (American Composer): *Music*

Mr. GYORGY KEPES (Massachusetts Institute of Technology): *Painting*

Mr. RICHARD LIPPOLD (American Sculptor): *Sculpture*

Mr. SERGE CHERMAYEFF (Harvard University): *Architecture*

THE CHARLES K. COLVER LECTURESHIP was established in 1915 by Jesse L. Rosenberger and his wife in honor of her father, Charles Kendrick Colver, of the class of 1842. The lectures usually comprise a course of three. Many of them have subsequently been published by the University. In April, 1954 Colver Lectures were presented by Dr. Harry Levin of Harvard University on *The American Writer Between Two Worlds* and by Professor Dexter Perkins of the University of Rochester on *Ethics in Foreign Policy*.

THE JOHN HOWARD APPLETON LECTURESHIP was established in 1923 by friends and former students of Professor Appleton, in appreciation of his service of over fifty years as teacher and professor of chemistry at Brown University, to provide special annual lectures on pure or applied chemistry, the lecturers to be selected by the Department of Chemistry. In 1953-54 Appleton Lectures were presented by Professor Peter Debye of Cornell University on *Experiments on Effects of Strong Inhomogeneous Fields on Polymer Solutions* and by Professor Joel H. Hildebrand of the University of California on *Liquids and Solutions*.

THE PROFESSOR ALBERT BUSHNELL JOHNSON LECTURESHIP was established in 1930 under the terms of the will of Edward K. Aldrich, Jr. It provides for the holding of lectures by the Department of Romance Languages. In 1953-54 Johnson Lectures were presented by Professor Louis Landré of the University of Paris on *Etat Present Du Theatre Français* and by Professor Dámaso Alonso of the University of Madrid on *Spain and the Modern Novel*.

THE MOLLIE B. MANDEVILLE LECTURESHIP was established in 1924 by Frank N. Mandeville of the class of 1905, in memory of his wife. In 1953-54 a Mandeville Lecture was given by Dr. Robert Cushman Murphy of the American Museum of Natural History on *The Natural History of Oceanic Birds*.

THE BROWN UNIVERSITY LECTURES, established by the Corporation in 1938, are designed primarily for the purpose of offering to members of the Faculty an opportunity to share their intellectual interests and the results

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of their scholarly work with the community in which the University resides. The Winslow Upton Series, as the 1953-54 Lectures were designated, included the following five lectures under the general title *Science in the World of Tomorrow: Science as a Cultural Element*, Professor Charles H. Smiley; *Science and the Health of Man*, Professor Herman B. Chase; *Science and Religion*, Professor Carl W. Miller; *Science and the Mind of Man*, Professor Carl Pfaffmann; *Science and the Material World*, Professor Leallyn B. Clapp.

A number of other addresses are delivered at the University in the course of the year. A partial list would include the University convocations with addresses by well-known speakers; lectures under the auspices of the Rhode Island Philosophical Society, the English Club, the Amateurs of Ancient Greece, the Providence Archaeological Society, the Brown Christian Association, the History Club, the Friends of the Library, and the Skyscrapers.

Colloquia, with more informal addresses by members of the staff and others, are a regular part of the program of several departments, and to these also interested friends may be admitted.

THE EDGAR JOHN LOWNES MEMORY DAY FUND, established in 1924 by Mrs. Therese K. Lownes in memory of her husband, provides an income to be used annually for an organ recital by some distinguished artist. The artist in 1953-54 was Mr. Flor Peeters, Belgian composer, organist of the Metropolitan Cathedral at Malines, and Director of the Royal Conservatory, Antwerp, Belgium.

OTHER LECTURES delivered at the University during 1953-54 by other than members of the Brown University Faculty included:

Prof. GORDON MANLEY (University of London): *Climatic Fluctuations on Either Side of the North Atlantic and Their Relationship to Glaciation*

Dr. DON FAWCETT (Harvard Medical School): *Electron Microscope Observations on the Structure of Hepatic Cells and Ciliated Epithelia*

Dr. HENRY A. IMUS (Office of Naval Research, Washington, D. C.): *Psychological Research in England*

Prof. H. W. LIEPMANN (California Institute of Technology): *Problems in Turbulence Research*

Dr. FRANCIS J. NORTON (General Electric Company): *Applications of the Mass Spectrometer*

Dr. S. K. RUNCORN (University of Cambridge): *Geomagnetism and the Earth's Interior*

Dr. EARL H. NEWCOMER (University of Connecticut): *Plant Mitochondria*

Prof. JOHN Q. STEWART (Princeton University): *Social Physics*

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- Senator THEODORE FRANCIS GREEN (Rhode Island): *Contemporary American Diplomacy*
- Mr. LAWRENCE GOLDTHWAIT (St. George's School): *Geological Study of the Greenland Ice Cap*
- Dr. B. HAURWITZ (New York University): *Internal Waves*
- Dr. RALPH WETMORE (Harvard University): *Normal and Abnormal Growth in Plants*
- Prof. C. J. F. BOTTCHER (University of Leiden): *Relaxation Phenomena*
- Dr. G. H. WANNIER (Bell Telephone Laboratories): *Transition Temperatures in Statistical Mechanics*
- Dr. KARLIS LEYASMEYER (European Author and Educator): *Present Predicament and the Solution*
- Prof. KENNETH V. THIMANN (Harvard University): *The Physiology of Growth in Plant Tissues*
- Dr. W. A. BOUSFIELD (University of Connecticut): *Associative Clustering*
- Dr. IRVING BARTLETT (Rhode Island College of Education): *The United States and Pakistan*
- Prof. J. J. STOKER (New York University): *On the Motion of Fronts in Dynamic Meteorology*
- Prof. RICHARD D. SCHAFER (University of Connecticut): *Relationships between Lie Algebras and Other Non-Associative Algebras*
- Prof. HAROLD P. KNAUSS (University of Connecticut): *Quantum Effects in the Eye*
- Father JOSEPH CLARKE (Bellarmino College): *Science, Philosophy, Theology: A Program Toward Integration*
- Dr. WILLIAM S. VERPLANCK (Harvard University): *Lorenz and Tinbergen on Behavior*
- Mr. WILLIAM B. ALLEN (U. S. Geological Survey): *Ground Water Resources*
- Dr. CARLIN T. KINDILIEN (Colby College): *American Poetry in the 1890's*
- Dr. R. A. PATTERSON (Brookhaven National Laboratories): *Physics at Brookhaven*
- Prof. and Mrs. LESLIE SWAIN (Providence): *Revolt in Asia*
- Dr. HAROLD F. CLARK (Columbia University): *Natural Resources, Education, and Standards of Living*
- Prof. VIRGIL ALDRICH (Kenyon College): *Is An After-Image a Sense Datum?*
- Prof. I. S. COHEN (Massachusetts Institute of Technology): *Dimension Theory of Rings*
- Dr. GABRIEL HORVAY (General Electric Company): *Lanczos' Matrix Iteration Method for Solving Large Systems of Linear Equations and Eigen-value Problems*

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- Prof. A. B. GARRETT (Ohio State University): *The Constitution of the Grignard Reagents: Some Observations on the Friedel-Crafts Complexes*
- Dr. NANCY L. R. BUCHER (Massachusetts General Hospital): *The Formation of Radioactive Cholesterol from C¹⁴ Labeled Acetate in Liver Homogenates*
- Mr. IAN M. ROSS (Bell Telephone Laboratories): *The Field Effect Transistor*
- Dr. RICHARD SOLOMON (Harvard University): *Fear, Anxiety, and Aversion*
- Dr. BERNARD V. BOTHMER (Museum of Fine Arts, Boston): *Egyptian Portrait Sculpture*
- Dr. T. C. SCHNEIRLA (American Museum of Natural History): *Analysis of an Instinctive Behavior Pattern: Nomadism in Army Ants*
- Mr. WALTER J. SHEA (Rhode Island State Sanitary Engineer): *Pollution Abatement, Methods and Problems*
- Prof. RULON WELLS (Yale University): *Vagueness in Nature*
- Prof. GEORGES MAY (Yale University): *Jean Giraudoux et les Etats Unis*
- Prof. L. H. LOOMIS (Harvard University): *A Lattice-Theoretic Formulation of the Dimension Theory of Operator Algebras*
- Dr. LOUIS FLEXNER (University of Pennsylvania Medical School): *Studies on the Biology of Fetal Development*
- Dr. OSCAR RICHARDS (American Optical Company): *Limitations and Mensuration*
- Prof. ARTHUR KANTROWITZ (Cornell University): *The Dynamics of Gases at High Temperatures*
- Dr. ARTHUR L. QUIRK (University of Rhode Island): *Radiation Measurements in the Atmosphere*
- Prof. PAUL THOMSON (Providence College): *The Mind of Francis Thompson*
- Dr. NATHAN MARCUVITZ (Brooklyn Polytechnic Institute): *Mathematical Representations of the Responses of Physical Systems*
- Prof. CLARENCE H. GRAHAM (Columbia University): *Status of Psychology in Japan*
- Prof. HENRY D. AIKEN (Harvard University): *Some Notes on the Aesthetic and the Cognitive*
- Mr. H. B. SHEPARD (Federal Reserve Bank of Boston): *Wooden Dollars—The Importance of Forestry in New England's Economy*
- Prof. R. S. PHILLIPS (Yale University): *Semi-groups of Linear Operators*
- Dr. MERRILL CHASE (Rockefeller Institute): *The Relation of Circulating White Cells to Allergy and Antibody Production*
- Dr. HAROLD LEVINE (Harvard University): *Acoustic Diffraction at High Frequencies*

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- Dr. WILL HERBERG (American Federation of Labor): *Judaism as a Religion of Personal Decision and Commitment*
- Dr. CONRAD G. MUELLER (Columbia University): *Some Data and Theory on Single Nerve Fiber Activity in Simple Visual Systems*
- Prof. MILTON SOLOMON (University of Rhode Island): *Soils of Rhode Island*
- Dr. PAUL G. BENEDUM (Hiawatha Oil and Gas Company): *Recent Petroleum Exploration on the Continental Shelf*
- Dr. DONALD W. PRITCHARD (Johns Hopkins University): *Dynamics of Estuarine Circulation*
- Prof. ROBERT H. THOULESS (Cambridge University): *The Present Position of Experimental Parapsychology*
- Prof. GARRETT BIRKHOFF (Harvard University): *The Classification of Partial Differential Equations*
- Dr. ROBERT P. EPPLE (Tracerlab, Inc.): *Applications of Radioactivity in Research and Industry*
- Dr. ANNA R. WHITING (University of Pennsylvania): *Some Recent Studies in Mutagenesis in the Parasitic Wasp "Habrobracon juglandis"*
- Dr. A. B. PIPPARD (Cambridge University): *Superconductivity*
- Dr. H. KETCHUM BOSTWICK (Woods Hole Oceanographic Institution): *Marine Resources*
- Dr. CRANE BRINTON (Harvard University): *The Anatomy of Revolution*
- Prof. W. E. GROTH (Bonn University): *New Methods for the Separation of Gaseous Isotopes*
- Mr. GUNTHER K. WERTHEIM (Woods Hole Oceanographic Institution): *A Study of the Florida Current by Means of the Electrical Potential between Key West and Havana*
- Dr. S. J. SINGER (Yale University): *Immunochemistry—A New Chemistry*
- Dr. BRUCE H. BILLINGS (Baird Associates): *Spectroscopy at one-half Millimeter*
- Dr. CHARLES B. FERSTER (Harvard University): *Fixed Ratio Reinforcement*
- Mr. ROLAND C. CLEMENT (Audubon Society of Rhode Island): *Our Living Resources*
- Prof. JOSEPH O. HIRSCHFELDER (University of Wisconsin): *Intermolecular Forces*
- Prof. J. H. KEENAN (Massachusetts Institute of Technology): *Flux Vectors in Onsager's Reciprocal Relations*
- Prof. HARRY B. WHITTINGTON (Harvard University): *The Geosyncline and Foreland Facies in the Ordovician of Western Europe*
- Dr. J. P. TRINKAUS (Yale University): *Studies on the Embryology of the Bony Fish*

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- Mr. PAUL M. ANGLE (Chicago Historical Society): *A. Lincoln, By Himself*
- Mr. JOE KING (Boston College): *Admiralty Courts in America*
- Prof. ABRAHAM SEIDENBERG (University of California): *A New Decision Method for Elementary Algebra*
- Dr. EDGAR ZWILLING (University of Connecticut): *Ectodermal-Mesodermal Interaction in Limb-Bud Development in the Chick Embryo*
- Prof. KARL MARGUERRE (Washington University): *Basic Equations of Elasticity and Methods of Attack*
- Prof. HARRIET B. CREIGHTON (Wellesley College): *Wildflowers of Australia*
- Dr. NEAL E. MILLER (Yale University): *Some Studies of Drive and Drive Reduction*
- Dr. ARMAND BOREL (Institute for Advanced Study): *On Characteristic Classes of Homogeneous Spaces*
- Prof. WERNER BERGMANN (Yale University): *An Organic Chemist's Interest in Evolution*
- Prof. OSCAR HANDLIN (Harvard University): *Al Smith and Urban Democracy*
- Prof. OSMAN K. MAWARDI (Massachusetts Institute of Technology): *A Generalized Approach to Electroacoustic Transducers*
- Prof. H. SCHLICHTING (Technische Hochschule, Germany): *Axial Flow Around a Rotating Body of Revolution*
- Dr. EDWIN S. MUNGER (American Universities Field Staff): *Native Africa in Revolt*
- Prof. H. E. HAWKES (Massachusetts Institute of Technology): *Prospecting by Geochemical Methods*
- Dr. REIDAR F. SOGNAES (Harvard School of Dental Medicine): *Comparative Observations on the Microstructure, Histochemistry, and Radiochemistry of Mineralized Tissues*
- Prof. C. C. LIN (Massachusetts Institute of Technology): *Finite Amplitude Wave Propagation*
- Dr. FLOYD RATLIFF (Harvard University): *Animal Psychophysics*
- Prof. N. J. HOFF (Brooklyn Polytechnic Institute): *Effect of High Temperatures upon Structures*
- Dr. J. WENDELL BURGER (Trinity College): *Excretion in the Lobster*
- Prof. S. F. SINGER (University of Maryland): *Meteorites and Cosmic Rays*
- Prof. EDWARD C. KIRKLAND (Bowdoin College): *Academic Freedom in Peril*
- Dr. G. HERZBERG (National Research Council of Canada): *Spectra of Free Radicals*
- Prof. WITOLD HUREWICZ (Massachusetts Institute of Technology): *On the Concept of the Fibre Space*

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- Dr. OTTO KRAYER (Harvard Medical School): *Antiaccelerator Cardiac Agents*
- Dr. SAM L. CLARK, JR. (Naval Medical Research Institute): *Some Humoral Aspects of Tolerance to Bacterial Pyrogens in Rabbits*
- Dr. MIGUEL C. JUNGER (Harvard University): *Sound Radiation and Scattering by Cylindrical Surfaces*
- Rev. LUTHER A. WEIGLE (Yale Divinity School): *The New Standard Revised Version of the Bible*
- Dr. CARNEY LANDIS (Columbia University): *New Light in Flicker-fusion Phenomena*
- Prof. PAUL B. SEARS (Yale Conservation Committee): *Late Pleistocene Climate and Vegetation in Mexico*
- Dr. ROLF ELIASSEN (Massachusetts Institute of Technology): *Biochemical Unit Operations in Waste Disposal*
- Dr. AUBREY GORBMAN (Columbia University): *The Comparative Biochemistry of Iodine Metabolism and the Problem of Evolution of Thyroid Function*
- Prof. DONALD WILLIAMS (Harvard University): *Reflections on the Nature of Quantity*
- Dr. OSCAR RICHARDS (American Optical Company): *Microtomy*
- Dr. BENJAMIN FINE (New York Times): *The Press and Education*
- Prof. LARS J. GARDING (University of Lund): *Eigenfunction Expansions for Elliptic Differential Operators*
- Dr. ELEMER R. GABRIELI (Yale University School of Medicine): *Radio-sensitivity of the Reticulo-endothelial System*
- Dr. HOWARD B. ANDERVONT (National Cancer Institute): *The Biology of Cancer*
- Dr. LENNOX GREY (Columbia University): *Communication and the Language Arts*
- Dr. FRANK FINGER (University of Virginia): *The Teaching of Undergraduate Psychology*
- Prof. HENRY JOEL CADBURY (Harvard University): *Recent Trends in New Testament Studies*
- Mr. EDWARD A. BAYNE (American Universities Field Staff): *Buying Time in Iran*
- Prof. ERNST SNAPPER (University of Southern California): *Equivalence Relations in Algebraic Geometry*
- Dr. A. R. T. DENUES (Sloan-Kettering Institute for Cancer Research): *Isolated Chromosomes*
- Prof. PHILIPP FRANK (Harvard University): *Physics and Metaphysics in Quantum Theory*
- Prof. FRANK E. BROWN (Yale University): *Alexander's Dream*

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- Prof. DAVID M. PRATT (University of Rhode Island): *Factors Affecting the Growth of Marine Bivalves*
- Dr. MILTON ORCHIN (University of Cincinnati): *The Chemistry and Reactions of Carbon Monoxide*
- Mr. C. E. CHASE (Massachusetts Institute of Technology): *Some Aspects of Recent Liquid-Helium Research*
- Mr. ALBERT RAVENHOLT (American Universities Field Staff): *The Philippines: Pattern for Democracy in Asia?*
- Dr. DONALD R. GRIFFIN (Harvard University): *Acoustic Orientation in Animals and Men*
- Prof. HENRY C. STETSON (Harvard University; Woods Hole Oceanographic Institution): *The Submarine Geology of the Continental Margins*
- Prof. CHARLES L. STEVENSON (Harvard University): *Relativism in Ethics*
- Prof. F. K. G. ODQUIST (Royal Institute of Technology, Stockholm): *Some Aspects of the Mechanics of Creep*
- Prof. GEORGE W. MACKEY (Harvard University): *The Frobenius Reciprocity Theorem for Infinite Group Representation*
- Prof. HARVEY BROOKS (Harvard University): *Recent Work on the Theory of the Alkali Metals*
- Prof. MILTON BURTON (University of Notre Dame): *Radiation Chemistry*
- Prof. BRAND BLANSHARD (Yale University): *Ethics of Belief*
- Mr. ALVA KERSCHEL BENNETT (American Optical Company): *Current Research on Optical Inhomogeneities*
- Dr. LEROY APKER (General Electric Company): *Some Electronic Surface Properties of Semiconductors*
- Prof. D. C. ALLEN (Johns Hopkins University): *The Dream and the Miracle: Shakespeare's Last Plays*
- Prof. J. LAURENCE KULP (Columbia University): *Recent Advances in Age Determination*
- Dr. HENRY HELSON (Yale University): *A Conjecture of Steinhilber and a Theorem of Szego*
- Dr. F. G. FRIEDLANDER (University of Manchester): *Diffraction of a Pulse in a Stratified Atmosphere*
- Dr. STEPHEN P. MIZWA (Director, Kosciuszko Foundation): *Copernicus*
- Dr. OSCAR RICHARDS (American Optical Company): *Special Methods*
- Mr. JOSEPH HARRISON (Christian Science Monitor): *International Communications*
- Prof. ALBERT HOFSTADTER (Columbia University): *The Myth of the Whole: A Consideration of Quine's View of Knowledge*
- Prof. N. M. NEWMARK (University of Illinois): *Dynamical Behavior of Structures Subjected to Blast Loading*

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Dr. GILBERT STORK (Columbia University): *Reactions of the Morphine Alkaloids*

Dr. RAGNAR GRANIT (Karolinska Institutet, Stockholm): *Spontaneous Activity in Sense Organs and Principle of Centrifugal Control*

University Extension

The University offers each semester, evening extension courses open to all who desire to register. There are no entrance requirements, except ability to do the work, and no required courses except in rare instances.

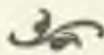
Single courses comprise seven weekly sessions and provide fifteen periods of class instruction. *Double courses* comprise twelve weekly sessions and provide thirty periods of class instruction.

A course certificate is issued upon the satisfactory completion of each course, except in the case of certain special courses which are non-credit courses. On the satisfactory completion of fifteen double courses, or the equivalent, the Associate in University Extension diploma is granted as recognition by the University of the work that has been accomplished. Study in extension courses is not applicable to degrees at Brown University.

Inquiries about extension courses and applications for registration should be sent to the Director of University Extension, 73 Brown Street. The application should give the full name of the applicant, his address, and the course or courses desired. On receipt of the fee, an attendance card is issued which must be shown at all sessions.

In the series of courses beginning in February, 1954, 39 regular courses were given with a total registration of 719; in the special State of Rhode Island—Brown University sponsored series for teachers in service, entitled *The Art of Communication*, 232 were enrolled. In the series of courses beginning in September, 1954, 43 regular courses were given with a total registration of 950; in the special State of Rhode Island-Brown University sponsored series for teachers in service, entitled *The Far East*, 473 were enrolled.

Prizes, Premiums, Honors



In 1824 under guidance of Nicholas Brown, Treasurer of the College, an Alumni Fund of one thousand dollars was established to provide medals for the winners in prize speaking competitions. These contests were suspended by President Wayland, who later established the President's Premiums, and secured further sums for prize awards. Partial remission of tuition for indigent students was arranged in 1847. In 1858, under President Sears, the University established scholarship funds, and in 1859 Miss Lydia Carpenter initiated the Aid Fund. The University Premiums (bequeathed by Nicholas Brown) and some other moneys previously devoted to prizes were then converted into scholarships for aid to needy students.

Premiums for Excellence in Preparatory Studies^{1,2}

Premiums for excellence in certain preparatory studies are awarded each autumn to members of the entering class on the basis of special examinations as described below. Examinations separately judged with separate awards but covering the same material are conducted simultaneously for men of the College and for women of Pembroke College.

The competitions in Greek, Latin, and Mathematics are each open to all Freshmen. However, those in the French and German languages, respectively, are open only to those freshmen whose knowledge of the language concerned has been gained through secondary school studies rather than from family or community contacts.

THE PRESIDENT'S PREMIUMS, derived from the income of a fund presented in 1843 by President Wayland, and later increased, are awarded each year to those members of the freshman class, who upon examination are found to excel in preparatory Greek and Latin. At the College and similarly at Pembroke College, a single premium is awarded in Greek; a first and a second are awarded in Latin.

In Greek the examination presupposes three years' study of the language in a secondary school or its equivalent. The student must show knowledge of the language by translating passages from Xenophon's *Anabasis* (I-IV), selections from Homer's *Iliad* or *Odyssey* (I-III), and also a sight passage of simple Attic prose; by answering specific questions on grammatical forms and syntax; and by translating into Greek an easy passage of English prose, based on the *Anabasis*. The candidate must also show familiarity with the content of the works read and general data concerning their authors. In 1953-54 no premium in Greek was awarded.

¹ The University reserves the right to withhold any award.

² For dates on which competitions are held consult the University Calendar in this Catalog.

PRIZES, PREMIUMS, HONORS

In Latin the examination presupposes four years' study of the language in a secondary school or its equivalent. Ability to translate is tested by selections involving familiar vocabulary and construction. Knowledge of grammatical forms, syntax, and style is tested by translation into Latin of passages in connected discourse in English based on writings of Caesar and Cicero. In 1953-54 premiums for men were awarded as follows:

The first premium to ALLAN LEWIS JACOBSON

prepared at Classical High School, Providence, Rhode Island

The second premium to ROBERT EDWARD CONNELL

prepared at Winthrop High School, Winthrop, Massachusetts

Premiums for women were awarded as follows:

The first premium to ARDELL BETTE KABALKIN

prepared at Classical High School, Providence, Rhode Island

The second premium to BARBARA ANNE MASON

prepared at Classical High School, Providence, Rhode Island

THE HARTSHORN PREMIUMS IN MATHEMATICS, derived from the income of a prize scholarship fund presented to the University in 1872 by Joseph Charles Hartshorn of the class of 1841, a clergyman, are awarded each year to the two members of the freshman class of the College who are found to excel in an examination on elementary algebra (through quadratic equations and the binomial theorem) and plane geometry. In 1953-54 premiums were awarded as follows:

The first premium to HENRY LEE THOMPSON, JR.

prepared at Hope High School, Providence, Rhode Island

The second premium to CHARLES PAUL MARCUS

prepared at Oak Park High School, Oak Park, Illinois

THE HYPATIA PREMIUMS IN MATHEMATICS, derived from the income of a fund, named for Hypatia of Alexandria, and presented anonymously in 1951, parallel for women the Hartshorn Premiums and supersede Entrance Premiums previously paid from other funds. In 1953-54 premiums were awarded as follows:

The first premium to ELIZABETH ANN KILGORE

prepared at Concord High School, Concord, New Hampshire

The second premium to BARBARA JOAN BORNGESSER

prepared at Lexington High School, Lexington, Massachusetts

THE ALBERT BUSHNELL JOHNSON PREMIUMS IN FRENCH are derived from part of the income of the Albert Bushnell Johnson Fund bequeathed to the University in 1949 by Edward K. Aldrich, Jr. These supersede similar premiums paid at The College from 1890 to 1908 from the President's Premium Fund, and from 1909 to 1949 from the Ratcliffe Hicks Prize Fund, and at Pembroke College from other University funds. These premiums are awarded each year to the two members of the freshman class of the College and similarly of Pembroke College, who are found to excel in preparatory French. The examination presupposes not less than two years' study of the language in a secondary school or its equivalent. In 1953-54 premiums for men were awarded as follows:

PRIZES, PREMIUMS, HONORS

The first premium to DONALD ANTHONY COLOMBO

prepared at Davis High School, Mt. Vernon, New York

The second premium to ALLAN LEWIS JACOBSON

prepared at Classical High School, Providence, Rhode Island

Premiums for women were awarded as follows:

The first premium to CAROLYN MARY URQUHART

prepared at Bellows Free Academy, St. Albans, Vermont

The second premium to KATHLEEN FRANCIS PATNAUDE

prepared at Brockton High School, Brockton, Massachusetts

THE CAESAR MISCH PREMIUMS IN GERMAN established in 1913 by gift of Mrs. Marion L. Misch, are awarded to the two members of the freshman class at the College who are found to excel in preparatory German. The examination presupposes not less than two years' study of the language in a secondary school or its equivalent. In 1953-54 premiums were awarded as follows:

The first premium to MARVIN JOSHUA FIALCO

prepared at Walnut Hills School, Cincinnati, Ohio

The second premium to DANIEL ALOYSIUS BUCKLEY, JR.

prepared at Brockton High School, Brockton, Massachusetts

THE ASA CLINTON CROWELL PREMIUMS IN GERMAN (succeeding Entrance Premiums in German inaugurated in 1922), derived from the income of a fund established in 1928 by alumnae of the University, are awarded to the two members of the freshman class of Pembroke College who are found to excel in preparatory German. These premiums parallel for women the Caesar Misch premiums. In 1953-54 a premium was awarded as follows:

The second premium to ROSANNE OLIVIA KUNZE

prepared at Hunter College High School, New York, New York

Premiums for Excellence in Undergraduate Studies^{1,2,3}

THE DAVID HOWELL PREMIUM is awarded from income of a prize scholarship fund presented to the University in 1866 by Gamaliel Lyman Dwight in honor of his grandfather, David Howell, who taught at the College from 1766 to 1825, was honorary alumnus of the first Commencement, the first tutor, the first Professor (other than President Manning), and Acting President 1791-92. David Howell was also a member of the Continental Congress, was appointed on a mission by

¹ The University reserves the right to withdraw any prize competition or to withhold the award. Essays should be typewritten and should bear the name and date of the competition. Each should be signed with a pseudonym and be deposited with the Recorder before 4 p.m. on the designated date, accompanied by a sealed envelope containing the author's name. A copy of each prize-winning essay may be retained for deposit in the archives of the University Library or for delivery to the donor of the prize.

² These premiums are listed in historical sequence.

³ For dates on which essays or other materials are due or competitions are held, consult the University Calendar in this Catalog.

PRIZES, PREMIUMS, HONORS

George Washington, and became Associate Justice of the Rhode Island Supreme Court, and U. S. District Judge. The premium is given at the close of the first semester of the senior year to the student who, "having a good record of deportment, has the highest rank in Mathematics and Natural Philosophy." The qualifying subjects are mathematics, physics, mechanics, and astronomy. In making the award the amount and distribution of the candidate's work in these subjects is considered. In 1953-54 the premium was awarded from income of the Susan Colver Rosenberger Fund to

JOSEPH NICHOLAS PALMIERI

THE THOMAS CARPENTER PRIZES FOR ELOCUTION, derived from the income of a fund established in 1867 by Thomas Carpenter, are awarded each year to the three students of the College to whom are assigned the first, the second, and the third rank of excellence in elocution. The competition is open to all members of the sophomore class and to those members of the junior class who have not previously been contestants. The selections declaimed may be either prose or verse. All arrangements are in the hands of the professor of public speaking. In 1953-54 prizes were awarded as follows:

The first prize to JOVITE LABONTÉ, JR.

The second prize to RODNEY NICHOLAS MARA

The third prize to LOUIS ALLAN TANENBAUM

THE THOMAS CARPENTER AND LYDIA CARPENTER PREMIUMS were established in 1869, by Lydia Carpenter, in behalf of her late brother. They are assigned at the end of the academic year to the two members of the senior class at the College who, "already on scholarships, shall, in the judgment of the Faculty, unite in the highest degree the three most important elements of success in life—ability, character, and attainment." In 1953-54 these premiums were awarded, from income of the Susan Colver Rosenberger Fund, respectively to

THOMAS JOSEPH FRANCIS McCORMACK

JOSEPH NICHOLAS PALMIERI

THE ROBINSON POTTER DUNN PREMIUM. The income of a prize scholarship fund, presented to the University in 1872 by pupils and friends of Professor Robinson Potter Dunn, is given, at the end of the junior year, to the student at the College "with the highest standing in rhetoric, English composition, and public speaking". In making the award, regard is given to the number of such courses taken as well as to the rank attained in them. For women this award is paralleled by the Tristram Burges Premium. In 1953-54 the premium was awarded to

LOUIS ALLAN TANENBAUM

THE CLASS OF 1873 PRIZES are derived from the income of a fund presented in 1877 by the class of 1873. Two prizes are awarded each year to members of the senior class, men or women, who submit the best papers under conditions designated by the Department of Economics. In 1953-54 the prizes were awarded as follows:

The first prize to BARBARA JOYCE NAHIGIAN

The second prize to BAYARD WAYNE BIDWELL

PRIZES, PREMIUMS, HONORS

THE LAFAYETTE SABINE FOSTER PREMIUM IN GREEK is derived from the income of a fund bequeathed in 1880 by the Hon. Lafayette Sabine Foster, of the class of 1828. This income is to be paid annually "to that scholar of the institution who passes the best examination in the Greek language, the examination to be made in the first, third, sixth, and twenty-fourth books of Homer's *Iliad*, or in the *Oration on the Crown* by Demosthenes." The examination is open to all undergraduate students, men and women. In 1953-54 no premium was awarded.

