

ANNUAL CATALOG

STEVENS INSTITUTE
of TECHNOLOGY

A COLLEGE
OF ENGINEERING



CASTLE POINT
HOBOKEN, NEW JERSEY

1935-1936



PANORAMIC MAP
SHOWING LOCATION OF
STEVENS INSTITUTE OF TECHNOLOGY

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Aerial Explorations Inc.

STEVENS INSTITUTE OF TECHNOLOGY, THE COLLEGE BUILDINGS,
CAMPUS AND ATHLETIC FIELDS

ANNUAL CATALOG

STEVENS INSTITUTE *of* TECHNOLOGY

A COLLEGE
OF ENGINEERING



FOUNDED IN 1870
BY EDWIN A. STEVENS

CASTLE POINT
HOBOKEN, NEW JERSEY

FEBRUARY, 1935

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ANNUAL CATALOG STEVENS INSTITUTE *of* TECHNOLOGY

1935

JANUARY							FEBRUARY							MARCH						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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1936

JANUARY							FEBRUARY							MARCH						
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JULY							AUGUST							SEPTEMBER						
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13	14	15	16	17	18	19	11	12	13	14	15	16	17	15	16	17	18	19	20	21
20	21	22	23	24	25	26	18	19	20	21	22	23	24	22	23	24	25	26	27	28
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OCTOBER							NOVEMBER							DECEMBER						
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6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31	..	..	24	25	26	27	28	29	30	29	30	31	..	..	..	..

CALENDAR

THE full course of STEVENS INSTITUTE OF TECHNOLOGY occupies four years. Each year is divided into two regular terms; following the regular terms of each of the first three years is a supplementary term devoted to work in laboratories, shops and drafting rooms; also, following the Freshman year, a six-weeks' course is given in the Civil Engineering Camp.

JANUARY-SEPTEMBER, 1935

January 21, Monday, to January 25, Friday (incl.). Examinations on work of the First Term.

January 26, Saturday, to January 29, Tuesday (incl.). Mid-year Recess.

January 28, Monday. Enrollment of all classes closes at 5 P.M.

January 30, Wednesday. Second Term begins at 8:50 A.M. Second term tuition due from the three upper classes before 5 P.M.

February 4, Monday. Meeting of the Faculty at 3 P.M.

Second term tuition due from the Freshmen before 5 P.M.

February 22, Friday. Holiday. Washington's Birthday.

March 20, Wednesday. Intraterm reports to the Registrar due at 4 P.M.

April 18, Thursday, to April 24, Wednesday (incl.). Easter Recess.

May 22, Wednesday, to May 27, Monday (incl.). Examinations on work of the Second Term.

May 28, Tuesday. Supplementary Term for all classes begins.

May 30, Thursday. Holiday. Memorial Day.

June 3, Monday. Meeting of the Faculty at 10 A.M.

June 7, Friday, to June 8, Saturday (incl.). Commencement Recess.

June 8, Saturday. Sixty-third Annual Commencement.

Twenty-seventh Annual Alumni Day.

[1]

STEVENS INSTITUTE OF TECHNOLOGY

- June 19, Wednesday.* Supplementary Term for Freshmen ends.
June 24, Monday. Summer School for Freshmen begins.
June 26, Wednesday. Supplementary Term for Sophomore and Junior Classes ends.
July 1, Monday. Freshman Camp opens. Summer School for upperclassmen begins.
August 3, Saturday. Summer School for Freshmen ends.
August 10, Saturday. Freshman Camp closes. Summer School for upperclassmen ends.
August 10, Saturday, to August 17, Saturday (incl.). Economics Conference for Graduate Engineers.
August 18, Sunday, to August 31, Saturday (incl.). Camp Session for Preparatory School Students.
September 13, Friday. Enrollment of Freshmen closes at 5 P.M.
September 17, Tuesday. Enrollment of three upper classes closes at 5 P.M.

SEPTEMBER, 1935-SEPTEMBER, 1936

1935

- September 13, Friday.* Enrollment of Freshmen closes at 5 P.M. First term tuition due from Freshmen before 5 P.M.
September 13, Friday, and 14, Saturday. Locker assignments, distribution of supplies and athletic equipment for Freshmen begin at 9 A.M.
September 16, Monday. Orientation Week for Freshmen begins at 9 A.M.
September 17, Tuesday. Enrollment of the three upper classes closes at 5 P.M. First term tuition due from the three upper classes before 5 P.M. Meeting of Faculty at 10 A.M.
September 20, Friday. Locker assignments, distribution of supplies and athletic equipment for the three upper classes begin at 9 A.M.

[2]

CALENDAR

- September 23, Monday.* First Term begins. President's Address to the Student Body at 9 A.M.
November 5, Tuesday. Holiday. Election Day.
November 13, Wednesday. Intraterm reports to the Registrar due at 4 P.M.
November 20, Wednesday. Meeting of Faculty at 1:30 P.M.
November 28, Thursday to November 30, Saturday (incl.). Thanksgiving Recess.
December 23, Monday, to January 1, 1936, Wednesday (incl.). Christmas Recess.
1936
January 20, Monday. Examinations on work of the First Term begin.
January 29, Wednesday. Enrollment of all classes closes at 5 P.M. Second term tuition due from all classes before 5 P.M.
February 3, Monday. Second Term begins at 8:50 A.M. Meeting of the Faculty at 3 P.M.
February 22, Saturday. Holiday. Washington's Birthday.
March 25, Wednesday. Intraterm reports to the Registrar due at 4 P.M.
April 1, Wednesday. Meeting of Faculty at 1:30 P.M.
April 9, Thursday, to April 15, Wednesday (incl.). Easter Recess.
May 25, Monday, to May 29, Friday (incl.). Examinations on work of the Second Term.
June 1, Monday. Supplementary Term for all classes begins at 9 A.M.
June 8, Monday. Meeting of the Faculty at 1:30 P.M.
June 12, Friday, to June 13, Saturday (incl.). Commencement Recess.
June 13, Saturday. Sixty-fourth Annual Commencement. Twenty-eighth Annual Alumni Day.
June 19, Friday. Supplementary Term for Freshmen ends.
June 22, Monday. Summer School for Freshmen begins.
June 27, Saturday. Supplementary Term for Sophomore and Junior Classes ends.

[3]

STEVENS INSTITUTE OF TECHNOLOGY

June 29, Monday. Freshman Camp opens.

July 6, Monday. Summer School for upperclassmen begins.

August 1, Saturday. Summer School of Freshmen ends.

August 8, Saturday. Freshman Camp closes.

August 8, Saturday, to August 15, Saturday (incl.). Economics Conference for Graduate Engineers.

August 15, Saturday. Summer School for upperclassmen ends.

August 16, Sunday, to August 29, Saturday (incl.). Camp Session for Preparatory School Students.

September 18, Friday. Enrollment of Freshmen closes at 5 P.M.

September 21, Monday. Orientation Week for Freshmen begins.

September 22, Tuesday. Enrollment of three upper classes closes at 5 P.M.

September 28, Monday. First Term begins.

CORPORATION

THE TRUSTEES OF THE
STEVENS INSTITUTE OF TECHNOLOGY

OFFICERS

WALTER KIDDE, *Chairman*

WILLIAM S. BARSTOW, *Vice-Chairman*

JAMES A. FARRELL, *Vice-Chairman*

EDWARD WESTON, *Vice-Chairman*

JAMES CREESE, *Secretary and Treasurer*

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JOHN ASPINWALL, M.E., M.A., President, Coldwell Lawn Mower Company.

WILLIAM SLOCUM BARSTOW, A.B., E.D., President, Barstow Tyng and Company, Inc.

ROBERT BOETTGER, M.E., Secretary and Director, United Piece Dye Works.

HENRY DONALD CAMPBELL, B.A., LL.B., President, The Chase National Bank.

HARVEY NATHANIEL DAVIS, PH.D., LL.D., Sc.D., President, Stevens Institute of Technology.

JAMES AUGUSTINE FARRELL, E.D., formerly President, The United States Steel Corporation.

GEORGE GIBBS, M.E., E.D., Gibbs & Hill, Consulting Engineers.

ARTHUR GRAHAM GLASGOW, M.E., E.D., Sc.D., Chairman, Humphreys and Glasgow, Ltd.

DAVID SCHENCK JACOBUS, M.E., E.D., Advisory Engineer, The Babcock & Wilcox Company.

DAVID CLAYTON JOHNSON, M.E., Alumni Representative, President, New York Steam Corporation.

WALTER KIDDE, M.E., President, Walter Kidde & Company.

FRANKLIN BUTLER KIRKBRIDE, A.B.

STEVENS INSTITUTE OF TECHNOLOGY

CONRAD NEWTON LAUER, M.E., President, The Philadelphia Gas Company.

ALTEN S. MILLER, M.E., Vice-President, The Bartlett Hayward Company.

FREDERICK AUGUSTUS MUSCHENHEIM, M.E., President, Hotel Astor.

EDGAR PALMER, B.S., E.E., Chairman of the Board, New Jersey Zinc Company.

WILLIAM E. PAULSON, M.E., Alumni Representative, President, Thomas Paulson & Son, Inc.

ROBERT COX POST, M.E., Vice-President, Post & McCord, Inc.

ROBERT CROOKS STANLEY, M.E., E.M., President, The International Nickel Company.

EDWIN AUGUSTUS STEVENS, JR., M.E., Hoboken Land and Improvement Company.

WILLIAM HENRY TAYLOR, M.E., President, The Philadelphia Electric Company.

JOHN C. TRAPHAGEN, LL.D., President, Bank of New York and Trust Company.

ALBERT C. WALL, B.A., M.A., Attorney, Wall, Haight, Carey & Hartpence.

EDWARD WESTON, LL.D., Sc.D., Chairman, Board of Directors, Weston Electrical Instrument Corporation.

MURRAY EDWARD WHITELEAF, M.E., Alumni Representative, Secretary-Treasurer, Siemund-Wenzel Company.

COMMITTEES OF TRUSTEES

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Investment—F. B. KIRKBRIDE, Chairman, SAMUEL G. ALLEN, DAVID C. JOHNSON, ROBERT C. STANLEY, JOHN C. TRAPHAGEN, JAMES CREESE, Secretary.

MEMBERS OF THE FACULTY

ADMINISTRATIVE OFFICERS

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JAMES CREESE, Litt.B., M.A., *Vice-President and Treasurer*.

FRANKLIN DeRONDE FURMAN, M.E., *Dean*.

JOHN CHARLES WEGLE, M.E., *Assistant Dean and Registrar*.

NEWELL ORMSBEE MASON, A.B., A.M., *Acting Secretary of the Faculty*.

SAMUEL HOFFMAN LOTT, M.E., *Camp Executive*.

GUSTAV GEORGE FREYGANG, M.E., A.M., *Director of Summer School*.

NICHOL H. MEMORY, M.E., *Secretary of the Alumni Association, Assistant to the President*.

ENID MAY HAWKINS, *Librarian*.

WILLIAM SMITH, *Superintendent of Buildings and Grounds*.

WALTER A. SYKES, *Cashier and Bookkeeper*.

VIOLET WISBEY, *Manager of Castle Stevens*.

MEMBERS OF THE FACULTY, TEACHING STAFF AND ADMINISTRATION

PROFESSORS, DIRECTORS, INSTRUCTORS, ETC.†

HARVEY NATHANIEL DAVIS, A.B., A.M., Ph.D., Sc.D., LL.D., President and Professor of Mechanical Engineering.

J. HECTOR FEZANDIÉ, M.E., A.M., Professor Emeritus of Mechanical Engineering.

WILLIAM ERNEST GEYER, Ph.D., Professor Emeritus of Physics.

FRANK LOUIS SEVENOAK, A.M., M.D., L.H.D., Professor Emeritus of English and History.

ROBERT MARSHALL ANDERSON, B.S., M.E., Professor Emeritus of Mechanical Engineering.

PERCY HODGE, A.B., B.S., Ph.D., Professor of Physics.

FRANCIS JONES POND, B.S., A.M., Ph.D., Sc.D., Professor of Chemistry and Director of the Morton Memorial Laboratory.

† Arranged, with the exception of the President, on the basis of academic seniority. See appendix for alphabetical list. See pages 65 to 81 for departmental lists.

STEVENS INSTITUTE OF TECHNOLOGY

FRANKLIN DE RONDE FURMAN, M.E., Dean and Professor of Machine Design.

WILLIAM DUANE ENNIS, M.E., E.D., Alexander Crombie Humphreys Professor of Economics of Engineering.

CHARLES OTTO GUNTHER, M.E., Professor of Mathematics.

LOUIS ADOLPHE MARTIN, JR., M.E., M.A., Professor of Mechanics.

WALTER VAN DYKE BINGHAM, B.A., M.A., Ph.D., Professor of Psychology.

RICHARD FRANCIS DEIMEL, B.S., M.A., Professor of Mechanical Engineering.

WILLIAM REEDER HALLIDAY, M.E., Associate Professor of Machine Design.

SAMUEL HOFFMAN LOTT, M.E., Associate Professor of Engineering Drawing and Descriptive Geometry; Camp Executive.

GEORGE MARTIN WEIMAR, A.B., A.M., Ph.D., Associate Professor of English and History; Secretary of the Faculty. (On Sabbatical Leave, 1934-1935.)

ARTHUR JAMES WESTON, B.A., A.M., Associate Professor of English.

WALDEMAR MATTHAEUS STEMPEL, A.B., M.A., Assistant Professor of Physics.

FRANK CLIFFORD STOCKWELL, A.B., S.B., Anson Wood Burchard Professor of Electrical Engineering.

LEWIS ELMER ARMSTRONG, Ph.B., Assistant Professor of Mathematics.

LOUIS ALAN HAZELTINE, M.E., Sc.D., Professor of Physical Mathematics.

WALTER SQUIRE, A.B., A.M., Lecturer on Music.

JOHN ALFRED DAVIS, B.S., Director of Physical Education.

ALFRED SEGUINE KINSEY, Professor of Shop Practice.

LESLIE HERR BACKER, M.E., Associate Professor of Chemistry.

GEORGE WINCHESTER BARNWELL, B.S., M.A., Assistant Professor of Economics of Engineering.

GUSTAV GEORGE FREYGANG, M.E., A.M., Associate Professor of Mechanics; Director of the Summer School.

MEMBERS OF THE FACULTY

JOHNSON O'CONNOR, A.B., A.M., Associate Professor and Director of Psychological Studies.

OLAF ANDERSEN, Ph.D., Lecturer on Geology.

DAVID L. SNADER, A.E., C.E., M.S., M.A., Professor of Civil Engineering.