THE RATCLIFFE HICKS PRIZES FOR EXCELLENCE IN DEBATE, established in 1891 by the Hon. Ratcliffe Hicks, of the class of 1864, and by bequest in 1907, are awarded annually as follows:

I. Equal prizes to each of the two representatives of the University in the major intercollegiate debates who show the greatest ability in both the preliminary trials and the final debate. In awarding the prizes, regard is given to thought, style, and delivery. In 1953-54 the prizes were awarded respectively to

JOVITE LABONTÉ, JR.
RODNEY NICHOLAS MARA

II. A first and a second prize to the students of the College showing the greatest ability in a public debate between the representatives of the junior and sophomore classes. Each class is represented by three men, whom a committee appointed by the President of the University chooses from the preliminary contestants before the public debate. This committee also determines the subject and makes the necessary arrangements. The prizes are awarded irrespective of the decision upon the debate as a whole. In making the award, regard is given to thought, style, and delivery. In 1953-54 prizes were awarded as follows:

The first prize to JOVITE LABONTÉ, JR.
The second prize to RODNEY NICHOLAS MARA

THE LUCIUS LYON PREMIUMS IN LATIN are derived from the income of a fund presented in 1893 by Mrs. Caroline L. Lyon, in memory of her husband, Lucius Lyon, of the class of 1844. Five-tenths of the income each year forms the first premium, three-tenths the second, and two-tenths the third. The premiums are awarded on the basis of a special examination held at the close of the senior year, open to men and women. The examination may relate to any or all of the following subjects: the Latin language, Latin literature, Roman history. In 1953-54 premiums were awarded as follows:

The first premium to PATSY FRANK NESCI
The second premium to KENNETH BARNES BOURNE, JR.
The third premium to NANCY BRANDON KAUFMAN

THE WILLIAM GASTON PRIZE FOR EXCELLENCE IN ORATORY. From the income of a fund established in 1894 as a memorial to the Hon. William Gaston, LL.D., of the class of 1840, a medal and a cash prize are awarded annually to the member of the graduating class of the College who delivers the best original address, not to exceed fifteen hundred words. To compete for the prize, a student must deposit with the Recorder a typewritten copy of his address at a designated

PRIZES, PREMIUMS, HONORS

date before the public competition. From these addresses, not more than five are selected for delivery. In making the award in the final contest regard is given to thought, style, and delivery. In 1953-54 the prize was awarded to

ROGER WENDELL BOWEN

THE GASPEE CHAPTER DAUGHTERS OF THE AMERICAN REVOLUTION PRIZE. This prize, established in 1895, is now paid from the income of a fund presented to Brown University in 1899. The prize is awarded annually to that student (in good standing) of Pembroke College who, registered in a class in American History, presents the best paper under conditions designated by the Department of History. The professor of American History and the Gaspee D.A.R. Prize Committee serve as the judges. In 1953-54 the prize was awarded to

NANCY LORD

THE WILLIAM GASTON PRIZE SCHOLARSHIP is provided by the income of a fund established in 1899 by the widow and the children of the Hon. William Gaston, LL.D., of the class of 1840. The scholarship is awarded at the Honors Convocation to a member of the Senior class at the College solely upon merit. For 1953-54 this prize was awarded to

THOMAS JOSEPH FRANCIS MCCORMACK

THE PHILO SHERMAN BENNETT PRIZE was established in 1904 by Philo Sherman Bennett for the "best essay discussing the principles of free government." A prize is awarded each year to that member of the senior class, man or woman, who submits the best paper under conditions designated by the Department of Political Science. In 1953-54 the prize was awarded from income of the Susan C. Rosenberger Fund to

JOHN WOLCOTT WORKS

THE BISHOP McVICKAR PRIZES were founded in 1909 by the Rt. Rev. William Neilson McVickar, Bishop of the Protestant Episcopal Diocese of Rhode Island, 1898-1910, and are now awarded from the income of a fund established in 1923 in his memory by his sister, Miss E. C. McVickar. The prizes are awarded for the best papers submitted under conditions designated by the Department of Biblical Literature. The competition is open to all undergraduates, men and women. In 1953-54 prizes were awarded as follows:

The first prize to CHARLES SARGENT TYLER

The second prize to SARAH CONSTANT DELANEY

THE RATCLIFFE HICKS PRIZE IN ENGLISH established in 1915, from income from the Ratcliffe Hicks Fund of 1907, is awarded at the end of the senior year to the student at the College who has "the highest standing in the courses in English literature and language." For women, this prize is paralleled by the Minnie Helen Hicks Prize in English. In 1953-54 the prize was awarded to

HAROLD HUGH ROBINSON, JR.

PRIZES, PREMIUMS, HONORS

THE SUSAN COLVER ROSENBERGER PRIZES were established in 1919 by Jesse L. Rosenberger, as a memorial to his wife, who was the daughter of Charles K. Colver, of the class of 1842. The awards are to be made under conditions to be laid down by the University. It is a stipulation of the endowment that the prizes "shall not be assigned permanently to any one department of the University, nor continuously for any one thing, but shall be awarded for whatever, from year to year, or from time to time, it is believed will, at the time, do the greatest good, either in the interests of scholarship, or for the development of character," and that from time to time a medal shall be awarded to a graduate of Brown University or another person "for specially notable or beneficial achievement."

In 1953-54 prizes from the income of this fund were offered in each of the following competitions open to men and women:

I. In Italian: Two prizes for the best papers submitted under conditions designated by the Division of Modern Languages. A prize was awarded as follows:

The second prize to ROSE THOMASIAN

II. In Spanish: Two prizes for the best papers submitted under conditions designated by the Division of Modern Languages. No prize was awarded.

For the year of 1953-54 part of the income from this fund was devoted to the payment of the following premiums normally paid from other funds as elsewhere designated, the David Howell Premium, the President's Premiums, the Philo Sherman Bennett Prize, and the Carpenter Premiums.

In 1954-55 two prizes from the income of this fund are offered in each of the following competitions:

I. In Art: Awarded for the best papers submitted under conditions designated by the Department of Art.

II. In Music: Awarded for the best papers submitted under conditions designated by the Department of Music.

THE ENGINEERING PRIZE, awarded since 1920 and now derived from the income of a prize scholarship fund presented to the University in 1930 by the Brown Engineering Association, is awarded to the member of the senior class who, a candidate for the degree of Bachelor of Science in Engineering, has maintained high standing in the fundamental engineering courses of the first three years, and gives marked promise of future usefulness in some branch of the profession of engineering. In 1953-54 the prize was awarded to

ELWOOD GREGORY ROOME

THE JAMES ALDRICH PIRCE PRIZE is awarded from the income of a fund established in 1927 by Miss Florence Pirce in memory of her brother, a member of the class of 1892. The fund is designed "to promote among students an understanding of order and beauty in life." The prize is currently awarded to the undergraduate at the College who presents the best paper in the course in Greek Art and Archaeology (Classics 117, 118; Art 117, 118) or in Greek and Roman History (Classics 121, 122), these being offered in alternate years, and for women is paralleled by the Minnie Helen Hicks Prize in Classical Appreciation. In 1953-54 the prize was awarded to

ROBERT REINER JOHNSON

PRIZES, PREMIUMS, HONORS

THE PRESTON GURNEY LITERARY PRIZES are derived from the income of a fund bequeathed in 1928 to Brown University by Preston Gurney, of the class of 1866. From the income of the endowment two prizes are to be awarded annually to members of the senior class, men or women, for the best essays on approved literary topics. Two-thirds of the income shall constitute the first prize, and one-third the second prize. In 1953-54 prizes were awarded as follows:

The first prize to PAUL BEEKMAN TAYLOR

The second prize to DEVRA JUDITH MILLER

THE CHEMISTRY PRIZE is awarded annually (since 1930) to the most outstanding student in the junior class concentrating in the Department of Chemistry, the recipient to be chosen by the department on the basis of past accomplishment and future promise. The prize consists of a year's membership in the American Chemical Society. In 1953-54 equal prizes were awarded respectively to

RAYMOND LEONARD TAYLOR

HARRIET RUTH WATERMAN

THE RUTH ELECTA COLLINS PREMIUM IN FRENCH is derived from the income of a fund established in 1936 by Mrs. Clarkson Abel Collins in memory of her daughter, Ruth Electa Collins. It is awarded annually to that member of the senior class, man or woman, "distinguished as an outstanding scholar in French." In 1953-54 the premium was awarded to

JEAN LOUISE SCHUPBACH

THE HENRY PARKER MANNING MATHEMATICAL PRIZES, instituted in 1936 by annual gift, as the "Calculus Prizes," are now paid out of not more than half of the annual income of a fund established anonymously in 1949, on the ninetieth birthday of Henry Parker Manning, Brown 1883, mathematician and scholar of ancient languages. The portion of the annual income not so expended is added annually to the principal. A first and a second prize are currently awarded on the basis of a special examination in the Calculus, open to juniors, men and women. In 1953-54 prizes were awarded as follows:

The first prize to GENE EDWARD BLOCH

The second prize to ZYGMUND LOWE DERMER

THE IRVING LYSANDER FOSTER PRIZE IN FRENCH is awarded from the income of a fund established in 1940 by Warren Woden Foster and Hattie Foster Moore in memory of their father, Irving Lysander Foster, of the class of 1893. The prize is awarded at the end of the academic year to the member of the freshman class, man or woman, who, not a person of French lineage nor educated in a French-speaking community, excels in the work in French. In 1953-54 the prize was awarded to

CAROLINE MARY URQUHART

THE ADOLPH CONRAD ELY PRIZE IN GERMAN is derived from a fund bequeathed in 1941 to Brown University by Adolph Conrad Ely, teacher, of the class of 1894. A prize is awarded annually on recommendation of the Department of German

PRIZES, PREMIUMS, HONORS

to the senior, man or woman, with highest standing in Germanic Languages and Literature. In 1953-54 the prize was awarded to

BARBARA ANN CASPARIAN

THE CLARKSON ABEL COLLINS, JR., PREMIUM IN AMERICAN MARINE HISTORY is derived from the income of a fund given to Brown University in 1941 by Letta I. Collins in memory of her son. An annual prize is offered for the best paper on any approved topic dealing with the American Merchant Marine or Navy prior to 1865. Currently, the competition is open to men under conditions specified by the Department of Naval Science. In 1953-54 the prize was awarded to

ROBERT HATHAWAY GOFF, JR.

THE MINNIE HELEN HICKS PRIZE FUND was bequeathed in 1942 to Brown University by Minnie Helen Hicks. The income is used to provide for various prizes awarded to students of Pembroke College as announced elsewhere.

THE SAMUEL C. LAMPORT PRIZES IN INTERNATIONAL UNDERSTANDING, first offered in 1943 by annual gift of the Trustees of the Samuel C. and Miriam D. Lamport Foundation, are now awarded from the income of a fund donated to Brown University in 1952 by these trustees. The prizes are offered to undergraduate students of Brown University, men and women, for papers on international understanding, with emphasis on cooperation and tolerance. Currently, prizes are awarded each year as follows: in 1952-53, and in alternate years thereafter, two prizes in History and two in Political Science; in 1953-54, and in alternate years thereafter, two prizes in Economics and two in Sociology. In 1953-54 prizes were awarded as follows:

In Economics:

The first prize to FRED KENNETH BEAKER

The second prize to DIANE PARDOE

In Sociology:

The first prize to ALICE JOY PHILLIPS

The second prize to ROBERT FISHER ROBERTSON

THE ISABEL HARRIS METCALF PRIZE was instituted in 1943. It is offered annually for the best paper submitted by any student of Pembroke College under conditions designated by the Department of Political Science. In 1953-54 no prize was awarded.

THE MURIEL PORT STEVENS PRIZE IN MUSIC, inaugurated in 1944 by annual gift from Mrs. Eli Port in honor of her daughter, of the class of 1940, Pembroke College, is awarded annually on recommendation of the Department of Music, for high achievement in composition, performance, historical study, or a combination of these fields. The prize, open to all undergraduate students of the University, men and women, will not be given twice to the same student. It will ordinarily be awarded only to a student who has completed four semesters of work in the Department of Music. In 1953-54 the prize was awarded to

COLIN DANA HAWES

PRIZES, PREMIUMS, HONORS

THE HOPE CHATTERTON AWARD IN MUSIC, to memorialize Hope Chatterton, was, by annual gift, donated anonymously, the first award being made in the spring of 1946 for "the best student pianist in Pembroke College." The fund was endowed in 1952. A prize is given in the spring to a student of Pembroke College, enrolled in the Department of Music, who in public audition is deemed to excel in piano performance. In 1953-54 the prize was awarded to

MARY LOU COUTURE

THE MINNIE HELEN HICKS PRIZES FOR ELOCUTION, paid since 1949 from income of the Minnie Helen Hicks Prize Fund, parallel, for students of Pembroke College, the Thomas Carpenter Prizes for Elocution established in 1867 for men in The College. The contests separately judged are conducted concurrently, and under similar conditions. Two prizes are offered. In 1953-54 prizes were awarded as follows:

The first prize to GERALDINE ANNE WEICKER

The second prize to CAROL BINDER

THE ALBERT ARNOLD BENNETT, CLASS OF 1872, PRIZE FUND was established by an anonymous donor through several gifts made between 1941 and 1949. The fund is in memory of the Reverend Albert A. Bennett, D.D., pioneer missionary to Japan. A sum not to exceed half the annual income is available annually for prize purposes, but not continuously for any one object. Specifically approved as possible beneficiary is the principal of any scholastic prize fund of the University, which though long established at the time of the award is then deemed by the President of Brown University to be relatively inadequate. The portion of the annual income not expended for other prize purposes is added annually to the principal. In 1953-54 an addition was made from income of this fund to the principal of the David Howell Premium Fund.

THE CHOPIN CLUB OF PROVIDENCE AWARD IN MUSIC, inaugurated in 1950, is given, on recommendation of the Department of Music on the basis of performance and evidence of serious purpose, to a freshman, man or woman, who is studying voice or instrument regularly. Half the award is given at the end of the first semester and, if satisfactory effort continues, the remainder is given to the same recipient at the end of the second semester. In 1953-54 the prize was awarded to

KENNETH SPERO LATCHIS

THE HELEN WHEELWRIGHT AWARD IN MUSIC, inaugurated as a prize in 1950 by the Monday Morning Musical Club of Providence as a memorial to Miss Helen Wheelwright, is awarded to an undergraduate, man or woman, who in the opinion of the Department of Music displays musical gifts of a high order. In 1953-54 the award was made to

DANIEL CARY ABBOTT

THE MINNIE HELEN HICKS PRIZES IN ART are awarded, since 1951, from income of the Minnie Helen Hicks Fund for creative work in Art to students in Pembroke College concentrating in Art. A committee appointed by the Department of Art

PRIZES, PREMIUMS, HONORS

selects the winners on the basis of a limited group of works done by each candidate during her college career and submitted in competition at a public exhibit. The department may retain one work by each prize winner. The winner of the first prize in any year is not eligible to compete in a subsequent year. In 1953-54 prizes were awarded as follows:

The first prize to JUDITH BESS SHANKMAN

The second prize to MARY LOUISE GRECCO

THE ALEXANDER MEIKLEJOHN PRIZE IN LOGIC is paid from income of a fund established anonymously in 1951. The prize is awarded to a member of the freshman, sophomore, or junior class, man or woman, who excels in Logic and related subjects. It consists of books selected by the winner after consultation with a member of the Department of Philosophy, at a cost not exceeding half the annual income from the fund, the rest being added to the principal. In 1953-54 the award was made to

EUGENE CHERNELL

THE MURIEL FAIN SHER MEMORIAL PRIZE IN PSYCHOLOGY is derived from the income of a fund established in 1952 by the friends of Muriel Fain Sher. It is awarded annually to the most outstanding student in the senior class of Pembroke College concentrating in the Department of Psychology, the recipient to be chosen by the Department on the basis of past accomplishment and future promise. In 1953-54 the award was made to

JOY FRANCINE GARZIANO

THE CLASS OF 1952 PRIZE is derived from three-fourths of the income of a fund established in 1952 by the Class of 1952, at the College. It is awarded annually to an outstanding student of the College at the end of his junior year, on the basis of excellence in scholastic achievement and extra-curricular activity. The remainder of the income is added annually to the principal. In 1953-54 the award was made to

WARREN FRED ILCHMAN

THE PRESSER FOUNDATION AWARD IN MUSIC was instituted in 1952 by annual gift from the Presser Foundation in Philadelphia. The recipient is selected by the President and the Chairman of the Music Department, guided solely by considerations of merit. Not less than approximately one-third of the work of the recipient shall be in Music. In 1953-54 the award was made to

ROSAMOND HATHAWAY WALDRON

THE WOODS HOLE PRIZE IN BIOLOGY is awarded by an anonymous donor, by annual gift since 1952. The prize is an opportunity for a summer course with tuition paid, at the Marine Biological Laboratory, Woods Hole, Massachusetts. It is awarded to a member of the junior or senior class, man or woman, for the best paper or demonstration for presentation at the Biological Conference of Eastern New England Colleges in the spring. In 1953-54 the prize was awarded to

ROBERT CURTIS KNOWLES

PRIZES, PREMIUMS, HONORS

THE TRISTAM BURGESS PREMIUM IN ENGLISH, instituted in 1953, is given at the end of the junior year to the student at Pembroke College "with the highest standing in rhetoric, English composition, and public speaking." It parallels the Robinson Potter Dunn Premium in English awarded in the College. In making the award, regard is given to the number of such courses taken as well as to the rank attained in them. The fund, donated anonymously, is in honor of Tristram Burges, Brown 1796, first professor of English at Brown, "Professor of Oratory and Belles-Lettres," 1815-28, Trustee, 1813-53, Chief Justice, R. I. Supreme Court, 1815-16, LL.D., Brown, 1823. In 1953-54 the premium was awarded to

HARRIET PHYLISS NICHOLS

THE MINNIE HELEN HICKS PRIZE IN ENGLISH, paid since 1953 from income of the Minnie Helen Hicks Prize Fund, is awarded at the end of the senior year to the student at Pembroke College, who has "the highest standing in the courses in English literature and language." It parallels the Ratcliffe Hicks Prize in English awarded in the College. In 1953-54 the prize was awarded to

KATHLEEN PHYLLIS WALTER

THE MINNIE HELEN HICKS PRIZE IN CLASSICAL APPRECIATION, instituted in 1953 from income of the Minnie Helen Hicks Prize Fund, is currently awarded to the undergraduate at Pembroke College, who presents the best paper in the course in Greek Art and Archaeology (Classics 117, 118; Art 117, 118), or in Greek and Roman History (Classics 121, 122), these being offered in alternate years. It parallels the James Aldrich Pirce Prize offered at the College. In 1953-54 the prize was awarded to

SUSAN DWIGHT COLLINS

THE LESTER WELLS BOARDMAN PRIZE IN AMERICAN LITERATURE was instituted by annual gift, in 1954, in memory of Lester W. Boardman, Brown 1899, A.M., 1902, by his widow, Mrs. Abigail C. Boardman. The prize is to be awarded to a student in the College, for excellence in the field of American Literature. In 1953-54 the prize was awarded to

PAUL BEEKMAN TAYLOR

Honor Scholarships

"To encourage proficiency in studies and to provide recognition for successful application to college work," the Faculty, in 1909 at The College and in 1922 at Pembroke College, established Honor Scholarships without financial stipend. These scholarships are awarded (1) since 1922, at the respective Honors Convocations in November, to resident undergraduates for scholastic achievement during the previous college year, and (2) since 1949, at Commencement, to graduating students for scholastic achievement during the senior year. An Honor Scholarship becomes effective upon the date of announcement.

THE JAMES MANNING AND FRANCIS WAYLAND SCHOLARSHIPS are awarded to students of the College whose college work throughout the academic year preceding,

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or just completed, has been of such excellence that they are deemed worthy of high academic distinction and of academic distinction respectively. For awards at Honors Convocation, at the instigation of Alexander Meiklejohn, from the Ratcliffe Hicks Fund of 1907, a prize book is presented to each James Manning and Francis Wayland Scholar.

THE ELISHA BENJAMIN ANDREWS SCHOLARSHIPS are awarded to students of Pembroke College, whose college work throughout the academic year preceding, or just completed, has been of such excellence that they are deemed worthy of high academic distinction. For awards at Honors Convocation, from the Lida Shaw King Prize Book Fund of 1929, a prize book is presented to each Elisha Benjamin Andrews Scholar.

During the academic year 1953-54, Honors Scholars were announced as follows:

JAMES MANNING SCHOLARS

Seniors, at Commencement

JEROME BAILEY GRIEDER
CHARLES DAVID LAKE

THOMAS JOSEPH FRANCIS MCCORMACK
JOSEPH NICHOLAS PALMIERI

Seniors, at Honors Convocation

GUIDO JAMES CERILLI
MARTIN JOEL KANTOR

THOMAS JOSEPH FRANCIS MCCORMACK
PAUL BEEKMAN TAYLOR

Juniors, at Honors Convocation

DAVID BRUCE KUNSTLER

RAYMOND LEONARD TAYLOR

Sophomores, at Honors Convocation

JOHN GEORGE BLAIR
NORMAN JAY COWEN
NOEL MACDONALD FIELD, JR.

HOWARD BURT GREENSTEIN
STANFORD ALBERT HAUSMAN
HERBERT RAKATANSKY

FRANCIS WAYLAND SCHOLARS

Seniors, at Commencement

NORMAN WILLIAM BAZLEY
ROBERT MILLARD FURMAN
ROY ELLIS GAINSBURG
EMANUEL GERARD
MARTIN JOEL KANTOR
RICHARD CORTLAND NICKERSON

JOHN ERWIN SEMONCHE
JOHN SKLAR
NORMAN ARTHUR SPRINTHALL
GORDON WOODHALL WEBSTER
ROGER PARKER WILKS

Senior, at Honors Convocation

SIDNEY MORRIS RICHMAN

Juniors, at Honors Convocation

JOSEPH ROLAND GAETA
RICHARD KHACHIAN

PETER WALLACE LISBON
RICHARD DOMINIC SPIZZIRRI

PRIZES, PREMIUMS, HONORS

Sophomores, at Honors Convocation

JOHN HARVEY CUTLER
BRUCE TOWNSEND DALZELL
ALVIN EMANUEL FRIEDMAN

EDMUND CHARLES LARY
MARIO JOSEPH SCULCO
BASIL SAMUEL TANENBAUM

ELISHA BENJAMIN ANDREWS SCHOLARS

Seniors, at Commencement

REBECCA BOWLES ANDERSON
MARGRIT BENZION
ANNE MARILYN CAHALANE
ANNE FAYETTE DERMER
ELIZABETH HAAS
MOLLYANN KEAT KAY
CAROL LOUISE KILBOURNE
ELENORE JEAN MACPHAIL
SARAH BREWER MARSHALL

SYLVIA HELENE MOSCOVITZ
CAROL ANN O'BRIEN
JEAN LOUISE SCHUPBACH
MARY OLIVE SISK
ROSE THOMASIAN
EDITH MARGARET VEIT
KATHLEEN PHYLLIS WALTER
JUDITH CARVER WELLS

Seniors, at Honors Convocation

EUDA LOIS BILLER
ANNE MARILYN CAHALANE
JOY FRANCINE GARZIANO
SYLVIA HELENE MOSCOVITZ
BARBARA JOYCE NAHIGIAN
CAROLYN O'NEIL

JEAN LOUISE SCHUPBACH
MARY OLIVE SISK
ELGA LISALOTTE KRON STULMAN
ROSE THOMASIAN
ARLENE CLAIRE WEINTRAUB

Juniors, at Honors Convocation

JANE LUCILE BALTZELL
PHYLLIS JUSTINE GUSHAE
MARJORIE JEAN LIGHTFOOT

JANET CHRISTINE MACPHAIL
JUDITH AUDREY THORSEN
HARRIET RUTH WATERMAN

Sophomores, at Honors Convocation

JUDITH CAROL KWESKIN
WINIFRED RUTH SIBLEY
BARBARA HERSHEY SUNSERI

JEAN MERYL TOUROFF
SARAH ELIZABETH WILLIAMS

Honorary Societies

Phi Beta Kappa

OFFICERS, 1954-55

President: PROFESSOR (EMERITUS) WILLIAM THOMSON HASTINGS, A.M.
Vice-President: WILLIAM HENRY EDWARDS, A.B., LL.B.
Secretary: PROFESSOR ANDREW JOSEPH SABOL, PH.D.
Treasurer: RONALD BANCROFT SMITH, A.B., LL.B.
Auditor: GEORGE LELAND MINER, A.B.

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The Rhode Island Alpha of the Phi Beta Kappa Society was established at Brown University in 1830. The Women's Section was organized in 1900. The chapter annually elects to membership a certain number of the leading scholars of the senior and junior classes.

Candidates for the degree of Bachelor of Arts are eligible for election to Phi Beta Kappa. Not more than one-sixth of the candidates for this degree may be elected, and not more than one-third of the members from each class are elected in the junior year.

Two elections are ordinarily held each year, one at midyear and one in May. At midyear the juniors and about half of the seniors are elected, the choice being based primarily upon their scholastic standing as shown by the official college records. In May the remaining seniors are selected. They are elected "only after a scrutiny of their whole academic record in detail, including (a) such evidence as their success in candidacy for Honors," and (b) opinions of members of the Faculty regarding their general qualifications, particularly the extent to which they possess liberal culture.

MEN ELECTED IN 1953-54

Seniors

NORMAN WILLIAM BAZLEY
GUIDO JAMES CERILLI
ROBERT ANTHONY DiCURCIO
ROBERT ALFRED FRENETTE
EDWARD JENCKS GAUTHIER
THOMAS ELLIOTT GOLD
JEROME BAILEY GRIEDER
HENRY FRANK IZEMAN
ELTON PAUL KATZ
CHARLES DAVID LAKE
JOSEPH WARREN MALKARY
THOMAS JOSEPH FRANCIS McCORMACK
GEORGE S. MORFOGEN
JOHN NALBANDIAN
DAVID ELA PARKER

SIDNEY MORRIS RICHMAN
ROBERT ALLEN SELIGSON
JOHN ERWIN SEMONCHE
SIDNEY JOEL SHULINS
JOHN SKLAR
NORMAN ARTHUR SPRINTHALL
ROGER PARKER WILKS

Juniors

ELIOT VINCENT BARENBOIM
ANDREW STEPHEN BLAZAR
ROBERT PAINE CARLSON
JOSEPH ROLAND GAETA
JOHN TALBOTT HOUK
DAVID BRUCE KUNSTLER
PETER WALLACE LISBON
RICHARD DOMINCI SPIZZIRRI

WOMEN ELECTED IN 1953-54

Seniors

ANNE FAYETTE DERMER
ELIZABETH HAAS
ANNADELE HORNDAHL
MOLLYANN KEAT KAY
CAROL LOUISE KILBOURNE
ELENORE JEAN MACPHAIL
SARAH BREWER MARSHALL
SYLVIA HELENE MOSCOVITZ
CAROL ANN O'BRIEN
CAROLYN O'NEIL

MARY OLIVE SISK
KATHLEEN PHYLLIS WALTER
ARLENE CLAIRE WEINTRAUB
JUDITH CARVER WELLS

Juniors

JANE LUCILE BALTZELL
PHYLLIS JUSTINE GUSHAE
MARJORIE JEAN LIGHTFOOT
JANET CHRISTINE MACPHAIL
MARY SEGAL
JUDITH AUDREY THORSEN

PRIZES, PREMIUMS, HONORS

Sigma Xi

OFFICERS, 1954-55

President: ALONZO WALLACE QUINN

Vice-President: HERMAN BURLEIGH CHASE

Secretary: ALBERT ARNOLD BENNETT

Treasurer: PAUL FRITZ MAEDER

Vice-President (1953-54): CARL PFAFFMANN

The Brown Chapter of the Society of the Sigma Xi was established in May, 1900. The annual Initiation Exercises occur on the Thursday following the first Sunday in March.

The following persons are eligible to full membership:

(a) Any professor, instructor, or other member of the staff of Brown University who has shown noteworthy achievement as an original investigator in some branch of pure or applied science.

(b) Any graduate student in Brown University who, judged by his actual work of investigation, has exhibited an aptitude for scientific research.

(c) Any graduate of Brown University of not less than five years standing, who has shown noteworthy achievement as an original investigator in some branch of pure or applied science, is eligible to alumni membership.

(d) Any professor, instructor, or investigator, connected with a neighboring educational, scientific, or professional institution not having a chapter, who would otherwise be eligible for active membership, is eligible as a non-resident member.

(e) Any associate within five years after graduation on the condition prescribed in (b) of this section.

The following persons are eligible to election as associates:

(a) Any graduate student in Brown University who has shown marked excellence in one or more departments of pure or applied science.

(b) Any student in Brown University who has completed two and one-half years of undergraduate work and who has shown marked excellence in two or more departments of pure or applied science.

Nominations are made by the active members, two signatures being required for each nomination. A board of electors makes the elections, once each year, from the list of nominees. In March 1954, the following were initiated:

MEMBERS

By promotion

ROBERT EDWARD BEYER
WILLIAM TURNBULL BRADNER
JOHN ANTHONY CARPENTER
WALTER DANNHAUSER
HARRISON MCCREA DICKSON
ROBERT WILLIAM HENDRICKS
JOHN HARMON HENKEL
LOIS ANNE LOEWENTHAL
JOHN BLAKESLEE LYON, JR.

WILLIAM GEORGE MAISCH
JOHN WILEY MCCRARY, JR.
IRENE ANDERSON MIALE
DONALD HOWARD POWERS, JR.
WILLIAM PERIN RANEY
EDGAR CLARENCE SMITH, JR.
GEORGE VERONIS
RICHARD FORREST WOODCOCK

PRIZES, PREMIUMS, HONORS

Directly

RICHARD BALLANTINE ALLEN
EUGENE BELL
ROBERT MERCER BURGER
NESTOR EDGAR CAROSELLI
CARMINE CHARLES FERRISO
GORDON LEE HIEBERT
KURT LÜCKE
LACHLAN MACKINNON

PAUL FRITZ MAEDER
ROBERT WILLIAM MARTEL
PHILIP LAURENT MERCIER
RONALD SAMUEL RIVLIN
HIROSHI UEHARA
HOWARD MORRISON WIGHT, JR.
KURT WRAY

ASSOCIATES

(from the College and from Pembroke College)

Graduates

AMERICO BERNARDO ALMEIDA
DAVID ALAN BECKWITH
GARY MCGREGOR BOONE
JOHN BRUCE BRACKENRIDGE
SOMCHAI CHANSUVAN
JOHN CHARLES CORELLI
LELAND EARL CRATTY, JR.
MARY ROBERTS FORBES DAY
RONALD KRAFT EBY
VICTOR RALPH FORMISANO
EARL CLIFFORD HAGSTROM
ROBERT BERNARD HEIART

AUDREY PHYLLIS HOLT
HERBERT MEYER KAMOWITZ
STUART ESTES LOVELL
DONALD GENE MALM
ROBERT ELMER MCCARTHY
THEODORE JOSEPH MENTEL
JOHN ALLAN MORRISON
FRANK PANTALEONE PALERMO
NICHOLAS PAPPAS
BEN SILVER
NORMAN EUGENE WILLIAMS

Seniors

NORMAN DAVISON BARTLETT, JR.
NORMAN WILLIAM BAZLEY
EUDA LOIS BILLER
BETSY LEE JEFFERS BISHOP
STANLEY HARRY BOULAS
RICHARD ROBBINS BRAISTED
GUIDO JAMES CERILLI
ROBERT MERTON CHRISTIANSEN
ANNE CRAWFORD CLOWES
EMANUEL GERARD
ALVIN IRA GERSTEIN
CARROLL SHANON GOLDBERG
ROBERT REINER JOHNSON
ELTON PAUL KATZ
MOLLYANN KEAT KAY

CAROL LOUISE KILBOURNE
JOHN BENNETT LIVINGSTONE
JOSEPH WARREN MALKARY
JOSEPH ALBERT MESCHINO
SYLVIA HELENE MOSCOVITZ
RICHARD CORTLAND NICKERSON
PATRICIA MARY POZZI
EDWARD FRANCIS REGAN, JR.
ELWOOD GREGORY ROOME
MATTHEW DANIEL SCHARFF
MARY OLIVE SISK
BRUCE STEGER
ANN BROOKS TEBBETTS
GORDON WOODHALL WEBSTER

PRIZES, PREMIUMS, HONORS

Juniors

ROBERT PAINE CARLSON
DAVID BRUCE KUNSTLER
JANET CHRISTINE MACPHAIL

RAYMOND LEONARD TAYLOR
HARRIET RUTH WATERMAN

Engineering Society

Tau Beta Pi

OFFICERS, 1954-55

President: FRANK COLLE WHITNEY
Vice-President: WLADISLAW JUERGENS
Secretary: JOSEPH EDWARD MOTHERWAY
Treasurer: PETER SIMENKOW
Cataloguer: WLADISLAW JUERGENS

The Tau Beta Pi Association, national engineering honor society, was founded at Lehigh University in 1885 to mark in a fitting manner those who have conferred honor upon their Alma Mater by distinguished scholarship and exemplary character as undergraduates in engineering, or by their attainments as alumni in the field of engineering, and to foster a spirit of liberal culture in the engineering colleges of America. Each chapter has full control of its individual affairs, the control being vested primarily in the undergraduate members. An alumni advisory board may act in an advisory and judiciary capacity.

To be eligible for election to membership as an undergraduate, the student must be in either his junior or senior year. To be eligible as a junior, his scholastic records must fall within the top eighth of his class and as a senior the top fifth. Distinguished scholarship, while the primary requisite for admission, is not considered the sole criterion. After the scholarship requirements have been fulfilled, the selection is based on integrity, breadth of interest both inside and outside of engineering, adaptability, and unselfish activity. An alumnus, either of Brown University or other accredited engineering schools, may be elected to membership if he has a proven record of character, ability, and integrity, the election still being made by the undergraduate chapter.

The Rhode Island Alpha Chapter was installed at Brown University on February 12, 1954. At the time of the installation of the chapter, in addition to the charter members, 128 alumni members were initiated, mostly alumni who would have been eligible for membership in the society had the chapter existed prior to their graduation.

PRIZES, PREMIUMS, HONORS

CHARTER MEMBERS INITIATED IN 1953-54

Class of 1950

GEORGE STEPHEN HOMIC

Class of 1951

CHARLES JOSEPH CASEY, JR.
ALVAN KNUTE GUSTAFSON
WILLIAM HIGGINSON MANNING
PAUL RUDOLPH REY
ALBERT DOUGLAS WOOD

Class of 1952

MICHAEL ARMANDO FAVICCHIO
ANTHONY KOOHARIAN
JAMES FRANCIS MCGINN
RICHARD JOHN SAHULKA
ALFRED CHEN-PING YANG

Class of 1953

DANIEL PAUL DEFINO
PETER PAUL GILLIS
JAMES ROBERTS WOODBURY
RICHARD HSING-YUNG YEN

Class of 1954

NORMAN DAVIDSON BARTLETT, JR.
PAUL FRANCIS BROWN
ALFRED JOSEPH PETTERUTI
EDWARD FRANCIS REGAN
ELWOOD GREGORY ROOME

Class of 1955

WLADISLAW JUERGENS
PETER SIMENKOW
FRANK COOKE WHITNEY

MEN ELECTED IN 1953-54

Seniors

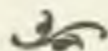
ROBERT MERTON CHRISTIANSEN
WALTER BALLARD OLSTAD

EVERETT RONALD SILVIA

Junior

JOSEPH EDWARD MOTHERWAY

The Associated Alumni of Brown University



Honorary Chairmen

Harold Brooks Tanner '09
Henry Merritt Wriston

Providence
Providence

Officers—1954-55

<i>President:</i> Elmer S. Horton '10	Barrington, R. I.
<i>Treasurer:</i> Richmond H. Sweet '25	Providence, R. I.
<i>Vice Presidents:</i>	
<i>New England Region:</i> Edwin M. Murphy '19	Swampscott, Mass.
<i>Rhode Island Region:</i> Francis J. O'Brien '16	Providence, R. I.
<i>North Atlantic-Midland:</i> William F. Rooney '20	Brooklyn, N. Y.
<i>South Atlantic-Midland:</i> Alden R. Walls '31	Atlanta, Ga.
<i>North Central Region:</i> F. Abbott Brown '26	Chicago, Ill.
<i>South Central Region:</i> Joel A. Rogers '31	St. Louis, Mo.
<i>Western Region:</i> Robert E. Soellner '24	Palo Alto, Calif.
<i>Alumni Secretary:</i> William B. McCormick '23	Providence, R. I.

Directors

Walter Adler '18	George Hurley, Jr. '41
Norman P. Arnold '30	Herbert M. Iselin '42
Frederick A. Ballou '16	Charles D. Kenney '27
Frederick Bloom '35	John H. Kreidler '38
Lyman G. Bloomingdale '35	Joseph F. Lockett, Jr. '42
Cortlandt P. Briggs '39	Samuel J. McDonald '38
William T. Broomhead '35	Richard D. Messinger '37
Richard F. Canning '32	Louis B. Palmer '28
T. Dexter Clarke '32	A. Peter Quinn, Jr. '45
Arlan R. Coolidge '24	E. Bruce Remick '44
Louis Farber '29	William K. Saunders '42
William E. Fay Jr. '38	Lewis A. Shaw '48
Carleton Goff '24	Owen F. Walker '33
Robert H. Goff '24	James L. Whitcomb '36
Milton H. Glover '22	G. Gale Wisbach '39
William A. Graham '16	Kenneth Wright '38
Russell B. Granniss '36	

THE ASSOCIATED ALUMNI

Trustees of the Brown Alumni Fund

Term Expires 1954

Noel M. Field '26

Alfred H. MacGillivray '39

William R. Hulbert, Jr. '37

Ernest J. Woelfel '23

Term Expires 1955

Harry H. Burton '16

Joseph W. Ress '26

Benjamin A. Chase '38

Henry D. Sharpe, Jr. '45

Robert C. Litchfield '23

Harvey M. Spear '42

Royal B. Lord '21

Alan A. Wood '11

Term Expires 1956

John F. Bannon '99

William H. Edwards '19

William H. Danforth '42

W. Easton Louttit '25

C. Manton Eddy '22

Norman Pierce '33

Gurney Edwards '18

Gavin A. Pitt '38

Chairman 1953-54

Ex Officio: Henry M. Wriston, Bruce M. Bigelow '24, Thomas B. Appleget '17, F. Morris Cochran

Executive Secretary: Allen B. Williams, Jr. '40

Brown Alumni Monthly

Board of Editors (1954-55)

Charles Arthur Braitsch '23, *Chairman*

Warren Leonard Carleen '48

Carleton Goff '24

George William Potter '21, *Vice-Chairman*

Elmer Stuart Horton '10

Prof. Israel Kapstein '26

Garrett Davis Byrnes '26

John Tracy Winterich '12

Managing-Editor

William Chesley Worthington '23

Assistant Editor

John Francis Barry, Jr. '50

Association of Class Secretaries

Advisory Board

Chairman, Walter Adler '18

Vice-Chairman, Franklin A. Hurd '33

Secretary, Martin L. Tarpy '37

Ex Officio: Elmer S. Horton '10

Ex Officio: William B. McCormick '23

Degrees Conferred



Degrees in Course Conferred by the University in 1954

The College

June 7, 1954

BACHELOR OF ARTS

A.B., Summa cum Laude

Martin Joel Kantor

Thomas Joseph Francis McCormack

A.B., Magna cum Laude

Anthony Augustus
Guido James Cerilli, Jr.
Robert Alfred Frenette
Robert Millard Furman
Emanuel Gerard
Thomas Elliott Gold
Carroll Shanon Goldberg
Jerome Bailey Grieder

Charles David Lake
Sidney Morris Richman
Matthew Daniel Scharff
John Erwin Semonche
Sidney Joel Shulins
Norman Arthur Sprinthall
Bruce Steger
Caleb Randall Woodhouse

A.B., Cum Laude

Norman William Bazley
Richard Robbins Braisted
Robert Anthony DiCurcio
Roy Ellis Gainsburg
Edward Jencks Gauthier
Alvin Ira Gerstein
Henry Frank Izeman
Elton Paul Katz
Robert Ivan Kramer
John Bennett Livingstone

Joseph Warren Malkary
George Monteiro
George S. Morfogen
John Nalbandian
David Ela Parker
Harold Hugh Robinson, Jr.
Robert Allen Seligson
John Sklar
Gordon Woodhall Webster
Roger Parker Wilks

DEGREES CONFERRED

A.B.

Daniel Cary Abbott
Ronald Joseph Abdow
Kenneth Burton Abel
Herbert Carl Achtmeyer, Jr.
Charles Richard Alspach
Richard Luis Amill
Joseph Robert Annimo
Frank Anzivino, Jr.
Robert Charles Arruda
Henry Clayton Atwood, Jr.
Joel Nathan Axelrod
Warren Percy Bailey
Clarence Caulfield Barksdale
Sidney Baumgarten
Arthur Ascher Bayer
Edward John Beadle
David Winton Bell
Paul Gregory Benedum, Jr.
Sarkis Berberian
Constantine Louis Berdos
Jerome David Bernstein
Harry Bryant Bernstrom
Armand Albert Bessette
Bayard Wayne Bidwell
Gordon Shoemaker Bigelow
William Dillon Blake
Charles Louis Blankfort
Joseph Francis Bombino
Richard Melvin Borod
Stanley H. Boulas
Kenneth Barnes Bourne, Jr.
Roger Wendell Bowen
Earl Francis Bradley
James Anthony Bradley, Jr.
Roger Brandwein
Leland Davis Breckenridge, Jr.
William Merrick Brigden
Richard Gordon Brodrick, Jr.
James Delano Brown
Alan William Brownsword
Charles Williams Burdick, Jr.
Frederick Hunter Burrell
Gerard Noel Burrow
Lewis Harrison Busell
Haven Paul Cammett

Roger Charles Carmel
David Richter Carter
Edward Timothy Casey
Loring William Chadwick
Laurence Zachary Chipurnoi
Alfred Cocchiaraley
Herbert Stuart Cohen
Marshall Herbert Cohen
John Kingsbury Colby, Jr.
Robert Conley
Robert Lee Conrad
Russell Albert Cook
Walter Martin Cook
John Joseph Cooney
Robert F. Copp
Alan M. Corney
John Joseph Cote
Donald Eugene Cottey
Joseph Edmund Coughlin, Jr.
Ezra Chester Creswell
Roger James Kissel Cromwell
John David
Ansel Samuel Davis
John Dwelle Davis
Nico de Graaff
Raymond Ernest DeNault
Peter Paul DePaola
Joseph Clark Dickinson
Leslie Benjamin Disharoon
Henry Thompson Donaldson
Edmund Aubrey Doyle
Charles Duncan Drummond, Jr.
Dana Marshall Dudley
Norman Charles Duquette
Harry Francis Edson, Jr.
Ronald Leonard Eliasson
Thomas Perry Fagan
Richard Paul Farley
John Joseph Farrell, Jr.
Rodger Edward Farrell
Howard Knowles Fielding, Jr.
Alan John Fletcher
Fredric David Frigoletto, Jr.
Vaughn Douglas Fuller
Santo Thomas Gagliano

DEGREES CONFERRED

Albert Armond Gallotta, Jr.
Michael Joseph Gasparello
Thomas Theodore Gately
Lewis Mark Gediman
Charles Sumner Genovese
Alfred Edward Giberti
Theodore Payne Gibson
Robert Carroll Gill
Robert Isaac Glass
William Richard Goff
Laurance Frederic Good
John Gorham
Paul Remi Goyette
John David Greene
Michael Gruytch
William Vincent Gugli
Alvin Richard Hagenau
William Earl Hall
Walter Halperin
Michael David Harris
Girard Edmund Haverty
Charles Elwyn Hayes, Jr.
Gerald Alexander Hebert
Paul Lorenz Hilpman
Sanford Hollander
David Van Valkenburg Holles
Stephen Francis Honan
John Adams Hopkins
Mark Hopkins, Jr.
Nathaniel William Horton
Bruce Hamilton Hunt
Emilio Domenico Iannuccillo
Adrian Richard Isé
Stanley Burton Jaffe
Robert Whyte Johnstone, IV
William Constantine Jones
Charles Ira Judkins, Jr.
Adolph August Kartell, Jr.
Kenneth James Kessariss
Chase Patterson Kimball
Roger Francis King
John Hugh Kinghorn
Chester Adam Kisiel
Ernest Victor Klein
Daniel Henry Krivit
James Edward Kurfess

Danny Wynn-Ye Kwok
Harold Martin Langs
John Francis Larson
John William Leahy
Arnold Lederman
Alan Henry Leff
Edward MacMillan Lemar
Jacques Lipetz
Alton Gordon Lipkin
Alfred Ralph Lombardi
Frank James Lord
Vincent MacBride Love
Robert Charles Lunn
Jerrold Irwin Lupoff
Chris Adrian Lutes
Douglas Clark MacCallum
John Earle Maddox
Hugh Nathaniel Major
Edward John Marcaccio
Shant Markarian
Stephen Matus
James Joseph McGough
John Daymond McKee, Jr.
William Clayton McKeehan, III
David Frank McKendall
James Michael McSherry
Roy Dudley Meeks
Theodore Joseph Metzger
Stanford Miller
Keith Gardner Milligan
Peter Acly Milne
Kenneth Maxwell Moffat
Peter Hamilton Mohrfeld
Edwin Ross Molineux
Bradford Wheeler Monahan
James Cyril Mooney
Charles Manus Moran, Jr.
Edward Stewart Morrison, Jr.
Ralph Wyndom Morton, Jr.
Frederic Henry Mundy, Jr.
Louis William Murgo
James Winford Nagle, III
Jasper John Najarian
Philip Langlands Nash
Robert Everton Naylor
Stephen Joel Neiman

DEGREES CONFERRED

Patsy Frank Nesci
Stuart Tobias Nevins
Philip William Noel
William Andrew O'Brien
Richard Joseph O'Hearn
Edward William O'Malley
John Edward Orton, III
Robert Ouloosian
Reginald Peter Patota
William Franklin Peace
Ralph John Perrotta
Arthur Thomas Petit
William Williston Pettine
John Philip Philbin, Jr.
Nicholas Pliakas
Samuel Joseph Pollock
William James Potter, Jr.
Francis Morgan Powers
Jack Kaufman Raiff
George Morton Randall
Abbott Jay Reeves
Fritz David Regensteiner
Geoffrey Willard Riker
Ernest Edward Ritchie
Donald Frederick Robbins, Jr.
Robert Fisher Robertson
Melvin Leonard Robinson
Donald Alexander Romano
Paul Lawrence Rosenberg
John Charles Rossiter
Robert Francis Roth
Leonard Earl Rubin
Everett Carl Sammartino
Roderick Schutt
Dean John Seibert
Manfred Seiden
Russell Kuhlman Shaffer
John Francis Shortall
John Anthony Sifakis
Thomas Henry Simon
William Peter Simon
Robert Malcolm Sloane
John Cameron Smith
Thomas Paul Snow
Sefton Stallard
Ronald Adams Stark
Ara Krikor Stepanian

Preston Tapley Stephenson, Jr.
Walter G. Stern
Thomas Reid Stetson
Carter Aven Straton
John Nicholas Streil, Jr.
Myles David Striar
Sherman Alan Strickhouser
James Milton Stuart
Gregory James Sullivan
Julius Gerald Sutton
Howard Clinton Sweet, Jr.
Everett Franklin Tanner, Jr.
Irving Kurtz Taylor
Paul Beekman Taylor
Moris Aaron Tcath
David Leonard Tecklin
Joseph Henry Thomas, Jr.
Levi Herbert Thomas
Richard French Thomas
Raymond Eugene Tobey
Philip Alan Torgan
Thomas Candor Tritschler
Paul David Tucker
Douglas Laird Turner
Charles Sargent Tyler
Hovey Marshall Tyndall
Howard Alden Vaughan
Arthur William Vietze, Jr.
Vieri Guy Volterra
John Alexander Wallace
Robert Wals
Robert Maxwell Watters
Floyd Seligman Weil
Richard Samuel Weinstein
Edgar Fisher Wells, Jr.
Howard Wentworth Westfield, Jr.
Russell White, III
Robert Maynard Wigod
Ronald Spencer Wills
Ernest John Woelfel, Jr.
Richard Edmond Wood
Richard Evan Woodsum
John Wolcott Works
Donn Hamilton Worth
Jerold Owen Young
Jordan Zack

DEGREES CONFERRED

BACHELOR OF SCIENCE IN ENGINEERING

Sc.B., *Cum Laude*

Norman Davison Bartlett, Jr.

Elwood Gregory Roome

Sc.B.

Robert Otis Ames
Edwin Craven Ballard, Jr.
Davis Remele Bates, Jr.
Harry Ernest Bay
Barry David Brown
Paul Francis Brown, Jr.
Daniel J. Cardozo
Robert Merton Christiansen
Ronald Hills Coleman
Pasquale Gerald DeSimone, Jr.
Roberto Oresto DiSaia
Donald Gordon Enoch
Allister Francis Fraser
Paul Alfred Frontiero
George Thomas Gergora
Robert Henderson Hawley
Charles Peter Heaton
Russell James Houldin

Arnold Richard Johnson
Richard Sigmund Kaufman
Carl Hess Keller, Jr.
Neil Francis Lacey, Jr.
James Francis Lyons, Jr.
James Macallum, Jr.
Alphonse Ulysses Marcotte
Walter Ballard Olstad
Barry Frederick Pearce
Jacob David Perrine
Alfred Joseph Petteruti
William Vaughan Polleys, III
Wallace Wheaton Read
Edward Francis Regan, Jr.
Wesley Allan Roth
Everett Ronald Silvia
Robert Balme Tucker
Robert Paul Watelet

BACHELOR OF SCIENCE IN CHEMISTRY

Sc.B., *Cum Laude*

Robert Reiner Johnson

Sc.B.

Richard Francis Beidler
Benjamin David Berkman, Jr.
Ralph Edward Brisco
Hagop Andrew Chopoorian
Fredric Edward Detoro
Joseph Carmine DiPalma
Serafino Joseph Fusco
Robert Wesley Handy
Joseph Albert Meschino

Glenn Curtis Morrison
David Nelson Orth
John Frederick Pendleton
Constantine Chris Petropoulos
Thomas Louis St. Pierre
Michael Anthony Silvestri
David Mayo Whalen
Paul Edward Wittreich

BACHELOR OF SCIENCE IN PHYSICS

Sc.B., *Summa Cum Laude*

Joseph Nicholas Palmieri

DEGREES CONFERRED

Sc.B., *Cum Laude*

Richard Cortland Nickerson

Sc.B.

Donald Herbert Breslow
Frederick Richard Flad
Duncan Grant

Hajime Seki
Frank John Wezniak

Pembroke College

June 7, 1954

BACHELOR OF ARTS

A.B., *Summa cum Laude*

Anne Marilyn Cahalane
Sarah Brewer Marshall

Barbara Joyce Nahigian
Jean Louise Schupbach

A.B., *Magna cum Laude*

Margrit Benzion
Anne Fayette Dermer
Elizabeth Haas
Annadele Horndahl
Mollyann Keat Kay
Carol Louise Kilbourne

Elenore Jean Macphail
Sylvia Helene Moscovitz
Carolyn O'Neil
Mary Olive Sisk
Elga Lieselotte Kron Stulman
Kathleen Phyllis Walter

A.B., *Cum Laude*

Euda Lois Biller
Betsy Lee Jeffers Bishop
Beatrice Ann Calvo
Lynn Lenore Campbell
Barbara Ann Casparian
Amelia Mary Fazzano
Marjorie Stuart Ford
Joy Francine Garziano
Nancy Elizabeth Kirkwood

Barbara Reubin Levin
Carol Ann O'Brien
Jeanne Adele Powell
Patricia Mary Pozzi
Pearl Schwartz
Rose Thomasian
Rosamond Hathaway Waldron
Arlene Claire Weintraub
Judith Carver Wells

A.B.

Shirley Elizabeth Adams
Joan Roberts Anderson
Rebecca Bowles Anderson
Olinda Clemente Andrade
Elaine Marie Annotti

Natalie Ruth Austin
Annette Winter Ball
Mary Catharine Bancroft
Ann Blyth Barnes
Anne Minot Barr

DEGREES CONFERRED

Claudette Yolande Berube
Joan Wright Bliss
Barbara Alyce Bogle
Valerie Frances Butler
Nancy Campbell
Marilyn Jane Carlson
Phyllis Helene Carondo
Jettabee Christenson Caswell
Caroline Everett Cento
Elizabeth Starkey Charette
Joan Claire Chiappinelli
Ethel WaGew Chin
Mary Lu Clark
Phyllis Helen Clarke
Patricia Parcher Cleaveland
Mary Jennette Clinton
Anne Crawford Clowes
Diana Joan Coates
Ellen Cohen
Patricia Jane Collins
Susan Dwight Collins
Patricia Crabtree
Leonora Winn Daniels
Constance Martha Deering
Caroline Ann deFuria
Helen Trenchard Deuell
Dalia Anne Devenis
Priscilla Lloyd Donaldson
Esther Warnick Doolittle
Jean Nostrand Dorgan
Sylvia Lou Dowden
Phyllis Evelyn Drumm
Anne Ruth Dufour
Doris Eisenberg
Gail Elizabeth Erickson
Polly Gowran Evans
Nancy Gay Faber
Ruth Berta Finkelstein
Margaret Mary Flynn
Rebecca Jane Franklin
Jane Ring Fritz
Suzanne Mabel Gardner
Semia Mary George
Erna Margarete Giesinger
Joan Elizabeth Girard
Nancy Marie Gledhill

Margaret Goodspeed
Kay Ann Grandi
Mary Louise Grecco
Sheila Kay Hart
Betty Lou Held
Kay Elisabeth Hellstrom
Joan Marie Herbst
Isobel Catherine Hinckley
Barbara Luce Hobart
Louise Hoff
Janet Helen Hunt
Meredith Hutchings
Nancy Lou Jayne
Marjorie Alice Jones
Shirley Arlene Juskalian
Nancy Brandon Kaufman
Elizabeth Anne Kelly
Caroline Margaret Kimberly
Doris Ellen Kinder
Susan Dorothy Klee
Doris Helen Kreiger
Marion Clara LaChance
Diane Joslyn Lake
Margaret Anna Lange
Joyce Alice Betty Larkin
Anne Louise Larkosh
Nancy Lord
Tovia Ann Mancoll
Joan Frances Mandell
Joyce Ellen Mangler
Carolyn Brewer Marcy
Anne Matilda Matthews
Jean Lois McEwan
Charlotte Jones McGinnis
Devra Judith Miller
Nancy Anne Morse
Margaret Josephine Nahabit
Virginia Mary Lee Noddin
Joan Ruth Northup
Harriett Nutt
Maureen Patricia O'Brien
Jane Frances O'Hara
Mary Ann O'Neil
Audrey Ann Picard
Claire Bradford Pierce
Mary Lynn Presbrey

DEGREES CONFERRED

Judith Quinn
Carolyn Eugenia Reed
Dorothy Winifred Retan
Marilyn Gronna Rice
Celia Bickley Richmond
Felice Sara Rinder
Mariruth Rizzi
Kathleen Mary Roan
Phyllis Lee Rome
Emily Ann Sammartino
Barbara Elizabeth Sheldon
Helen Lorraine Shepherd
Joan Denise Sherman
Nancy Ruth Shustick
Joanna Avery Slesinger
Susan Sperry
Dorothy Brandon Stehle
Regina Mae Sullivan

Sally Jean Sussler
Ann Brooks Tebbetts
Lila Sandra Teich
Elizabeth Ann Tonkin
Roberta Strock Trauger
Margaret Franklin Tuite
Isabel Alveretta Tupper
Edith Margaret Veit
Joanne Walker
Jane Bancker Ware
Barbara Anne Weller
Constance Raynes West
Ann Louise Westman
Sandra Lillian Whalen
Catherine Craddock Williams
Mary Ellen Williams
Susan Ruth Wing
Linda Elise Zanetti

BACHELOR OF SCIENCE

*Conferred in connection with the granting of a diploma by the
Rhode Island Hospital School of Nursing*

Sc.B.

Elizabeth Ferrara Gaona

Honors Program Awards in June, 1954

The College

HIGHEST HONORS

Joseph Nicholas Palmieri
Physics

HIGH HONORS

STANLEY H. BOULAS
Biology

GUIDO JAMES CERILLI, JR.
Biology

JOHN DWELLE DAVIS
Psychology

ROY ELLIS GAINSBURG
Philosophy

JEROME BAILEY GRIEDER
Political Science

HENRY FRANK IZEMAN
Biology

JOHN BENNETT LIVINGSTONE
Biology

THOMAS JOSEPH FRANCIS MCCORMACK
Philosophy

HAROLD HUGH ROBINSON, JR.
English and American Literature

DEGREES CONFERRED

HONORS

JOEL NATHAN AXELROD

Psychology

NORMAN WILLIAM BAZLEY

Physics

ALAN WILLIAM BROWNSWORD

American Civilization

CHARLES DUNCAN DRUMMOND, JR.

Biology

SERAFINO JOSEPH FUSCO

Chemistry

ALVIN IRA GERSTEIN

Psychology

JOHN NALBANDIAN

Biology

JOHN ERWIN SEMONCHE

American Civilization

JOHN SKLAR

English and American Literature

Pembroke College

HIGHEST HONORS

Jean Louise Schupbach

French

HIGH HONORS

BETSY LEE JEFFERS BISHOP

Biology

ANNE MARILYN CAHALANE

English and American Literature

JOY FRANCINE GARZIANO

Psychology

ELIZABETH HAAS

Philosophy

ANNADELE HORNDAHL

English and American Literature

CAROL LOUISE KILBOURNE

Chemistry

SYLVIA HELENE MOSCOVITZ

Psychology

BARBARA JOYCE NAHIGIAN

International Relations

CAROL ANN O'BRIEN

English and American Literature

PEARL SCHWARTZ

History

ROSE THOMASIAN

French

ARLENE CLAIRE WEINTRAUB

Philosophy

HONORS

ANNE FAYETTE DERMER

French

ELENORE JEAN MACPHAIL

Art

TOVIA ANN MANCOLL

English and American Literature

DEVRA JUDITH MILLER

English Expression

ELGA LIESELOTTE KRON STULMAN

History

The Graduate School

June 5, 1954

MASTER OF ARTS

Robert Ray Ammerman, A.B.

Sarkis Atamian, B.S.

Arthur Bauman, A.B.

Robinson Oligny Bellin, A.B.

Alfred Blimbergs

Warner Blumenthal, A.B.

DEGREES CONFERRED

Gary McGregor Boone, A.B.
Marion Elizabeth Brown, B.A., B.L.S.
Yung Hsuan Chou, B.A., B.D.
Andrew Royston Cochran, A.B., B.D.
Archibald Cary Coolidge, Jr., A.B.
Mary Celine Davidow, Ed.B.
William Deminoff, A.B.
Paula Jespersen Diehl, A.B.
Timothy John Duggan, A.B.
Eleanor Marie Hess, B.S. in Bus. Admin.
Robert Mitsuo Hirata, A.B.
Paul Max Lloyd, A.B.
Patricia Marie Mahon, A.B.
Donald Gene Malm, Sc.B.

Robert Francis Nettleton, A.B.
Harford Willing Hare Powel, Jr., A.B.
Edward Price, A.B., B.D.
Leonard Carlo Ranalli, A.B.
James Richard Rees, A.B., B.D., A.M.
Ronald Ernest Santoni, B.A.
Carol Johnson Schaefer, A.B.
Luigina Cianfarani Sogliero, Ed.B.
Margita Vita Sterste
Janet Wright Sullivan, A.B.
Emery Roland Walker, Jr., A.B.
Paul William Wittmer, A.B.
Justine Louise Wood, A.B.

MASTER OF SCIENCE

Robert Lee Bovaird, Jr., Sc.B. in Engin.
Phys.
John Bruce Brackenridge, Sc.B.
Somchai Chansuvan
John Charles Corelli, Sc.B.
Victor Ralph Formisano, Sc.B.
Salvatore Fucci, Sc.B. in E.E.
Thomas Henry George, A.B.
Earl Clifford Hagstrom, Sc.B.

Audrey Phyllis Holt, Sc.B.
Herbert Meyer Kamowitz, Sc.B.
Theodore Joseph Mentel, B.A.Sc.
John Allan Morrison, B.Sc.
Raymond Patrick Murray, B.S. in E.E.
James Alan Seiler, Sc.B.
Harry Sussman, B.E.E.
Nicholas Charles Szuchy, B.E.E.
Norman Eugene Williams, A.B.

DOCTOR OF PHILOSOPHY

Alfred Eugene Bakanowski, Sc.B. in Physics, Sc.M.

Thesis: "Anelastic effects in alkali halide crystals."

Mary Dexter Bates, A.B., A.M.

Thesis: "Columbia's bards: A study of American verse from 1783 through 1799."

Eugene Bell, A.B., Sc.M.

Thesis: "Some effects of ultrasound on the mouse liver."

Robert Edward Beyer, A.B., Sc.M.

Thesis: "A study of insulin metabolism in an insulin tolerant strain of mice."

Robert Northcutt Burlingame, A.B., A.M.

Thesis: "Marsden Hartley: A study of his life and creative achievement."

Nestor Edgar Caroselli, Sc.B., Sc.M.

Thesis: "Verticillium wilt of maple."

John Anthony Carpenter, A.B., A.M.

Thesis: "Species differences in taste preferences."

Richard Lee Cartwright, A.B.

Thesis: "Logical constructions."

Robin Livingstone Curtis, A.B., A.M.

Thesis: "An experimental study of circling behavior in adult BUD mice."

DEGREES CONFERRED

Walter Dannhauser, Sc.B. in Chem.

Thesis: "Dielectric properties of normal and isobutyl alcohol."

Donald John Denney, Sc.B. in Chem.

Thesis: "The dielectric properties of solid and liquid methanol and of methanol—1-propanol solutions"

Alton Harold Desmond, B.S., Sc.M.

Thesis: "The role of anoxia in liver damage."

Harrison McCrea Dickson, A.B., Sc.M.

Thesis: "The effects of x-irradiation on some aspects of gastrointestinal function."

John Andrew Dillon, Jr., Sc.B., Sc.M.

Thesis: "Adsorption of carbon dioxide of nickel single crystal surfaces using an improved radiotracer technique."

Erwin Fishman, A.B.

Thesis: "Self-diffusion in liquids: A study of n-pentane and n-heptane."

John William Flavin, A.B., A.M.

Thesis: "Uranine secretion in transplantable spontaneous hepatomas in C₃H mice."

Jack Frommer, Sc.B., Sc.M.

Thesis: "The effect of polyvinylpyrrolidone (PVP) on the liver of the mouse."

Eugene Paul Goldberg, Sc.B., Sc.M.

Thesis: "A study of the chemistry of 2-amino-1-butanol—aldehyde anhydro products and related compounds."

Charles Edward Grabiell, A.B.

Thesis: "Chemistry of 2,5,5-trinitro-3-aza-4-oxa-2-hexene."

John Harmon Henkel, Sc.B., Sc.M.

Thesis: "The equation of state and the thermal dependence of the isothermal elastic coefficients of crystalline argon."

Gordon Lee Hiebert, Sc.B.

Thesis: "Infrared spectrum of crystalline solutions and the structure of the hydrogen halides."

Karl Kiralis, A.B., A.M.

Thesis: "Critical edition (in two volumes) of William Blake's *Jerusalem, the Emanation of the Giant Albion* (1804-1820)."

Aron David Kossoff, A.B., A.M.

Thesis: "The poetic vocabulary of Fernando de Herrera."

Carl-Fredrik Axel Leth, Civ. Ing.

Thesis: "The effect of shear stresses on the carrying capacity of I-beams."

Lois Anne Loewenthal, A.B., A.M.

Thesis: "The effects of vitamin A deficiency on skin and hair growth in mice."

David Sherman Lovejoy, B.S., A.M.

Thesis: "The licentious republic: Rhode Island, 1760-1776."

John Blakeslee Lyon, Jr., A.B., Sc.M.

Thesis: "An analysis of muscle and liver glycogen and running activity of mouse strains resistant or susceptible to nutritional obesity."

Robert William Martel, A.B.

Thesis: "The conductance of dilute solutions of electrolytes in dioxane-water mixtures at 25°."

Robert Llewellyn Miller, Sc.B. in Chem.

Thesis: "The infrared spectrum and the force field of crystalline hydrogen peroxide and their relation to the ice problem."

Gerald Eugene Myers, A.B., A.M.

Thesis: "An analysis of propositional attitudes; a linguistic approach."

DEGREES CONFERRED

Rose Mary Ring, A.B., A.M.

Thesis: "The complex eigenvalue problem for radio waves in a curvilinearly tapered atmosphere."

Edward William Ross, Jr., Sc.B., Sc.M.

Thesis: "I. On the stability of gas flow in a conical pipe.
II. On the load-carrying capacity of plastic plates."

John Lyell Sanders, Jr., Sc.B. in Aero. Engin., Sc.M. in Math.

Thesis: "Plastic stress-strain relations based on infinitely many plane loading surfaces."

Bill Burton Smith, A.B.

Thesis: "The application of the Favorski Rearrangement to the production of A-norsteroids and the preparation and nitrous acid deamination of 1-aminomethyl-cyclohexanol."