EUGENE HECTOR FEZANDIÉ, B.S., M.E., Assistant Professor of Mechanical Engineering.

HARRY CHARLES FRANK, B.S., M.S., Assistant Professor of Physics.

HARVEY STEVENSON, A.B., Lecturer on Architecture and Allied Arts.

WILLIAM ERNEST FRED APPUHN, E.E., M.A., Assistant Professor of Mathematics.

JAMES CREESE, Litt.B., M.A., Vice-President and Treasurer.

JOHN CHARLES WEGLE, M.E., Registrar, Assistant Dean and Assistant Professor of Descriptive Geometry.

KENNETH SEYMOUR MOORHEAD DAVIDSON, B.S., Assistant Professor of Mechanical Engineering.

JOHN PRESLEY FIFE, B.A., M.A., Assistant Professor of English. (Absent on exchange with Massachusetts Institute of Technology.)

CARL GEORGE ROTERS, Lecturer on the Fine Arts.

DAVID DINKEL JACOBUS, M.E., Sc.D., Assistant Professor of Chemistry.

JOHN CARNEGIE SIM, Instructor in Physical Education.

WILLIAM CHACE GREENE, Ph.B., M.A., Assistant Professor of English, Massachusetts Institute of Technology. (On exchange.)

HAROLD BURRIS-MEYER, B.S., M.A., Assistant Professor of English.

HERBERT CHRISTOPHER ROTERS, M.E., M.S., Assistant Professor of Electrical Engineering.

ALF KEYSER BERLE, B.S., Instructor in Economics of Engineering.

ALFRED BORNEMANN, M.E., Dr.ING., Assistant Professor of Engineering Chemistry.

NEWELL ORMSBEE MASON, A.B., A.M., Assistant Professor of History.

STEVENS INSTITUTE OF TECHNOLOGY

WILLIAM LAWRENCE SULLIVAN, B.S., M.S., Instructor in Electrical Engineering.

FRANK J. MISAR, B.P.E., Instructor in Physical Education.

WILLIAM BEARD, B.S., Instructor in English and Government.

OLIVER MILTON HALL, A.B., M.A., Instructor in Psychology.

NOEL URQUHART, M.E., M.S., Instructor in Physics.

JOHN I. YELLOTT, JR., B.E., M.M.E., Instructor in Mechanical Engineering.

DAVID MACK, A.B., Assistant in Psychology.

ROBERT MILTON DIETZ, M.E., Instructor in Civil Engineering.

WILLIAM FREDERICK BAILEY, M.E., Instructor in Electrical Engineering.

FREDERICK LEWIS BISSINGER, M.E., Instructor in Chemistry.

ROBERT ARTHUR CHADBURN, M.E., Instructor in Machine Design.

HOWARD WILSON EMMONS, M.E., Instructor in Mechanical Engineering.

ALLAN BROWN MURRAY, M.E., Instructor in Mechanical Engineering.

ARCHIBALD STEWART WILKINSON, M.E., Instructor in Machine Design.

ADOLPH AMEND, JR., M.E., Instructor in Electrical Engineering.

RICHARD JOSEPH BIELK, M.E., Assistant in Physics.

FRED ANDREAS GITZENDANNER, M.E., Instructor in Economics of Engineering.

CLARENCE KENNETH HOLLAND, M.E., Instructor in Mechanical Engineering.

MARTINO JOSEPH VACCARO, M.E., Instructor in Machine Design.

GILBERT CLINTON WHITNEY, JR., M.E., Instructor in Civil Engineering.

GEORGE HEGGIE, Superintendent of Shops.

COMMITTEES OF THE FACULTY

RESEARCH STAFF IN PSYCHOLOGY

Human Engineering Laboratory

JOHNSON O'CONNOR, A.B., A.M., Director.

DAVID MACK, A.B., Assistant.

DEPARTMENTAL ASSISTANTS

LOUIS BECKER, Honorary Assistant Curator, the Museum.

ETHEL LEINKAUF, in the Library.

SAMUEL SLINGERLAND, in Electrical Engineering.

MORTIMER J. ROBERTS, in Mechanical Engineering.

WILLIAM HENRY UMSTEAD, in Shop Practice.

ALPHONSE CHARLES BRILLAT, in Shop Practice.

WILLIAM DEXHEIMER, in Shop Practice.

AUGUST W. TOENSHOFF, in Shop Practice.

STANDING COMMITTEES OF THE FACULTY

Committee on Academic Functions and Special Lectures—Dean FURMAN, Chairman, Vice-President CREESE, Professors FREYGANG, HALLIDAY, ROTERS, and WEIMAR.

Committee on Scholarships and Student Aid—THE DEAN, Chairman, THE TREASURER, THE REGISTRAR, Professors BACKER and STOCKWELL.

Committee on Matriculation—THE REGISTRAR, Chairman, THE DEAN, Professors HODGE, MASON, and POND.

Committee on Schedules—Professor FREYGANG, Chairman, Professors APPUHN and LOTT.

Committee on Curriculum—THE PRESIDENT, Chairman, Director DAVIS, Professors ENNIS, FEZANDIÉ, FURMAN, GUNTHER, HODGE, KINSEY, MARTIN, POND, SNADER, STOCKWELL, and WESTON.

Committee on Graduate Instruction—Professor STOCKWELL, Chairman, Professors DEIMEL and POND.

Library Committee—Professor WESTON, Chairman, THE LIBRARIAN, Vice-President CREESE, Professors ARMSTRONG, DAVIDSON, and ENNIS.

Personality Records—Professor FEZANDIÉ, Chairman, Mr.

STEVENS INSTITUTE OF TECHNOLOGY

MEMORY, Secretary, Professors HAZELTINE, O'CONNOR, and WEGLE.

Committee on Publications and Publicity—THE VICE-PRESIDENT, Chairman, THE REGISTRAR, Professors BARNWELL, and FREYGANG, and Mr. MEMORY.

Committee on Student Activities—THE DEAN OR HIS DESIGNATED REPRESENTATIVE, Chairman, THE TREASURER OR HIS DESIGNATED REPRESENTATIVE, THE DIRECTOR OF PHYSICAL EDUCATION, Professors BURRIS-MEYER and HALLIDAY.

Committee on Industrial Contacts—PROFESSOR DIEMEL, Chairman, Professors HODGE, POND, and ROTERS.

HISTORY OF THE COLLEGE

FROM its establishment in 1870, Stevens Institute of Technology has offered consistently one course in the fundamentals of engineering to provide basic training for the practice of the profession in its several branches. It was among the first American colleges to grant the degree of Mechanical Engineer. In sixty-three years, since the admission of the first students, the college has graduated more than three thousand five hundred men whose subsequent careers have taken them into all fields of engineering practice; mechanical, civil, chemical, electrical and industrial engineering.

In its name and by reason of its location at Castle Point, Stevens Institute of Technology perpetuates an unusual tradition in engineering. Colonel John Stevens purchased from the State of New Jersey in 1784 the grounds now included in the campus of the college. Here he planned the first condensing double-acting engine designed on the American continent and installed it in a boat on the Hudson three years before Fulton's *Clermont* took the water. Here he built the *Phoenix*, the first steamboat to venture out upon the ocean. He also introduced the steam ferry and, as early as 1825-1826, experimented with the first locomotive in America to run under steam on a track. His sons, Robert L. Stevens and Edwin A. Stevens, continued the development of steam navigation and railroad transportation, and incorporated the Camden and Amboy Railroad in 1830. The second of these sons, Edwin A. Stevens, provided by will in 1867 for the establishment of the college which bears the Stevens name.

The bequest by Mr. Stevens included a city block assessed at \$112,500; a building fund of \$150,000; and an endowment of \$500,000. By Act of Legislature of the State of New Jersey, approved February 15, 1870, the college was incorporated under a directing board known as "The Trustees of the Stevens Institute of Technology." Construction of the main

building was begun in the Fall of 1869; a course of public lectures was delivered during the Spring of 1871; and the College was opened for the admission of students in September, 1871.

The first president of the college, Henry Morton, a physicist whose experiments and addresses turned public attention to the work of science, gathered about him a faculty of able men, whose names are memorable in the history of the various sciences they served. Dr. Morton's presidency extended from 1870 to 1902 during which period the college grew far beyond the limits established by its original endowment, and additional property and funds were entrusted to it. Among the foremost donors were President Morton and Andrew Carnegie.

Alexander Crombie Humphreys, a graduate of the college and a Trustee from 1891, succeeded Dr. Morton in the presidency in 1902 and directed the affairs of the college until 1927. His administration brought about a doubling of the financial resources of the corporation and added to the college campus practically all of the original Castle Point property of the Stevens family. The facilities of the college were placed at the disposal of the government for the training of men for the naval service in the World War. In 1924 was completed a fund of a million dollars to permit salary increases. Dr. Frank L. Sevenoak, Professor of English and History, was designated Acting President for the year 1927-28.

Harvey Nathaniel Davis has been president of the College since 1928. In the seven years of his administration approximately half a million dollars, in endowments, in improvements of plant, and in equipment, have been added to the resources of the College: the Anson Wood Burchard endowment for the Department of Electrical Engineering; a partial endowment for a chair of Economics of Engineering

as a memorial to Alexander Crombie Humphreys; the John W. Lieb memorial rooms and the da Vinci library; the Edgar B. Bacon bequest for scholarships and general endowment; and bequests from Professor William H. Bristol, Colonel George L. Wall, Henry E. McGowan, and William J. Boucher, all alumni of the College.

The most significant chapters in the history of the College are those that trace the evolution of its curriculum. There has never been in this College a multiplicity of curricula dividing the field of engineering into parts, in some one of which each undergraduate must specialize; on the contrary the College has always had a single undergraduate curriculum, devoted primarily to mathematics, physics, and chemistry, and the various branches of mechanics, including thermodynamics, which are the foundations of all engineering. This curriculum has always included introductory courses in mechanical, civil, electrical, and chemical engineering, to which Dr. Humphreys added the first approach in any engineering school to what is now known as management. In a general revision of the curriculum made in 1928-29, the faculty sought to bring even nearer to equality the stress laid on those four fields of engineering and to strengthen the study of economics and the humanities. The Alexander Crombie Humphreys endowment for the Department of Economics of Engineering, although not a complete foundation, gave encouragement for the reconstruction of that increasingly important department of study. The instruction in civil engineering was extended in 1930 when the College acquired a tract of 375 acres in northern New Jersey, near Johnsonburg, and developed the Engineering Camp. This permitted the addition to the Freshman year of a summer course, under field conditions, in surveying and related subjects.

Students are admitted to college in September and, since 1933, in midwinter. The tendency has been to use entrance examinations as little as possible and to appraise instead the

full pre-college record of the student and his general fitness for the study of engineering. An experiment in vocational or collegiate guidance has been made at the Engineering Camp where, each summer since 1931, boys of high school age have attended a two week conference (see page 23); and for six years the college has sponsored a program of research in aptitude testing. Within the college several devices have been developed to encourage the student to put forth his best effort; among these are the Dean's List (see page 82), the system of awards and prizes under the sliding-scale plan of tuition introduced in 1930 (see page 31) and, finally, the establishment in 1934 of a degree with distinction available to qualified students who, during their Senior year, do independent work outside the prescribed curriculum on projects of their own choice.

ENDOWMENTS AND DONATIONS

EDWIN A. STEVENS by a codicil to his will dated April 15, 1867, designated three trustees, Martha Bayard Stevens, William W. Shippen, and Samuel Bayard Dod to hold in trust for the institution which he proposed to establish, a block of land, bounded by Hudson, River, Fifth and Sixth Streets, Hoboken, a building fund of \$150,000, and an endowment fund of \$500,000. These bequests, \$762,500 in all, were for that time a generous provision for the new institution of learning, a patrimony sufficient to give the school a position of security among the then few and youthful schools of engineering. Beyond the Edwin A. Stevens endowment, there have been several other benefactions to the College from the Stevens family.

During the eighteen seventies no substantial additions to the endowment or plant funds were made, but in 1881, President Henry Morton himself established a precedent for others of the growing Stevens constituency by giving to the College a fund for the equipment of a work shop. President Morton's other gifts in the course of twenty years brought the total of his benefactions to \$145,000.

The second president of the College, Alexander Crombie Humphreys, during his life and by bequest endowed two scholarships, each with a principal of \$15,000, in memory of his sons, Harold Humphreys and Crombie Humphreys.

Andrew Carnegie, a trustee of the College from 1891 to 1919, provided the funds for the erection and endowment of the Carnegie Laboratory of Engineering. His concern for the College and for its growth showed itself in several other generous gifts. Since his death the Carnegie Corporation has continued Mr. Carnegie's benefactions to the College, contributing to the alumni fund subscribed in 1924,

helping to finance the alumni Economic Conferences of 1931 and 1932 and, since 1933, elective courses in music. The total of Mr. Carnegie's direct and indirect benefactions is \$803,300.

The General Education Board, established by John D. Rockefeller, Jr., has made two large grants to the College, \$250,000 in completion of the Graduates Fund of 1915 and \$300,000 for the similar fund of 1924; the Board also made a grant of \$10,000 in 1931 for psychological research.

Alumni subscriptions to special and endowment funds of the College have been frequent and substantial. On several occasions and especially at critical times in the institution's history the alumni have enlisted themselves and other friends of the College in organized campaigns for its benefit. One of the first of these established a building fund which was consolidated with gifts from President Morton to provide for the erection of the Morton Memorial Laboratory of Chemistry in 1906. Between 1910 and 1913 they obtained \$137,000 for the purchase of campus grounds on Castle Point. The Graduates Fund begun in 1912 permitted salary bonuses to members of the staff during the World War. In 1915, the alumni collaborated with the Trustees to clear the College of debt and to establish an endowment of \$1,000,000. Again in 1924 they built up a fund of \$1,000,000 including the endowment of several scholarships mentioned with the names of the donors elsewhere in this catalog.

The corporation acknowledges obligation to loyal alumni and to many others whose philanthropy responded to the needs and purposes of the College. Among these are especially to be named: William Hall Walker whose gift was applied in the erection of the William Hall Walker Gymnasium; George Eastman whose donations were \$50,000 in 1915 and \$50,000 in 1924; Edward S. Harkness whose donations were \$10,000 in 1915 and \$100,000 in 1924; George Grant Mason who over a period of years gave to the College \$104,000;

Edward Weston who has made several donations, \$26,000 in all, for extension of plant; Admiral George Wallace Melville who established a fund of \$5,000 for the purchase of engineering equipment; William D. Hoxie whose bequest of \$50,000 was used in the construction of Hoxie House; and Edgar B. Bacon whose bequest to the College in 1929 amounted to \$55,000.

Two departments of instruction have received endowments in recent years. Arthur Graham Glasgow in 1929 initiated the as yet incomplete endowment of the Alexander Crombie Humphreys chair of Economics of Engineering. By a gift of \$300,000 in 1929, Princess Henry XXXIII of Reuss endowed the Department and a Professorship of Electrical Engineering as a memorial to Anson Wood Burchard, '85.

For the equipment of the engineering camp in 1930 gifts were made by W. G. Keuffel, W. L. E. Keuffel, and C. M. Bernegau of Keuffel and Esser Co., Professor William E. Geyer and Donald Bush. Other funds allocated to the Engineering Camp in 1931 include the bequests of \$25,000 from Professor William H. Bristol, \$2,000 from Lieutenant Colonel George L. Wall, and \$1,000 from William J. Boucher.

For the John W. Lieb Memorial were received in 1932 a building fund, provided by William S. Barstow and others, the Lieb collection of Vinciana presented by Samuel Insull and a portrait of Mr. Lieb.

In 1934 the College received a bequest of \$5,000 from Henry E. McGowan of the Class of 1894.

During the first six years of President Davis' administration subsidies of \$52,587 have been donated for research projects; gifts for current operating purposes in those years reach a total of \$120,777. Included in these totals are a number of anonymous gifts, the proceeds of the annual Alumni Funds since 1929, and the contributions of a group of annual donors through an informal organization known as the President's Guard which was organized in 1928.

GROUNDS AND BUILDINGS

STEVENS Institute of Technology occupies a promontory known as Castle Point, at Hoboken, New Jersey, on the west bank of the Hudson River opposite Twelfth Street, New York City. This isolated hill, entirely separate from and almost a mile in front of the southerly continuation of the Palisades, commands a view of the full length of Manhattan Island, the harbor, and the Hudson River. The history of Castle Point begins in the first records of the Hudson River area; its cliff of green serpentine rock is definitely and identifiably mentioned in the log of the *De Halve Maen* that brought Hendrick Hudson on his original voyage of discovery. Since the days of the American Revolution the college property has been associated with the Stevens name; in 1784 a great tract of land, of which the present campus was a part, was purchased from the State of New Jersey by Colonel John Stevens. During the nineteenth century Castle Stevens continued to be the home of his family and the then wooded slopes of the hill, especially the northerly section known as the Elysian Fields, attracted holiday crowds from the city across the river.

Beginning in the block of land at Hudson and Fifth Streets, which was included in the original bequest of Edwin A. Stevens in 1867, the college has gradually extended its boundaries to include practically all of the Castle Point property until today the grounds comprise an area of approximately thirty acres.

In the center of an area of great commercial and industrial activity, and yet set apart on a campus of historic importance, Stevens Institute of Technology is favored by its location as an institution devoted to science and engineering.

The buildings of instruction and administration are concentrated at the southerly end of the campus.

THE ADMINISTRATION BUILDING, formerly the Main Building, was the original home of the college and in it are now located various administrative offices as well as the rooms for instruction in the departments of Physics, Machine Design and Shop Practice. The auditorium, in this building, was the scene of the organization meeting of the American Society of Mechanical Engineers on April 7, 1880.

The Department of Mechanical Engineering is housed in its own building, the CARNEGIE LABORATORY OF ENGINEERING, given by Andrew Carnegie, a trustee of the college, in 1901. THE MORTON MEMORIAL LABORATORY OF CHEMISTRY, the funds for which were provided by President Morton and the Alumni, was dedicated to the memory of President Henry Morton in 1906. RECITATION HALL, formerly occupied by a preparatory school, was adapted to college use in 1917 and now is used by the departments of Humanities, Economics of Engineering, Mathematics, and Mechanics. THE NAVY BUILDING, erected by the United States Government during the World War for the U. S. Navy Steam Engineering School, and since purchased by the college, has been reconstructed to provide quarters for the departments of Electrical and Civil Engineering, the Alumni Association, the college book store and the college MUSEUM.

THE LIBRARY BUILDING also was a war-time structure and has been materially modified to accommodate a collection, in great part technical, of approximately twenty-four thousand volumes. The Lieb Memorial Rooms are an exhibition room and two research rooms in which are kept and exhibited the Leonardo da Vinci library assembled by John W. Lieb, '80, and presented to the college by Samuel Insull, an historical collection of Stevens papers presented or loaned to the college by members of the Stevens family, and the Frederick W. Taylor collection. The Vinciana collection,

about two thousand four hundred items, includes a complete set of the Leonardo manuscripts in facsimile together with most of the works on Leonardo in English, French, German, or Italian. The Stevens papers include some four thousand items, original documents, correspondence, deeds and maps. The Taylor collection, assembled for a memorial exhibition on December 7, 1933, has been presented to the College by Mrs. Taylor as a library of reference on the life, work, and international influence of Frederick W. Taylor, '83, originator of the theories and methods of industrial operation generally known as scientific management.

Two athletic fields, one with a quarter mile track, and nine tennis courts, are within the boundaries of the campus and convenient to the laboratories and recitation buildings. THE WILLIAM HALL WALKER GYMNASIUM, named for the donor, dedicated in 1916, stands just within the Green Gate at the southern entrance to the Castle Point grounds. The building contains a sixty foot swimming pool, two squash courts and other usual facilities.

Lawns that extend to the brow of the cliff surround CASTLE STEVENS, erected in 1861 by Edwin A. Stevens, the founder of the college. This residence was opened to college use in 1911 as a social center and a dormitory. In it are dining halls for students and faculty.

HOXIE HOUSE, built in 1929, on the northern slope of Castle Point, bears the name of the late William D. Hoxie, alumnus and trustee of the College; it is the residence of the President.

STEVENS ENGINEERING CAMP

Approximately sixty miles from the college campus, near Blairstown, in Warren County, New Jersey, not far from the Delaware Water Gap and lying between the Kittatinny Range and the Jenny Jump Mountains, is located the three hundred and seventy-five acre tract of land acquired in 1929 as the site of the summer camp in civil engineering. Within

this area is a natural lake of thirty acres on the shores of which the college camp has been erected. The students and faculty are housed in cabins scattered through the woods; one of these, occupied by the camp executive, is Boucher Cabin. The largest buildings are the mess hall, facing the lake, and the William H. Bristol Building in which are drafting-rooms and classrooms. All buildings are lighted electrically. There are two athletic fields, Geyer Field and Wall Field. The camp has its own water supply and waste disposal systems. The natural setting is such as to favor not only practical study of civil engineering but also all forms of out-of-door life and recreation. At the close of the academic year at Castle Point, the entire Freshman Class goes to camp for a six weeks' course of instruction in surveying (see page 67).

CAMP SESSION FOR PREPARATORY SCHOOL BOYS

Fourth Annual Session: August 18 to August 31, 1935

One of the important decisions of a boy's life is the choice of the kind of college most suitable for him. For one boy, a liberal arts college may offer the greatest opportunity for the development of his abilities; for another, an engineering college opens the natural way to satisfying life interests and work; and for a third, the wise choice may be that of a university in which as his interests develop he may move in one direction or the other without too great loss of time. At a time when the sciences are taking a new place in cultural life and men possessed of engineering knowledge are occupying in increasing numbers commanding positions in business and public life, it is important that the keener young men in the preparatory schools should consider engineering training.

To help boys to make their choice intelligently, not between particular colleges but between the different types of college, Stevens Institute of Technology invites boys of

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preparatory school age to spend two summer weeks at Camp Stevens. This experiment in vocational or collegiate guidance was first tried in the summer of 1931 and repeated each year since, with an enrollment yearly of about forty boys. They are given an introduction to engineering through lectures by men experienced in the various branches and through elementary field work each day in one branch of engineering, surveying, under the direction of Professor David L. Snader and a group of squad leaders. A special set of aptitude and psychological tests, designed to discover each boy's characteristic interests and abilities, are given by Professor Johnson O'Connor and Dr. Walter Van Dyke Bingham. The results of all these studies are later discussed with the boys and their parents.

The visiting lecturers at the camp session of 1934 were Dr. Charles T. Breed, Headmaster of Blair Academy; Walter A. Jenssen, Deputy Administrator, National Recovery Administration; Dr. Clarence F. Hirshfeld, Director of Research, Detroit Edison Company; Joseph W. Barker, Dean of the School of Engineering, Columbia University; Robert Ridgway, Consulting Engineer to the N. Y. Port Authority; Dr. Lawrence V. Redman, Vice-President in charge of research, Bakelite Corporation; Dr. H. Foster Bain, Secretary of the American Institute of Mining and Metallurgical Engineers; William A. Batt, President of the SKF Industries, Inc.; Robert C. Post, Vice-President of Post and McCord; Stephen F. Voorhees, of Voorhees, Gmelin and Walker; Dr. Roy V. Wright, Editor of *Railway Age*; Conrad N. Lauer, President of the Philadelphia Gas Company; Dr. Irving Langmuir, Assistant Director of the Research Laboratory, General Electric Company; Dr. Bruce M. Bigelow, Director of Admissions, Brown University; R. Farwell Gagg, Experimental Engineer, Wright Aeronautical Corporation; Dexter S. Kimball, Dean of the College of Engineering, Cornell University; President Harvey N. Davis and Dean Franklin De R. Furman of the College.

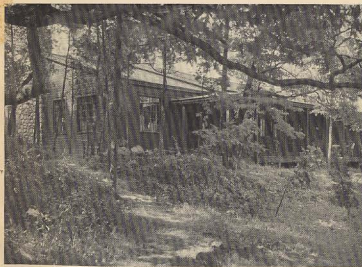
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THE LAKE



A STUDENT CABIN



CAMP MESS HALL

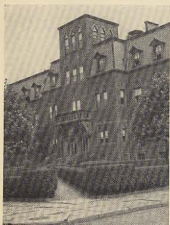
AT THE ENGINEERING CAMP



THE SIXTH STREET GATE



ON CASTLE POINT



ADMINISTRATION BUILDING



GYMNASIUM

ON THE CAMPUS AT CASTLE POINT

ADMISSION TO THE FRESHMAN CLASS

THE essential requirement for admission to the Freshman Class is evidence that the candidate has received a thorough preparatory training. On the basis of all information available, the applicant will be either admitted, or rejected with permission to apply again. The decision of the Committee on Matriculation is final. Preference will be given to those with superior records and credentials rather than to those with mere priority of application.

Applications for Admission. All applications for admission to the Freshman Class must be made in writing upon printed forms which will be provided by the Registrar on request, or found inside the rear cover of this catalog.

Application Fee. Each formal application must be accompanied by an application fee of \$5.00. This fee is not refunded.

Time of Admission. Students are admitted to the Freshman Class at the beginning of the scholastic year in September, and at the beginning of the second term in February.

Requirements for Admission. A candidate for admission to the Freshman Class must present evidence that he is a competent student and has satisfactorily completed an approved secondary school course which has stressed science and mathematics.

Personal Interview. Each candidate for admission is required to appear before a representative of the College for a personal interview. Whenever necessary, arrangements will be made so that the applicants will not have to make a special trip of considerable length to the College for this interview.

Students considering Stevens Institute of Technology are

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invited to visit the Registrar's Office or consult him by mail at an early date for the purpose of being advised regarding the best possible preparation for the course at the College.

High School Record. The applicant should request the Principal of the school he has attended to mail directly to Stevens Institute of Technology on blanks supplied by the Registrar, a complete record of the applicant's work in all subjects during his preparatory course which should ordinarily extend over a period of at least four years.

An applicant who has attended more than one school should arrange to have properly filled out blanks filed from each school for the courses completed in that school.

Examinations. No entrance examinations are given by the College or required for admission.

College Entrance Examination Board. A certificate of College Entrance Examination Board grades may be offered for any or all of the subjects submitted for entrance. Applications for examination must be addressed to the College Entrance Examination Board, 431 West 117th Street, New York, N.Y.

Regents. New York State Regent certificates may also be offered, provided that certified copies are mailed directly to the College by the Regents.

ENROLLMENT

All applicants who are notified, on or before September 7, 1935, that they are qualified for admission must enroll either:

- (a) by mail on cards which will be supplied by the Registrar on application and which must be received by him properly filled out not later than 5 p.m. on September 13, 1935, or
- (b) in person in the Registrar's Office any time before 5 p.m. on September 13, 1935.

ADMISSION

FEE PAYABLE BEFORE ADMISSION

Application Fee. An application fee of \$5.00 must be paid at the time the candidate files his application for admission. This fee is not refunded. (See Application for Admission, inside back cover.)

ORIENTATION WEEK

All newly admitted Freshmen should present themselves at the College on the morning of Monday, September 16, 1935, at 9 o'clock, at which time the President and the Dean will address them in the Auditorium. At this time the full program for Orientation Week will be announced. Attendance will be expected for seven hours per day (not including the lunch hour) through Friday, September 20, and for four hours on Saturday, September 21.

The program of the week will include a number of lectures by members of the Faculty and others, on the meaning and scope of engineering and on the opportunities offered at Stevens Institute of Technology. A large part of the available time will, however, be devoted to thorough drill in the technique of drafting so that the regular work in that department may be begun promptly and effectively on the first day of the regular term. Each student is expected to provide his own drawing instruments and implements as prescribed by the Department of Machine Design.

SUMMARY OF REGULATIONS FOR ENTERING STUDENTS

I. *Application Fee.* All applications for admission must be made in writing upon printed forms which will be provided by the Registrar on request, and each application must be accompanied by an application fee of \$5.00.

II. *Admission.* a. Applicants intending to enter on high school records must present their records on blanks which will be furnished by the Registrar to the Principals of high schools on their request. These blanks must be filled out by the Principals and sent directly by them to the Registrar.

b. Applicants intending to enter by examinations of the College Entrance Examination Board should present a certificate of College Entrance Board grades.

c. The credentials of applicants wishing to secure credit for examinations taken with the Regents of the University of the State of New York, should be filed with the Registrar of Stevens Institute of Technology on or before August 15. These credentials must be mailed by the Regents directly to the Registrar.

III. *Enrollment.* All applicants, after receiving notice of their admission, are required to enroll either (a) by mail, on cards which will be supplied by the Registrar on application and which must be received by him, properly filled out, not later than 5 p.m. on September 13, 1935; or (b) in person, in the Registrar's office any time before 5 p.m. on September 13, 1935. All applicants enrolling after September 13, 1935, will be required to pay a fee of \$5.00.