Vincent John Stakutis, Sc.B. in Physics, Sc.M.

Thesis: "Ultrasonic attenuation in aqueous suspensions."

Elwyn Lowell Swarts, A.B.

Thesis: "The conductance of dilute, aqueous solutions of electrolytes at 25°C."

David Merton Towle, A.B., Sc.M.

Thesis: "The absorption and velocity of ultrasonic waves of finite amplitude in liquids."

George Veronis, A.B.

Thesis: "A study of time-dependent wind-driven ocean circulation."

Werner Claus von Dohlen, Sc.B. in Chem.

Thesis: "An X-ray investigation of the crystal structures of isocyanic acid and formic acid."

George Wallis, Sc.M.

Thesis: "The effect of strain on the work function of polycrystalline silver."

Elliot Samuel Wolk, A.B., Sc.M.

Thesis: "Representation of topological algebras."

Abraham Yeselson, A.B., A.M.

Thesis: "United States-Persian diplomatic relations, 1883-1921."

Honorary Degrees Conferred by the University during the Academic Year 1953-54

COMMENCEMENT, JUNE 7, 1954

GORDON EDWARD BIGELOW, *Doctor of Divinity*

ALEXANDER MANLIUS BURGESS, *Doctor of Science*

MERRILL KELLEY BENNETT, *Doctor of Humane Letters*

FIORINDO ANTHONY SIMEONE, *Doctor of Science*

NATHAN MARSH PUSEY, *Doctor of Laws*

CLARENCE BELDEN RANDALL, *Doctor of Laws*

HAROLD WILLIS DODDS, *Doctor of Laws*

GEORGE MAGOFFIN HUMPHREY, *Doctor of Laws*

DEGREES CONFERRED

Rosenberger Medal

The Susan Colver Rosenberger Medal is generally regarded as the highest honor within the power of Brown University to confer. It is awarded by designation of the Faculty. The Medal was provided for in 1919 by Jesse L. Rosenberger as a memorial to his wife, with the suggestion that it be used to recognize "specially notable or beneficial achievement in scholarships, in authorships, in public life of any kind, or relating to the advancement of the public welfare" The recipients and years of past awards are as follows:

WILLIAM WILLIAMS KEEN	1925	FRED FARBELL FIELD	1940
CHARLES EVANS HUGHES	1928	HENRY DEXTER SHARPE	1944
JOHN DAVISON ROCKEFELLER, JR.	1931	ZACHARIAH CHAFEE, JR.	1947
CHARLES VALUE CHAPIN	1935	WARREN RANDOLPH BURGESS	1953
MARY EMMA WOOLLEY	1937		

List of Students



STATUS AS OF SEPTEMBER 1954

A.B. = Bachelor of Arts; Sc.B.(C) = Bachelor of Science in Chemistry; Sc.B.(E) = Bachelor of Science in Engineering; Sc.B.(P) = Bachelor of Science in Physics.

SENIORS: CLASS OF 1955

NAME	DEGREE	RESIDENCE
Aarons, LeRoy Franklin	A.B.	New York, N.Y.
Ablow, Herbert Lester	A.B.	Salem, Mass.
Abramowitz, Arnold Chester	A.B.	Brooklyn, N.Y.
Ades, Harvey J.	A.B.	New Bedford, Mass.
Aguiar, Leonard Marshall	A.B.	Barrington
Albert, Carl Mayer	A.B.	Waterbury, Conn.
Aldrich, John Duane	A.B.	Bellows Falls, Vt.
Allsbrook, Torrence Richard	A.B.	Oakmont, Pa.
Amhowitz, Harris Jacob	A.B.	Bay Shore, N.Y.
Anderson, Harry Leslie, Jr.	A.B.	Johnston
Anderton, Norman Ralph	A.B.	Rumford
Andrew, Charles Anthony, Jr.	A.B.	Providence
Arbitman, Albert	A.B.	Providence
Arnold, Benjamin William, IV	A.B.	Warwick
Asselin, Charles Arvid	A.B.	Paterson, N.J.
Atkinson, Richard Franklin, II	Sc.B.(E)	White Plains, N.Y.
Baldino, Salvatore Carmen	A.B.	Nutley, N.J.
Barenboim, Eliot Vincent	A.B.	Providence
Barnes, John Murkland, Jr.	A.B.	Marblehead, Mass.
Barrett, William Fergus	A.B.	Westchester, N.Y.
Barron, Robert Anthony	A.B.	Great Neck, N.Y.
Barrows, Fred Howard, III	A.B.	N. Scituate
Basile, Orazio Joseph	A.B.	Providence
Beers, Richard Mintura	A.B.	Providence
Beil, Arthur Randall, Jr.	A.B.	Flushing, N.Y.
Benford, William Ramsden	A.B.	North Providence
Bergeron, Lucien Albnie, Jr.	A.B.	Putnam, Conn.
Bernheim, Robert Allan	Sc.B.(C)	Colorado Springs, Colo.
Bishop, Lewis Graham	Sc.B.(P)	Needham, Mass.
Blazar, Andrew Stephen	A.B.	Providence
Blinn, Bruce Allan	A.B.	Long Beach, N.Y.
Bloch, Gene Edward	Sc.B.(P)	Mayfield Hghts., Ohio
Blumberg, Joseph Richard	A.B.	New Haven, Conn.
Blumen, Joseph	A.B.	Newport
Blythe, Charles David	A.B.	South Dartmouth, Mass.
Bonz, Philip Edwin	Sc.B.(E)	Sharon, Mass.
Boom, Gary William	A.B.	Wellsboro, Pa.

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Borah, Robert Edward	A.B.	Providence
Borjeson, Howard Paul	A.B.	Holden, Mass.
Borod, Robert Leon	A.B.	Providence
Borodach, Gerold Nathan	A.B.	Willimantic, Conn.
Borst, James Frederick	Sc.B.(E)	Drexel Hill, Pa.
Bosland, Paul Cullen	A.B.	Greenwood
Bosler, John Ralph, Jr.	A.B.	Norristown, Pa.
Boulanger, Henry Joseph, Jr.	Sc.B.(E)	North Providence
Bouras, Leonard	A.B.	Brockton, Mass.
Bouton, Norman Mansfield	A.B.	Howe, Ind.
Brodeur, Richard Henry	A.B.	Marlboro, Mass.
Brown, Charles Joseph	A.B.	Wellesley, Mass.
Bry, Richman	A.B.	St. Louis, Mo.
Bullock, David Brewster	A.B.	Hatchville, Mass.
Burke, John Patrick	A.B.	Buffalo, N.Y.
Burnham, James Barry	A.B.	Rutherford, N.J.
Burroughs, John Edward	A.B.	Bristol, Conn.
Bushell, Gordon Phillip	A.B.	New York, N.Y.
Butler, Charles Thomas	A.B.	Saranac Lake, N.Y.
Buttling, William Joseph, Jr.	A.B.	Brooklyn, N.Y.
Cahill, Robert Francis	A.B.	Brockton, Mass.
Cannon, Philip Gunn	A.B.	Windsor Locks, Conn.
Capuano, Vincent Allen	A.B.	Providence
Cardoso, Norman	A.B.	Swansea, Mass.
Carlson, Robert Paine	A.B.	Riverside
Carron, Desmond James	A.B.	Cranston
Carson, Barry V.	A.B.	Westport, Conn.
Carter, Charles Elmer	A.B.	North Providence
Casselman, Thomas Norman	Sc.B.(P)	Erie, Pa.
Castleberry, Edward Francis	A.B.	Cincinnati, Ohio
Chambers, George Kenneth	A.B.	Tennent, N.J.
Chandler, John Wardwell	A.B.	Portland, Me.
Chapin, Breck	A.B.	North Bangor, N.Y.
Chase, John Wallace	Sc.B.(P)	Leonia, N.J.
Chernell, Eugene	A.B.	Brooklyn, N.Y.
Chu, Daniel	A.B.	Bethesda, Md.
Cobb, John Wyman	A.B.	Falmouth Forside, Me.
Cole, James Payson	A.B.	West Englewood, N.J.
Coletti, Barry Domenic	A.B.	Wollaston, Mass.
Collins, Bruce Turner	Sc.B.(C)	Attleboro, Mass.
Condaxis, William Peter	A.B.	Providence
Conn, George	Sc.B.(E)	Melrose, Mass.
Corbridge, James Noel, Jr.	A.B.	Garden City, N.Y.
Corcoran, Lawrence Powers	A.B.	Rockland, Mass.
Costa, Anthony	A.B.	Providence
Cottrell, Thomas Sylvester	A.B.	Detroit, Mich.
Coukos, James Stephen	A.B.	Lynn, Mass.
Crane, George Warren	A.B.	New York, N.Y.
Curran, Joel Danforth	A.B.	Providence
Dalton, Paul Austin	A.B.	Wellesley, Mass.

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Davis, James Clark, Jr.	Sc.B.(E)	St. Albans, Vt.
De Camp Richard Surridge	A.B.	Dayton, Ohio
Decker, David Stanton	A.B.	Washington, D.C.
Delvisco, Anthony William	A.B.	Montclair, N.J.
Demetropoulos, Nicholas Andrew	A.B.	Pawtucket
De Patie, Richard John	A.B.	West Hartford, Conn.
DeProsse, William Lynch, Jr.	A.B.	Neversville, N.Y.
Dermer, Zigmund Lowe	Sc.B.(P)	Providence
Devoe, Harry Leslie, Jr.	A.B.	Providence
Dimmitt, Sterling	A.B.	Providence
Dinneen, John Edward	A.B.	Edgewood
Disney, Michael Blackway	A.B.	Mundelein, Ill.
Dodge, Thomas Wesley	A.B.	Tyringham, Mass
Dorer, John	A.B.	Maplewood, N.J.
Dover, Robert Fairbanks	A.B.	Barrington
Drabb, Michael John	A.B.	Bridgeport, Conn.
Dunham, George Kenneth	A.B.	Queens Village, N.Y.
Eckel, John William	A.B.	Scotia, N.Y.
Ecker, Robert Alan	Sc.B.(E)	Patchogue, N.Y.
Egan, James Thomas	A.B.	Warwick
Ehrlich, Stephen Roger	A.B.	Brooklyn, N.Y.
Erwin, Stuart Philip, Jr.	A.B.	New York, N.Y.
Fagereng, Per Daniel	A.B.	Manhasset, N.Y.
Fairman, Roger Milton	A.B.	Stamford, Conn.
Faulkner, Richard Harvey	A.B.	Cranston
Fay, Jon Wells	A.B.	Pittsburgh, Pa.
Fell, Ernest Millward	A.B.	Fall River, Mass.
Ferando, Louis John	A.B.	Westerly
Fern, Mattis Isa	A.B.	Brooklyn, N.Y.
Fitzgerald, Robert Drake, Jr.	A.B.	Milwaukee, Wis.
Fletcher, William, III	A.B.	Barrington
Fliegelman, Harold Norman	A.B.	Norristown, Pa.
Fordon, Frederick Flower	A.B.	Detroit, Mich.
Forest, Robert Norman	A.B.	Pawtucket
Fort, Bradford Lathan	A.B.	Southport, Ind.
Fox, Paul William	A.B.	East Orange, N.J.
Frazier, William Jay, Jr.	A.B.	Chicago, Ill.
French, Frederick Rawson, Jr.	A.B.	Brockton, Mass.
Friend, John Greenebaum	A.B.	Glencoe, Ill.
Fries, Burkhard Christopher	A.B.	Bridgewater, Mass.
Fuller, Gordon E. C.	A.B.	Buffalo, N.Y.
Fuller, John Wesley	A.B.	Maplewood, N.J.
Funck, James Richard	A.B.	Camp Hill, Pa.
Gallup, Asa Oran, IV	A.B.	Grosse Pointe, Mich.
Gardner, Marvin Leonard	A.B.	Providence
Geer, Fred Louis	A.B.	Natick, Mass.
Genua, Vincent Loreto	A.B.	Waterbury, Conn.
Gesen, Charles Jackman	A.B.	Concord, N.H.
Ginsberg, George Leon	A.B.	Fall River, Mass.
Gleason, Lawrence MacMillan	Sc.B.(E)	Rutherford, N.J.

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Goetz, Robert Bernard	A.B.	Troy, N.Y.
Goldfarb, Walter Benjamin	A.B.	Brookline, Mass.
Granger, Joseph Francis, Jr.	A.B.	Marlborough, Mass.
Gray, David Maxwell	A.B.	Santa Barbara, Calif.
Green, Raymond	A.B.	Fall River, Mass.
Greenhall, Robert Leonard	A.B.	East Orange, N.J.
Grimes, Donald Michael	A.B.	Warwick
Gross, Donald Lincoln	Sc.B.(E)	Wellfleet, Mass.
Guinness, George Victor, Jr.	Sc.B.(E)	Pawtucket
Halpert, Stephen Karl	A.B.	Portland, Me.
Halvorsen, David Wayne	A.B.	Cranston
Hamre, Peter Jay	A.B.	North Weymouth, Mass.
Hanna, George Lloyd, Jr.	A.B.	Providence
Harrell, James	A.B.	Merrick, N.Y.
Harrington, Robert Dudley, Jr.	A.B.	Worcester, Mass.
Harris, William Dale	A.B.	Tarentum, Pa.
Harvey, Richard McNeeley	A.B.	Spring Lake, N.J.
Hawes, Colin Dana	A.B.	Saylesville
Hebner, Robert Joseph	A.B.	Rfd. 2, Attleboro, Mass.
Helgerson, Carl Mauritz	A.B.	East Providence
Henningson, John Joseph	A.B.	Cranston
Hilton, Joseph	A.B.	New York, N.Y.
Hinckley, William Pitt	A.B.	Riverside
Hobron, Robert Stephan	A.B.	New London, Conn.
Hodgate, Charles, Jr.	A.B.	Fall River, Mass.
Hoik, Daniel Batchelder	A.B.	Concord, N. H.
Holtzman, Boris Shae	A.B.	Hillside, N. J.
Hotton, George Erik	A.B.	Dorchester, Mass.
Houk, John Talbott, Jr.	A.B.	Sea Island, Ga.
Ilchman, Warren Fred	A.B.	Denver, Colo.
Iseminger, Boyd Austin, Jr.	A.B.	Middleboro, Mass.
Jaffe, Anthony Robert	A.B.	New York, N. Y.
Janis, Donald Richard	A.B.	Providence
Jarvinen, Philip Onni	Sc.B.(E.)	Rockland, Mass.
Jazwinski, Vincent Thomas	A.B.	Whippany, N. J.
Jenness, Raymond Nathaniel, Jr.	A.B.	Hatfield, Mass.
Joest, Fred August, Jr.	Sc.B.(E.)	S. Plainfield, N. J.
Joel, William Lee, II	A.B.	Richmond, Va.
Johnson, Gordon Elbert, Jr.	A.B.	Hamden, Conn.
Juergens, Wladislaw	Sc.B.(E.)	Philadelphia, Pa.
Juncker, Henry, III	A.B.	New York, N. Y.
Kaplan, Lewis	A.B.	Brooklyn, N. Y.
Kaplan, Mark	A.B.	Lowell, Mass.
Kase, Stuart	A.B.	Brooklyn, N. Y.
Keefe, Daniel Mark	A.B.	Newton, Mass.
Kelleher, Henry	A.B.	Taunton, Mass.
Kelley, Gilbert H.	Sc.B.(E.)	South Braintree, Mass
Kelley, William Patrick	A.B.	Albany, N. Y.
Kenny, Robert Edmund	A.B.	South Attleboro, Mass
Kern, George William	A.B.	Providence

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Khachian, Richard	A.B.	Norwalk, Conn.
Kilpatrick, James Maybra	A.B.	Highland Park, Ill.
Kimball, Dean Fiske	A.B.	Manhasset, N. Y.
Kincade, Edward Francis, Jr.	A.B.	Leonia, N. J.
Kinsey, Kenneth Francis	A.B.	Warwick
Klaess, William John	A.B.	Rockville Center, N. Y.
Knowles, Robert Curtis	A.B.	Saylesville
Koch, Carl Wilson	A.B.	Allentown, Pa.
Kohut, Pete, Jr.	A.B.	Ambridge, Pa.
Kolb, Clifford Ellworth, Jr.	A.B.	Rockaway, N. J.
Korman, Tom Stuart	A.B.	Lawrence, N. Y.
Kramer, Ronald Edmund	A.B.	Newton, Mass.
Kraut, William	A.B.	Jersey City, N. J.
Kroll, Stanley	A.B.	Brooklyn, N. Y.
Kunstler, David Bruce	A.B.	New York, N. Y.
Labush, Leonard William	A.B.	Providence
Lachance, Roland Martin	A.B.	West Warwick
Laferriere, Arthur Leo	Sc.B.(C.)	Pawtucket
Lake, Benson	Sc.B.(E.)	Germantown, Pa.
Lakin, Leonard Sherwin	A.B.	Fall River, Mass.
Lalikos, Stephen	A.B.	Peabody, Mass.
Land, Mark Allen	A.B.	Passaic, N. J.
Landau, Steven Andrew	A.B.	Riverside, Pa.
Landman, Owen Barry	A.B.	Newport
Lary, Ralph Leon	A.B.	West Scarboro, Me.
Lauber, Alan Lee	A.B.	Short Hills, N. J.
Lawson, John Wentworth	A.B.	Providence
Lawson, Richard Alan	A.B.	Providence
Leonard, Donald Edward	A.B.	Providence
Le Sueur, Harvey Crockett	Sc.B.(E.)	South Portland, Me.
Letiecq, Paul Henry	A.B.	Briarcliff Manor, N. Y.
Levin, Colman	A.B.	Brookline, Mass.
Levine, Michael Howard	A.B.	New York, N. Y.
Lichtenstul, Joel Adelson	A.B.	Pittsburgh, Pa.
Linsky, Leo Joseph	A.B.	Salem, Mass.
Lisbon, Peter Wallace	A.B.	Providence
Logan, Francis Matthew, Jr.	A.B.	Lawrence, Mass.
Longo, Robert	Sc.B.(E.)	Cranston
Lord, Willard Richardson	A.B.	East Mt. Kisco, N. Y.
Louttit, Thomas Robley, Jr.	A.B.	Providence
Lowe, Douglas Robert	A.B.	Milford, Conn.
Lownds, John Richard	A.B.	Danbury, Conn.
Lucas, Wilder George	A.B.	University City, Mo.
Ludington, Nicholas Leland	A.B.	New York, N. Y.
Ludlow, George Byron, Jr.	A.B.	Warwick
Lund, Richard Boardman	A.B.	Warren
Lynch, Jerome Benedict	A.B.	Providence
Lynch, Robert Francis	A.B.	Westbury, N. Y.
MacDonald, Robert Alexander	A.B.	Glenbrook, Conn.
Malamud, Michael Harlen	A.B.	Weston, Mass.

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Malinou, Martin Seymour	A.B.	Providence
Malkiewicz, Raymond Joseph	A.B.	Passaic, N. J.
Mangione, Francis Cornelius	A.B.	Gaspee Plateau
Mara, Rodney Nicholas	A.B.	Providence
Mariani, Terence David	A.B.	Waterbury, Conn.
Marratt, Charles Edward	A.B.	Maplewood, N. J.
Martin, David Byrd	A.B.	Mexico D. F., Mexico
Marx, Lawrence Jackson	A.B.	New York, N. Y.
Mason, George Edgar	A.B.	South River, N. J.
Matulionis, Algis	A.B.	Providence
Mavor, Leon Wayne	A.B.	Cranston
Mayerson, Peter	A.B.	New Orleans, La.
Mayette, Robert John	S.B.(E.)	Providence
McAlister, Charles Andrew	A.B.	Foxboro, Mass.
McClellan, Gordon	A.B.	Stamford, Conn.
McCutcheon, Douglas Milton	A.B.	Slatersville
McGown, George Quentin, III	A.B.	Ft. Worth, Tex.
McKechnie, Joseph Roy	A.B.	Pawtucket
McKee, Brian Bromwell	A.B.	Barrington
Mihalakos, Socrates Harry	A.B.	Waterbury, Conn.
Minor, William Ernst, III	A.B.	Cincinnati, Ohio
Monaghan, John Joseph	A.B.	Pawtucket
Montgomery, William Kent	A.B.	Yonkers, N. Y.
Moore, Richard Koelle	A.B.	Port Washington, N. Y.
Morick, Harold John	A.B.	New York, N. Y.
Morie, Thomas Albert	A.B.	Wenonah, N. J.
Morris, James Thomas	A.B.	Taylor, Pa.
Motherway, Joseph Edward	Sc.B.(E.)	Providence
Murchelano, Robert Adrian	A.B.	Providence
Musé, Joseph Francis, Jr.	Sc.B.(E.)	Bellmore, N. Y.
Nangle, Paul Michael, Jr.	A.B.	Marblehead, Mass.
Newman, George Donald	A.B.	Weston, Mass.
Newman, Herbert Saul	A.B.	Waterbury, Conn.
Newman, Theodore Roosevelt, Jr.	A.B.	Tuskegee, Ala.
Newsam, Arthur Roland, Jr.	A.B.	Cranston
Nourie, Richard Fisher	A.B.	North Providence
Noyes, Sydney West	A.B.	East Providence
O'Brien, John Dennis	A.B.	Rockland, Mass.
O'Donnell, William Henry, Jr.	A.B.	Naugatuck, Conn.
O'Hara, James Declan	A.B.	Greenfield, Mass.
Olding, Duncan Robert	Sc.B.(E.)	Fall River, Mass.
Orodenker, Norman Gilbert	A.B.	Providence
O'Such, Robert Francis	A.B.	Forest Hills, N. Y.
Palcho, Ralph John	A.B.	Pittsburgh, Pa.
Payne, William Leonard	Sc.B.(C.)	South Weymouth, Mass.
Pearce, William Joslin	A.B.	Providence
Pearson, Everett Alden	A.B.	Seekonk, Mass.
Pendergast, James Francis	A.B.	Riverview
Penhallow, William Scott	Sc.B.(P)	Woonsocket
Perry, Gordon Edward	A.B.	New Haven, Conn.

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Perry, Richard Anthony	Sc.B.(E)	Fall River, Mass.
Peterson, Kenneth Robert	A.B.	Haverhill, Mass.
Peterson, Neale Lawrence	A.B.	Westfield, N. J.
Pfuderer, Albert Peter	Sc.B.(C)	Hamden, Conn.
Phillips, Alfred Hazen	Sc.B.(E)	East Providence
Placco, Oscar Angelo	Sc.B.(E)	Cranston
Plaisted, Edward Endicott	A.B.	Meredith, N. H.
Poliks, Gerald Joseph	A.B.	Gardner, Mass.
Politi, Albert Henry	A.B.	Palisades Park, N. J.
Popp, Robert Stanley	A.B.	Rockland, Mass.
Price, Robert Kreamer	A.B.	Woodbury, N. J.
Prifty, William Thomas	A.B.	Waterbury, Conn.
Ralston, Rodney	A.B.	Cranston
Ray, Reginald Webster, Jr.	A.B.	Westport, Conn.
Reid, William Irving, Jr.	A.B.	Pawtucket
Reilly, Michael Joseph	A.B.	Yonkers, N. Y.
Renzulli, William	A.B.	Providence
Riccio, Willis Hugh	A.B.	Providence
Rider, James Eddy Hanson	Sc.B.(E)	Providence
Rivera, Eugene Philip	A.B.	Providence
Robinson, Edgar Allen	A.B.	Brookline, Mass.
Roll, John Ides	A.B.	Berwick, Pa.
Russo, Raymond Michael	A.B.	New York, N. Y.
Ruwe, Lester Nicholas	A.B.	Grosse Pointe Farms, Mich.
Samsel, Loren Wesley, Jr.	A.B.	Dallas, Pa.
Sander, William Glen, Jr.	A.B.	Pittsburgh, Pa.
Sargent, William Henry	Sc.B.(E)	Providence
Schaughency, Michael Frederick	Sc.B.(C)	Cranston
Schoenrock, Bruce Warren	A.B.	Meriden, Conn.
Schwalberg, Martin Arnold	A.B.	New York, N. Y.
Schwartz, Eric Davis	Sc.B.(E)	Great Neck, N. Y.
Schwartz, Marvin Heidingsfeld	A.B.	Cincinnati, Ohio
Scott, Arthur, Jr.	A.B.	Pawtucket
Scott, George Wilkinson	A.B.	Warwick
Seifert, Donald Max	A.B.	Bethel, Conn.
Sequino, Francis Michael	A.B.	Warren
Shapiro, Joel Lawrence	A.B.	Belle Harbor, N. Y.
Shaw, Russell Franklin	A.B.	Pawtucket
Shearing, John Arthur	Sc.B.(E)	Great Neck, N. Y.
Sheehan, John Francis	A.B.	Hartford, Conn.
Simenkow, Peter	Sc.B.(E)	Providence
Smith, Andrew Knowles	A.B.	Warwick
Smith, James Richard	A.B.	Johnstown, Pa.
Smith, John Gordon	Sc.B.(C)	Saylesville
Smith, Mitchill Lee	A.B.	Glen Ridge, N. J.
Smith, Richard Moisseiff	A.B.	Ridgefield, Conn.
Smolokoff, Sheldon	A.B.	Glen Cove, N. Y.
Soltysiak, Wallace Joseph	A.B.	Providence
Spizzirri, Richard Dominic	A.B.	Oak Park, Ill.
Spranger, Geoffrey Hart	A.B.	Cranston

LIST OF STUDENTS: SENIORS

NAME	DEGREE	RESIDENCE
Stagg, Theodore, Jr.	A.B.	Radburn, N. J.
Standish, Charles Russell, Jr.	A.B.	Naples, N. Y.
Stavis, Frederick	A.B.	Newton Centre, Mass.
Stedman, Derek Cornell	A.B.	New York, N. Y.
Steinitz, Sidney Abraham	A.B.	Pittsburgh, Pa.
Stoltmann, Hillard Anthony	A.B.	Meriden, Conn.
Stone, Edward Albert	Sc.B.(E)	Cranston
Stone, Harris Botwinik	A.B.	New Haven, Conn.
Strong, John Temple, Jr.	Sc.B.(E)	Setauket, N. Y.
Sturm, Ernest	A.B.	Brooklyn, N. Y.
Sullivan, Robert Cook	Sc.B.(C)	Providence
Summerfield, John Alan	A.B.	Chicago, Ill.
Sutherland, Edmund Richie	A.B.	Grosse Pointe, Mich.
Tanenbaum, Louis Allan	A.B.	Denver, Colo.
Tansey, Russell Huett	A.B.	New London, Conn.
Taylor, Raymond Leonard	Sc.B.(C)	Providence
Thayer, Kendrick	A.B.	Providence
Thea, Joel	A.B.	Brooklyn, N. Y.
Thom, Robert	A.B.	Vineland, N. J.
Thomson, Alan Paul	A.B.	Stratford, Conn.
Tooley, Edward Joseph	A.B.	Yonkers, N. Y.
Trepte, Donald Paul	A.B.	Villa Park, Ill.
Tryon, Jonathan Stedman	A.B.	Rockport, Mass.
Tucci, Joseph Ralph	A.B.	Providence
Udall, Gordon Floyd, Jr.	A.B.	Amityville, N. Y.
Ulrich, George Erwin	A.B.	Concord, N. H.
Valkys, Irving Michael	A.B.	Palisades Park, N. J.
Van Hulsteyn, David Bentley	Sc.B.(P)	Winterhaven, Fla.
Vaughan, Wayland Edward	A.B.	Needham, Mass.
Vivian, John Albert	A.B.	Providence
Walker, Thomas Edward	A.B.	Portland, Me.
Walter, John Fenner	Sc.B.(E)	Bayside, N. Y.
Webb, Philip Kalien	A.B.	Providence
Webster, James Gillis, III	A.B.	Englewood, N. J.
Wehe, Theodore John	A.B.	Providence
West, David Fielding	A.B.	Tenafly, N. J.
West, Robert Daniel	A.B.	Edgartown, Mass.
Whistler, Leonard, II	A.B.	Syracuse, N. Y.
White, Maynard Pressley, Jr.	A.B.	Queenstown, Md.
Whitehouse, Daniel Roger	A.B.	Woonsocket
Whitney, Frank Coole	Sc.B.(E)	Middleboro, Mass.
Willette, Gordon Louis	Sc.B.(C)	Dighton, Mass.
Wilson, Garwood Peck	A.B.	New Haven, Conn.
Wolfson, Richard Baume	A.B.	Fall River, Mass.
Womsley, Robert Brand	A.B.	Dayton, Ohio
Woolley, Walter, Jr.	A.B.	Taunton, Mass.
Yatsu, Frank Michio	A.B.	Cleveland, Ohio
Young, David Longstaff	A.B.	Norwalk, Conn.
Young, Robert Thur	A.B.	Branford, Conn.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Young, Sumner Sullivan	A.B.	Wayzata, Minn.
Zavarine, Richard	A.B.	Belmont, Mass.
Zucconi, David John	A.B.	New York, N. Y.