IV. *Orientation Week.* All newly admitted Freshmen are required to report on Monday, September 16, 1935, at 9 a.m.

ADMISSION TO THE FRESHMAN CLASS

IN FEBRUARY

Able students, graduating from a public high or other preparatory school in the middle of the year, who are desirous of completing a college course and getting started on their careers at the earliest possible time may apply for admission to College with a special section of Freshmen at the mid-year. Such students by working at a slightly more severe pace than others during their first three semesters of residence, and by making effective use of two summers, will find themselves in step with their class at the beginning of its Junior year, and may hope to graduate with the class that entered four months before them.

They will do a considerable part of the work of their first two years in the regular sections of their class, and will be at Camp with their classmates during their first summer. They will also be eligible to participate in the various extra-curricular activities of college life throughout the period of their connection with it.

Candidates wishing to enter in midwinter should make application in writing, preferably before January 15, and each application must be accompanied by an application fee of \$5.00. Terms of admission are similar to those set forth in the catalog for admission in September. Candidates, who are for any reason not accepted for midwinter admission, may ask to have their applications considered for admission in the following September without paying a second application fee.

The special curriculum for midwinter matriculates is given on page 64; for information on tuition and other fees, see page 41.

ADMISSION TO ADVANCED STANDING

All applications for admission to advanced standing must be made in writing on printed forms which will be provided by the Registrar upon request. Each application must be accompanied by an application fee of \$5.00. This fee is not refunded.

A student desiring to qualify for admission to advanced standing must present to the Registrar of Stevens Institute of Technology the following:

1. A certificate of honorable dismissal from the institution last attended;
2. An official transcript of his college record showing subjects taken, with the grade obtained in each subject and the year of the course in which it was taken;
3. A marked catalog showing courses referred to in the transcript of record.

The candidate's credentials must show that he has met the requirements for admission to Stevens Institute of Technology. (See page 25.)

Records of advanced standing for students desiring to enter in September, 1935, must be in the hands of the Registrar not later than September 7, 1935.

A personal interview with a representative of the College will be arranged for all applicants for transfer to Stevens Institute of Technology.

When a student applies for admission to advanced standing, the College reserves the right to have the applicant or his credentials examined by the Heads of the Departments who will be concerned in his admission if, in the opinion of the Committee on Matriculation, his record warrants such action.

GENERAL INFORMATION

ENROLLMENT

STUDENTS of all four classes are required to enroll before the beginning of each of the two Regular Terms and they may do so either by mail or in person. Enrollment by mail or in person should be on cards which will be supplied to the student on application to the Registrar. In either case the enrollment card, properly filled out, must be filed in the Registrar's office on or before the following dates:

At the beginning of the First Regular Term; Freshmen, September 13, 1935, upperclassmen, September 17, 1935.

At the beginning of the Second Regular Term, all classes, January 29, 1936.

Students who present themselves for enrollment after these times will be required to pay a fee of \$5.

Not until a student has filed his enrollment card and has paid the prescribed fees, including the tuition fee and the deposit for incidental expenses, will he be enrolled in his class.

TUITION FEES

The tuition fee is \$480 a year, payable in two installments, one of \$250 at the beginning of the first term, and one of \$230 at the beginning of the second term, each due on the appropriate enrollment date as indicated above.

A number of Endowment Participation Certificates will be issued, as described on pages 32 to 35, which will be accepted in lieu of cash in partial payment of one or both of the tuition installments of the year to which the certificates apply. The net tuition fee is, therefore, \$480 a year as a maximum, and \$380 a year as a minimum.

There are no extra fees for orientation week or for laboratory and shop courses.

GRADUATION FEE

A Graduation Fee of \$10 is required, at least ten days before the degree is to be conferred, of each candidate for a degree. The fee will be returned if the degree is not conferred.

Endowment Participation Certificates

The number and value of the Endowment Participation Certificates available to the class of 1939 and subsequent classes will be substantially as follows:

No. During Freshman Year	No. During Sophomore Year	No. During Junior Year	No. During Senior Year	Total Number	Each of the Value of
4	5	6	7	22	\$100
5	6	7	8	26	75
6	7	8	9	30	50
7	8	9	10	34	25
—	—	—	—	—	—
22	26	30	34	112	

It is not, however, guaranteed that the number and value of the Endowment Participation Certificates available in any year to members of a class will be exactly as indicated in the table above, if the relative standing of the men at the time of any allotment is such as to indicate, in the judgment of the President, that a different distribution of substantially the same total of face values among substantially the same number of students would be more equitable. In such a case, the decision of the President shall be final.

Members of the Classes of 1936, 1937, and 1938 will be awarded Endowment Participation Certificates for the academic year 1935-1936 on the basis of the table in the 1934-1935 Catalog, except that the face value of each certificate

will be smaller by 20 per cent than that table indicates, to correspond to the 20 per cent reduction in the tuition fee which is herein announced. In 1936-1937 and thereafter members of these classes will receive certificates in accordance with the table in this, the 1935-1936 Catalog, special arrangements being made with respect to any individuals who may seem to be suffering undue hardship under this arrangement.

The first allotment of Endowment Participation Certificates to the Class of 1939 will be made on or about the first day of the second term of the academic year 1935-1936. The allotment for the Sophomore, Junior, and Senior years will be made in the summer preceding each year.

An Endowment Participation Certificate will be honored with respect to its cash value, only in payment of tuition, and only in the amount (s) and as of the date (s) entered thereon, and only if the student named on its face is at the time in good and regular standing and without blemish as to Honor Board proceedings.* Otherwise, such a certificate is financially null and void. In dating the certificate issued to any student, the rule will be that not more than half of the face value may be applied to the tuition installment of the first term, and that \$25 units will not be subdivided.

Honor Points

Endowment Participation Certificates will be allotted on the basis of honor points earned during the preceding academic year, or, in the case of the first allotment to each class, during the preceding term. The right is reserved to change this procedure at any time if experience indicates that a change would be for the best interests of the College.

* "Honor Board proceedings" refers to the Honor System under which Stevens undergraduates enforce their own standards of honesty in tests and examinations.

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Honor points will be assigned for Grades as follows:

For each	A	B	C	D	E
For each term-hour, laboratory, etc.	3	2	1	0	-1
For each term-hour, classroom	6	4	2	0	-2
For each subject in supplementary term	15	10	5	0	-5
For a six weeks' camp	45	30	15	0	-15

Grades raised by repetition of a course in a Summer School, and grades received or activities undertaken while repeating any regular or supplementary term, will not entitle a student to additional honor points.

On this basis a "straight A" man would receive 330 honor points during his Freshman year (including camp), 300 honor points during each of his Sophomore and Junior years, and 270 honor points during his Senior year.

Honor points will also be assigned for such student honors as the various class offices, the Honor Board and Student Council, the honor societies, and positions of leadership in the fraternities.

Honor points will also be assigned for participation in such non-athletic activities as the undergraduate engineering societies, the undergraduate publications, the undergraduate press club and the dramatic society.

Honor points will also be assigned for participation in the various athletic activities of the College, including not only the intercollegiate sports, but also the various intramural sports.

And finally, honor points will be assigned for earning money for self-support during the college year, on jobs approved *in advance* for this rating by the Dean.

A detailed list of the honor points that may be earned in each of these ways will be published in the Student Handbook. The right is reserved to add items to, or remove items from the list, or to change the ratings of the various items

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listed, whenever experience may indicate that such a change would be for the best interests of the College.

It is expected that the honor point list will be so rated that the leader of each class in extra-curricular activities (including self-support) will acquire, in each year, about one-fourth to one-third as many honor points for extra-curricular activities as would correspond to a "straight A."

Any questions that may arise in connection with the assignment of honor points shall be adjudicated by the Assistant Dean, and his decision shall be final. In particular, the Assistant Dean may decline to grant honor points to any student who, in his opinion, has not properly performed the duties pertaining to the honor or office in question.

TUITION REFUNDS

No portion of tuition fees paid will be refunded to a student withdrawing from college on account of misconduct, low scholarship, or for any other cause relating to the impairment of his scholastic standing. When a student in good standing is obliged to withdraw on account of illness or other unavoidable circumstances, an appropriate refund will be made.

EXPENSES

DEPOSIT FOR INCIDENTAL EXPENSES

Each student who is admitted is required to deposit \$60 on or before September 13, 1935, and thereafter to maintain this deposit as security for the payment of incidental expenses, such as for books, printed notes, stationery, shop supplies, gymnasium supplies and drawing instruments and materials which are sold to him through the College, and for breakage in the laboratories. This deposit will be credited in final settlement when the student graduates or leaves.

STEVENS INSTITUTE OF TECHNOLOGY

Bills will be rendered for the incidental expenses specified above and are payable as follows:

For supplies issued at the beginning of the First Term, on or before November 30.

Other incidental expenses of the First Term, and for supplies issued before February 10, on or before March 15.

Other incidental expenses of the Second and Supplementary Terms, on or before August 1.

The incidental expenses of each year of the course will be approximately as follows:

FRESHMAN YEAR	
First Term (not including drawing instruments)	\$48.00
Second and Supplementary Terms and Camp	48.00
SOPHOMORE YEAR	
First Term	\$21.00
Second and Supplementary Terms	32.00
JUNIOR YEAR	
First Term	\$40.00
Second and Supplementary Terms	35.00
SENIOR YEAR	
First Term	\$45.00
Second Term	25.00

Each student must also provide himself with a set of drawing instruments and implements according to specifications issued by the Department of Machine Design at or before the beginning of Orientation Week.

This means that the average annual expenses of each student for books, supplies, etc., will be about seventy-five dollars.

The student is advised not to make his purchases before entering, as arrangements have been made by which the best articles can be had at the College on advantageous terms.

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BOARD AND LODGING

Castle Stevens, located on Castle Point within the campus of Stevens Institute of Technology, and overlooking the Hudson River, was originally the residence of the Stevens family. It is now operated as a dormitory offering housing accommodations and dining-room facilities. Its common rooms include reception and recreation rooms and are available for meetings and social functions. Applications for rooms in the Castle should be addressed to the Manager of the Castle.

Each student desiring to reside in the Castle will present a lease signed by his parent or guardian on a form provided by the college. This lease gives the option of paying the annual charge for room rent and breakfasts in advance or one-half at the beginning of the rental period and one-half at the beginning of the Second Term. When the lessee elects to make payment in two installments, a bond of \$100 must be executed by the lessee and a responsible property owner.

The prices of the various rooms in the Castle are given in the table on page 40. These prices include breakfast on each day of the academic year.

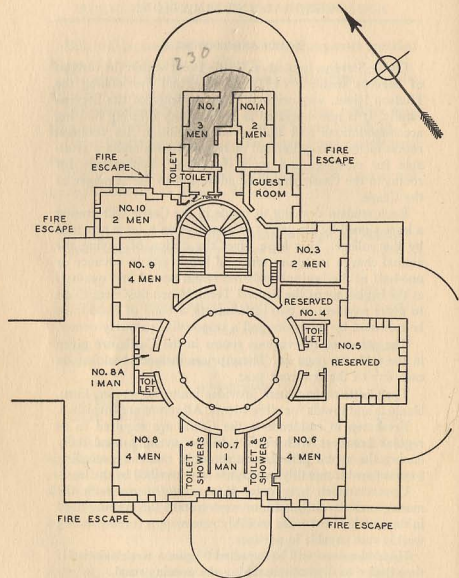
The Castle management provides janitorial service, linen, blankets and towels for all residents. All rooms are furnished.

Freshmen in residence in the Castle are required to be regular boarders with respect to the evening meal daily during the rental period, at a monthly rate not exceeding \$15.00 payable monthly in advance as prescribed by the lease.

Upperclassmen may enter into arrangements with the management by the month or week to take the evening meal in the Castle at the same monthly rate or at a corresponding weekly rate payable in advance.

Upperclassmen will be expected to give a week's notice if they desire to discontinue taking the evening meal.

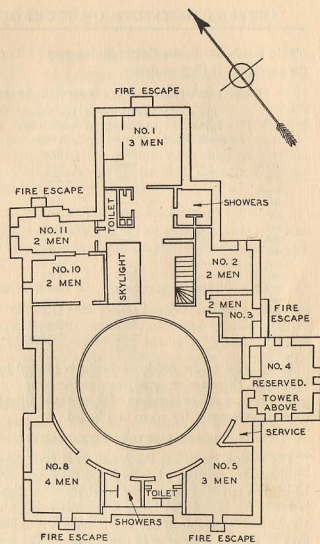
All students, whether residents of the Castle or not, may



SECOND FLOOR

FLOOR PLANS OF

CASTLE STEVENS



THIRD FLOOR

STEVENS INSTITUTE OF TECHNOLOGY

obtain luncheons in the Castle dining room a la carte or in the cafeteria, if they so desire.

COST PER YEAR OF ROOM AND BREAKFASTS

Room	For a Student Rooming Alone	Per student with two in room	Per student with three in room	Per student with four in room
201	—	\$280	\$230	—
201A	—	\$265	—	—
203	—	\$300	\$260	—
203A	—	\$270	—	—
206	—	—	\$300	\$260
207	\$320	\$260	—	—
208	—	—	\$300	\$260
208A	\$320	—	—	—
209	—	—	\$280	\$240
210	—	\$280	—	—
301	—	\$275	\$235	\$210
302	\$300	\$250	—	—
303	\$285	\$235	—	—
305	—	\$285	\$245	—
308	—	\$285	\$245	\$220
310	—	\$260	\$230	—
311	—	\$280	—	—

In addition to the residence facilities offered by the College itself, there are on or adjacent to the campus eleven fraternity houses where members of these fraternities have their own arrangements for room and board.

BOARD AND LODGING IN CAMP

The tuition fee of the Freshman year (see page 31) covers the cost of surveying instruction at the Engineering Camp, which is a required part of the curriculum. A charge of \$70 is made for board and lodging for the regular six-weeks' session and is payable in advance. Students who find it necessary to extend their stay in camp beyond the required six weeks to improve their grades or to complete work in surveying interrupted by attendance at summer school courses, will be charged \$2.00, for board and lodging, for each day in camp after the required session.

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SENIOR INSPECTION TRIP

In the fall of the year the entire Senior Class devotes one week to a tour of inspection of manufacturing plants in the eastern states. The program is carefully chosen to give the students a view of a wide range of industrial activities and industrial centers. A charge will be made to cover each student's expenses on this trip; of late years this cost has been about \$60. This charge will be due with the tuition for the first term of the Senior year.

STUDENT COUNCIL BLANKET TAX

A blanket tax for the support of undergraduate activities is payable annually with the tuition fee of the first term (see page 48).