JUNIORS: CLASS OF 1956

Abbott, Bruce Norman	A.B.	Beverly, Mass.
Abt, Samuel Raphael	A.B.	Bayside, N. Y.
Adelberg, Samuel Bertram	A.B.	Brighton, Mass.
Adkins, Douglas Lee	A.B.	Fall River, Mass.
Ahlborn, Lee	A.B.	White Plains, N. Y.
Ahonen, Vaino Axel	A.B.	West Barnstable, Mass.
Aleixo, Antonio Nunes, Jr.	Sc.B.(C)	Valley Falls
Alfaro, Maurice Joseph	A.B.	Bronx, N. Y.
Alexandre, Gilbert	A.B.	New York, N. Y.
Allgair, George William	A.B.	Summerville, N. J.
Alsfield, Vincent Leo	A.B.	Edgewood
Alway, John Richard	A.B.	Ann Arbor, Mich.
Anderson, Zane Jacob	A.B.	Port Morris, N. J.
Andrews, Edward Reed	A.B.	Providence
Apostolacus, William Theodore, Jr.	Sc.B.(E)	Long Branch, N. J.
Arabian, Martin Vahe	A.B.	Puerto Cabello, Venezuela
Arovas, Jack	A.B.	New Haven, Conn.
Arpin, Oscar Edward	Sc.B.(E)	Providence
Arroll, Richard Joseph	A.B.	Swampscott, Mass.
Atwood, Alan Franklin	A.B.	Nantucket, Mass.
Averill, William Thurlow	A.B.	Upper Montclair, N. J.
Baer, Henry Philip	A.B.	New York, N. Y.
Bailey, Gordon, Burgess	A.B.	Needham, Mass.
Baird, John Edward	A.B.	Cleveland, Ohio
Baird, John Frederick	Sc.B.(E)	Glen Rock, N. J.
Balas, Robert Michael	A.B.	West Anglewood, N. J.
Balogh, Dominic Vincent	A.B.	Hamden, Conn.
Barber, Donald Clark	A.B.	Providence
Bartsch, Bruce Raymond	A.B.	West Englewood, N. J.
Bartuska, Peter Moses	A.B.	Nanticoke, Pa.
Bathrick, John Robert, Jr.	Sc.B.(E)	Yorkville, N. Y.
Baugh, Ned Peter	A.B.	Elmhurst, Ill.
Bearce, Denny Neil	A.B.	Pleasantville, N. Y.
Becker, Fred Kenneth	A.B.	West Orange, N. J.
Bensinger, Roger Galston	A.B.	Chicago, Ill.
Bernstein, Alan Thomas	A.B.	New York, N. Y.
Berrier, James Tyler	A.B.	Plainfield, N. J.
Biddle, Justin Miller	Sc.B.(E)	Putney, Vt.
Bishop, Dwight Beighley	A.B.	Oyster Bay, N. Y.
Bivens, William Stone	A.B.	Kansas City, Mo.
Blair, John George	A.B.	Needham Heights, Mass
Blank, Barry William	A.B.	Sea Girt, N. J.
Bobrow, Joseph Sheldon	A.B.	Riverdale, N. Y.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Boggs, James Caleb, Jr.	A.B.	Wilmington, Del.
Bologna, Joseph James	Sc.B.(E)	Brooklyn, N. Y.
Borjeson, Richard Antone	A.B.	Holden, Mass.
Bowen, Donald Deane	A.B.	Denver, Colo.
Boynton, Daniel Chase	A.B.	Providence
Bradley, William Edward	A.B.	Corning, N. Y.
Branner, Don	A.B.	Mt. Vernon, N. Y.
Brenner, Paul Harold	A.B.	Cedarhurst, N. Y.
Brightman, William Thomas 3rd	A.B.	Providence
Briner, Jack Vedder	Sc.B.(E)	Arlington, Va.
Brown, Edward Bertram	A.B.	Providence
Brown, Ralph Douglas	A.B.	New York, N. Y.
Buck, Richard Edwin	A.B.	Islington, Mass.
Bull, Mason, Jr.	A.B.	Morrison, Ill.
Bulley, Allen Edgar, Jr.	Sc.B.(E)	Kenilworth, Ill.
Burgin, Jon Harvey	A.B.	Quincy, Mass.
Burnham, Robert Lyndon	A.B.	Winchester, Mass.
Caffrey, George Jerome	A.B.	Watertown, Conn.
Cameron, Hugh Boyd	A.B.	Elyria, Ohio
Campbell, Robert Spencer	Sc.B.(E)	Birmingham, Mich.
Campisi, Peter Louis	A.B.	Maplewood, N. J.
Capozzoli, Nicholas John, Jr.	A.B.	Freeport, N. Y.
Carleton, Donald Crafts	A.B.	Reading, Mass.
Cavallaro, Aldo Mario	A.B.	Manville
Chadwick, Peter David	A.B.	Hamden, Conn.
Chapman, George Alvin, Jr.	A.B.	West Lebanon, N. H.
Chorney, Paul	Sc.B.(E)	Pawtucket
Christian, George Thomas, Jr.	A.B.	Carmel, N. Y.
Clayson, George Phelps, III	A.B.	Pittsfield, Mass.
Cline, Jerome Stuart	A.B.	Bronxville, N. Y.
Cohen, Donald	Sc.B.(P)	Providence
Cohen, Edwin Dearborn	A.B.	St. Albans, N. Y.
Cohen, Stafford Irwin	A.B.	Newton, Mass.
Conner, Robert Bennett	A.B.	Rockville Centre, N. Y.
Cooke, Raymond Richard	Sc.B.(E)	Plainville, Conn.
Cooper, William Allen	A.B.	West Haven, Conn.
Corbus, William Rudolph	A.B.	Newport
Corning, Peter Andrew	A.B.	New York, N. Y.
Coveney, Richard Marean	A.B.	Cambridge, Mass.
Cowen, Norman Jay	A.B.	Providence
Cowey, Ross Edwin	A.B.	Newport
Crann, Donald Marsh	Sc.B.(E)	Summit, N. J.
Crawford, Charles Niles, Jr.	A.B.	South Weymouth, Mass.
Crawford, Richard Lovelace	Sc.B.(C)	Valley Falls
Crecca, Richard Reynolds	A.B.	Glen Ridge, N. J.
Cronin, William Patrick	A.B.	West Newton, Mass.
Crooks, William Dunbrack Kenneth	A.B.	Marblehead, Mass.
Crowley, Herbert Riley	A.B.	Bronxville, N. Y.
Curran, Maurice Joyce, 3rd	A.B.	Andover, Mass.
Cutler, John Harvey	A.B.	Great Neck, N. Y.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Dacey, Thomas Francis	A.B.	North Agawam, Mass.
Daley, Joseph Michael, Jr.	A.B.	Winfield Park, N. J.
Dalzell, Bruce Townsend	A.B.	New Bedford, Mass.
Damutz, Edward Victor	Sc.B.(E)	Northford, Conn.
Dana, Richard Maurice	A.B.	Brookline, Mass.
Darnley, Wallis Hammond	A.B.	Longmeadow, Mass.
Davis, Joel	A.B.	New York, N. Y.
Davis, Russell Vincent, Jr.	A.B.	Rumford
Davitt, Maurice Charles	A.B.	Fairfield, Conn.
Debbs, Joseph Robert	A.B.	Maplewood, N. J.
De Ciccio Donald Richard	A.B.	Providence
de Freitas, Gabriel Fernandes	A.B.	New Bedford, Mass.
Delhagen, John Edward	A.B.	Nutley, N. J.
Del Santo, Ralph Frederick, Jr.	A.B.	East Greenwich
Demchak, William Lee	A.B.	Vandergrift, Pa.
De Mund, James Mortimer	A.B.	West Hartford, Conn.
Derderian, Kelam Steven	A.B.	Cranston
Diamond, Evans	A.B.	Forest Hills, N. Y.
Dickerson, Neil Otis	Sc.B.(E)	Shelter Island, N. Y.
Di Zoglio, Harry Francis	Sc.B.(E)	Providence
Dobbing, William Robert	Sc.B.(E)	Lonsdale
Doherty, Thomas Gerald, Jr.	A.B.	Stratford, Conn.
Doll, John Gregory	A.B.	Pawtucket
Donahue, Joseph Bennett	A.B.	Edgewood
Donaldson, John Cecil, Jr.	A.B.	Wilton, Conn.
Doolan, Dwight Morris	A.B.	Cranford, N. J.
Dornstein, Perry	A.B.	Brooklyn, N. Y.
Dorsey, Frank Colston	A.B.	Baltimore, Md.
Dragat, Andrew Sack	A.B.	Hartford, Conn.
Dubosque, Robert Erwin	A.B.	Boston, Mass.
Duffy, Robert Daniel	A.B.	Providence
Du Pont, Joseph, Jr.	A.B.	Bristol
Durfee, David Rising	A.B.	Hoosick Falls, N. Y.
Dyer, William Winfield, Jr.	A.B.	Marblehead, Mass.
Easton, George William	A.B.	Springfield, Mass.
Eden, Charles Henry	A.B.	Providence
Ehmann, Carl Frederick	A.B.	Bellerose, N. Y.
Eigen, Lewis David	A.B.	New York, N. Y.
Elkins, Robert Alan	A.B.	Jersey City, N. J.
Evans, David Sturgis	A.B.	North Scituate, Mass.
Ewell, George Ward	A.B.	Milltown, N. J.
Ewing, James Glasgow	A.B.	Boston, Mass.
Feder, Jay Paul	A.B.	New York, N. Y.
Feldman, Richard Samuel	A.B.	Rochester, N. Y.
Field, Noel Macdonald, Jr.	A.B.	Providence
Finnegan, James Roland	Sc.B.(E)	Brockton, Mass.
Fishman, David Seymour	Sc.B.(E)	Providence
Fitzgerald, Edward James	A.B.	Huntington, N. Y.
Fitzgerald, Thomas Barker	A.B.	Milwaukee, Wis.
Flather, Charles Randolph	A.B.	Providence

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Focarino, Joseph Allen	A.B.	Lodi, N. J.
Fogelson, Richard Charles	A.B.	Chicago, Ill.
Foley, John Robert	A.B.	Grosse Pointe Farms, Mich.
Forman, Edwin Noel	A.B.	Brooklyn, N. Y.
Foster, Ronald Eldon	A.B.	Noroton, Conn.
Fox, George Raymond, Jr.	A.B.	Riverside
Frank, Armin Henry	A.B.	Blanchester, Ohio
Fredette, Richard Chester	A.B.	Pawtucket
Freeman, Charles Lisso	A.B.	Providence
Freeman, Donald Kenneth, Jr.	A.B.	Detroit, Mich.
Freese, Herman	Sc.B.(E)	Baldwin, N. Y.
Fuger, Pierre Godfroy, Jr.	A.B.	Grosse Pointe Farms, Mich.
Fry, James Craig	Sc.B.(E)	Arlington Heights, Ill.
Fulton, Chandler Montgomery	A.B.	Naugatuck, Conn.
Fuschetti, Edward Alfred	A.B.	Summit, N. J.
Gabele, Carl Frederick, Jr.	A.B.	Roslindale, Mass.
Gagliardi, James Peter	A.B.	Hartford, Conn.
Gainer, Harold Lester Norman, Jr.	A.B.	Forest Hills, N. Y.
Gallotta, Richard Arnold	A.B.	Providence
Galloway, Oliver Goldsmith	A.B.	Boston, Mass.
Gardiner, Charles Carroll	A.B.	Providence
Gardiner, Donald Stephen	A.B.	Needham Heights, Mass.
Gemma, Alfred Joseph	A.B.	Cranston
Gerould, Wayne Philip	A.B.	Waverly, N. Y.
Giusti, Gerald John	A.B.	East Providence
Goemans, John Walter	A.B.	Milwaukee, Wis.
Going, Joseph Burke	A.B.	Providence
Gold, Daniel Peter	A.B.	Denville, N. J.
Golden, John Henry	A.B.	Braintree, Mass.
Goldenberg, Louis	A.B.	Brookline, Mass.
Golder, John Kenneth, Jr.	A.B.	Allwood, Clifton, N. J.
Goodrum, Ralph Richard	A.B.	Fall River, Mass.
Gordon, Robert Frederick	A.B.	Lowell, Mass.
Gottcher, Barry Hugh	A.B.	New York N. Y.
Goulet, Claude Bernard	A.B.	Cranston
Gray, Barry Wesley	A.B.	Pawtucket
Green, Nathaniel Drew	A.B.	Clayton, Mo.
Greene, Barry David	A.B.	New Haven, Conn.
Greene, Benjamin Russell	A.B.	Wellesley, Mass.
Greenstein, Howard Burt	Sc.B.(P)	Cranston
Greer, James Bradford	A.B.	West Newton, Mass.
Griffin, David Hamlin	Sc.B.(C)	Falls Church, Va.
Griffin, James Henry	Sc.B.(E)	Long Beach, Michigan City, Ind.
Grocott, James Murdoch	A.B.	Ocean Grove, Mass.
Hagan, Ralph Ernest, III	A.B.	Raynham Center, Mass.
Hakham, Elias Naji	A.B.	Tehran, Iran
Hale, Roger Loucks	A.B.	Wayzata, Minn.
Halkyard, Robert Carr	A.B.	Sharon, Mass.
Hamilton, Earl Dalton	A.B.	Providence
Hamilton, Philip Richardson	A.B.	Beaver, Pa.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Hardenbergh, Daniel Kingman	A.B.	Chappaqua, N. Y.
Harris, Richard Elton	A.B.	Riverside
Harrity, Peter Conrad	A.B.	Philadelphia, Pa.
Hassenfeld, Irwin Nathan	A.B.	Providence
Hatch, Lawrence Otis	A.B.	South Thomaston, Me.
Hausman, Sanford Albert	A.B.	Hackensack, N. J.
Hazell, Roger Keith	A.B.	Silver Spring, Md.
Henry, Francis Joseph	Sc.B.(E)	East Providence
Herzog, Samuel Adolphe	A.B.	Forest Hills, N. Y.
Hessenthaler, David	Sc.B.(E)	Providence
Hetherington, John Milton, Jr.	A.B.	Providence
Hetterly, Robert Malcolm	A.B.	Hanover, N. J.
Hines, John Joseph	A.B.	Elmhurst, L. I., N. Y.
Hoffmann, Louis Robert, II	A.B.	Sea Girt, N. J.
Holmes, Thomas William, Jr.	A.B.	Fort Lauderdale, Fla.
Horowitz, Lewis Jay	A.B.	New York, N. Y.
Howard, John Arnold	A.B.	Westminster, Mass.
Howard, Phillip Carl	A.B.	Swampscott, Mass.
Hughes, Guy D'Oyly	A.B.	Clayton, Mo.
Hughes, Richard D'Oyly	A.B.	Clayton, Mo.
Isé, Robert Henry	A.B.	Providence
Iser, Bernard	A.B.	Brooklyn, N. Y.
Jackson, David Pingree	A.B.	Marblehead, Mass.
Jackson, James Wolfe	A.B.	Grosse Pointe Park, Mich.
Jacobs, Peter Leopold	A.B.	Woodmere, N. Y.
Jacobsmeier, William Edward	Sc.B.(E)	Portsmouth, N. H.
Jeffers, John Herrick	A.B.	Providence
Jerome, Jeremiah James	A.B.	Yonkers, N. Y.
Johnson, Kurt William	A.B.	Derby, Conn.
Johnson, Robert Laurence	A.B.	Winchester, Mass.
Jones, Robert Bradford	A.B.	Whitman, Mass.
Jones, Thomas Frederick, Jr.	A.B.	Kenilworth, Ill.
Josephson, Harry Raymond	A.B.	Canton, Mass.
Joukowsky, Artemis Wolynsky	A.B.	Larchmont, N. Y.
Kane, Irving Joel	A.B.	Brookline, Mass.
Karnes, Seymour Gordon	Sc.B.(C)	Providence
Keane, Donald Joseph	A.B.	Stratford, Conn.
Keating, Bruce Creighton	Sc.B.(E)	Malverne, N. Y.
Kehoe, Gerald Francis	A.B.	Providence
Kelley, James Robert	A.B.	Hyannisport, Mass.
Kendall, Richard Elkton	A.B.	Falmouth, Mass.
Kessler, Harold Irwin	A.B.	Providence
Kilianski, Rudolph Paul	A.B.	Providence
King, Paul James Donald	A.B.	Scarsdale, N. Y.
King, Rudolph Henry	A.B.	Evanston, Ill.
Kingman, Stanley Russell, Jr.	A.B.	Arlington, Mass.
Kinter, Joseph Watson	A.B.	Indiana, Pa.
Kirby, Peter Benaglia	A.B.	Shrewsbury, Mass.
Kirkpatrick, George Simonds	A.B.	Providence
Klein, Frank Heninger	A.B.	Yonkers, N. Y.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Klein, Lawrence Morton	A.B.	Taunton, Mass.
Klenke, Robert Herman	A.B.	Huntington, N. Y.
Kluger, Sanford	A.B.	Paterson, N. J.
Knauff, Robert Philip	A.B.	New London, Conn.
Kneeland, Thomas Eugene, Jr.	A.B.	Winchester, Mass.
Koczak, Edward Joseph, Jr.	A.B.	Wallingford, Conn.
Kovalchick, Robert	A.B.	Indiana, Pa.
Kraft, Quentin Guild	A.B.	Dover, Mass.
Kralik, Joseph John, III	A.B.	Newark, N. J.
Krieg, Edwin Holmes	Sc.B.(E)	Wellesley Hills, Mass.
Kritz, Arnold Herman	Sc.B.(P)	Providence
Kugler, Ernest Richard	A.B.	Valley Falls
La Bonte, Jovite, Jr.	A.B.	Providence
Lamb, Richard Youngblut	Sc.B.(E)	River Forest, Ill.
Lambright, Harold Raymond, Jr.	A.B.	Hamden, Conn.
Lary, Edmund Charles	Sc.B.(E)	West Scarboro, Me.
Lasca, Norman Paul, Jr.	A.B.	Grosse Pointe, Mich.
La Tulippe Edward Brendon	Sc.B.(E)	Fall River, Mass.
Leaska, Mitchell Alexander	A.B.	Putnam, Conn.
Le Blond, Charles J.	A.B.	Providence
Le Blond, Henry Edmour Joseph	A.B.	Pawtucket
Lee, Edward Lewis, Jr.	A.B.	Fort Washington, Pa.
Lee, Frederick	A.B.	Stockton, Calif.
Leland, Robert Farnham	A.B.	Elgin, Ill.
Leva, John Ambrose	A.B.	Braintree, Mass.
Levenson, Alan Joel	A.B.	Portland, Me.
Levesque, Norman Paul	Sc.B.(E)	Providence
Levy, Howard Milton	Sc.B.(E)	Providence
Lewis, Edwin Francis, Jr.	A.B.	Andover, Mass.
Lewry, Arthur Tomes	Sc.B.(E)	Taunton, Mass.
Lohr, James Barnhart	A.B.	Somerset, Pa.
Loomis, Raymond James	A.B.	Pawtucket
Lopatin, Myles White	A.B.	Worcester, Mass.
Love, Arthur MacBride, Jr.	A.B.	Wellesley Hills, Mass.
Lovell, Bruce Walton	A.B.	Wethersfield, Conn.
Lowry, Donald Grey	A.B.	Westwood, Mass.
Lubin, Sheldon Bertram	A.B.	Chestnut Hill, Mass.
Ludington, Martin Lammert	A.B.	Clayton, Mo.
Luque, William John	A.B.	Quito, Ecuador
Lutes, Philip Haynes	A.B.	Woonsocket
Luther, Clifford Joseph	A.B.	Plainsboro, N. J.
Lyons, Thomas Tolman	A.B.	Cambridge, Mass.
MacLeish, James Walter	A.B.	East Weymouth, Mass.
Malzan, Albert Hamlin	A.B.	Falmouth, Mass.
Marcoux Leo	Sc.B.(E)	Pawtucket
Marcus, Burton Seymour	A.B.	Great Neck, N. Y.
Marean, David Francis	A.B.	Swampscott, Mass.
Martin, Andrew Bonner	A.B.	Schenectady, N. Y.
Mastrobuono, Richard Louis	A.B.	Lafayette
Matteodo, Eugene Anthony	A.B.	Providence

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Mauran, William Walter	A.B.	Providence
McCarthy, Robert Emmett	A.B.	Tuckahoe, N. Y.
McCulloch, Eugene Franklin, Jr.	A.B.	Needham Heights, Mass.
McDaniels, John Francis	A.B.	Raymond, N. H.
McGinn, John Edward	A.B.	Providence
McGuinness, James Patrick	A.B.	Rumson, N. J.
McKay, Paul Harold	A.B.	West Hartford, Conn.
McKenney, Richard Gove	A.B.	Beverly, Mass.
Mears, James William	Sc.B.(E)	Springfield, Mass.
Mehler, Philip Robert	A.B.	Great Neck, N. Y.
Melendy, Herbert Edward	A.B.	Farmington, Me.
Mentzer, Edward S.	A.B.	Newton Center, Mass.
Merritt, Charles Wesley, Jr.	A.B.	New York, N. Y.
Merson, David Ward	A.B.	Lewiston, Me.
Meyers, Peter Wallace	A.B.	Flemington, N. J.
Midwood, George Albert	A.B.	West Barrington
Miller, Albert Alan	A.B.	New York, N. Y.
Minster, Henry Mortimore	A.B.	Rumson, N. J.
Mitchell, Neal Burgess, Jr.	Sc.B.(E)	Salem, Mass.
Moberger, William Harold	A.B.	Providence
Moir, Stewart Hay	A.B.	Cambridge, Mass.
Moore, William Thomas	A.B.	Short Hills, N. J.
Morley, Kenneth Cameron, Jr.	A.B.	Maplewood, N. J.
Mosher, Robert Allen	Sc.B.(E)	Weston, Mass.
Mullin, Martin John, Jr.	A.B.	Waban, Mass.
Murphy, Christopher Huyck	A.B.	New Canaan, Conn.
Nachajski, Peter John	A.B.	Danbury, Conn.
Nashel, Richard Bernard	A.B.	Teaneck, N. J.
Nathanielsz Ault Mellor	A.B.	Richmond Hill, N. Y.
Nelson, William Russell	A.B.	Leonia, N. J.
Neibank, James Francis	A.B.	Jamestown, N. Y.
Nielsen, Carl Ernest, Jr.	Sc.B.(E)	East Bridgewater, Mass.
Noble, William Richard, Jr.	A.B.	Hackensack, N. J.
Norigian, Gerald Gregory	A.B.	Providence
Norton, Robert Alexander	A.B.	Marblehead, Mass.
Nothelfer, Richard Albert	A.B.	Dedham, Mass.
Oberbeck, Paul Armin	A.B.	University City, Mo.
O'Brien, Philip Joseph	A.B.	Gardner, Mass.
Olton, Tinley Lionel, Jr.	Sc.B.(E)	Providence
O'Neil, Richard Gregory	A.B.	Cranston
O'Neill, John Thomas, Jr.	A.B.	Red Hook, N. Y.
Orczyk, Stanley Richard	A.B.	Worcester, Mass.
Orr, John Clifton III	A.B.	Mount Kisco, N. Y.
Ott, David Fentress	A.B.	Lake Forest, Ill.
Otto, George Aylwin	A.B.	Glen Head, N. Y.
Packard, George Quincy, Jr.	A.B.	Melrose, Mass.
Page, Josiah Bartlett	A.B.	Scarsdale, N. Y.
Page, James Randolph	A.B.	New York, N. Y.
Panarelli, Joseph Emilio	A.B.	Providence
Parker, Gordon Lancaster, Jr.	A.B.	Providence

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Pascal, David	A.B.	Woonsocket
Patey, Reuben Henry, Jr.	A.B.	White Plains, N. Y.
Pearson, John Davie	Sc.B.(P)	Swarthmore, Pa.
Peavy, Lester Roy	A.B.	Bridgeport, Conn.
Pelen, Paul Thomas	Sc.B.(E)	Providence
Perkins, Craig Powers	A.B.	Rochester, N. Y.
Perrino, Albert Carl	Sc.B.(C)	Cranston
Peterson, John Allen	A.B.	New Haven, Conn.
Petterson, Lewis Waldemar, Jr.	A.B.	Edgewood
Philippi, Peter Swain	Sc.B.(E)	Newark, N. J.
Pienkny, Seymour	A.B.	Far Rockaway, N. Y.
Pietro, William Edward	A.B.	Worcester, Mass.
Piscuskas, Vitold Stanley	A.B.	Brockton, Mass.
Place, Graham Browning	A.B.	Providence
Pollard, George Huntington	A.B.	Barrington
Pombo, Melvin Martin	Sc.B.(C)	Seekonk, Mass.
Porter, Bruce Fairchild	A.B.	West Haven, Conn.
Prescott, Gary Owen	A.B.	Newport
Prifty, Robert James	A.B.	Waterbury, Conn.
Prince, Frank Charles	A.B.	New York, N. Y.
Pringle, William Duncan	A.B.	New York, N. Y.
Rakatansky, Herbert	A.B.	Providence
Randall, Edward Vincent, Jr.	A.B.	Monroe, Conn.
Randazza, Joseph Peter	A.B.	Gloucester, Mass.
Randazzo, Anthony Philip	A.B.	Passaic, N. J.
Ray, Louis Charles	Sc.B.(P)	Providence
Read, Robert Wheaton	A.B.	Seekonk, Mass.
Redding, Conway Holmes	A.B.	Hampton, Va.
Reese, Louis Henry	A.B.	Scranton, Pa.
Regan, Frank Clinton	A.B.	Dorchester, Mass.
Rego, Francis Carmine, Jr.	Sc.B.(E)	Hamden, Conn.
Resnic, Harold Irving	A.B.	Holyoke, Mass.
Revis, David Jay	A.B.	Mattapan, Mass.
Reynolds, David Wesley	A.B.	Manchester, N. H.
Ricci, Raymond Edward	A.B.	Cranston
Richards, Wayne Herbert	A.B.	Versailles, Conn.
Rider, Kenneth Graham Salkeld	A.B.	Brightwaters, L. I., N. Y.
Ridley, Clifford Anthony	A.B.	Wilton, Conn.
Robinson, John Stuart	A.B.	West Newton, Mass.
Rogers, James Harriman, Jr.	A.B.	Winnetka, Ill.
Romano, William Scudder	A.B.	Northport, N. Y.
Rona, Peter Arnold	A.B.	New York, N. Y.
Rosenbaum, David Mark	Sc.B.(P)	Brookline, Mass.
Rosenberg, Stephen	A.B.	Baltimore, Md.
Rosenblum, Jerome Jay	A.B.	New York, N. Y.
Ross, Harold Stanley	A.B.	Scarsdale, N. Y.
Roth, Alan	A.B.	New York, N. Y.
Rubin, Robert Michael	A.B.	New York, N. Y.
Russell, William Walker, Jr.	A.B.	East Providence
Ryder, Alton Vernon	Sc.B.(P)	Bristol, Conn.

LIST OF STUDENTS: JUNIORS

NAME	DEGREE	RESIDENCE
Sackett, Richard Edwin	A.B.	Greenwich, Conn.
Sackey, James Alfred Attram Kofi	Sc.B.(C)	West Africa
Saharian, Alexander	Sc.B.(E)	Providence
Samuels, Jack Donald	A.B.	New York, N. Y.
Sanford, Timothy Fox	A.B.	New Canaan, Conn.
San Soucie, William Bryce	A.B.	Pascoag
Sapir, Daniel Gustave	A.B.	Forest Hills, N. Y.
Schaffer, Lewis Adam	A.B.	East Orange, N. J.
Scharf, Ronald Mann	A.B.	New York, N. Y.
Schneider, Robert Albert	A.B.	Newtonville, Mass.
Schultz, William Bradford, Jr.	Sc.B.(E)	Sturbridge, Mass.
Schwartz, Ronald Alan	A.B.	Fall River, Mass.
Scudder, John Paul	A.B.	Morristown, N. J.
Sculco, Mario Joseph	A.B.	Westerly
Seid, John Jacob	A.B.	Essex, Conn.
Semel, Daniel Mindlin	A.B.	Cedarhurst, N. Y.
Shaffer, Frank Holmes, III	A.B.	Cincinnati, Ohio
Shanley, Richard Allen	A.B.	Hamden, Conn.
Shatkin, Aaron Joseph	A.B.	East Greenwich
Sheffer, Joseph	A.B.	Chestnut Hill, Mass.
Shutkin, Peter Michael	A.B.	Milwaukee, Wis.
Siegel, Sheldon Proctor	A.B.	Brookline, Mass.
Silverman, Donald Arthur	A.B.	Brookline, Mass.
Silverstein, Michael Alan	A.B.	Providence
Simpson, Joseph Warren, III	A.B.	Milwaukee, Wis.
Sinclair, Donald McKinnon	A.B.	Milwaukee, Wis.
Sinclair, Ian Alexander	A.B.	Milwaukee, Wis.
Singer, Roger Nelson	A.B.	Rahway, N. J.
Skerry, William Frederick	A.B.	Winchester, Mass.
Sloane, Barry Locke	A.B.	Chestnut Hill, Mass.
Smiles, Christopher Jr.	A.B.	Wilton, Conn.
Smith, Arnold Perry	Sc.B.(Ap.M.)	Norwichtown Conn.
Smith, Douglas Albertson	A.B.	Cranford, N. J.
Smith, John Allen Jr.	A.B.	Riverside
Smith, Langdon Spaulding	A.B.	East Providence
Snow, Kennedy Bruce	A.B.	Boulder, Colo.
Solimine, Joseph Jr.	A.B.	Essex Fells, N. J.
Soloway, Joseph	A.B.	Jamaica, N. Y.
Spiller, Donald Gibson	A.B.	Sharonville, Ohio
Spruth, Thomas Keener	A.B.	Lake Bluff, Ill.
Stearns, John Sargent	A.B.	Wellesley Hills, Mass.
Stephens, Nicholas Meriwether	A.B.	Newport
Sterling, Robert Lee, Jr.	A.B.	Shaker Heights, Ohio
Steven, Robert Stewart, Jr.	A.B.	Providence
Stowik, William Joseph	Sc.B.(E)	Lonsdale
Straub, George Hyde, Jr.	Sc.B.(E)	Elkins Park, Pa.
Strickland, Richard Alan	A.B.	Woonsocket
Sullivan, Philip Paul	A.B.	Portsmouth
Sutherland, Reynolds Jay	A.B.	Yonkers, N. Y.
Swain, James Edgar, Jr.	A.B.	Allentown, Pa.

LIST OF STUDENTS; JUNIORS

NAME	DEGREE	RESIDENCE
Swartz, Robert Phillip	A.B.	Milford, Mass.
Sweeney, Thomas Stratton	A.B.	Providence
Tanenbaum, Basil Samuel	Sc.B.(P)	Providence
Terrill, Stuart Fairchild, Jr.	A.B.	Brookfield Center, Conn.
Thomas, Benjamin Morris	A.B.	Great Neck, N. Y.
Thompson, David Gale	Sc.B.(C)	Ilion, N. Y.
Thompson, Richard Lawton	A.B.	Auburndale, Mass.
Thompson, Thomas Donald	A.B.	Auburndale, Mass.
Thorpe, Richard Macy	A.B.	Pittsburgh, Pa.
Tingley, Frederick Maryon	A.B.	Bristol
Titelbaum, Jules Arnold	A.B.	Brooklyn, N. Y.
Tortolani, Raymond Michael	A.B.	Providence
Tower, Eugene Nichols	A.B.	Cohasset, Mass.
Trippett, Peter Rivers	Sc.B.(C)	East Orange, N. J.
Trost, Frederick Felix	A.B.	Red Hook, N. Y.
Trott, Donald Irwin	A.B.	Jamaica, N. Y.
Trowbridge, Augustus	A.B.	Philadelphia, Pa.
Tutless, Peter Joseph	A.B.	Seekonk, Mass.
Uhl, Donald Peter	A.B.	Plandome, L. I., N. Y.
Underhill, Christopher Sands	A.B.	Sandy Hook, Conn.
Usdan, Michael David	A.B.	Bronx, N. Y.
Valicenti, Richard Edward	A.B.	Flushing, N. Y.
Vanderhoop, John Occooch	A.B.	Gay Head, Mass.
Vandersip, Henry Annis	Ac.B.(E)	Providence
Vandervliet, Wesley Maurice	A.B.	Groton, Conn.
Veaudry, Ronald Robert	A.B.	Pawtucket
Vesely, Richard John	A.B.	Cleveland, Ohio
Walls, Alden Robert, Jr.	A.B.	Atlanta, Ga.
Walsh, Donald Eugene	A.B.	North Providence
Warner, Russell Eugene	A.B.	Castle on Hudson, N. Y.
Wasicko, William James	A.B.	Yonkers, N. Y.
Watts, Robert Allen	A.B.	Garden City, N. Y.
Weaver, Clarence Gerold	A.B.	Providence
Weber, Walter Jacob	Sc.B.(E)	Milltown, N. J.
Weddell, Arthur, Jr.	A.B.	Rumford
Weicker, Andrew Quirk	A.B.	Providence
Weingarten, Charles Henry	A.B.	Forest Hills, N. Y.
Weiss, Hilton Miller	Sc.B.(C)	Providence
Wescott, William Albert	A.B.	Little Silver, N. J.
West, Edward James	A.B.	Providence
Westcote, Walter Murray	A.B.	Glen Ridge, N. J.
Whalen, Richard Edward	A.B.	Holyoke, Mass.
Wheeler, William March, III	A.B.	Rochelle Park, N. J.
White, Stephen Turner	A.B.	Menlo Park, Calif.
Whittemore, Allen West	A.B.	St. Louis, Mo.
Whittemore, William Haarstick	A.B.	St. Louis, Mo.
Wilenzik, Marvin Leonard	A.B.	Barnesboro, Pa.
Wiley, John Pennock	Sc.B.(E)	Lincoln, Mass.
Williams, Archie	A.B.	Springfield, Mass.
Williams, Richard Ellis	Sc.B.(E)	Wyoming, Pa.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Williams, Roger Bennett	A.B.	Edgewood
Willis, David Scoville	A.B.	Glens Falls, N. Y.
Wojcicki, Andrew Adalbert	Sc.B.(C)	Washington, D. C.
Wolins, Donald Morton	A.B.	Riverhead, N. Y.
Wood, John Howard	A.B.	Lake Bluff, Ill.
Worsley, John Ashton	A.B.	Pawtucket
Wragg, Dodd Benham	A.B.	New London, Conn.
Yanni, Frank Richard	A.B.	Brockton, Mass.
Youman, Stephen Daniel	A.B.	Medway, Mass.
Young, Frederick Earle	A.B.	West Haven, Conn.
Zimmerman, Robert Fairchild, Jr.	A.B.	Convent, N. J.
Zinn, Theodore	A.B.	Manhasset, N. Y.

SOPHOMORES: CLASS OF 1957

Abbatomarco, Philip Francis	A.B.	Providence
Abramowitz, Mark	A.B.	Brooklyn, N. Y.
Abramson, David Bruce	A.B.	Brookline, Mass.
Ackerman, Robert Harold	A.B.	New York, N. Y.
Adams, Arthur Gray, Jr.	A.B.	Bergenfield, N. J.
Aho, Richard John	Sc.B.(E)	Lunenburg, Mass.
Alexander, John William	A.B.	Chehalis, Wash.
Allin, Edward Francis	A.B.	North Providence
Allison, William Landphere	A.B.	West Hartford, Conn.
Alves, Daniel Joseph	A.B.	Pawtucket
Anderson, Richard Eric	A.B.	Cranston
Anderson, Ralph Pierce	Sc.B.(E)	West Roxbury, Mass.
Andrew, Donald Gibson	A.B.	Warwick
Andrews, Paul	A.B.	Worcester, Mass.
Arcaro, Harold Conrad, Jr.	A.B.	Providence
Aronoff, Stephen Jay	A.B.	New York, N. Y.
Arsenault, Donald William	A.B.	Slatersville
Artinian, Edward	A.B.	Pawtucket
Backhaus, George John	A.B.	New Rochelle, N. Y.
Baker, Ronald Edward	A.B.	Tuckahoe, N. Y.
Barbuscio, Frank Donald	Sc.B.(C)	East Providence
Barker, Richard Canfield	A.B.	Wethersfield, Conn.
Barstow, Peter Tucker	A.B.	Sioux City, Iowa
Bartlett, Arthur Clarke	A.B.	Wakefield, Mass.
Basse, Albert, Jr.	A.B.	Brighton Dist. Boston, Mass.
Beattie, John Bayer	A.B.	Scarsdale, N. Y.
Beeman, John Prentice	A.B.	Litchfield, Conn.
Behringer, Fred Dietz	A.B.	Ambler, Pa.
Bence, Richard Lorin	A.B.	Fort Lauderdale, Fla.
Bernstein, Henry Sack	A.B.	West Hartford, Conn.
Besser, James Russell	A.B.	Ho Ho Kus, N. J.
Bianowicz, Joseph Henry	A.B.	Torrington, Conn.
Bierwirth, Arthur	A.B.	Linden, N. J.
Bird, Charles Stephen	A.B.	East Rockaway, N. Y.
Bird, Donald Ware	A.B.	La Jolla, Calif.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Bird, John Peter	Sc.B.(E)	Waltham, Mass.
Bird, Robert Arthur, Jr.	Sc.B.(E)	Valley Falls
Bitting, George Capen	A.B.	St. Louis, Mo.
Blake, Richard Albert	A.B.	Riverside
Blank, Burton Warren	A.B.	New York, N. Y.
Bliss, Bruce James	A.B.	North Attleboro, Mass.
Bliss, Dan Michael	A.B.	Providence
Bollow, William Russell	A.B.	Downers Grove, Ill.
Bolotow, Norman Jay	A.B.	Providence
Bolton, William Arthur Peter	A.B.	Glenside, Pa.
Booth, Anthony Crawford	A.B.	Rumford
Borton, Roland Cameron	A.B.	Scarsdale, N. Y.
Brandli, John Danner, Jr.	A.B.	Short Hills, N. J.
Breslin, Thomas Grimmett	A.B.	Providence
Bride, William Thomas, Jr.	A.B.	Andover, Mass.
Brody, Robert Marvin	A.B.	New York, N. Y.
Brody, Robert Stanley	A.B.	Haverhill, Mass.
Brogunier, Joseph Edward	A.B.	Hagerstown, Md.
Brook, Leonard Benjamin	A.B.	Scarsdale, N. Y.
Brosseau, William Alfred	A.B.	Chicopee, Mass.
Brown, Frank Abbott, Jr.	A.B.	Evanston, Ill.
Brown, Harold Frederick, Jr.	A.B.	Newton Centre, Mass.
Brown, Paul Patten	Sc.B.(E)	Rumford
Brust, Norman Terry	Sc.B.(E)	Oceanside, N. Y.
Buchanan, Peter Stuart	A.B.	West Cheshire, Conn.
Buckley, Daniel Aloysius, Jr.	A.B.	Brockton, Mass.
Bullis, Robert Howard	Sc.B.(E)	Troy, N. Y.
Bullock, Donald Paige	A.B.	Hatchville, Mass.
Buote, James Francis	A.B.	Cranston
Burke, Anthony Kyrle	A.B.	Tuxedo, N. Y.
Burke, William Gerald, Jr.	A.B.	Hicksville, N. Y.
Campbell, Marshall Fields, Jr.	A.B.	Beverly Farms, Mass.
Capalbo, William Norman	A.B.	Greenville
Capen, Samuel Wacker	A.B.	New York, N. Y.
Caputo, Angelo Anthony	Sc.B.(E)	Brooklyn, N. Y.
Carleton, Scott Oberle	A.B.	Oradell, N. J.
Carlin, Richard Lewis	Sc.B.(C)	Plymouth, Mass.
Carnabuci, Joseph Serafino, Jr.	A.B.	Brockton, Mass.
Carpenter, Bruce Hooper, Jr.	A.B.	Balboa, Canal Zone
Carver, Richard David	A.B.	Drexel Hill, Pa.
Casimir, Anthony Stephen	A.B.	Big Indian, N. Y.
Catanzaro, Robert Salvatore	A.B.	Warwick Neck
Cerasoli, James Robert	A.B.	Clairton, Pa.
Chagnot, Richard Anthony	A.B.	Needham, Mass.
Chandler, John Rust, Jr.	A.B.	Cleveland, Ohio
Chappell, Oliver Spaulding	A.B.	Willimantic, Conn.
Christiansen, Paul Herbert	A.B.	Shortsville, N. Y.
Chuvala, Raymond Daniel	A.B.	Danbury, Conn.
Clapp, Nicholas Roger	A.B.	Providence
Clark, John Warden	A.B.	Baltimore, Md.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Clark, Richard Perry	A.B.	Wakefield
Clarke, John Caleb Forman	A.B.	New Brunswick, N. J.
Cleghorn, James Leon	A.B.	Pawtucket
Clemetson, John Anton	A.B.	Prairie View, Ill.
Cohen, James Philip	A.B.	New York, N. Y.
Coken, Morton Lloyd	A.B.	Providence
Colangelo, Theodore Donald	A.B.	East Norwalk, Conn.
Colinan, David	A.B.	Saylesville
Colombo, Donald Anthony	A.B.	Valhalla, N. Y.
Connell, Robert Edward	A.B.	Winthrop, Mass.
Conner, John Francis	A.B.	New York, N. Y.
Conron, Michael Anthony	A.B.	Providence
Cook, James Allison	A.B.	Providence
Corrigan, James Nicholas	A.B.	Providence
Corrigan, Robert Anthony	A.B.	Springfield, Mass.
Cota, Richard Edward	Sc.B.(E)	Cranston
Cottrell, Stephen Richard	A.B.	Detroit, Mich.
Coupe, Alan Gregory	A.B.	Manville
Cowan, Robert Allen	Sc.B.(E)	Cleveland, Ohio
Cowen, Edwin Alfred, Jr.	A.B.	West End, N. J.
Cowles, George Welsh	A.B.	Glens Falls, N. Y.
Cox, James Warren	Sc.B.(E)	Hamburg, N. Y.
Crews, Richard Charles	A.B.	Ardsey, Pa.
Cuddy, Joseph Michael	A.B.	Pawtucket
Cutler, Stephen David	A.B.	Quincy, Mass.
Day, Clive Cameron, Jr.	A.B.	Short Hills, N.J.
Day, John Charles	A.B.	Melrose, Mass.
Day, Richard Willard	Sc.B.(E)	Rumford
Dean, Britten	A.B.	Guilderland, N.Y.
Dean, Phillips Vose, Jr.	Sc.B.(E)	Guilderland, N.Y.
Delaney, George Bernard, Jr.	A.B.	Walpole, Mass.
Dennehy, Thomas Morris	A.B.	Lake Forest, Ill.
Dennis, Robert Capen	A.B.	Albany, N.Y.
Denny, William Murdock, Jr.	Sc.B.(C)	Schenectady, N.Y.
Devereaux, Peter Warfield	A.B.	Barrington, Ill.
Dickert, Clarence Stewart	A.B.	Hurley, N.Y.
Dimond, Renwick DeGroat	A.B.	New York, N.Y.
Doctor, Kuno Karl Joachim	A.B.	Providence
Doonan, Kenneth Edward	A.B.	Cranston
Driscoll, James Raymond	A.B.	Lee, Mass
Dumaine, Dudley Bradlee	A.B.	Weston, Mass.
Dunlap, Daniel Cummings	Sc.B.(E)	Lexington, Mass.
Dunleavy, Raymond Edward	A.B.	Bronxville, N.Y.
Dunnán, Bruce Turner	A.B.	Lexington, Mass.
Eckel, Karl Matthew	A.B.	Scotia, N.Y.
Edwards, Daniel Jay	A.B.	Brightwaters, L.I., N.Y
Eisentrager, Robert William	A.B.	New York, N.Y.
Espey, Frederic Charles	A.B.	Palos Park, Ill.
Espinola, Ronald Paul	Sc.B.(P)	Providence
Esterline, John Walter, III	A.B.	New Augusta, Ind.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Evans, Thomas Lloyd	A.B.	Erie, Pa.
Fahey, John Joseph, Jr.	A.B.	East Providence
Fake, Peter Herbert	A.B.	Paramus, N.J.
Farrell, Walter Joseph	A.B.	Harrisburg, Pa.
Feiten, Paul Marsh	A.B.	Atherton, Calif.
Ferguson, Theodore Parkman, Jr.	Sc.B.(E)	Norwood
Fernald, Frederick Gordon	Sc.B.(E)	Verona, N.J.
Feuchtwanger, Joseph, III	A.B.	Scarsdale, N.Y.
Fialco, Marvin Joshua	A.B.	Cincinnati, Ohio
Fishback, James Frederick	A.B.	Bethesda, Md.
Fishkin, Alan Edward	A.B.	Wakefield, Ohio
Flanagan, Bruce	A.B.	Mendham, N.J.
Fleisig, Norbert	A.B.	Providence
Flynn, Thomas Lawrence, Jr.	A.B.	Edgartown, Mass.
Foley, Frank McRandle	A.B.	Providence
Follett, Herbert Gordon	A.B.	Fall River, Mass.
Foster, James Milton	A.B.	Halesite, N.Y.
Fraizer, George Alexander, Jr.	Sc.B.(E)	Providence
Frank, Richard Leo	A.B.	Canton, Ohio
Frank, Willard Chabot, Jr.	A.B.	Hamburg, N.Y.
Franz, Paul Bradford	Sc.B.(E)	Rye, N.Y.
Frattali, Richard Wildon	A.B.	Groton, Conn.
Frazier, Russell Kemp	A.B.	Yonkers, N.Y.
Freedlander, Arthur Elliot	A.B.	Haverhill, Mass.
Freeman, Robert Arthur	A.B.	Villanova, Pa.
Freund, William O. H., Jr.	A.B.	Shaker Heights, Ohio
Fries, Walter Kenneth	A.B.	New Haven, Conn.
Fronapfel, Joseph Bernard, III	Sc.B.(E)	Belmar, N.J.
Fulton, Robert Lester	Sc.B.(C)	East Weymouth, Mass.
Fusca, Vincent James	A.B.	Pittsburgh, Pa.
Fusco, Richard Anthony	A.B.	Aliquippa, Pa.
Ganz, Elliot Joseph	A.B.	Providence
Gardner, Glen Tilton	A.B.	Larchmont, N.Y.
Garland, John Alan, Jr.	A.B.	New Canaan, Conn.
Garrett, Scott Lee	Sc.B.(E)	Niles, Ohio
Gatti, Anthony Roger	Sc.B.(C)	Providence
Geremia, Michael Charles	A.B.	North Providence
Gersky, Robert Henry	A.B.	Tarrytown, N.Y.
Gerstein, Joseph Franklin	A.B.	Brookline, Mass.
Giddings, Jack Edwards	A.B.	Manchester Center, Vt.
Gillmar, Stanley Frank	A.B.	Honolulu, Hawaii
Ginther, Joseph Rawlins, Jr.	A.B.	Norristown, Pa.
Giordano, Robert Joseph	A.B.	Rutherford, N.J.
Giovine, Alfred Norman, Jr.	A.B.	Cranston
Glassman, George Morton	A.B.	New York, N.Y.
Glover, Gordon Gray	A.B.	Simsbury, Conn.
Gluck, Barry Jay	A.B.	Cedarhurst, N.Y.
Goddard, John Calvin	Sc.B.(C)	Needham Heights, Mass.
Godfrey, Richard Dudley	A.B.	Rye, N.Y.
Godshall, Douglas Reed	Sc.B.(E)	Collegeville, Pa.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Goff, Robert Hathaway, Jr.	A.B.	Providence
Gold, Benson Peter	A.B.	Brooklyn, N.Y.
Goldsmith, James Alfred, III	A.B.	Westport, Conn.
Gomez, Joaquin Carlos	A.B.	Cali, Colombia, South America
Goodwin, Don Fielding	Sc.B.(E)	Cranston
Gordon, Alan Mayer	Sc.B.(E)	Paterson, N.J.
Gordon, Charles Fox, Jr.	Sc.B.(E)	El Paso, Tex.
Gordon, Richard William	A.B.	New Hyde Park, N.Y.
Gorman, Robert Herancourt	A.B.	Wyoming, Ohio
Gould, John Philip	Sc.B.(E)	Highland Park, Ill.
Grace, Nathan Myron	A.B.	Worcester, Mass.
Grafton, Robert Bruce	Sc.B.(E)	Wakefield, Mass.
Gray, Garland Alonzo, Jr.	Sc.B.(E)	Chelsea, Mass.
Greenberg, Gerald Ned	Sc.B.(C)	Teaneck, N.J.
Greene Nathanael	A.B.	Providence
Greif, Kenneth Lee	A.B.	New York, N.Y.
Griess, William Ernest, Jr.	A.B.	Cincinnati, Ohio
Gross, Barrett Moulton	A.B.	Providence
Groves, George Shaw	A.B.	Glenshaw, Pa.
Gurney, Peter	A.B.	Lakeville, Conn.
Hale, John Francis	A.B.	Lonsdale
Hale, Robert Lee	A.B.	Erie, Pa.
Haley, Gene Clifford	A.B.	Newburyport, Mass.
Hallett, Edward Bangs	A.B.	Gloucester, Mass.
Hambuchen, James Ernest	A.B.	Huntington, L.I., N.Y.
Hanley, Jerome Richard	Sc.B.(P)	Loudonville, N.Y.
Hanna, Glenn	A.B.	Leonia, N.J.
Hanoian, Kerrigan George	A.B.	Providence
Harmon, James Allen	A.B.	Mamaroneck, N.Y.
Harmon, John McLean, Jr.	A.B.	Pittsburgh, Pa.
Harrison, John Gerald	A.B.	Council Bluffs, Iowa
Harvey, Norman Darrell	A.B.	Pelham, N.Y.
Haslam, William Lester	A.B.	East Providence
Haverl, Ronald Anton	Sc.B.(E)	Stratford, Conn.
Hayes, William Abbott, Jr.	A.B.	Springfield, Mass.
Hazlehurst, Thomas Edgar	A.B.	Providence
Heilbraun, Martin Lee	A.B.	Brooklyn, N.Y.
Held, Maxton Carlisle	A.B.	Scarsdale, N.Y.
Helgeland, Walter	Sc.B.(C)	New Bedford, Mass.
Hellstrom, Robert Gordon	A.B.	West Hartford, Conn.
Hesslein, Thomas George	A.B.	Chappaqua, N.Y.
Hill, Morton Charles	A.B.	Bridgeton, N.J.
Hills, Francis Joseph	A.B.	Rahway, N.J.
Hills, John Parker	A.B.	West Yarmouth, Mass.
Hirst, Arthur Ralph	A.B.	Cranston
Hoffman, John Hardie	A.B.	Lombard, Ill.
Hoffner, Burton Paul	A.B.	Arverne, N.Y.
Holden, Kenneth George	Sc.B.(C)	Summit, N.J.
Holleman, James Maxey	A.B.	Tulsa, Okla.
Hollitscher, Peter John	A.B.	New Rochelle, N.Y.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Holt, Marmaduke Burrell, III	A.B.	Denver, Colo.
Hood, Ralph Henderson	A.B.	Philadelphia, Pa.
Hoppl, Charles Henry	A.B.	Valley Stream, N.Y.
Horner, Winfield Grier	A.B.	Tarrytown, N.Y.
Howe, Stephen Scott	A.B.	Sudbury, Mass.
Huber, Paul Anton	A.B.	Hollis, N.Y.
Hudson, Royal Carlton, Jr.	Sc.B.(C)	West Warwick
Hudson, William Charles	A.B.	East Rockaway, N.Y.
Humeston, Frederick Leon	A.B.	Danbury, Conn.
Hummerstone, Robert George	A.B.	Manhasset, N.Y.
Hurley, Thomas Joseph, Jr.	Sc.B.(C)	West Haven, Conn.
Imm, Martin Hilmar, Jr.	A.B.	St. Paul, Minn.
Ionata, Richard Andrew	A.B.	Providence
Irwin, Richard Edward	A.B.	Seekonk, Mass.
Jacobus, Lee Andree	A.B.	West Orange, N.J.
Janssen, Thomas Bennett	A.B.	Bronxville, N.Y.
Janssen, Webster Elliot	A.B.	Bronxville, N.Y.
Johnson, Conrad Philip	A.B.	Worcester, Mass.
Johnson, David Kimball	A.B.	Melrose, Mass.
Jones, Courtney Shephard	A.B.	Hampton, Va.
Jones, Edward Thomas	A.B.	Brockton, Mass.
Jones, Ernest Richard	A.B.	Gloversville, N.Y.
Jordan, Richard Charles	A.B.	Fair Lawn, N.J.
Jordan, Theodore Foster, Jr.	A.B.	Garden City, N.Y.
Just, John Francis	A.B.	Donora, Pa.
Kahn, Richard Alan	A.B.	Woodmere, N.Y.
Kaplan, Alfred Richard	A.B.	Flushing, N.Y.
Kaplan, David Michael	A.B.	Brookline, Mass.
Karan, Paul Richard	A.B.	Forest Hills, N.Y.
Karl, Paul Titus	A.B.	Pleasant Valley, N.Y.
Kaufman, K. Richard	A.B.	Scarsdale, N.Y.
Keith, John Monroe, Jr.	Sc.B.(E)	Springfield, N.J.
Kelley, John	A.B.	Troy, N.Y.
Kelly, Edward Patrick	A.B.	Brooklyn, N.Y.
Kelly, William Joseph	A.B.	Springfield, Mass.
Kennedy, Thomas Bryant, Jr.	A.B.	Peoria, Ill.
Kenny, Robert Webb, Jr.	A.B.	Providence
Kerrigan, Paul Joseph	Sc.B.(P)	Hudson, Mass.
Kessler, Mark Keil	A.B.	Lancaster, Pa.
Kilkenny, Gustave Wadsworth	A.B.	Seekonk, Mass.
King, William Dana	A.B.	Newton Highlands, Mass.
Klein, Donald Roth	A.B.	Yonkers, N.Y.
Klein, Michael Martin	A.B.	Riverdale, N.Y.C., N.Y.
Koester, Kenneth Oliver	A.B.	New Rochelle, N.Y.
Kohlhepp, Adam John, Jr.	A.B.	Yonkers, N.Y.
Kohn, Lewis Avrom	A.B.	Glens Falls, N.Y.
Koly, Richard Manchester	A.B.	North Smithfield
Kostecki, Richard Joseph	A.B.	Brooklyn, N.Y.
Kraihanzel, Charles Stephen	Sc.B.(C)	New Bedford, Mass.
Krikorian, Robert Richard	Sc.B.(C)	Providence

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Kroll, Jerome Lewis	A.B.	Brooklyn, N.Y.
Lalumia, Edward Joseph	A.B.	Hamden, Conn.
Lamb, Richard Forrest	A.B.	Buffalo, N.Y.
Lange, Paul Kruse	A.B.	Glens Falls, N.Y.
Lanphere, Lloyd Cessna	A.B.	Corry, Pa.
Larson, Warren Alfred	Sc.B.(C)	Milford, Mass.
Latchis, Kenneth Spero	A.B.	Brattleboro, Vt.
Lauenstein, Karl Frederic	A.B.	Chatham, N.J.
Laviano, Edmund Gerard	A.B.	Patchogue, N.Y.
Leavitt, Jay Allen	A.B.	Fall River, Mass.
Lehner, Peter Robert	A.B.	Brookline, Mass.
Lenz, Philip Corbin, Jr.	Sc.B.(E)	Barrington
Leonard, Ralph Lovett, Jr.	A.B.	Beverly, Mass.
Levin, Ira David	A.B.	Newton, Mass.
Lew, John Peter	A.B.	Manhasset, N.Y.
Lewis, David Carleton	A.B.	Newton, Mass.
Lewis, William Peabody	A.B.	Beverly, Mass.
Licht, Arthur Lewis	Sc.B.(P)	Providence
Litchfield, Loring Robert	A.B.	Waban, Mass.
Litchfield, Robert Cushing	A.B.	Morris Plains, N.J.
Loveman, Lester Edward	A.B.	New York, N.Y.
Lowen, Arthur Barry	A.B.	Yonkers, N.Y.
Lyden, John Kenneth	A.B.	Tarrytown, N.Y.
MacArthur, Robert Nickerson	A.B.	Winchester, Mass.
Mackey, Thomas Abbott	A.B.	Detroit, Mich.
MacLachlan, Robert Douglas, Jr.	A.B.	West Barrington
MacLean, John Calder	A.B.	Boston, Mass.
Mahoney, Thomas Raphael, Jr.	A.B.	Amityville, N.Y.
Main, Frank Proctor	A.B.	Boonton, N.J.
Mainardi, Edward Guala	A.B.	Paterson, N.J.
Maloney, Matthew Joseph	A.B.	New Milford, Conn.
Manning, Craig Alan	A.B.	Scarsdale, N.Y.
Mansell, Roger	Sc.B.(E)	Wantagh, N.Y.
Mansfield, Robert Leslie	A.B.	Garden City, N.Y.
Marchesani, Anthony Michael	A.B.	Providence
Marcus, Alan Richard	A.B.	Pittsburgh, Pa.
Marcus, Charles Paul	A.B.	Oak Park, Ill.
Marshall, John Leo	Sc.B.(E)	Pawtucket
Martinage, Louis Hubert	Sc.B.(E)	Reading, Mass.
Mathison, John Layfield	A.B.	Lakewood
May, John William	A.B.	Cranston
McCaughey, Patrick Edward, Jr.	A.B.	Short Hills, N.J.
McClea, Richard Joseph	A.B.	Detroit, Mich.
McColgan, John Arthur	A.B.	Saginaw, Mich.
McCurrach, James Crampton, Jr.	A.B.	Palm Beach, Fla.
McGarry, Walter Leo, Jr.	A.B.	Cranston
McIntosh, Kenneth Thomas	A.B.	Pawtucket
McKnight, John Stephen	A.B.	Cranston
McLain, Donald Jack	Sc.B.(E)	Springfield, Mass.
McLandress, Robert Shannon	A.B.	Glens Falls, N.Y.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
McLean, Edward Barnard	A.B.	Barrington
Meader, Charles Robert	A.B.	North Westport, Mass.
Medeiros, Antone Arruda	A.B.	New Bedford, Mass.
Merkin, Barry Allen	A.B.	Patchogue, N.Y.
Mernick, Frederick Joseph	Sc.B.(P)	Providence
Mertens, Richard Buchanan	A.B.	Park Ridge, Ill.
Miles, Burnley Lankford	Sc.B.(E)	Decatur, Ala.
Miller, Howard	Sc.B.(Ap.M)	Philadelphia, Pa.
Miller, Richard Watson	A.B.	West Newton, Mass.
Miller, William Homer	Sc.B.(E)	Pompton Lakes, N.J.
Minnerly, Robert Ward	A.B.	Yonkers, N.Y.
Mintzer, Steven Adam	A.B.	Chestnut Hill, Mass.
Monaghan, William John	A.B.	Jackson Heights, N.Y.
Monsarrat, Nicholas Thoms	A.B.	Seekonk, Mass.
Mont, George Edward	Sc.B.(C)	New Bedford, Mass.
Montanaro, Louis, Jr.	Sc.B.(E)	Providence
Moody, Hiram Frederick, Jr.	A.B.	Winchester, Mass.
Moos, Henry Warren	Sc.B.(P)	New Hyde Park, N.Y.
Morrison, Donald Edward, Jr.	A.B.	Randolph, Mass.
Morrissey, Daniel Henry, Jr.	A.B.	Barrington
Morong, Carrol Oscar, Jr.	A.B.	Hightstown, N.J.
Morse, Michael	A.B.	Chestnut Hill, Mass.
Muecke, Berthold, III	G.B.	Ruxton, Md.
Muldoon, James Edward	A.B.	Glen Cove, N.Y.
Murphy, Jonathan Farmer	A.B.	New Canaan, Conn.
Mushkin, Albert Samuel	A.B.	Brooklyn, N.Y.
Nannig, William Ira	A.B.	Providence
Narkiewicz, William Paul	Sc.B.(E)	Bellows Falls, Vt.
Nathan, Richard Perle	A.B.	Albany, N.Y.
Neil, David French	A.B.	East Orange, N.J.
Nemlich, Lee Steven	A.B.	Elmsford, N.Y.
Nerjes, Herbert Guenther	Sc.B.(C)	Providence
Nesbitt, John P.	A.B.	New York, N.Y.
Newell, Thaddeus Selby, III	A.B.	Rochester, N.Y.
Newhouse, John Spencer, Jr.	A.B.	St. Louis, Mo.
Newton, George Berryman, Jr.	Sc.B.(E)	Attleboro, Mass.
Nickoll, John Frederick	A.B.	Milwaukee, Wis.
Nooney, Richard Roberts	Sc.B.(E)	Pawtucket
Norman, Robert Arthur	A.B.	Rye, N.Y.
Norton, Lee Edward, Jr.	A.B.	Portland, Me.
Nutt, Charles	A.B.	Glastonbury, Conn.
Oberg, Robert Edward	A.B.	Plainville, Conn.
O'Brien, Robert Vincent	A.B.	West Springfield, Mass.
O'Bryan, Victor John	A.B.	Herkimer, N.Y.
O'Dell, Edward Thomas	Sc.B.(E)	Lowell, Mass.
O'Dowd, Michael	A.B.	Tappan, N.Y.
Ogden, James Stuart	A.B.	Barrington, Ill.
O'Leary, James Arthur, Jr.	A.B.	Worcester, Mass.
Olivera, Clifford Emil	Sc.B.(E)	Baldwin, N.Y.
Oppenheimer, Paul Lownes	A.B.	Buffalo, N.Y.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
O'Rourke, Thomas Edward, Jr.	Sc.B.(E)	Attleboro, Mass.
Packert, Richard Hibbard, Jr.	Sc.B.(E)	North Caldwell, N.J.
Pakradooni, Haig Herant, 3rd	A.B.	Wynnewood, Pa.
Palczewski, Victor	A.B.	Sao Paulo, Brazil
Panthen, Karl Craigie	A.B.	Scarsdale, N.Y.
Parrish, Theodore Roosevelt, Jr.	A.B.	Springfield, Mass.
Patton, Keith Dunlap	A.B.	Ridgewood, N.J.
Peartree, Charles Edward	A.B.	Wynnewood, Pa.
Peirce, Richard Graham	A.B.	Poughkeepsie, N.Y.
Pelletier, Valmore Alexis, Jr.	A.B.	Norwood, Mass.
Pepka, Edward Mark	A.B.	Webster, Mass.
Perkins, Winston Eugene	A.B.	Roxbury, Conn.
Perlman, Matthew Saul	A.B.	Washington, D.C.
Peters, Ronald Vincent	A.B.	Oceanside, Calif.
Peterson, David Barner	Sc.B.(E)	Riverhead, N.Y.
Phillips, Carlton Vernon	A.B.	New Bedford, Mass.
Pianka, Edward Walter	Sc.B.(E)	Fall River, Mass.
Pickard, Artemas Matthews	A.B.	Glencoe, Ill.
Pierce, Richard Holton	A.B.	Westwood, Mass.
Pilkanis, William John	A.B.	Providence, R.I.
Pliakas, George Andrew	A.B.	Providence
Poillon, William Neville	Sc.B.(C)	Shortsville, N.Y.
Pond, William Ashley	A.B.	Penn Yan, N.Y.
Powning, Allen Gleason	A.B.	Wayland, Mass.
Prenzel, Byron Curt	A.B.	River Edge, N.J.
Press, Robert Mitchell	A.B.	Providence
Quinn, John Canning	A.B.	Providence
Quinn, Richard Michael	A.B.	Pawtucket
Quint, George Morrow	A.B.	Syracuse, N.Y.
Ralston, Bruce	A.B.	Cranston
Ramsden, Robert Arthur	A.B.	Rumford
Rankin, Andrew Meserve, II	A.B.	Providence
Rapp, Thomas Hughes	A.B.	Greenwich, Conn.
Rathbun, Forrest Olney, Jr.	Sc.B.(E)	Providence
Reback, Harvey Arnold	A.B.	Fall River, Mass.
Reed, William Frederick	A.B.	Philippines
Reid, Robert James	A.B.	Sharon, Mass.
Reisberg, Boris Elliot	A.B.	Long Beach, N.Y.
Reynolds, Robert James	Sc.B.(E)	Gainesville, Ga.
Rhine, Donald Joel	A.B.	Hewlett Harbor, N.Y.
Rhodes, Reginald William	A.B.	Douglaston, N.Y.
Rich, James Harlan, Jr.	Sc.B.(E)	Philadelphia, Pa.
Rideout, Bruce Kingman	A.B.	Port Chester, N.Y.
Ridley, Leonard Sanford	A.B.	Fairhaven, Mass.
Riley, George Francis	Sc.B.(P)	Fall River, Mass.
Rivelli, William Raymond	A.B.	Providence
Robbins, William Arthur	Sc.B.(E)	Rockland, Mass.
Roche, John Jefferson	A.B.	Salisbury, Conn.
Roche, Peter Joseph	A.B.	White Plains, N.Y.
Roe, John Judson, III	A.B.	Blue Point, L.I., N.Y.