FEES PAYABLE BY MIDWINTER MATRICULATES

Tuition and other fees will be due and payable at the same times and in the same amounts as by other members of the class with which midwinter matriculates will graduate except for the first term of such a student's course the tuition installment payable is \$250. In particular, each student will be expected to make at the time he enrolls, and thereafter maintain, the usual deposit of \$60 as security for the payment of incidental expenses, such as for books, printed notes, stationery, shop supplies, gymnasium supplies, and drawing instruments and materials, which are sold to him through the College, and for breakage in the laboratories. This deposit will be credited in final settlement when the student graduates or leaves. He will pay the usual Summer School fees in both summers and the usual charge for board and lodging at the Engineering Camp (see page 40). During the Sophomore year he will pay the same fees as his regular classmates.

Midwinter matriculates will be eligible to compete, under suitable conditions, with their regular classmates, during their Sophomore and Junior years, for the Endowment Par-

ticipation Certificates allotted to their class at the ends of those years. A special group of Endowment Participation Certificates, in number about one-seventh as many as the midwinter matriculates enrolling, and of values ranging from \$25 to \$100, will be awarded at the beginning of the Sophomore year on the basis of the competitive standing of the group of midwinter matriculates considered by themselves. An appropriate fraction of the yearly Student Council blanket tax is assessed against Freshmen entering in January at the time of their first tuition payment.

STUDENT EMPLOYMENT

It should be borne in mind that students who engage in outside employment while they pursue their studies in the College will have difficulty in meeting satisfactorily the curriculum requirements. They should not, therefore, rely upon such means to meet any considerable part of their college expenses.

For information in regard to the opportunities for employment that may occur the student should apply to the Dean.

ACADEMIC ROUTINE AND REGULATIONS

Attendance. Regular attendance at all classes, laboratory, drafting, shop, and physical education periods and other scheduled activities, is expected of each student.

Standing. Each set of grades—intraterm, final, supplementary term, camp, and summer school—of each student will be transmitted by the Registrar to the parent or guardian.

Standing is expressed according to proficiency, in grades A, B, C, D, E. Grade A denotes high distinction; grade B, distinction; grade C, satisfactory; grade D, unsatisfactory, giving credits for hours but not for points toward promotion or graduation; and grade E, failure. "Abs." indicates that the student was absent from an examination.

Requirements for Promotion and Graduation. For graduation a student *must obtain credit* for as many *hours* as are included in the curriculum (at present 400) and for an equal number of *points*. *Credit for hours* is given when the grade for a course is A, B, C, or D. No credit for hours is given with the grade of E and hence no student is eligible for graduation who has one or more E's standing on his record.

Credit points are obtained in accordance with the following schedule:

	For each A	B	C	D	E
For each term-hour, laboratory, etc	3	2	1	0	-1
For each term-hour, classroom	6	4	2	0	-2
For each subject in supplementary term	15	10	5	0	-5
For a six weeks' camp	45	30	15	0	-15

Grades raised by repetition of a course in summer school and grades received in repeating any regular or supplementary term will entitle a student to an appropriate revision of credit points for promotion or graduation.

To be eligible for promotion to *full standing* in the next higher class, a student must have acquired credit for a number of hours equal to the total number of assigned hours of the previous year or years and at least an equal number of points. A student will not be permitted to graduate with his class in June, or to continue with his class in September if he has obtained credit for a number of points for the preceding college year less than 84 per cent of the total number of assigned hours of that year. A student who is permitted to continue with his class on less than a C average for the year is advanced *conditionally* and must improve his record in succeeding years to at least a C record for the entire course if he is to graduate with his class.

Academic Status. Any unusual academic status of a student will be noted on the records and final term reports in one

or more of the following terms: Dean's List (see page 82); Warned; Very Unsatisfactory; Probation; Probation Closed; Not Permitted to Continue with His Class; Permitted to Repeat; Required to Withdraw; Expelled.

STUDENT LIFE AND ACTIVITIES

Under the sliding-scale tuition plan, honor points are awarded for extra-curricular activities as well as for college grades. These activities afford a measure of the initiative, perseverance, and leadership possessed by the student and, to some extent, furnish him with means of self-development outside of the classroom. The student is encouraged to participate in a reasonable number of the recognized extra-curricular activities, and his participation is sufficiently controlled by the Faculty Committee on Student Activities through its Chairman, the Dean of the College, to prevent an impairment of his success in his studies. The head of each student organization is required to submit to the Dean's Office for approval the names of all students who desire to engage in the activities of that organization.

Student life in the College is organized for self-government. Four student boards assume responsibility for the major activities:

The Honor Board, founded in 1906, is charged with the administration of the Honor System under which the student body assumes responsibility for honest conduct in examinations, tests, and the execution of pledged work. The Honor Board conducts an investigation of each case reported to it and, if the accused is found guilty by a student jury, affixes the penalty subject to approval by the President of the College.

The Student Council, founded in 1912, exercises general supervision over student activities, enforcing rules established by the Council or the Faculty. It is composed of repre-

sentatives of the several classes, of the Honor Board and of other student organizations, boards and teams.

The Athletic Council has authority over matters related to the conduct of the various athletic activities, intercollegiate and intramural. It approves schedules of games, confirms the election of captains, selects the student managers of teams, and awards athletic honors and insignia.

The Interfraternity Council has supervision of rushing, pledging and interfraternity relationships. It is composed of two delegates from each of the fraternities recognized by the National Interfraternity Conference. The council is an instrument for the development of cooperation between its members and the College.

The undergraduate publications consist of *The Stute*, a weekly newspaper, and *The Link*, the college year-book issued by the Junior Class. *The Stevens Handbook*, issued by the Student Council, offers members of the entering class information on academic regulations and student activities.

The Undergraduate Press Club is composed of student correspondents of metropolitan newspapers. There is a Stevens Chapter of the national journalistic society of *Pi Delta Epsilon*.

The Stevens Dramatic Society, operating in conjunction with the members of an elective course in Play Production, presents several public performances each year. The Dramatic Society maintains an undergraduate *Orchestra*.

Membership in the *Stevens Engineering Society* carries with it eligibility for membership in a student branch of either the American Society of Mechanical Engineers (since 1908) or the American Institute of Electrical Engineers (since 1925). The program of the society calls for papers on technical subjects presented by students, addresses by men eminent in the engineering profession, and tours of inspection to industrial plants.

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A chapter of *Tau Beta Pi*, the national honorary society of engineering colleges, is maintained at Stevens.

The residents in Castle Stevens constitute the *Castle Stevens Club*. This organization provides for a measure of self-government in the Castle and undertakes certain social activities.

STUDENT COUNCIL BLANKET TAX

A blanket tax to cover the cost of various student activities, as agreed upon from time to time with the student council, is payable annually with the tuition of the first term. The tax for 1935-1936 will not exceed \$15. It brings to the student season tickets for inter-collegiate home games, gymnasium privileges for intramural games, the two undergraduate publications, *The Stute* and *The Link*, and such other privileges as may, from time to time, be agreed upon; the tax also includes an allowance for class dues previously assessed annually by the four undergraduate classes.

SCHOLARSHIPS

GRANTS of financial aid to students are made through scholarships, both endowed and unendowed, and by loans. These forms of assistance are ordinarily not awarded to entering Freshmen. Preference may be expected to be given to those whose merits have been proved by at least one term in college.

Scholarships endowed to offer aid to students bear the names of their donors or such other titles as may be prescribed by the donors. The Trustees recognize this form of benefaction as notably useful to the college, making possible the education of properly qualified young men who, without aid, could not complete the college course. Such endowed scholarships are permanently useful memorials. The capital is conserved and only the income applied in annual scholarship grants to students.

The capital resources of the college specifically for scholarship purposes amount to approximately \$230,000, yielding about \$12,000 annually for scholarship grants. During the academic year 1933-1934 sixty-two selected students received grants from these funds.

The Faculty Committee on Scholarships and Student Aid nominates to the President the recipients of scholarships. Unless otherwise specified hereafter, applications should be presented to the Chairman of the Committee not later than the first week in January and in June. To secure and retain a scholarship the student must present evidence of satisfactory academic standing and must conform to the rules and regulations of the college. Awards, with such exceptions as are mentioned hereafter, are made for not more than one year. The Committee also supervises the appointments to

unendowed scholarships and directs the use of the loan funds.

The endowed scholarships and loan funds of the college are separate from and independent of abatements of tuition under the sliding-scale tuition plan.

A list of scholarships is presented below, setting forth the terms of foundation and award of each:

ENDOWED SCHOLARSHIPS

Alumni Memorial Scholarships. The Alumni of Stevens Institute of Technology have endowed by gifts amounting to \$40,000 four scholarships in memory of the men of Stevens who died in service during the World War. These scholarships are awarded on the authority of the President, subject to the approval of the Executive Committee of the Alumni Association. The Alumni Scholarships are:

The First Alumni Memorial Scholarship, endowed by E. E. Hinkle, Stevens '90, established by the Trustees in 1919.

The Second Alumni Memorial Scholarship, endowed by W. D. Hoxie, Stevens '89, in memory of S. S. Wilcox, established by the Trustees in 1920.

The Third Alumni Memorial Scholarship, endowed by John Aspinwall, Stevens '81, in memory of his father, John Lloyd Aspinwall, established by the Trustees in 1920.

The Fourth Alumni Memorial Scholarship, the endowment for which was subscribed by alumni of the college, F. A. Muschenheim '91, Edwin S. Lorsch '91, and Robert Boettger '98, established by the Trustees in 1920.

The American Railway Master Mechanics' Association Scholarships. In 1891, a fund of \$8,000 was entrusted to the College by the Association as perpetual endowment of scholarships to be awarded to sons of members or honorary members of the Association in good standing, or the sons of deceased members who at the time of their death were in good

standing in the Association. The income was at first applied to the maintenance of four scholarships, but, by action of the General Committee of the Mechanical Division of the Association in 1927, the number of scholarships was reduced. For conditions of award see page 55.

Candidates for the scholarships should apply to the Secretary of the American Railway Association, Mechanical Division, 431 South Dearborn Street, Chicago, Illinois. When there are more applicants for these scholarships than there are vacancies, selection will be made by competitive examination.

The Edgar B. Bacon Scholarships. Under the will of Edgar B. Bacon of Jersey City, New Jersey, who died September 26, 1928, the college received a bequest of \$30,000 to found two or more scholarships to be known as the Edgar B. Bacon Scholarships which shall be open to competition to students residing in Jersey City, New Jersey. For conditions of award see page 54.

The William R. Beal Scholarship. In 1913, the family of William R. Beal by the gift of \$5,000 endowed a scholarship in his memory, to be known by his name.

The Henry W. Boettger, III, Scholarship. In 1924, Robert Boettger, Stevens '98, by the gift of \$15,000 endowed a scholarship in memory of his son, Henry W. Boettger, III. The income from this endowment provides a stipend for the scholar, and returns to the general funds of the college a considerable portion of the expenses of his education not covered by the tuition fee. The scholarship is awarded by competition for which graduates of the High Schools and the Saunders Trade School of Yonkers are eligible (see page 54). It is tenable through four years if the scholar maintains satisfactory standing. In years when the scholarship is vacant the income of the fund is applied as the President may direct.

The Isabella Grant Cawley Scholarship. In 1919, John Cawley endowed by a gift of \$6,000 a scholarship in memory of his wife, Isabella Grant Cawley. The scholarship is limited to residents of New Jersey.

The Howard Marsh Chandler Scholarship. In 1919, Mrs. Lucretia D. Chandler endowed, by the gift of \$7,000, a scholarship in memory of her son, Howard Marsh Chandler, Stevens '09, who died in 1911.

The Haversack Scholarship. An endowment of \$4,000 was established in 1920 by the New Jersey Federation of Women's Clubs in tribute to the Army Engineers and for the benefit of New Jersey veterans of the World War or their kin. When no candidates eligible under these terms make application, the income of the fund is expended in scholarship grants to other residents of the State.

The Harold and Crombie Humphreys Scholarships. These two scholarships, endowed by President Alexander Crombie Humphreys, in 1902 and 1904, by gifts of \$5,000 for each, received in 1928 additional endowments of \$10,000 each under the terms of Dr. Humphreys' will. His purpose in making additional endowment was to relieve the college of the total cost per annum per student not covered by the tuition fee. The scholarships are in memory of his two sons.

The John Osborne Palmer Memorial Scholarship. In memory of her son, John Osborne Palmer, a member of the Class of 1919, in his Senior year at the time of his death, Mrs. Herbert S. Palmer established an endowment of \$10,000 the income from which is to be used in assisting students in financial need. The donor expressed the wish that students receiving aid from this fund will reimburse the fund after graduation.

The Stephen Squires Palmer Scholarship. The New Jersey Zinc Company by the gift of \$15,000 in 1924 established a scholarship in memory of Stephen Squires Palmer, former

President of the Company and a trustee of the College. This fund is without restriction, except such as may be defined by the College, as to the number or amount of awards or the qualifications of candidates.

The Henry R. Rea Scholarship. Mrs. Henry R. Rea by the gift of \$15,000 in 1924 endowed a scholarship in memory of her husband, Henry R. Rea, Stevens '84. The scholarship provides free tuition for a student nominated by Mrs. Rea. When the nomination is not made by her, preference is given to candidates from Western Pennsylvania.

The Radio Scholarship. Willis H. Taylor, Jr., Stevens '16, by the gift of \$5,000 endowed a scholarship to be known as the Radio Scholarship for the benefit of students particularly interested in the development of radio engineering. The income of the fund is awarded annually, but preferably to the same scholar from year to year until he shall have completed his college course. The recipient is expected to continue his interest in radio engineering during his college course and to fit himself for work in that field.

The Richard H. Rice Scholarship. In 1924, the General Electric Company established an endowment of \$30,000 for scholarships named in memory of Richard H. Rice, Stevens '85, an engineer of the company in charge of the Lynn Plant. The scholars are selected by the General Electric Company from the sons of men connected with the company, particularly with the manufacturing and engineering departments. Such part of the fund as is not needed for the maintenance of the scholarships is allocated to the general fund of the College. For the conditions of award see page 54.

The St. Andrew's Scholarship. In 1920, Walter Scott of New York endowed by the gift of \$5,000 a scholarship to be known as the St. Andrew's Scholarship for the benefit of young men who may be able to meet the requirements of the College but are unable to meet the expenses of a college edu-

cation. The award is made annually, but preferably to the same student from year to year until he has completed his college course.

The Edwin L. Wiles Scholarship. In 1926, Miss Rhoda A. Wiles and Miss Margaret R. Wiles by the gift of \$10,000 endowed this scholarship, known by the name of their brother, Edwin L. Wiles, Stevens '76, in commemoration of the fiftieth anniversary of his graduation.