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Roesel, William Charles	Sc.B.(E)	Cranford, N.J.
Rollinson, George Mettam	A.B.	Rutherford, N.J.
Romer, William Miller	A.B.	Albany, N.Y.
Rose, Graham Sheldon	A.B.	Mineola, N.Y.
Rosenblatt, Robert Mordecai	A.B.	Albany, N.Y.
Rosenfeld, Peter Ernest	Sc.B.(E)	New York, N.Y.
Rubel, Philip John Bleriot	A.B.	New York, N.Y.
Sabin, Kent Hill	Sc.B.(E)	Mansfield, Mass.
Saltonstall, Robert Jr.	A.B.	North Andover, Mass.
Sampson, Clark Douglas	A.B.	Dayton, Ohio
Sandler, Charles Allen	A.B.	Norristown, Pa.
Sargenti, Philip Vincent	A.B.	New York, N.Y.
Sargon, Ivor	A.B.	Winthrop, Mass.
Saunders, Donald Leslie	A.B.	Brookline, Mass.
Scardera, Michael	Sc.B.(C)	Providence
Scarlato, Theodore Fotio	A.B.	Nassau, N. P., Bahamas
Schellbach, Lewis Carl	A.B.	Rockville Centre, N. Y.
Schenker, Ben David	A.B.	Glencoe, Ill.
Schiffer, Robert Franklin	A.B.	Grosse Pointe Park, Mich.
Schwartz, Walter Henry, Jr.	A.B.	St. Albans, L. I., N.Y.
Seligson, Carl Harold	A.B.	New York, N. Y.
Sepe, William Roy	A.B.	Cranston
Seving, Frederick Tracey, Jr.	A.B.	Ventnor City, N. J.
Shalita, Alan Remi	A.B.	New York, N. Y.
Shapiro, Joseph Samuel	A.B.	Sharon, Mass.
Shattuck, Seth Morse	A.B.	Mountain Lakes, N. J.
Shaw, Joseph Winterbotham	A.B.	Chicago, Ill.
Shaw, Robert Thomas	A.B.	Baldwin, L. I., N. Y.
Shulman, Robert Theodore	A.B.	Brooklyn, N. Y.
Siddall, John Albert	A.B.	Attleboro, Mass.
Siegel, Daniel G.	A.B.	Glencoe, Ill.
Sills, Leonard Haber	A.B.	Worcester, Mass.
Silva, Charles Clifford	A.B.	Nantucket Mass.
Simeone, Joseph Thomas	A.B.	Walpole, Mass.
Singer, Martin David	A.B.	Peabody, Mass.
Sklar, Richard Joel	A.B.	Newton, Mass.
Slater, Clifford Eldridge	A.B.	Waterbury, Conn.
Smith, Frank John	A.B.	Bethlehem, Pa.
Smith, Harry Joseph	A.B.	North Bellmore, N. Y.
Smith, Hugh Rodney	A.B.	Mystic, Conn.
Smith, James Frederick	A.B.	Trenton, N. J.
Smith, Orin Robert	A.B.	Newark, N. J.
Smithwick, Stephen Mixer	A.B.	Marblehead Neck, Mass.
Snyder, John Kennedy	A.B.	Sharon, Conn.
Snyder, Louis Michael	A.B.	Newton Centre, Mass.
Sobin, Gustaf Peter	A.B.	Brookline, Mass.
Sparkman, Palmer Drake	A.B.	New Rochelle, N. Y.
Spaulding, Frank Henry	A.B.	Danielson, Conn.
Spence, Stuart Breary	Sc.B.(E)	Mamaroneck, N. Y.
Spielmacher, Stephen John	A.B.	North Providence

LIST OF STUDENTS: SOPHOMORES

NAME	DEGREE	RESIDENCE
Sproul, Joseph Harvey	A.B.	Clarks Green, Pa.
Stedman, Arthur Keeney	A.B.	West Hartford, Conn.
Stephenson, George Henry	A.B.	Chestnut Hill, Mass.
Stephenson, Richard Douglas	A.B.	Bucks Co., Pa.
Stern, Michael Stephen	A.B.	Brookline, Mass.
Stevenson, Robert Baker	Sc.B.(P)	Wauwatosa, Wis.
Stevenson, Robert Thomas, Jr.	A.B.	Buzzards Bay, Mass.
Stoddard, Roger Eliot	A.B.	Needham, Mass.
Stonehill, Charles Martin	A.B.	Plainfield, N. J.
Sturdy, David Alden	A.B.	Attleboro, Mass.
Sullivan, Alvin Joseph, Jr.	A.B.	Fall River, Mass.
Sullivan, William Herbert, Jr.	A.B.	Rumford
Supino, Roch Patrick	A.B.	Demarest, N. J.
Sutphen, Harold John	A.B.	Belleville, N. J.
Sweeney, Robert Leon	A.B.	Trenton, N. J.
Sweetland, Peter	A.B.	Boston, Mass.
Symonds, Bernard Krieger	A.B.	Providence
Talbot, William Henry	A.B.	West Warwick
Tamm, Edward Allen, Jr.	A.B.	Washington, D. C.
Tapper, Edward Michael	A.B.	Pittsburgh, Pa.
Tatem, Robert Edgar	A.B.	Westbury, N. Y.
Taylor, Arthur Robert	A.B.	Rahway, N. J.
Taylor, Richard Dean	A.B.	Hoosick Falls, N. Y.
Tempesta, Paul Andrew	A.B.	Quincy, Mass.
Thompson, Henry Lee, Jr.	A.B.	Cranston
Thomson, Richard Donald	A.B.	Stratford, Conn.
Thorley, Francis Wood	A.B.	North Dartmouth, Mass.
Tildon, John Wesley Haywood	A.B.	Tuskegee, Ala.
Tison, James Sinkler	Sc.B.(E)	Seattle, Wash.
Toole, Frank Edward	A.B.	New Haven, Conn.
Townsend, Joseph Winter, Jr.	A.B.	River Forest, Ill.
Tracy, Harvey Thatcher, Jr.	A.B.	Swansea, Mass.
Turner, Glenn Haselton	A.B.	Pawtucket
Twaddell, Stephen Treadway	A.B.	Providence
Urquhart, Peter Andrew	A.B.	Brooklyn, N. Y.
Uyeyama, Terry Jun	A.B.	Leonia, N. J.
Vander Veer, Gerritt Hendry, Jr.	A.B.	Uncasville, Conn.
Van Leight, Peter Robert	A.B.	Summit, N. J.
Van Liew, Alfred Buttler	A.B.	St. James, N. Y.
Van Loan, William Wilson	A.B.	Evanston, Ill.
Velonis, Nick J.	A.B.	Indianapolis, Ind.
Viessmann, Alex Jan	A.B.	Sayville, N. Y.
Vieira, Manuel	A.B.	Swansea, Mass.
Vincent, Stanford Bates	A.B.	Waban, Mass.
Volterra, Max	Sc.B.(C)	Attleboro, Mass.
Von Stein, Peter	A.B.	New York, N. Y.
Wadsworth, William Bingham	A.B.	Whitesboro, N. Y.
Waldman, Robert Hugh	A.B.	Brooklyn, N. Y.
Waldvogel, Leroy Rolland, Jr.	A.B.	Rye, N. Y.
Walker, Gabriel, Jr.	A.B.	Portland, Me.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Walters, Leonard Brayton	A.B.	Marblehead, Mass.
Ward, Richard Rollins	A.B.	Hingham, Mass.
Waring, William Charles, III	A.B.	Wickford
Warr, William Bruce	A.B.	Melrose, Mass.
Waterman, Lawrence Charles	A.B.	Great Neck, N. Y.
Waters, Lion Sanford	A.B.	Mamaroneck, N. Y.
Watmough, Joseph, Jr.	A.B.	Greenville
Watson, William John	A.B.	Fairfax, Va.
Webb, Robert Lewis	A.B.	Cranston
Weiffenbach, James Milton	A.B.	Melbourne, Fla.
Wells, Timothy Rudolph, Jr.	A.B.	Norfolk, Va.
West, William Elwin, Jr.	A.B.	Attleboro, Mass.
Wetzler, Monte Edwin	A.B.	New York, N. Y.
White, Augustus Aaron	A.B.	Memphis, Tenn.
Whittemore, Charles Richard	A.B.	Westboro, Mass.
Wiener, Thomas Freund	Sc.B.(E)	Arlington, Va.
Wilder, Michael Lot	A.B.	Rochester, N. Y.
Williams, Arthur Benjamin, Jr.	A.B.	East Providence
Williams, Warren Wellde	A.B.	Palo Alto, Calif.
Winans, Lawrence Adrian	A.B.	Short Hills, N. J.
Winkler, Stuart Michael	A.B.	Hewlett, N. Y.
Winning, Robert Mayer	A.B.	New Bedford, Mass.
Wolfe, John Gordon Reaney	A.B.	Baltimore, Md.
Wright, Robert Alfred	A.B.	Saxtons River, Vt.
Wright, Robert Norman, III	A.B.	North Falmouth, Mass.
Wylie, Sheldon	A.B.	Cleveland Heights, Ohio
Yamazaki, Susumu	A.B.	Barrington
Yates, Leonard Joseph	A.B.	Pawtucket
Yeutter, Bruce Dee	A.B.	Oradell, N. J.
Zangrando, Robert Lewis	A.B.	Albany, N. Y.
Zieselman, Jerold	A.B.	Stamford, Conn.
Zimmerman, Robert Paul	Sc.B.(E)	Brooklyn, N. Y.
Zucker, Morris Robert	A.B.	South Orange, N. J.
Zurro, Joseph Vincent	A.B.	Providence
Zych, Leonard Peter	A.B.	New Bedford, Mass.

FRESHMEN: CLASS OF 1958

Adell, Randolph Marshall	A.B.	Key West, Fla.
Agnes, Ronald Dale	A.B.	Massillon, Ohio
Aiken, David Kent	Sc.B.(E)	Hingham, Mass.
Alaimo, James Gerald	A.B.	Torrington, Conn.
Allen, John Edmund	A.B.	Indianapolis, Ind.
Altieri, Pasquale Francis	A.B.	Bridgeport, Conn.
Ames, Arthur	A.B.	Mount Holly, N. J.
Ammon, Herman Louis	Sc.B.(C)	Rutherford, N. J.
Anderson, Jack Leonard	Sc.B.(E)	Rochester, N. Y.
Anderson, Peter Slobin	A.B.	Glen Cove, N. Y.
Anderson, Victor De Beavais	A.B.	Providence
Andronico, Michael Paul	A.B.	Yonkers, N. Y.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Angilly, Frederick Ernest, Jr.	Sc.B.(E)	Providence
Anthony Seth Russell, Jr.	Sc.B.(E)	Portsmouth
Antone, George Peter, Jr.	A.B.	Valley Falls
Arbitman, William Aaron	A.B.	Providence
Arms, Richard Woodworth, Jr.	A.B.	Hopkinton, Mass.
Aronson, Carl Edward	A.B.	Smithfield
Asher, Bernard Wolff	A.B.	Ithaca, N.Y.
Atwater, Nathaniel Bartlett	A.B.	Little Crompton
Axley, Robert Anthony	A.B.	White Plains, N. Y.
Bachelor, Milton Henry, Jr.	Sc.B.(E)	North Attleboro, Mass.
Baldwin, Roger Conant	A.B.	Wilmington, Del.
Bander, Harold David	Sc.B.(E)	Providence
Barkin, Stephen David	A.B.	New York, N. Y.
Barnard, Barrett	A.B.	Dayton, Ohio
Barry, William Francis	A.B.	Newtonville, Mass.
Barta, Robert Milton	Sc.B.(App.Math)	Longmeadow, Mass.
Batchelder, Charles Frederick	A.B.	Marblehead, Mass.
Batchelder, Harry Conrad	A.B.	Peabody, Mass.
Battle, Henry Wilson	A.B.	Charleston, W. Va.
Bayramshian, Richard Joseph	A.B.	Millis, Mass.
Beaton, Robert Richard	Sc.B.(E)	Providence
Beatty, Bruce Lee	A.B.	Silver Spring, Md.
Becker, John Philipp	A.B.	Winchester, Mass.
Beckwith, Henry Lyman Parsons, Jr.	A.B.	Providence
Beezley, Gerald Paul	A.B.	Council Bluffs, Iowa
Benson, Richard Edward	Sc.B.(E)	Cranston
Benway, George Alfred, Jr.	A.B.	Newton Centre
Bernheimer, Martin	A.B.	Norton, Mass.
Bigelow, Edward Burt	A.B.	Billings, Mont.
Bierman, Stephen Koplik	A.B.	Norwalk, Conn.
Bigford, Thomas Blackmer	A.B.	Lake Forest, Ill.
Bisbee, Douglas Sylvester	A.B.	Westport, Conn.
Blackman, Lenard Donald	A.B.	Providence
Blackman, William Roys	Sc.B.(E)	Northport, N. Y.
Blakeley, Robert Fletcher	A.B.	New Bedford, Mass.
Bliss, David Roger	A.B.	Hudson, N. Y.
Bloom, John Arthur	A.B.	Methuen, Mass.
Boland, John Philip	A.B.	Winchester, Mass.
Borden, Kenneth Parker	A.B.	Johnston
Bosland, David Glen	A.B.	Warwick
Boston, Stephen Ralph	A.B.	Trenton, N. J.
Bowles, John	A.B.	Springfield, Mass.
Bradley, David Burford	A.B.	Greenwich, Conn.
Bradley, Leonard Richard	Sc.B.(E)	Cranston
Brayton, David Anthony, Jr.	A.B.	Little Crompton
Brennan, Thomas Joseph	Sc.B.(E)	Rye, N. Y.
Brickach, Eugene Alexander	A.B.	Pawtucket
Broker, Michael Harry, Jr.	A.B.	Albany, N. Y.
Brougham, Robert Bruce	A.B.	Mountain Lakes, N. J.
Brown, Donald Redfern	A.B.	Riverside

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Brown, Eric	A.B.	Milton, Mass.
Brown, James Anthony	A.B.	Orchard Park, N. Y.
Brown, John Wilson	A.B.	Port Chester, N. Y.
Brown, Raymond Dutson	A.B.	Albany, N. Y.
Bucchiere, John Joseph, Jr.	A.B.	Saugus, Mass.
Buckelew, Timothy Dean	Sc.B.(E)	Providence
Budlong, Robert Merrill	A.B.	Seekonk, Mass.
Buffett, David Owen	A.B.	East Northport, N. Y.
Bullock, James Edward	Sc.B.(E)	Fall River, Mass.
Burkholder, Edwin Vernon, Jr.	A.B.	New York, N. Y.
Burt, David Ely	A.B.	Rumson, N. J.
Butler, William Bruce	A.B.	Patchogue, N. Y.
Bylin, Arthur Moore	A.B.	Belmont, Mass.
Cailor, Laverne Mentzer, Jr.	Sc.B.(E)	Youngstown, Ohio
Camerino, Fremont Joseph	Sc.B.(E)	Niles, Ohio
Canecchio, Robert Joseph	A.B.	Providence
Canning, Harold Edward	A.B.	Needham, Mass.
Capiris, Thomas	Sc.B.(C)	Yonkers, N. Y.
Carlisle, Donald Steven	A.B.	New Haven, Conn.
Carney, Robert McShane	A.B.	Milwaukee, Wis.
Carolan, Richard Francis	A.B.	Brookline, Mass.
Carroll, Laurence Joseph, Jr.	Sc.B.(E)	Taunton, Mass.
Carroll, William Francis, Jr.	A.B.	Greenville
Carullo, Francis Charles	A.B.	West Quincy, Mass.
Chadwick, William Howard	A.B.	Branford, Conn.
Champa, Richard Ignatius	A.B.	Revere, Mass.
Chapman, Alfred McCrea	A.B.	Bucks County, Pa.
Chapman, Linsley Sheperd	Sc.B.(E)	North Haven, Conn.
Charron, Peter Charles	Sc.B.(E)	Penacook, N. H.
Chatel, John Charles	A.B.	Washington, D. C.
Cheney, Ronald Lewis	A.B.	Duxbury, Mass.
Chin, Choo Dip	A.B.	Providence
Christie, John Campbell, Jr.	A.B.	Lake Forest, Ill.
Clark, Albert Franklin	A.B.	Dundee, N. Y.
Clark, Jeremy Carew	A.B.	Wakefield
Clayson, Davis Barr	A.B.	Pittsfield, Mass.
Clement, George	A.B.	Providence
Clifford, Charles Hovey	A.B.	Rockland, Mass.
Clipper, Gary Edwin	A.B.	Jackson, Mich.
Cluthe, Peter Alfred	A.B.	Florham Park, N. J.
Cogswell, John Shepard	A.B.	Jacksonville, Fla.
Cogswell, Thomas Jerome	A.B.	Chicago, Ill.
Cohen, Donald	A.B.	Baltimore, Md.
Cohen, Gilbert Philip	A.B.	Providence
Cohen, Theodore Paul	A.B.	New Rochelle, N. Y.
Cole, Robert Rockwell	Sc.B.(E)	Upper Montclair, N. J.
Coleman, Bradley Robert	A.B.	Montclair, N. J.
Colton, John Phillips	A.B.	New York, N. Y.
Comden, Laurence Peter	Sc.B.(C)	Westport, Conn.
Connell, Charles Roy	A.B.	Warwick

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Cook, Kevit Randolph	A.B.	Cohasset, Mass.
Cooper, George Wallace, Jr.	A.B.	St. Louis, Mo.
Corbett, John Michael	A.B.	Pittsburgh, Pa.
Corrigan, William Edward, Jr.	A.B.	Schenectady, N. Y.
Cotter, William Thomas Jr.	A.B.	Hinsdale, Ill.
Coyle, Laurence Martin	Sc.B.(E)	Fall River, Mass.
Craik, Kenneth Henry	A.B.	Pawtucket
Crosby, Edward Maurice	A.B.	Osterville, Mass.
Crowell, Wallace Burton	A.B.	Plymouth, Mass.
Crowl, Thomas Kenneth	A.B.	Baltimore, Md.
Crowley, William Francis	A.B.	Providence
Cullison, Douglas Lincoln, III	Sc.B.(E)	Mansfield, Mass.
Cummings, John Martan	A.B.	Villanova, Pa.
Cummings, Thomas Mulhern	A.B.	Hudson, N. Y.
Cunningham, Robert Frank	Sc.B.(E)	Garden City, N. Y.
Currier, Thomas Corey, Jr.	A.B.	Braintree, Mass.
Daglieri, Lawrence, Jr.	Sc.B.(E)	Providence
Dana, Peter Newton	A.B.	Providence
D'Andrea, Francis	Sc.B.(P)	North Providence
Darling, George Frederick	A.B.	Providence
Darling, Ronald John	A.B.	Milwaukee, Wis.
Dashnaw, Rodney Frederick	A.B.	Lake Placid, N. Y.
Dauk, Peter John	A.B.	New Canaan, Conn.
Davis, James Aden	A.B.	Springfield, Ill.
Davison, Gordon Earle	Sc.B.(E)	Hoxsie
Deakin, Thomas Adair	A.B.	Rahway, N. J.
Deitch, Jack Samuel	A.B.	Wilmington, Del.
Delhagen, Lawrence Raphael	A.B.	Nutley, N. J.
De Merlier, Edouard Paul	A.B.	Mt. Penn, Pa.
D'Eramo, Domenic	Sc.B.(E)	Providence
D'Esopo, Peter Berrien	A.B.	Tenary, N. J.
Des Roches, Joseph Hamel	A.B.	Lakewood
Detels, Michael	A.B.	Plansdome, L. I., N. Y.
Develin, Thomas Preston	Sc.B.(E)	Caldwell, N. J.
De Venuto, Richard James	A.B.	Astoria, N. Y.
Di Chiaro, Joseph, Jr.	Sc.B.(E)	Centredale
Dickson, Clifford Russell	A.B.	Saylesville
Dillabough, Kenneth McMullin	Sc.B.(E)	Philadelphia, Pa.
Dingleman, Warren Arthur	A.B.	Scarsdale, N. Y.
Di Sandro, Adolph Peter, Jr.	A.B.	Providence
Di Sandro, Mario J.	A.B.	North Providence
Dloughy, Gerald Ernest	A.B.	New Bedford, Mass.
Dobson, Stanley Charles, Jr.	Sc.B.(C)	North Providence
Dodge, James William	Sc.B.(E)	Providence
Donnellan, Stephen James, Jr.	Sc.B.(E)	Lexington, Mass.
Donovan, Thomas Joseph	A.B.	Sayville, L. I., N. Y.
Doolittle, John Beecher	A.B.	Hamden, Conn.
Dornon, Richard Alexander	Sc.B.(E)	Garden City, N. Y.
Dowling, Donald Cullinan	A.B.	Oak Park, Ill.
Downes, John	A.B.	Norwich, Conn.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Downing, Donn F.	A.B.	Litchfield, Conn.
Doyle, Robert Ogden	Sc.B.(P)	Providence
Drake, Charles Edward	A.B.	Syracuse, N. Y.
Drake, Henry Mills	A.B.	Syracuse, N. Y.
Drapelick, Norman Francis	A.B.	Downers Grove, Ill.
Driscoll, Owen Peters	A.B.	Seekonk, Mass.
Dubey, Leon B., Jr.	Sc.B.(E)	Bristol
Dudley, Benjamin Franklin II	A.B.	Portland, Me.
Du Mond, Philip Galusha	A.B.	Schenectady, N. Y.
Dunn, Richard Mason	Sc.B.(E)	Manville
Dunnington, Herbert Earl	A.B.	Brockton, Mass.
Du Pont, Bernard Alfred	A.B.	North Providence
Dzelzitis, Andrew Edgar	A.B.	Franklin, Mass.
Eastman, Edward Richard, Jr.	A.B.	Needham, Mass.
Ebbert, Thomas Granville	A.B.	Connellsville, Pa.
Eberhart, William Dryden	A.B.	Wilmette, Ill.
Ecclestone, Edwin Llwyd, Jr.	A.B.	Grosse Pointe, Mich.
Edwards, Ronald Robert	A.B.	Southampton, N. Y.
Edwards, Warren Elliott	A.B.	Reading, Mass.
Ellenhorn, David Noel	A.B.	Mount Vernon, N. Y.
Emmons, Richard Leslie	A.B.	Glen Rock, N. J.
Engelsmann, William Richard	A.B.	Ladue, Mo.
Epstein, Michael Taylor	A.B.	New Bedford, Mass.
Etscovitz, Lionel Potter	A.B.	Houlton, Me.
Evans, Lawrence Whittaker	A.B.	Bay Shore, N. Y.
Eveleth, Lincoln Swan	A.B.	Fairfield, Conn.
Ezell, William Bairman	A.B.	Providence
Fahnline, George Robert	A.B.	Sharon, Pa.
Fallis, Lawrence Sidney	A.B.	Detroit, Mich.
Falone, Thomas Victor	A.B.	Camden, N. J.
Farnham, Allen Frank	A.B.	Concord, N. H.
Farr, Richard Leigh, Jr.	A.B.	Riverside, Conn.
Faulkner, Robert Gerald	Sc.B.(E)	Reading, Mass.
Favor, James Newton	Sc.B.(E)	Norwalk, Conn.
Federico, Francis Salvatore	A.B.	Trenton, N. J.
Feinstein, Stephen John	A.B.	Providence
Feldman, Martin Leonard	A.B.	Cedarhurst, N. Y.
Feldman, Robert Alan	A.B.	Forest Hills, N. Y.
Fera, Joseph Domenic	Sc.B.(P)	Providence
Ferguson, Robert Arthur	A.B.	Camp Hill, Pa.
Finkelstein, David Jacob	A.B.	Woonsocket
Finnegan, Edward Robert	A.B.	New Haven, Conn.
Fischel, David	Sc.B.(P)	Erie, Pa.
Fish, Dennis James	A.B.	Warwick
Fish, Stewart Younglove	A.B.	Freeport, Ill.
Fisher, Walter William	A.B.	New Brunswick, N. J.
Fitch, Charles Arthur	Sc.B.(E)	Metuchen, N. J.
Flattau, Edward Samuel	A.B.	New York, N. Y.
Flaxman, Bertram Allen	A.B.	Providence
Fletcher, Edward Dale	Sc.B.(E)	Massillon, Ohio

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Flynn, Henry John, Jr.	A.B.	Huntington, N. Y.
Foley, Thomas Brian	Sc.B.(E)	Beverly, Mass.
Fowler, Bruce Leigh	A.B.	Pittsburgh, Pa.
Fox, Charles D'Arcy	Sc.B.(E)	Clayton, Mo.
Fox, Deane Knox, Jr.	A.B.	Port Washington, N. Y.
Franc, Harry L., III	A.B.	Clayton, Mo.
Frank, William Edward	A.B.	Canton, Ohio
Frazer, Robert Carl	Sc.B.(C)	South Glastonbury, Conn.
French, Robert Gibson	A.B.	Elmhurst, Ill.
Freyd, Peter John	A.B.	Wickford
Fricke, Hans Werner	A.B.	New York, N. Y.
Furlong, James Castle	A.B.	Washington, D. C.
Gale, Walter Wilson	Sc.B.(C)	Queens Village, N. Y.
Galligan, David Allan	A.B.	Garrison on Hudson, N. Y.
Games, John Early	Sc.B.(E)	Marblehead, Mass.
Gamwell, John White	A.B.	Peekskill, N. Y.
Gange, Joseph George, Jr.	A.B.	Winchester, Mass.
Gange, Robert Allen	Sc.B.(P)	Newark, N. J.
Garcia, Adolfo Luis	A.B.	Mayagues, Puerto Rico
Gardner, Kent	A.B.	Bronxville, N. Y.
Gardner, Thomas Lockwood	A.B.	Pawtucket
Garry, Theodore Sauvinet, Jr.	A.B.	Chicago, Ill.
Gemski, Peter, Jr.	A.B.	Woonsocket
Gill, Thomas William	A.B.	Central Falls
Gilman, Morgan George	A.B.	Norwich, Conn.
Gilmartin, Edmund Russell, Jr.	Sc.B.(E)	Bridgewater, Mass.
Ginalsiki, Paul	A.B.	Somerset, Mass.
Ginsberg, Ralph Bertram	A.B.	New York, N. Y.
Gleason, William Franklin, Jr.	A.B.	Rochester, N. Y.
Glen, William Boulay	Sc.B.(C)	Cranston
Glickman, Adam Joseph	A.B.	New York, N. Y.
Godessoff, Richard Boris	A.B.	Schenectady, N. Y.
Godreau, Albert Philip	Sc.B.(E)	Lynn, Mass.
Godwin, Lester Roy, Jr.	A.B.	Winchester, Mass.
Goldberg, Henry Morris	A.B.	Milwaukee, Wis.
Goldberg, Jeffrey Lloyd	A.B.	Pawtucket
Goldberg, Richard Harvey	A.B.	Fairfield, Conn.
Goldenberg, Richard David	A.B.	Hewlett, N. Y.
Goldson, Robert James, Jr.	A.B.	Milton, Mass.
Goodridge, John Kirtland	A.B.	Jalisco, Mexico
Goss, Edwin Vrooman	A.B.	Kenosha, Wis.
Gordon, Henri	A.B.	Clifton, N. J.
Gould, Douglas Stewart	A.B.	Suffern, N. Y.
Grace, Norman David	A.B.	Worcester, Mass.
Grad, Norman	A.B.	Jamaica, N. Y.
Grady, Gilbert Robidoux, Jr.	Sc.B.(C)	West Caldwell, N. J.
Graham, David, Jr.	A.B.	Chicago, Ill.
Gray, Richard Sperry	A.B.	Clearwater, Fla.
Grebstein, Lawrence Charles	A.B.	Providence
Gressens, Peter Joseph	Sc.B.(E)	Evanston, Ill.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Grimm, Peter William	Sc.B.(E)	Montclair, N. J.
Gushee, Stephen Hale	A.B.	Detroit, Mich.
Hackett, Charles Dudley, Jr.	A.B.	Binghamton, N. Y.
Hackett, James Howard	A.B.	Florham Park, N. J.
Hafner, Bron David	A.B.	Highland Park, Ill.
Hall, Seymour Brewster	A.B.	Quincy, Mass.
Halley, John Thomas, Jr.	A.B.	North Providence
Hallstein, William Charles	A.B.	Tarrytown, N. Y.
Halpern, Allan Solomon	A.B.	Brooklyn, N. Y.
Hamel, Conrad Leo	Sc.B.(E)	Woonsocket
Hanner, James Wolcott	A.B.	Biloxi, Miss.
Hanson, John Douglas	A.B.	Narragansett
Hardy, Lawrence Edward, Jr.	Sc.B.(E)	Rumford
Hargreaves, Robert Alan	Sc.B.(P)	Nasonville
Harned, Garry Donald	A.B.	Brooklyn, N. Y.
Harris, Reese Harvey	A.B.	West Hartford, Conn.
Harrison, Richard Sewall	Sc.B.(C)	Edgewood
Hart, James Clinton	Sc.B.(App.Math)	West Warwick
Hatch, Richard Calder	Sc.B.(C)	Brookhaven, N. Y.
Hawkinson, Roy Donald	Sc.B.(E)	Excelsior, Minn.
Healey, Warren Robert	A.B.	Pawtucket
Hearst, Sheldon	A.B.	Medford, Mass.
Heilbrun, Mark Peter	A.B.	Buffalo, N. Y.
Herrman, William Henry	A.B.	New York, N. Y.
Higdon, Donald George	A.B.	Rutherford, N. J.
Hill, Frederick Emerson	A.B.	Scranton, Pa.
Hinebaugh, Michael Stephen	A.B.	Hershey, Pa.
Hoberman, Owen Oscar	A.B.	Brooklyn, N. Y.
Hoffman, Robert Reinhold	A.B.	Clayton, Mo.
Hohol, Eugene John	Sc.B.(P)	Fords, N. J.
Holtzmann, Edward Marshall	A.B.	New York, N. Y.
Hopkins, John Putnam	A.B.	Hingham, Mass.
Hornbostel, Peter Anthony	A.B.	Center Moriches, N. Y.
Horsman, Calvin Ewart	Sc.B.(E)	Mt. Lakes, N. J.
Horton, Gary Walker	A.B.	Crestwood Tuckahoe, N. Y.
Houriet, Charles Edouard, Jr.	Sc.B.(E)	Santurce, Puerto Rico
Howard, Peter Burt	Sc.B.(E)	Windsor, Conn.
Howes, Alfred Upham	A.B.	Providence
Hughes, Charles Leo	Sc.B.(E)	Warren
Hurley, Samuel Clay, III	A.B.	Danville, Ill.
Jackson, Frank Malcolm	A.B.	East Rockaway, N. Y.
Jakubiak, Henry Emil	A.B.	New Britain, Conn.
James, Ulysses Samuel	A.B.	Livingston, N. J.
Jenkins, David Price	A.B.	South Weymouth, Mass.
Jensen, Jon George	A.B.	Havertown, Pa.
Jensen, Lawrence Craig Winston	A.B.	New York, N. Y.
Jesdale, William Todd	Sc.B.(E)	Winchester, Mass.
Johnson, Bruce	A.B.	Denver, Colo.
Johnson, Gary Rollander	A.B.	West Hartford, Conn.
Johnson, Paul Harry	A.B.	Milford, Conn.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Johnston, Henry Oliver	A.B.	Clayton, Mo.
Johnston, William Feidler	Sc.B.(E)	Winchester, Mass.
Jones, Parry von Steinwehr	Sc.B.(E)	Barrington
Jones, Robert Lawrence	Sc.B.(E)	Brooklyn, N. Y.
Jones, Thomas Charles, Jr.	Sc.B.(E)	Garden City, N. Y.
Joslin, Joseph Jerome	A.B.	Brookline, Mass.
Kachulis, Chris James	A.B.	Waterbury, Conn.
Kalesnik, Lawrence Frank	A.B.	Springfield, Mass.
Kapp, Edward Simons	A.B.	New York, N. Y.
Katz, Joel David	A.B.	Chestnut Hill, Mass.
Katz, Richard Edmond	A.B.	Woodmere, L. I., N. Y.
Kaufman, Elliot Martin	A.B.	Springfield, Mass.
Kaynis, Michael David	A.B.	New York, N. Y.
Keefe, Robert James	A.B.	Wellesley Hills, Mass.
Kelleher, Leo Edward	Sc.B.(E)	Pawtucket
Keller, Anson More	A.B.	Ferguson, Mo.
Kennedy, George Francis	A.B.	Cranston
Kennedy, Timothy Jones	Sc.B.(E)	Salem, Ohio
Kershaw, Charles Henry	A.B.	Providence
Kim, Chin Tai	A.B.	Seoul, Korea
Klaiber, Wolfgang	A.B.	Yonkers, N. Y.
Kleiderlein, Jack Raymond	A.B.	Bradford, Pa.
Klein, Charles Harold	A.B.	Villa Park, Ill.
Knapton, Christopher Elwood Firth	A.B.	Norton, Mass.
Kocher, Lawrence Taylor	A.B.	Williamsburg, Va.
Kopke, Peter William	A.B.	Rockville Centre, N. Y.
Krauskopf, Robert Samuel	A.B.	Milwaukee, Wis.
Kretzmann, Franz Walter	A.B.	Providence
Krolicki, Richard Edmund	A.B.	Pawtucket
Krug, Charles Donald	Sc.B.(E)	Paterson, N. J.
Kuniholm, Peter Ian	A.B.	Wilmette, Ill.
Kupstas, John Joseph	A.B.	North Attleboro, Mass.
Kurtz, Stephen Joseph	A.B.	Teaneck, N. J.
Kurze, Kenneth Adolf	A.B.	Cranston
Kyriakakis, Manuel	A.B.	Providence
Labovitz, David Ephraim	A.B.	Rockville, Md.
Lackey, Joel Irwin	A.B.	Albany, N. Y.
Laffoley, Paul George, Jr.	A.B.	Belmont, Mass.
Lakey, James Walter	Sc.B.(P)	Middleboro, Mass.
Lambert, Stephen Tallant	A.B.	Coatsville, Pa.
Lamborn, George Daniel Flynn	A.B.	Upper Montclair, N. J.
Lane, William Wallace	Sc.B.(E)	Kenilworth, Ill.
Lang, Richard Lewis	A.B.	Evanston, Ill.
Langham, Charles Markham, Jr.	A.B.	Palm Beach, Fla.
Larratt, Michael Forbes	A.B.	Westmount, Quebec
Lavanhar, Herbert Arnold	Sc.B.(E)	Merrick, N. Y.
Lawton, David Mayoh	A.B.	Pawtucket
Lawton, Robert John	A.B.	New York, N. Y.
Lazere, Donald Philip	A.B.	Des Moines, Iowa
Leach, Earle Freeman, Jr.	Sc.B.(E)	Baldwin, N. Y.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Leader, Alan Harvey	A.B.	New York, N. Y.
Lee, Jae Num	A.B.	Providence
Lee, Robert Evans, Jr.	Sc.B.(E)	Rumford
Leibo, Stanley Paul	A.B.	Providence
Lelievre, George	Sc.B.(P)	Fall River, Mass.
Levin, Harris Fenner	A.B.	Pawtucket
Levine, Ben Zion	A.B.	Scranton, Pa.
Levine, Bernard Martin	A.B.	Hamden, Conn.
Levine, Gerald Richard	A.B.	Woodmere, L. I., N. Y.
Levine, Richard Neil	A.B.	Brooklyn, N. Y.
Levy, Edwin Arnold	A.B.	Lawrence, L. I., N. Y.
Le Zotte, Edward Harrison	A.B.	Rochester, N. Y.
Lloyd, Stephen Leonard	A.B.	Rye, N. Y.
Lombardo, Ralph Blais, Jr.	A.B.	Pawtucket
Lorand, John Peter	Sc.B.(C)	Wilmington, Del.
Lugossy, Gilbert William	A.B.	Trenton, N. J.
Lynch, Charles James, Jr.	A.B.	Springfield, Mass.
Macbrayne, William Underwood	Sc.B.(E)	Seekonk, Mass.
MacInnes, Ian Campbell	Sc.B.(E)	Keesville, N. Y.
Macioci, Peter Joseph, Jr.	A.B.	Providence
MacKenzie, Donald	A.B.	Needham Mass.
Maddock, James Andrew	A.B.	Palm Beach, Fla.
Mailhot, Edgar George	A.B.	Cranston
Mainelli, Hugo Reno	Sc.B.(E)	Johnston
Manning, Robert Everett	Sc.B.(C)	Paramus, N. J.
Margeson, Robert King	A.B.	Portsmouth, N. H.
Mark, Harold	A.B.	Providence
Marlay, Peter Clymer	A.B.	Boonton, N. J.
Martell, Charles Rennie, Jr.	A.B.	Natick, Mass.
Martinson, Warren Charles	Sc.B.(E)	Barrington, Ill.
Marzullo, Donald Craig	A.B.	Brooklyn Heights, N. Y.
May, George Ainsley, Jr.	Sc.B.(E)	Roslindale, Mass.
Mazzanovich, John, III	A.B.	Lexington, Mass.
McBride, Robert Jones	A.B.	Saxtons River, Vt.
McCann, John Patrick	Sc.B.(E)	Cranston
McCreery, Maxwell Rodgers	A.B.	Winchester, Mass.
McDonald, John Hubert	A.B.	Providence
McDonald, Martin Francis	A.B.	Watertown, Conn.
McDonald, Thomas Russell	Sc.B.(P)	San Francisco, Calif.
McEachren, Neil Andrew	A.B.	Fairport, N. Y.
McFadden, Robert Bruce	A.B.	Mount Vernon, N. Y.
McGee, Eugene Kenneth	A.B.	Providence
McIntire, David John	A.B.	Poughkeepsie, N. Y.
McLaughlin, Robert Carroll	A.B.	Freeport, N. Y.
McMaster, Lauren Leslie, III	Sc.B.(E)	Brightwaters, N. Y.
McNally, Laurence James	Sc.B.(E)	Providence
McNeill, Thomas William	A.B.	Oak Park, Ill.
McNiff, Stephen John	A.B.	Providence
Mead, Charles Powell, Jr.	A.B.	Wheeling, W. Va.
Megrdochian, Peter	Sc.B.(C)	Providence