CURRENT UNENDOWED SCHOLARSHIPS

German-American Exchange Scholarship. One scholarship covering tuition, room and board is awarded annually to a German student nominated by the Institute of International Education for undergraduate study at Stevens Institute of Technology. In exchange, a student nominated by the College is awarded a scholarship providing tuition, room, and board, for graduate study of engineering in Germany. This exchange was instituted in 1929 through the interest of Prince Henry XXXIII of Reuss, and six appointments have since been made on each side.

The Conrad N. Lauer Scholarships. In view of the prevailing economic condition of the country, Conrad N. Lauer gave to the College since 1931 \$2,000 for the benefit of especially meritorious freshmen who might not otherwise have been able to attend college. The gifts were apportioned among five such members of the Class of 1935, three members of the Class of 1936 and three members of the Class of 1938.

The Howard L. Ingersoll Scholarship. Howard L. Ingersoll has given to the College the sum of \$2,400 to be awarded to a student from the State of Massachusetts. It has been awarded to a member of the Class of 1935.

The Henry Kohl Scholarship. In 1933 Henry Kohl made

provision, through the Alumni Fund of that year, for a scholarship tenable through four years, to be awarded to a graduate of a Jersey City high school. The scholarship is held by a member of the Class of 1937.

The Henry Morton Graduate Scholarship. The Trustees of Stevens Institute of Technology offer a graduate scholarship of the value of \$500 to cover full tuition, in honor of Dr. Henry Morton, the first President of the College. This scholarship is open to a graduate of an engineering college other than Stevens Institute of Technology.

Unendowed Graduate Scholarships. For the assistance of notably qualified graduate students there are made available each year a number of unendowed graduate scholarships ranging in value from \$100 to one half of the fee for graduate tuition.

SPECIAL SCHOLARSHIPS FOR FRESHMEN

Certain special scholarships, hereinafter named, are administered under a plan devised to make them especially adapted to the conditions set up by the sliding-scale of tuition. These special scholarships are available for Freshmen and are the only scholarships ordinarily awarded to Freshmen.

The sum of money mentioned in connection with each Special Scholarship listed below will be set aside at the beginning of his four-year course for the benefit of the scholar appointed, and he will be expected to make it last through as much of his four-year course as he can. He may use \$200 of it in part payment of the \$250 tuition installment due at the beginning of his Freshman year; the remaining \$50 of that first tuition installment is to be paid by the scholar as his stake in his own future.

The balance of each scholar's allotment may be drawn upon by him at any time for the purpose of paying a part or

the whole of any *net* tuition installment due under the sliding-scale plan, except that not more than one-third of the total value may be so used in any one academic year.

If the scholar for any reason severs his connection with Stevens Institute of Technology before completing his four-year course, his beneficiary interest in any unexpended portion of the original allotment to him ceases.

Appointments to the scholarships are controlled, with such modifications as may be indicated below, by the Faculty Committee on Matriculation.

The Edgar B. Bacon Scholarships. These scholarships, endowed by the bequest of Edgar B. Bacon of Jersey City, N.J., (see page 49) are awarded by the President, upon nomination by the Faculty Committee on Matriculation, to students residing in Jersey City. The full high school records, with endorsements as to the character and ability of the applicants from the principals and headmasters of the secondary schools will form the basis of award; but the College reserves the right to control the competition by the introduction of examinations as to knowledge of fundamental subjects or aptitude for engineering. One scholarship of the value of \$1,200 will be available for a Freshman entering college in the fall of 1935.

The Henry W. Boettger, III, Scholarship. In 1930, by arrangement with the donor of this scholarship described on page 49, a scholarship of the value of \$1,200 was awarded. Similar awards were made in 1932 and 1933; one will be available in 1935.

The Richard H. Rice Scholarship. In 1931, by arrangement with the donor of this scholarship described on page 51, a special scholarship of the value of \$1,500 was awarded. One scholarship of the value of \$1,200 will be available for a Freshman entering college in the fall of 1935.

American Railway Master Mechanics' Association. There being some accumulated unexpended income of the scholar-

ship endowment provided by the American Railway Master Mechanics' Association (see page 49) the College and the Association join in offering a special scholarship of the value of \$1,200. The scholarship available for 1935-1936, has been awarded. Only a son of a member or honorary member of the Association in good standing, or the son of a deceased member who died in good standing, is eligible for this scholarship. The Association will present nominations for the scholarship and application should be made to the Secretary of the American Railway Association, Mechanical Division, 431 South Dearborn Street, Chicago, Illinois.

The Hoboken High School Scholarships. Since 1873, the College has offered three scholarships each year to graduates of the Public High School of Hoboken as rewards of merit to students in the public schools. Candidates for these scholarships must meet the usual requirements for admission and will hold the scholarships only so long as they continue in good standing. These scholarships are not cumulative. If, however, in any year not all the scholarships are filled, the vacancies may be filled the following year by students selected similarly from among graduates of the other public high schools of Hudson County. When the number of applicants exceeds the number of scholarships available, the competition will be determined on the basis of the four years' preparatory school work of the candidates. To be eligible for a scholarship, a candidate must have received regular instruction for at least two years in the school from which he enters. Papers in application for a scholarship must be filed with the Registrar not later than July 1. Three scholarships of the value of \$1,500 will be available for Freshmen entering college in the fall of 1935; three scholarships of the value of \$1,200 will be available for students entering college in the fall of 1936.

The Stevens Hoboken Academy Scholarships. Two scholarships each year are offered in reward of merit to graduates

of the Stevens Hoboken Academy. The requirements and terms of appointment are in general similar to those of the Hoboken High School Scholarships. One scholarship of the value of \$1,500 and one of the value of \$800 will be available for Freshmen entering college in the fall of 1935; one of the value of \$1,200 and one of the value of \$600 will be available for Freshmen entering college in the fall of 1936.

Regional Scholarships. Five regional scholarships were offered through the Committee on Matriculation to students entering college in midwinter, 1934-1935: the New York City Scholarship, the New York State Scholarship, and the Northern New Jersey Scholarship, of a value of \$1,200 each; the New England Scholarship and the Middle Atlantic Area Scholarship, of a value of \$1,500 each. Students residing in the designated regions or attending schools in those regions are eligible for the scholarships. Not more than one-third of the value of a regional scholarship may be used in any one year. There were, in addition, a number of scholarships of less stipend, \$100 to \$300, to be awarded on the basis of the competition for the five regional scholarships.

Similar regional scholarships in limited number will be awarded to students entering college in September, 1935.

LOAN FUNDS

The Vreeland Trust Fund. The will of Dr. Jacob Vreeland of Poughkeepsie, New York, created in 1888 a trust fund, in the charge of the Trustees of the college, the income of which is "used to assist indigent and deserving young men to acquire a liberal education at Stevens Institute of Technology." The terms of the bequest prescribed that a student receiving assistance from this fund must have given his promissory note, satisfactorily endorsed, for the specific amount borrowed. A note under the Vreeland Loan Fund is drawn to bear interest, payable semi-annually at 4 per cent,

from October 1 of the year in which the student, pursuing the course without interruption, would graduate. The principal sum of the loan is payable in semi-annual installments of \$50 in the first year after graduation and in semi-annual installments of \$100 in each succeeding year until the whole of the principal is paid. Should a student who has borrowed from the Vreeland Loan Fund withdraw from college before graduation, the due dates of payments of interest and principal will be correspondingly advanced. Payments of principal and interest are returned to the permanent fund; consequently the original bequest of \$11,500 has in the course of years increased to a present fund of \$50,000.

The fund will be used to assist only such students as maintain a satisfactory record in scholarship and conduct. Applications for Vreeland loans should be made to the Chairman of the Faculty Committee on Scholarships and Student Aid.

Alumni Beneficiary Loan Fund. Subject to the same rules and restrictions as those prescribed for the Vreeland Loan Fund, loans to students and to alumni for graduate study may be made from a fund, now \$3,300, entrusted to the college by the Alumni Association. This fund, serving a purpose similar to that of the Vreeland Loan Fund, antedates the Vreeland Fund by more than a decade.

Senior Inspection Trip Fund. This fund, now \$420, was given by the Class of 1919. The entire fund may be employed in any year to aid deserving students who would not otherwise be able to take the Senior Inspection Trip. Beneficiaries obligate themselves to repay the amount of their loans within one year with interest at 4 per cent.

John Stevens Aid. In consideration of the large number of applications for scholarship grants and Vreeland loans in 1933, there was introduced an additional, temporary plan, John Stevens Aid, to assist students of good standing who might otherwise have been compelled to withdraw from col-

lege. Students selected for John Stevens Aid obligated themselves to render clerical and other services assigned to them by the Dean. Under the Federal Emergency Relief Administration after February 1934 certain funds controlled by similar regulations were administered by the College through the office of the Dean.

PRIZES

The Priestley Prize. The Priestley Prize was established in 1877 by Dr. Henry Morton, Dr. A. R. Leeds, Mr. S. B. Dod, Mr. W. W. Shippen, and Mrs. Martha B. Stevens in honor of the discoverer of oxygen.

This prize of \$25 is awarded annually to the student of the Junior Class who has most distinguished himself in the Department of Chemistry in the Freshman, Sophomore, and Junior years.

In 1934 the prize was awarded to John Boustead of the Class of 1935. Honorable Mention was given to Harold David Peterson, Jr., and Edgar Ewart Wrege of the Class of 1935.

The William A. Macy Prize. Only students who are graduates of the preparatory schools of Hoboken and who have attended these schools at least two years can compete for this prize. It is awarded to that student, entering from one of these schools, who has the best standing for the first two years of the course, provided this standing is satisfactory.

In 1934 this prize of \$25 was awarded to Alvin Conrad Scholp of the Class of 1936. Honorable Mention was given to Eugene Bernard Hauser of the Class of 1936.

The Alfred Marshall Mayer Prizes in Physics. The Alfred Marshall Mayer Prizes in Physics were established in 1916 by Mr. John Aspinwall, Stevens '81.

Two prizes, one of \$30 and one of \$20, are awarded annually to the two members of the Sophomore Class who rank first and second in the lecture, recitation, and laboratory

courses in physics of the Freshman and Sophomore years.

In 1934 the first prize was awarded to Edward William Bunke of the Class of 1936, and the second prize to Harry Weston Phair of the Class of 1936. Honorable Mention was given to Herbert Paul Culp, Foster Arvid Olsen, and Frederick R. Weaver of the Class of 1936.

The Homer Ransom Higley Prize. This prize was established in 1921 by Tau Beta Pi in memory of Homer Ransom Higley, Assistant Professor of Mathematics at Stevens. A gold medal is awarded annually to that member of the Sophomore Class who has established the highest average in mathematics for the Freshman and Sophomore years.

In 1934 the award was made to Edward William Bunke of the Class of 1936. Honorable Mention was given to Herbert Paul Culp of the Class of 1936.

The Frank Louis Sevenoak Prizes. In honor of Dr. Frank L. Sevenoak, Professor Emeritus of English and History, prizes of a total value of \$80, given annually between 1929 and 1934 by an anonymous donor, were awarded to the laboratory group of seniors presenting the best report in Mechanical Engineering. In 1934, the laboratory group receiving the award was composed of Charles Joseph Burch, Walfred Abrahamson, Jr., Edward R. Ardito, and Peter R. deBruyn of the Class of 1934. The prize will not be available after 1935.

Engineering Camp Trophies. Two trophies are awarded at the close of the Engineering Camp session for Freshmen. The Athletic Trophy, given by the Class of 1930, has inscribed on it the letter of the cabin whose teams have won the highest place in athletic contests, with the names of the individual students composing the teams of that cabin. The name of the best all-round camper, elected by the Camp executive, the head of the instructing staff, and the director of athletics, is inscribed on a plaque presented by Frank J. Misar of the Department of Physical Education. This award,

in 1934, was won by Herman Koester, Jr., of the Class of 1937.

Prizes for Camp Work in Civil Engineering. In 1934 prizes known as the Department of Civil Engineering prizes were awarded for the third time. These were awarded wholly on the basis of the highest quality of work done throughout the regular six weeks of camp instruction in Civil Engineering. The first prize of ten dollars was awarded to John Henry Andresen of the Class of 1937. The second prize of five dollars was awarded to Robert Z. Hague. Honorable Mention to Robert Alfred Halvorsen.

The Richard Stevens Tennis Trophy. The inscription on this cup reads: "In memory of Richard Stevens, a son of the founder of the Institute, an exponent and patron of lawn tennis and treasurer, U.S.L.T.A., 1898-1916, this trophy is presented to Stevens Institute of Technology by Elsie Stevens Stevens, his wife, and Caroline Stevens Condon, Dorothy Stevens Fleming and Richard Stevens, Jr., his children, to be awarded to the winner of an annual singles lawn tennis tournament in each of fifty years, open to the undergraduate students of the college." The cup, designed by Theodosius Stevens, was presented to the College on Commencement Day, 1932. The winner of the competition in 1934 was Louis John Marvinney of the Class of 1935.

THE COURSE OF INSTRUCTION

STEVENS Institute of Technology offers one unspecialized undergraduate curriculum leading, for historical reasons, to the degree of Mechanical Engineer (M.E.). Emphasis is, however, placed on the basic disciplines that underlie *all* engineering careers. The course is intended to prepare the graduate for later specialization in any one of the several branches of engineering practice: mechanical, civil, chemical, electrical, or industrial engineering. Thorough study of mathematics, chemistry, and physics is considered requisite; stress is placed on mechanics and on thermodynamics, and a foundation is laid for practical knowledge of electrodynamics and of hydrodynamics. Skill in self-expression and communication, not only by means of the sketching pencil and the drawing-pen, but also through the written and spoken word, is sought through formal and informal guidance extended through all four years of the college course. In such a course of study, technical electives are necessarily few (see page 88).

A liberal education, however, is achieved only by placing before the student opportunities to familiarize himself with the history of man's social, economic, and civil progress. Such studies at Stevens are especially within the field of the division of humanities, and in this division a greater freedom of election is possible.

The curriculum of the College is shown in tabular form below. In the table is indicated the number of periods per week assigned to each subject of study in each term. Where only one numeral appears opposite the subject, as *Mathematics 5*, reference is to classroom periods per week; where two numerals appear, as *Physics 5 + 4*, the first refers to classroom periods per week and the second numeral refers to laboratory, shop, drafting, or conference hours. Final

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examinations will be given in the first five courses listed for each term. In addition to the subjects listed below, each student is required to give three hours per week throughout the course to the program of the Department of Physical Education.

CURRICULUM FOR STUDENTS ENTERING IN SEPTEMBER

Freshman Year

Orientation Week: General Lectures, 12 hours
Drafting Practice, 27 hours

First Term: 15 weeks		Second Term: 15 weeks	
Mathematics	5	Mathematics	5
Chemistry	4	Chemistry	4
Descriptive		Physics	3
Geometry	3 + 3	English	2 + 1
English	2 + 1	History	3
History	3		
Shop Practice	0 + 4	Shop Practice	0 + 3
		Engineering	
		Drawing	0 + 4
	17 + 8		17 + 8

Supplementary Term: Shop Practice, 3 weeks (count as 70 hrs.)

Summer Camp: Civil Engineering, 6 weeks

Sophomore Year

First Term: 15 weeks		Second Term: 15 weeks	
Mathematics	4	Mathematics	3
Statics	2	Kinetics	4
Physics	5 + 4	Physics	3 + 3
Economics of		Mechanism	3 + 3
Engineering	3	Humanities	3
Humanities	3	(elective)	
(elective)			
Chemistry	0 + 3	Chemistry	0 + 3
English	0 + 1	English	0 + 1
	17 + 8		16 + 10

Supplementary Term: Chemistry Laboratory, 2 weeks (70 hrs.)
Engineering Drawing, 2 weeks (70 hrs.)

COURSE OF INSTRUCTION

Junior Year

First Term: 15 weeks		Second Term: 15 weeks	
Mechanics of		Thermodynamics	5
Materials	4 + 1½	Applied Statics	3
Hydraulics	3 + 1½	Electrical	
Machine Design	3 + 3	Engineering	2 + 3
Physical		Chemical	
Chemistry	3 + 3	Engineering	3 + 3
Humanities	3	Humanities	3
(elective)		(elective)	
English	0 + 1	English	0 + 1
		Mechanical Engi-	
		neering Laboratory	0 + 3
	16 + 10		16 + 10

Supplementary Term: Mechanical Engineering Laboratory,
2 weeks (70 hours)
Machine Design, 2 weeks (70 hours)

Senior Year

First Term: 15 weeks*		Second Term: 15 weeks	
Mechanical		Mechanical	
Engineering	4 + 4	Engineering	3 + 3
Civil Engineering	3	Civil Engineering	3 + 3
Electrical		Electrical	
Engineering	5 + 3	Engineering	4 + 3
Applied Kinetics	2	† Technical Elective	3
Economics of		Economics of	
Engineering	3	Engineering	3
English	0 + 1	English	0 + 1
	17 + 8		16 + 10

Qualified students may receive a degree with distinction by adding to the curriculum of the senior year a thesis on a project of their own choice.

* Including Inspection Trip, 1 week.

† See page 88 for the current list of technical electives.

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CURRICULUM FOR STUDENTS

ENTERING IN MIDWINTER

The curriculum of the Freshman and Sophomore years, as modified for Freshmen entering in mid winter, is shown in the accompanying table. In their Junior and Senior years they will follow the curriculum indicated on the preceding page.

Supplementary Term: * Shop Practice, 3 weeks (count as 70 hours).

First Summer

Mathematics
Chemistry
English Expression

Civil Engineering in last 4 weeks of summer

Second Winter

September Term: 15 weeks

*Mathematics	4
*Statics	2
*Physics	5 + 4
*History	3
*Economics of Engineering	3
*Chemistry	0 + 3
*English	0 + 1
*Shop	0 + 4

17 + 12

February Term: 15 weeks

*Mathematics	3
*Kinetics	4
*Physics	3 + 3
*Mechanism	3 + 3
*History	3
*Chemistry	0 + 3
*English	0 + 1
Eng. Drawing	0 + 4

16 + 14

* Engineering Drawing, 2 weeks (70 hours).

Supplementary Term: * Chemistry Laboratory, 2 weeks (70 hours).

Second Summer

Two Humanities Electives

* With regular class.

DEPARTMENTS

DEPARTMENT OF CHEMISTRY

FRANCIS JONES POND, B.S., A.M., Ph.D., Sc.D., *Professor, and Director of the Morton Memorial Laboratory of Chemistry*

LESLIE HERR BACKER, M.E., *Associate Professor*

DAVID DINKEL JACOBUS, M.E., Sc.D., *Assistant Professor*

ALFRED BORNEMANN, M.E., Dr.ING., *Assistant Professor*

FREDERICK LEWIS BISSINGER, M.E., *Instructor*

ALTHOUGH one of the requirements for admission to the Freshman Class is a preliminary course in Chemistry such as is offered in most high schools and preparatory schools, nevertheless it is found desirable and even necessary at first to give a careful review of the fundamental parts of this preliminary chemistry. This is followed by the study of general inorganic chemistry, including such theoretical and physical chemistry as is deemed essential for a well educated cadet-engineer, together with as much descriptive chemistry as can be thoroughly covered in the time allowed for this work during the first year.

The laboratory courses in Inorganic Chemistry, Qualitative Analysis, Quantitative Analysis, and Engineering Chemistry are given during the second and third years. The aim of these courses is primarily to teach the student the fundamental principles underlying chemical changes, to broaden his general chemical knowledge, to train him in habits of exact experimentation, and to make him as familiar as possible with those chemical principles, tests and analyses which are of importance in general engineering and chemical work. In addition to the fundamental principles

of Qualitative and Quantitative Analysis, these courses acquaint the student with the methods of gas analysis, coal analysis, the determination of the heating value of solid, liquid, and gaseous fuels, oil analysis, boiler water analysis, hydrogen-ion determination, the fundamental principles of metallography, certain exercises in Physical Chemistry, and other subjects important to Engineering Chemistry.

During the third year, courses in Physical Chemistry, Chemical Engineering, Industrial Chemistry, and Metallurgy are given.

The instruction in all years is given in the form of experimental lectures and recitations, and the endeavor is made to require the student to be familiar with the important fundamental facts and principles of the various branches of chemistry.

In the fourth year, technical elective courses in chemical and chemical engineering subjects are offered to qualified fourth-year students.

DEPARTMENT OF CIVIL ENGINEERING

DAVID L. SNADER, A.E., C.E., M.S., M.A., *Professor*

ROBERT MILTON DIETZ, M.E., *Instructor*

GILBERT CLINTON WHITNEY, JR., M.E., *Instructor*

And, in 1934, the following instructors for the six weeks'

Summer Camp of Civil Engineering: WALTER HARRIS BACON, M.E., ROBERT ARTHUR CHADBURN, M.E., ROBERT MILTON DIETZ, M.E., VINCENT STANLEY KRAEGER, M.E., ALLAN BROWN MURRAY, M.E., ALBERT CHARLES TESS, M.E., GILBERT CLINTON WHITNEY, JR., M.E., ARCHIBALD STEWART WILKINSON, M.E.

The work of this Department is intended to open to view the scope of Civil Engineering as one part of the field of engineering, to show its relation to other branches, and to give

such training as will make it possible for graduates who so desire to enter this branch of engineering.

At the end of the Freshman year the instruction in surveying is given for a period of six weeks' duration in the Engineering Camp. Provision is made for practical, diversified work in the field where instruction in surveying, field practice and mapping is given under conditions that are most healthful. The work in surveying leads to the field of highway engineering, through field work in the use of the tape, engineer's level, transit, and plane table; including theory and use of the stadia method, topographic surveying, and instruction and field work in the application of the elementary principles of railroad surveying. The field work is carried on in open country, both level and steeply sloping, through marshy land, in wooded areas, across country and along highways. The varied camp areas include fields suitable for the simpler beginning problems as well as rough, picturesque and difficult ground for the most difficult type of field work.

In the Senior year instruction is given in the underlying theory and design of various kinds of structures including roofs, buildings, bridges and foundations, especially structures of steel and of plain and reinforced concrete. This follows the courses in mechanics, mechanics of materials, and applied statics of the Sophomore and Junior years which form a foundation for instruction in the theory and design of all structures.

Emphasis is at all times placed upon the analysis of the problem, after the necessary data have been obtained and logically arranged for analysis and for use in design. But the inherent nature of this field of work is such that, because of its wide practical implications, it of necessity requires some application to definite and specific design problems in order best to exhibit the principles and processes and to

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show how these principles may be made useful in this and in other fields.

The theory of design early involves the investigation and analysis of the loads that may be placed on a projected structure and the methods of determining the resulting stresses. Of equal importance is the consideration of the characteristics and properties of the materials, and of their suitability for varying requirements; and careful attention is given to the economic side of the problem.

DEPARTMENT OF ECONOMICS OF ENGINEERING

WILLIAM DUANE ENNIS, M.E., E.D., *Alexander Crombie
Humphreys Professor*

GEORGE WINCHESTER BARNWELL, B.S. M.A., *Assistant
Professor*

ALF KEYSER BERLE, B.S., *Instructor*

FRED ANDREAS GITZENDANNER, M.E., *Instructor*

Instruction in this department was organized, virtually as a pioneer step, by the late President Humphreys. The work is now carried on partly through the endowment of the Alexander Crombie Humphreys professorship. The course is one in business methods and principles.

The present program begins with a general review of the industrial position and policies of the United States. The effort is made to relate the conditions of today to those of the past, and the economic set-up with the constitutional and traditional background. Special attention is paid to characteristics and policy determinants in industry and to cyclic fluctuations in the price level. A broad view is taken of the place of the engineer in production and the studies are by no means confined to the machine shop or the power plant. Wage systems, production control and modern management are discussed. The principles of accounting are presented as

DEPARTMENT OF ELECTRICAL ENGINEERING

constituting the universal language of business. This is followed by some study of cost accounting and depreciation. There is included a discussion of plant valuation, especially with relation to rate making, with an analysis of rate structures in public utility and railway freight departments. Quantitative treatment is given the subjects of corporation organization and finance, money and banking, and investments generally. Governmental finance and taxation receive attention.

Occasion is taken to call attention to prevailing standards of business and professional ethics.

As far as possible, all instruction is conducted on the case system. Two somewhat opposed thoughts underlie the work of this Department: that in most cases engineering positions of high responsibility must be filled by men with business training; and that the engineering profession constitutes a training ground for business managers. On either basis the elementary principles of business are worthy of incorporation in an engineering curriculum.

DEPARTMENT OF ELECTRICAL ENGINEERING

ANSON WOOD BURCHARD FOUNDATION

FRANK CLIFFORD STOCKWELL, A.B., S.B., *Anson Wood
Burchard Professor*

HERBERT CHRISTOPHER ROTERS, M.E., M.S., *Assistant Pro-
fessor*

WILLIAM LAWRENCE SULLIVAN, B.S., M.S., *Instructor*

WILLIAM FREDERICK BAILEY, M.E., *Instructor*

ADOLPH AMEND, JR., M.E., *Instructor*

SAMUEL SLINGERLAND, *Laboratory Instructor and Mecha-
nician*

To carry out the general purposes of the course at Stevens, this Department endeavors to meet the following demands:

first, to fit graduates to enter any branch of electrical engineering and, through continuing their study, to compete successfully with graduates of standard electrical engineering courses; secondly, to equip graduates entering other fields of engineering to deal intelligently with such electrical matters as may come within their duties; and, finally, to assist in giving all graduates a broad scientific education that will enable them to attack new problems with vision and confidence.

The classroom and laboratory courses are conducted closely in parallel. Each subdivision of the subject is first treated in lectures and recitations, and—usually within a few weeks—is followed by appropriate laboratory exercises.

The fundamentals having been introduced to the student, the major portion of the course is devoted to the study of the construction, operation, and application of the great variety of electrical apparatus in general use. This includes direct-current machines, transformers, synchronous machines, induction machines, measuring instruments, various auxiliary apparatus, and methods of transmission and distribution for industrial power, lighting, and electric railways.

Toward the latter part of the course there are taken up more briefly and mainly through lectures certain special or advanced branches, such as: conduction through gases, with special reference to the arc lamp, the arc rectifier, and the thermionic tube and allied devices whose development constitutes a most important recent advance in electrical science; and transient electric currents, electrical oscillations and electric waves, as employed in radio communication and for other purposes.

Some of the laboratory exercises are designed to teach methods of testing electrical machines, apparatus, and material, and have been selected from electrical engineering

practice. In such exercises emphasis is laid on the best methods of arranging data and of expressing results, especially in regard to neatness, clearness, and completeness. The students are required to make the electrical connections, to guard against sources of experimental error, and—as far as possible—to use their own initiative in determining the necessary readings, thus fitting them for making independent tests. Other laboratory exercises are essentially studies of various pieces of apparatus, in which the main object is to illustrate the theory given in the classroom; for experience shows that the real meaning of various theoretical relations is not fully appreciated by the student until he sees the application in concrete apparatus. Frequently such exercises are purely qualitative, the student being required to write descriptions and explanations of the experimental results. During the course, several laboratory periods are devoted to computation exercises, in which the student works out assigned problems.

The laboratory is provided with sufficient equipment so that only two students work together with the same apparatus, thus making the instruction far more efficient than when the exercises are performed by large groups. The number of readings to be taken simultaneously usually makes it impracticable for students to work singly.

DEPARTMENT OF HUMANITIES

WALTER VAN DYKE BINGHAM, B.A., M.A., Ph.D., *Professor of Psychology*

ARTHUR JAMES WESTON, A.B., A.M., *Associate Professor of English, Chairman*

GEORGE MARTIN WEIMAR, A.M., Ph.D., *Associate Professor of English and History* (On Sabbatical leave, 1934-1935.)

WALTER SQUIRE, A.B., A.M., *Lecturer on Music*

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JOHNSON O'CONNOR, A.B., A.M., *Associate Professor, Director of Psychological Studies*

OLAF ANDERSON, Ph.D., *Lecturer on Geology*

HARVEY STEVENSON, A.B., *Lecturer on Architecture and Allied Arts*

JOHN PRESLEY FIFE, A.B., A.M., *Assistant Professor of English* (Absent on exchange with Massachusetts Institute of Technology)

CARL GEORGE ROTERS, *Lecturer on the Fine Arts*

WILLIAM CHACE GREENE, Ph.B., M.A., *Assistant Professor of English*, Massachusetts Institute of Technology. (On exchange)

HAROLD BURRIS-MEYER, B.S., A.M., *Assistant Professor of English*

NEWELL ORMSBEE MASON, A.B., A.M., *Assistant Professor of History*

WILLIAM BEARD, B.S., *Instructor in English and Government*

OLIVER MILTON HALL, A.B., M.A., *Instructor in Psychology*

DAVID MACK, A.B., *Assistant in Psychology*

The object of the Department of the Humanities is to give the student a contact, as broad as feasible in a course in engineering, with the cultural studies classified as the humanities. Development of the student's facility in oral and written expression is continued through four years under the direct and personal guidance of members of the Department who base their judgment and criticism largely upon the student's reports in other departments of instruction. One hour a week is allotted in the schedule of each student for such tutorial conferences.