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Mello, James Francis	A.B.	Warren
Meyer, Harold Adolph, Jr.	A.B.	Ridgewood, N. J.
Michalski, Valentine Francis	A.B.	Jersey City, N. J.
Miller, Joseph Charles	Sc.B.(E)	Larchmont, N. Y.
Miller, Ludlow	A.B.	Huntington, N. Y.
Miller, Robert Elwell	A.B.	Watermill, N. Y.
Miller, Richard William	A.B.	Scotia, N. Y.
Milot, David Aram	A.B.	Johnston
Miluski, Joseph John	A.B.	Scranton, Pa.
Mogayzel, John Warren	Sc.B.(C)	Pawtucket
Mohler, John Addison, Jr.	A.B.	Greenwich, Conn.
Money, Stuart Elbert	Sc.B.(E)	Attleboro, Mass.
Montgomery, Richard Clinton	A.B.	Alliston Park, Pa.
Moody, James Robert	Sc.B.(E)	Tuckahoe, N. Y.
Moore, David Leroy	A.B.	Lake Forest, Ill.
Moore, Terry Aue	Sc.B.(E)	Dallas, Tex.
Moran, Martin Joseph	A.B.	West Haven, Conn.
Morse, Reginald Giles	A.B.	Montclair, N. J.
Morse, Richard Hart, Jr.	A.B.	Springfield, Mass.
Morse, Robert Wallace	Sc.B.(P)	Waltham, Mass.
Mortensen, Gilbert Henry	A.B.	Morris Plains, N. J.
Moses, Thomas Lanier	A.B.	Pittsburgh, Pa.
Mosler, Charles Perkins	A.B.	Paramus, N. J.
Moss, Robert Atkins	A.B.	Whitinsville, Mass.
Moulton, James Harvey	A.B.	Winchester, Mass.
Moyer, Joseph Alan	A.B.	Huntington Woods, Mich.
Mullery, Alvin Paul	Sc.B.(E)	Providence
Murad, Yacoub Ibrahim	Sc.B.(E)	Bethlehem, Jordan
Murck, William Wade	A.B.	Forest Hills, N. Y.
Murphy, Richard Allen	A.B.	Fall River, Mass.
Murphy, Robert Joseph, III	A.B.	Santa Monica, Calif.
Murphy, William Rector	Sc.B.(E)	El Paso, Tex.
Myles, John Lawrence, Jr.	Sc.B.(E)	Scarsdale, N. Y.
Naef, Frederick Edward, Jr.	Sc.B.(E)	Greenvillage, N. J.
Nash, Howard Coffin	A.B.	Rochester, Mich.
Nass, David Lewis	A.B.	New Britain, Conn.
Nathan, Walter Isadore	A.B.	Brooklyn, N. Y.
Nathanson, Nathan	A.B.	Pawtucket
Neal, Richard Erwin	Sc.B.(E)	North Andover, Mass.
Nelson, Donald Anders	A.B.	Brockton, Mass.
Nencka, Frank Lawrence	Sc.B.(C)	Warren
Newell, Francis Delano	Sc.B.(E)	Rochester, N. Y.
Newhouse, Aribert Richard, Jr.	A.B.	Princeton, N. J.
Nicholson, William George	A.B.	New London, Conn.
Nielsen, Bruce Stuart	A.B.	Roslindale, Mass.
Noonan, James Joseph	A.B.	Pawtucket
Nordenholz, Fred Wood	A.B.	Forest Hills, N. Y.
Nuttall, Robert Allen	Sc.B.(E)	East Providence
Oberg, Ronald Ernest	Sc.B.(E)	Norwich, Conn.
O'Brien, James Jeffrey	A.B.	North Providence

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Offenkrantz, Ronald Joel	A.B.	Brooklyn, N. Y.
Olanoff, Jerrold Alan	A.B.	Swampscott, Mass.
Olsen, William Gilmour	Sc.B.(E)	West Hempstead, N. Y.
Olson, Robert Price	A.B.	Bronxville, N. Y.
Onanian, Edward Donald	A.B.	Providence
O'Neill, James Brian	A.B.	Jewett City, Conn.
Ott, James Forgan	A.B.	Lake Forest, Ill.
Ott, Matthew Nelson, Jr.	A.B.	Freehold, N. J.
Page, James Harold	A.B.	Needham, Mass.
Palaiologos, Charles Peter	A.B.	Youngstown, Ohio
Palumbo, William Anthony	A.B.	Hamden, Conn.
Paray, William Walter	A.B.	Bridgeport, Conn.
Parker, Arthur Holmes	A.B.	Dover, Mass.
Parker, Donald Andrew	Sc.B.(E)	Garden City, N. Y.
Patrick, Gardner	A.B.	Montevideo, Uruguay
Patterson, Robert King	A.B.	Grosse Pointe Shores, Mich.
Paul, Warren Galloway	A.B.	Rockville Centre, N. Y.
Pearson, Hugh Walter	A.B.	Wellesley, Mass.
Perkins, Earl Philo, Jr.	A.B.	Narragansett
Perkins, Wayne Appleton	A.B.	Westwood, Mass.
Perry, George Hawley, Jr.	Sc.B.(E)	Wakefield, Mass.
Perry, Leroy Francis	A.B.	Fall River, Mass.
Phelps, Barrie Glenn	A.B.	Sumner, Md.
Phillippi, Martin Alexander, Jr.	A.B.	Little Compton
Picchione, Pasquale Vincent	A.B.	Providence
Pies, David Wilson	A.B.	Lockport, N. Y.
Pinch, Robert Allan	A.B.	Lynn, Mass.
Pizzuti, Everett Vincent	A.B.	Providence
Platzker, Arnold C. Golembe	A.B.	Great Neck, N. Y.
Plaut, Martin Edward	A.B.	Canton, Ohio
Poitras, Edward Warren	A.B.	Holliston, Mass.
Poor, Warner Edward	A.B.	Sharon, Mass.
Presel, Peter Isaac	Sc.B.(E)	Providence
Prindle, Paul Edwin	A.B.	Arlington, Mass.
Prouty, Ronald Ellsworth	A.B.	Auburn, Mass.
Puccinelli, John Foster	Sc.B.(E)	Englewood, N. J.
Raag, Valvo	Sc.B.(P)	Orange, N. J.
Radoccia, Evandro Renato, Jr.	A.B.	Warwick
Rafkin, Lewis Samuel	A.B.	Lawrence, N. Y.
Raftery, Thomas Lawrence	A.B.	Douglaston, N. Y.
Ramos, Alfred Araujo, Jr.	Sc.B.(E)	East Providence
Rasmussen, Andrew McCall	A.B.	Melrose, Mass.
Rauth, Andrew Michael	Sc.B.(P)	Grosse Pointe Woods, Mich.
Redding, William Taylor	A.B.	Woonsocket
Reistrup, John Valdemar	A.B.	Washington, D. C.
Rettaliata, Donald Anthony	Sc.B.(E)	Babylon, N. Y.
Rich, Arnold Bradlee, Jr.	A.B.	Yuma, Ariz.
Richardson, Joseph Vincent, Jr.	A.B.	Rumford
Ridderheim, David Sigfrid, Jr.	A.B.	Providence
Riddiford, John Anthony	A.B.	Berlin, Conn.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Riddle, William Lewis	A.B.	Highland Park, Ill.
Ridout, Horatio Sharpe	A.B.	Southbridge, Mass.
Rihbany, Edmund Peter	A.B.	New Bedford, Mass.
Riley, Richard Juerst	A.B.	Lowell, Mass.
Ringel, Jordan Evan	A.B.	Flushing, N. Y.
Risedorf, Glenn Frederick	Sc.B.(App.Math.)	Schenectady, N. Y.
Ritter, Martin Leon	A.B.	South Orange, N. J.
Roach, John Joshua, Jr.	A.B.	West Hartford, Conn.
Robertshaw, Gilbert Edward	A.B.	Slatersville
Robinson, Charles Henry	Sc.B.(E)	Blackstone, Mass.
Robinson, Herbert William	A.B.	New Bedford, Mass.
Rockwell, Hays Hamilton	A.B.	Grosse Pointe, Mich.
Rodes, Thomas Moore	A.B.	St. Louis, Mo.
Rohan, James Edward	A.B.	University City, Mo.
Root, John Abbott	A.B.	Chagrin Falls, Ohio
Rosenberg, Alan Stephen	A.B.	Woodmere, N. Y.
Rosenberg, Richard Saul	A.B.	Buffalo, N. Y.
Rossetti, Edward John	Sc.B.(E)	Cranston
Rothstein, Arnold Morton	A.B.	Brooklyn, N. Y.
Roussel, Christian Richard Plantagenet	A.B.	New York, N. Y.
Rowell, Glendon	A.B.	Greenwich, Conn.
Ryder, John Edward	A.B.	St. Albans, Vt.
Salzman, Lawrence Edward	A.B.	Minneapolis, Minn.
Sanchez, Robert Pochon	A.B.	Rockville Centre, N. Y.
Santangini, Joseph Anthony	A.B.	Providence
Sarkisian, George David	A.B.	Arlington, Mass.
Sauter, Richard Nelson	Sc.B.(E)	Mount Vernon, N. Y.
Sawyer, Marshall Moody, Jr.	A.B.	Fairhaven, Mass.
Scaff, Harold Hall, Jr.	A.B.	East Orange, N. J.
Schaffer, Paul Majer	A.B.	Great Neck, N. Y.
Scheuer, John William	A.B.	Scranton, Pa.
Schneider, Robert Francis	Sc.B.(E)	Short Hills, N. J.
Schofield, David Bentley	Sc.B.(App.Math.)	Watertown, Mass.
Schueler, Frank Ernest, Jr.	Sc.B.(E)	Melrose, Mass.
Schwartz, Steven Allen	A.B.	New Bedford, Mass.
Schwartzman, Robert Louis	A.B.	Jackson Heights, N. Y.
Scott, Gordon Fraser	Sc.B.(E)	Stony Brook, N. Y.
Scott, Peter Hamilton	Sc.B.(C)	Needham, Mass.
Sczepanski, John Richard	Sc.B.(E)	Webster, Mass.
Seager, Theodore Dwight	Sc.B.(App.Math.)	Marshfield, Mass.
Sealy, Palmer Jr.	A.B.	Forest Hills, N. Y.
Seid, Richard Albert	A.B.	Essex, Conn.
Seielfstad, Harold Douglas, Jr.	Sc.B.(E)	Lakewood, Ohio
Selig, Robert Joel	A.B.	Laconia, N. H.
Selig, John Jandorf	A.B.	Port Chester, N. Y.
Seligman, Michael Bruce	A.B.	Brighton, Mass.
Seward, Dwight Thompson	A.B.	St. Louis, Mo.
Sgarzi, Louis Albert	A.B.	Plymouth, Mass.
Shapira, John Stark	A.B.	Chicago, Ill.
Shapiro, Robert Ivan	Sc.B.(E)	Brooklyn, N. Y.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Sharp, William Willoughby, Jr.	A.B.	New York, N. Y.
Shea, Dion Warren Joseph	Sc.B.(P)	New London, Conn.
Sheldrick, Peter	A.B.	Morristown, N. J.
Sheldrick, Radley Dews	Sc.B.(E)	Millbury, Mass.
Sherburne, Douglas Maxwell	A.B.	Pawtucket
Shumway, Charles Lakin	Sc.B.(E)	Rochester, N.Y.
Sierakowski, Robert Leon	Sc.B.(E)	Rockville, Conn.
Silverstein, Louis Solomon	A.B.	New Bedford, Mass.
Silverstein, Leslie Michael	A.B.	Brooklyn, N. Y.
Silvert, William Lawrence	Sc.B.(P)	Lakeville, Conn.
Simidian, Dikran Vahan	Sc.B.(E)	Forest Hills, N. Y.
Simon, Harold Kurt	A.B.	Clayton, Mo.
Singiser, Stephen Thomas	Sc.B.(E)	Brightwaters, N. Y.
Smith, Charles Truitt	A.B.	Baltimore, Md.
Smith, James Everett, Jr.	A.B.	Gorham, Me.
Smith, Kirk Western	Sc.B.(E)	Quonset Point
Smith, Roy Harmon III	A.B.	Cleveland Heights, Ohio
Smithies, Loring Wolcott	A.B.	Waterbury, Conn.
Snyder, Harry Leroy	A.B.	East Paterson, N. J.
Soucar, Emil	A.B.	Pawtucket
Soule, Dean	A.B.	Concord, Mass.
Speckmann, Ronald George	Sc.B.(E)	Bloomfield, N. J.
Spiewak, Kenneth Ralph	A.B.	Great Neck, N. Y.
Squires, Conrad	A.B.	Wilton, Conn.
Stamm, Charles William	Sc.B.(E)	New London, Conn.
Stanley, Peter Schniewind	A.B.	Glen Cove, N. Y.
Stansmore, Sidney William	A.B.	Westport, Conn.
Starke, William Ralph	A.B.	Great Neck, N. Y.
Steele, Richard Francis	A.B.	Stoneham, Mass.
Stein, Martin George	A.B.	Forest Hills, N. Y.
Stephen, Sanders Hill	A.B.	Greenwood, Mass.
Stern, Jeffrey L.	A.B.	Chicago, Ill.
Stevens, Charles Gardnar, III	A.B.	Chicago, Ill.
Stokes, Joel Carruth	A.B.	Atlanta, Ga.
Strand, Robert Hanisch	A.B.	Elmwood Park, Ill.
Strem, Michael Edward	A.B.	Pittsburgh, Pa.
Streett, John Kennard	A.B.	Clayton, Mo.
Sturges, John Masury, Jr.	A.B.	New York, N. Y.
Sugden, Keith, Logan	A.B.	Tarrytown, N. Y.
Sullivan, Edward Charles, Jr.	A.B.	Keene, N. H.
Summerfield, William Lawrence	A.B.	Chicago, Ill.
Summers, Meade Henry	A.B.	Clayton, Mo.
Surette, Gerald Joseph	Sc.B.(E)	Reading, Mass.
Szczepanski, Eugeniusz	Sc.B.(E)	Marsden, Yorkshire, England
Tavares, Robert Franklin	Sc.B.(C)	Riverside
Taylor, David Morris	A.B.	Brownsville, Pa.
Taylor, Harold Allen, Jr.	Sc.B.(C)	Riverhead, N. Y.
Taylor, Robert Fairchild	A.B.	Marblehead, Mass.
Tebo, Joseph James	A.B.	Grafton, Mass.
Thier, Jerome Melvin	A.B.	Jessup, Pa.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Thomas, James Varnum	A.B.	Middleboro, Mass.
Thompson, Robert Charles	A.B.	Manchester, Conn.
Thorsen, Laurence Conger	A.B.	Batavia, Ill.
Threlfall, Gordon Donner	A.B.	Pawtucket
Tierney, Myles	Sc.B.(App.Math.)	Huntington, L. I., N. Y.
Tipton, Abram Dulaney, Jr.	A.B.	Bay Shore, L. I., N. Y.
Todd, Starr Phillips	A.B.	Rowley, Mass.
Torrey, Richard Frederick	A.B.	Rockland, Mass.
Tozier, William Harley	A.B.	Snyder, N. Y.
Traum, Arthur William	A.B.	Silver Spring, Md.
Trela, Walter Joseph	Sc.B.(P)	Pawtucket
Trotter, Michael Hamilton	A.B.	Atlanta, Ga.
Turner, Charles Hamilton	A.B.	Northfield, Ill.
Turner, James Downing	Sc.B.(E)	Pembroke, Mass.
Uhry, Alfred Fox	A.B.	Atlanta, Ga.
Vanable, Joseph William, Jr.	A.B.	Providence
Van Auken, Bruce Albert	Sc.B.(E)	Scotia, N. Y.
Vandervoort, George William	Sc.B.(E)	Lake Forest, Ill.
Varone, Richard Thomas	A.B.	North Providence
Velentgas, Constantine Nicholas	A.B.	Portland, Me.
Vergara, Arthur Fontana	A.B.	Tuckahoe, N. Y.
Vetter, Thomas James	A.B.	Schenectady, N. Y.
Vincent, Charles Antonia	A.B.	Norwich, Conn.
Wackerling, Lloyd Raymond	A.B.	Riverside
Wakefield, James Cameron	A.B.	Hamden, Conn.
Walker, George Henry, III	A.B.	Chicago, Ill.
Watson, Charles Seiles	A.B.	Wethersfield, Conn.
Watson, Robert Willis	Sc.B.(E)	West Roxbury, Mass.
Webster, Earle Roberts, Jr.	Sc.B.(E)	Bangor, Me.
West, Richard Ellsworth	A.B.	Warwick
Westgate, Robert William	Sc.B.(E)	Gardiner, Me.
Wheelwright, Michael Cuthbert	A.B.	Sansalito, Calif.
Whelihan, Austin Robert Barclay	A.B.	Flourtown, Pa.
White, Thomas Henry	A.B.	Wyckoff, N. J.
Whitman, Ralph Eugene	A.B.	Pelham, N. Y.
Whitney, George McClellan	A.B.	Palisades, N. Y.
Whitney, John Barton	Sc.B.(C)	Brockton, Mass.
Whittaker, James Evans	A.B.	Grosse Pointe, Mich.
Wilkins, Richard Gardner	A.B.	Watertown, Mass.
Willenbecher, John Bacon	A.B.	Macungie, Pa.
Williams, John Roger, Jr.	Sc.B.(E)	Ambler, Pa.
Williams, Marshall Louis	A.B.	Wellesley, Mass.
Williams, William Edwin, Jr.	A.B.	Plainfield, N. J.
Williamson, Edward James, Jr.	A.B.	North Tiverton
Williamson, Samuel Albert	Sc.B.(C)	East Providence
Wilson, Abbott Eldridge, Jr.	A.B.	Somerset, Mass.
Wilson, David James	Sc.B.(E)	Springfield, Mass.
Wilson, Leigh Alan	A.B.	Springfield, Mass.
Wilson, Rufus Saxton, Jr.	Sc.B.(E)	Vienna, Va.
Wilson, Thomas Matthew	A.B.	Bryn Mawr, Pa.

LIST OF STUDENTS: FRESHMEN

NAME	DEGREE	RESIDENCE
Windsor, Grover Hubbell	A.B.	Des Moines, Iowa
Wolf, John Herbert, Jr.	Sc.B.(E)	Pittsburgh, Pa.
Wolman, Martin	A.B.	Albany, N. Y.
Wood, Robert Alexander	Sc.B.(C)	St. Louis, Mo.
Wood, Robert Christopher	A.B.	Hamden, Conn.
Wright, John Attmore	A.B.	Warwick
Wright, John Edward	A.B.	Keene, N. H.
Yeaton, Harold Lee	A.B.	Naugatuck, Conn.
Young, Frank Dwight, III	Sc.B.(E)	Valley Stream, N. Y.
Yuan, Frank Lee	Sc.B.(E)	Southboro, Mass.
Zorabedian, Albert Donald	A.B.	Providence
Zwick, John Peter	A.B.	Torrington, Conn.

SPECIALS

NAME	RESIDENCE
Angier, Fred R.	Providence
Roy, Donald J.	Providence
Sherman, Ori S.	Providence
Smith, Richard T.	Attleboro, Mass.
Tonoff, Eugene	North Providence

SUMMARY OF REGISTRATION

UNDERGRADUATE MEN

	<i>1953-1954</i>	<i>1954-1955</i>
	Semester II	Semester I
Seniors	420	392
Juniors	389	507
Sophomores	514	566
Freshmen	555	675
Special Students	8	6
Total	1,886	2,146

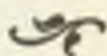
GENERAL SUMMARY

	<i>1953-1954</i>	<i>1954-1955</i>
	Semester II	Semester I
Undergraduate men	1,886	2,146
Pembroke College	759	829
Graduate School	359	400
	3,004	3,375
Registration in Extension Courses, Second Semester 1953-54		719
First Semester 1954-55		950
		1,669

STATISTICS OF GRADUATES

At the close of the one hundred and eighty-sixth commencement of the University in 1954, there were enrolled the names of 25,845 graduates, both men and women. Of this number 17,889 men and 5,119 women had received the Bachelor's degree; 1,805 exclusive of the foregoing had received advanced degrees; 69 received the degree of Doctor of Medicine, 963 had received honorary degrees.

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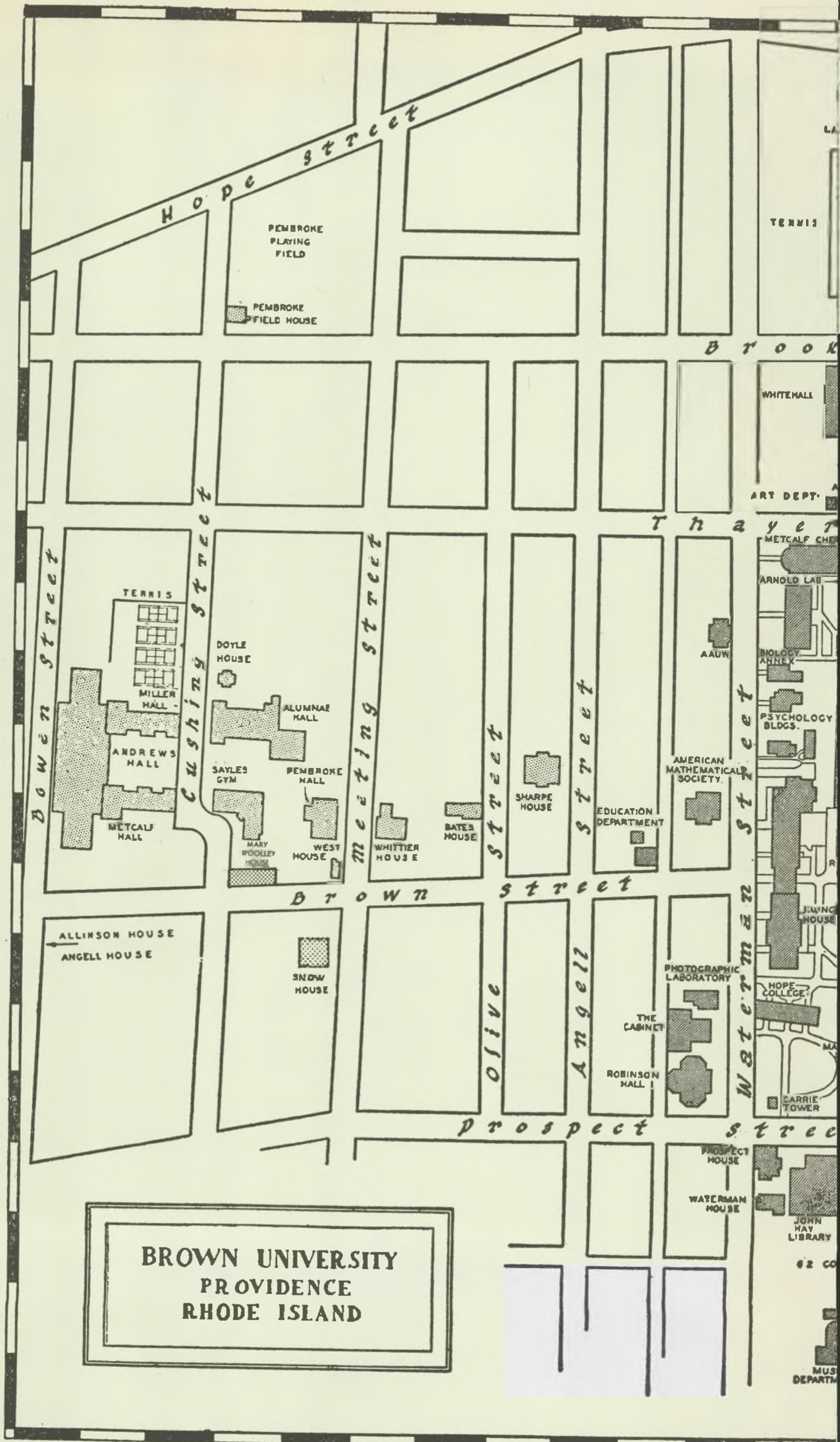
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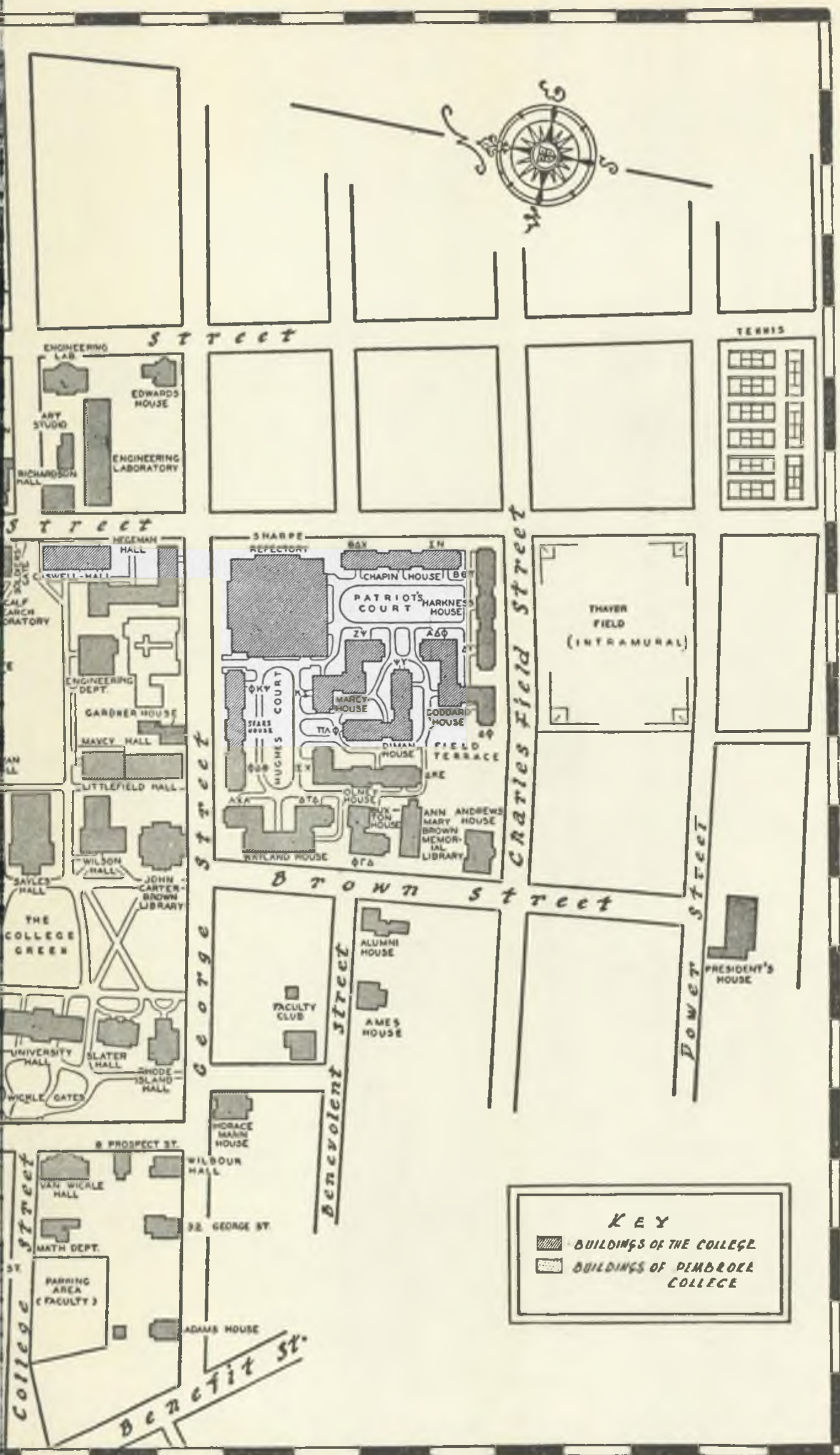
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SCHEDULE OF RECITATION GROUPS

Arranged According to Hours

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
8:00	A	B	A	B	A	B
9:00	C	D	C	D	C	D
10:00	E	F	E	F	E	F
11:00	G	H	G	H	G	H
12:00						
1:10	I	N	I	N	I	
2:10	J	N	J	O	J	
3:10	K	O	K	P	K	
4:10	L	O	L	P	L	
5:10	M	P	M		M	

Brown University

THE COLLEGE. An undergraduate college for men, with courses leading to the degrees of A.B., Sc.B. in Applied Mathematics, Sc.B. in Chemistry, Sc.B. in Engineering, and Sc.B. in Physics.

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