In the Freshman year, two courses are offered in this department, one in English literature, and the other a survey of Western civilization.

For the year 1934-1935, the following elective courses

DEPARTMENT OF MACHINE DESIGN

were available for Sophomores and Juniors: Nineteenth Century Prose and Poetry, The Essay in World Literature, The Essay in British and American Literature, The Course of English Poetry, Contemporary Literature, Play Production, Contemporary Drama; Classical Forms and Historical Background of Music, Harmony and Counterpoint, Contemporary Arts; Logic; General Geology; Social and Industrial Psychology, Contemporary Dictatorships, and Engineering Aspects of Government.

DEPARTMENT OF MACHINE DESIGN

FRANKLIN DERONDE FURMAN, M.E., *Professor of Machine Design*

WILLIAM REEDER HALLIDAY, M.E., *Associate Professor of Machine Design*

SAMUEL HOFFMAN LOTT, M.E., *Associate Professor of Engineering Drawing and Descriptive Geometry*

JOHN CHARLES WEGLE, M.E., *Assistant Professor of Descriptive Geometry*

ROBERT ARTHUR CHADBURN, M.E., *Instructor*

ARCHIBALD STEWART WILKINSON, M.E., *Instructor*

MARTINO JOSEPH VACCARO, M.E., *Instructor*

The work in this Department includes courses in Engineering Drawing, Descriptive Geometry, Mechanism, and Machine Design.

The course in Engineering Drawing is designed to give the student such instruction and exercises as will develop in him the ability to make and to read a practical working-drawing or tracing of any mechanical object or machine. Instruction is also given in the making of axiometric drawings by means of a limited number of specimen problems.

In Descriptive Geometry the ability to analyze is developed in parallel with proficiency in graphics. The student is thoroughly drilled in the analyses and graphics for the fundamental construction problems, after which he is given

practice in the solution of practical problems involving the various surfaces.

The advanced work of the Department involves a study of the underlying principles of machine and engine construction based on:

1. A classification of the laws and the development of the principles relating to the motions of machine parts. This branch of study comes under the subject of Mechanism.

2. An application of the laws and principles relating to mechanical forms under both static and dynamic action, with due consideration for the imperfection of both material and workmanship, and a regard for economy in production. This branch of study comes under the subject of Machine Design.

In the course in Mechanism the principles underlying all mechanical movements are classified and studied. These principles are then developed to their fullest practical value with the aid, usually, of mechanical objects and combinations, illustrations of which are taken whenever possible from the most modern machinery.

After the student has passed through the first subdivision of the course in Mechanism, in which he has dealt with instantaneous motions only, or with the motion of an elementary mechanism at a given phase, he takes up the study of mechanical motions for finite periods of time, analyzing for interference, velocity, and acceleration of the moving machine members. In this analysis the work is carried on by graphical solutions.

As the student takes up the various topics in Machine Design, his attention is directed to the laws and fundamental principles on which the computations of the design depend; to the commercial or economic conditions modifying the theoretical; to the practical considerations due to lack of perfection in materials, processes, workmanship, etc., which affect the theoretical proportions; and to the general agreement between complete theory and good practice.

DEPARTMENT OF MATHEMATICS

CHARLES OTTO GUNTHER, M.E., *Professor*

LOUIS ALAN HAZELTINE, M.E., Sc.D., *Professor of Physical Mathematics*

LEWIS ELMER ARMSTRONG, Ph.B., *Assistant Professor*

WILLIAM ERNEST FRED APPUHN, E.E., M.A., *Assistant Professor*

The work of this Department is closely coordinated with that in mechanics, not only because such treatment is especially suitable for students of engineering but also because mathematics has its foundation in the mechanics of nature.

The course is confined to the first two years, begins with analytic geometry and continues on through the calculus and differential equations. Although students are assumed to be familiar with algebra, geometry and trigonometry, essential parts of these subjects are reviewed as the need arises. Throughout the course special stress is laid upon the fundamental principles, and to this end students are required to develop all important formulae when their use is required.

DEPARTMENT OF
MECHANICAL ENGINEERING

HARVEY NATHANIEL DAVIS, A.B., Ph.D., Sc.D., LL.D.,
Professor

RICHARD FRANCIS DEIMEL, B.S., A.M., *Professor*

EUGENE FEZANDIÉ, B.S., M.E., *Assistant Professor, Chairman*

KENNETH SEYMOUR MOORHEAD DAVIDSON, B.S. in M.E.,
Assistant Professor

JOHN I. YELLOTT, JR., B.E., M.M.E., *Instructor*

HOWARD WILSON EMMONS, M.E., *Instructor*

ALLAN BROWN MURRAY, M.E., *Instructor*

KENNETH CLARENCE HOLLAND, M.E., *Instructor*

MORTIMER J. ROBERTS, *Laboratory Assistant and Mechanician*

The work in this Department—coming in the Junior and Senior years—aims to develop the student's ability to attack problems in mechanical engineering. The standard of performance expected of the students is that required of young engineers in practice.

In the lecture courses the analytical phases of the work are stressed. The steam power plant as a whole and in its several parts—the boiler, the turbine, and reciprocating engine, the condenser and heaters—are analyzed. The internal combustion engine is used as a parallel case. Stress is laid upon the few fundamental principles underlying all heat engine practice to impress upon the student the unity of the subject and the wide application of these few principles. Those students who desire to go more deeply into certain subjects may do so by choosing elective courses in the second term of the fourth year.

The laboratory equipment is made available to the students for the solution of fairly extensive and sometimes original engineering problems. The problem to be investigated is either presented by the department or proposed by the student. The planning, execution, and analysis of the necessary tests are carried out under student supervision and largely through student initiative. A comprehensive report is made after the conclusion of an investigation.

The objective of this method is to help the student to a critical engineering viewpoint. He is encouraged to study critically his own experimental method of attack, and that of other experimenters. In addition he acquires familiarity with the simpler and more generally useful devices used in engineering measurements. He is expected to decide for himself how long a test should be run, what arrangement of equipment will yield most accurate results and how the results and conclusions can be most attractively presented in his report. A premium is placed upon work performed in a well-informed, far-sighted fashion.

DEPARTMENT OF MECHANICS

LOUIS ADOLPHE MARTIN, JR., M.E., A.M., *Professor*
GUSTAV GEORGE FREYGANG, M.E., A.M., *Associate Professor*

The instruction given by the Department of Mechanics is divided into the following courses:

Theoretical Mechanics, given during the Sophomore year. Statics is taken up first, then kinetics. This arrangement affords a close connection between the work in mathematics and in mechanics in so far as the mathematical difficulties encountered in mechanics increase with the student's increasing knowledge of mathematics. The student thus applies and reviews his mathematics while mastering the principles of mechanics. This course also serves as a stepping-stone between the first short course in mechanics given by the Department of Physics and the advanced work in applied mechanics.

Numerous experiments illustrating the problems solved in this course are performed individually by the students in the laboratory under the Department of Physics.

Mechanics of Materials, given during the first term of the Junior year. This subject is taught as soon as the student has completed his courses in mathematics and theoretical mechanics; it precedes and forms an introduction to the courses in machine and structural design. In addition to the analytical study of the properties of elastic materials from the practical engineering standpoint under the Department of Mechanics, experimental verification of these properties is afforded the student by individual work in the laboratory of the Department of Mechanical Engineering.

Applied Statics, given during the second term of the Junior year. The student is now sufficiently advanced to appreciate the applications of the general principles and methods of

STEVENS INSTITUTE OF TECHNOLOGY

mechanics to the solution of engineering problems. In this course particular attention is paid to the applications of the principles of work and energy, and to the analytical and graphical treatment of statical problems.

Hydraulics, given during the first term of the Junior year. The work consists of a review of the principles of hydrostatics with applications to engineering problems, and of a course in theoretical and practical hydraulics, with an elementary discussion of water wheels and turbines.

Thermodynamics, given during the second term of the Junior year. This course in the principles of thermodynamics, presented from the standpoint of the engineer, coordinates with the work in Mechanical Engineering.

Applied Kinetics, given during the first term of the Senior year. This is a continuation of the course in kinetics and is devoted to the study of machinery in motion.

DEPARTMENT OF PHYSICAL EDUCATION

JOHN ALFRED DAVIS, B.S., *Director*

JOHN CARNEGIE SIM, *Instructor*

FRANK J. MISAR, B.P.E., *Instructor*

The modern and fully equipped William Hall Walker Gymnasium and Castle Point Athletic Field afford splendid facilities for conducting a thorough course in physical education which extends throughout the four years of the college curriculum.

A physical and medical examination is given each member of the Freshman Class upon entering college. Subsequent examinations are given whenever it is considered necessary or when desired by the student.

In general, the aim of the prescribed course in physical education is to give each student the kind and amount of physical activity that is necessary to counteract the sedentary effects of the classroom and to afford a means of recreation.

DEPARTMENT OF PHYSICS

For those students who possess the necessary qualifications, there are intercollegiate contests in soccer football, basketball, lacrosse, baseball, and tennis; and numerous interclass and interfraternity games engage their interests.

The Freshman Camp in Civil Engineering offers unusual opportunities for recreation and physical development. For six weeks in the summer following Freshman year, all members of the Class are in camp and participate in organized and informal sports.

DEPARTMENT OF PHYSICS

PERCY HODGE, Ph.D., *Professor*

WALDEMAR M. STEMPEL, A.B., M.A., *Assistant Professor*

HENRY CHARLES FRANK, B.A., M.S., *Assistant Professor*

NOEL URQUHART, M.E., M.S., *Instructor*

RICHARD JOSEPH BIELK, M.E., *Laboratory Assistant*

Physics, which is the scientific basis of engineering, is taught under the titles mechanics, sound, heat, light, and electricity, according to the usual classification. The concept of energy, as related to all of these subjects is, however, stressed, as are also the interrelations of the various subjects.

As far as possible the ideas and discoveries of modern physics, particularly the electron theory, are made use of in both theoretical discussions and illustrations. It is the aim to coordinate the physics course as closely as possible with the courses given in the engineering departments, but at the same time to lead the student to realize the important part which physics has played in the discoveries and developments of recent years and to make him ambitious to take part in original investigations which may lead to still other additions to our present store of useful knowledge. An elementary course in physics is required for entrance in order that students may have the necessary perspective when entering upon the more advanced work in the subject.

In the laboratory proper methods of experimentation and of the use of data are acquired, together with a knowledge of the physical significance of the experiments performed. Also the endeavor is made to instill into the student's mind ideas as to how original investigations may be undertaken and carried out successfully in order that he may gain confidence in his own ability to succeed in original work.

DEPARTMENT OF SHOP PRACTICE

ALFRED SEGUINE KINSEY, *Professor*
GEORGE HEGGIE, *Superintendent*
WILLIAM H. R. UMSTEAD, *Instructing Mechanic*
ALPHONSE BRILLAT, *Instructing Mechanic*
WILLIAM DEXHEIMER, *Instructing Mechanic*
AUGUST W. TOENSHOFF, *Shop Assistant*

In this Department the student is given a training in the fundamental principles and methods governing the application and working of metals and other materials of construction. To accomplish this each student is required to produce by hand and machine tools certain jobs which form a practical course of General Machine Shop Work, Pipefitting, Forging, Forge-Welding, Oxyacetylene, Electric and Thermit Welding, Heat Treatment of Steel, Founding, Pattern-making, Wood Construction, and Millwrighting.

In conjunction with the shop jobs, classroom illustrated lectures, accompanied by printed notes, are given covering the chemical and physical characteristics of the engineering metals and other shop materials, power transmission, metal-working lubricants and coolants, metal forming processes, melting and casting of metals, multiple-precision production, accident prevention, shop systems.

SUMMER SESSION

The Summer Session courses offered during the six weeks beginning July 1, 1935, are primarily for those students of Stevens Institute of Technology who desire to improve their records.

The courses available are those prescribed by the regular curriculum of the college, provided that a sufficient number register for any one course.

Students from other institutions desiring to improve their records are admitted if they have the necessary prerequisites for the courses selected.

For more detailed information, address the Director of Summer School, Stevens Institute of Technology, Hoboken, New Jersey.

THE DEAN'S LIST

THE Dean makes, and from time to time revises, a list of students in each class whose character and academic standing seem to indicate the possession, in high degree, of ability and of a sense of responsibility. The Dean's list is published in the annual catalog and in such other ways as the Dean may direct, and copies of it are sent, twice in each year, to the parents of each student listed. The usual penalties for deviations from the prescribed academic routine, including in particular attendance at classes, are ordinarily waived for students on the Dean's list, but the Dean may, at any time, drop from the list any student who seems to be abusing his privileges.

The names of the students who have been on the Dean's List since the issue of the last catalog are as follows:

FOR THE SECOND HALF OF THE COLLEGE YEAR, 1933-1934

SENIOR CLASS

(CLASS OF 1934)

Walfred Abrahamson, Jr.
Adolph Amend, Jr.
Edward R. Ardito
Peter deBruyn
Charles J. Burch
Frank Caroselli
Everett G. Gravenhorst

Gordon P. Gravenhorst
Richard M. Heiles
Clarence K. Holland
John J. Kennedy
Vincent S. Kraeger
Carl G. Pansegrau
Gilbert C. Whitney

JUNIOR CLASS

(CLASS OF 1935)

Richard S. Arnold
John Boustead
Joseph C. Boyle
Frank W. Disch
Donald C. Exler
Raymond E. Hansen

Charles F. Hildenbrand
Richard MacHenry
Gilbert F. Norcross
Harold D. Peterson, Jr.
Frederick T. Varcoe
Edgar E. Wrege

THE DEAN'S LIST

SOPHOMORE CLASS

(CLASS OF 1936)

Edward W. Bunke
Mitchell H. Cubberley
Herbert P. Culp
Everett B. De Luca
Joseph G. Diliberto
George A. Hanlon
Kenneth Kasschau
George S. Kelley
Robert A. LeMassena

Frederick J. Madea
Foster A. Olson
Harry W. Phair
Alexander Quayle
Thomas A. Robertson
Charles V. Schaefer, Jr.
Alvin C. Scholp
Everett R. Sprague
Frederick R. Weaver

FRESHMAN CLASS

(CLASS OF 1937)

John H. Andresen, Jr.
Arnold B. Arons
Robert L. Buchanan
Bruno Ehrman, Jr.
Harry D. Forest
Robert Z. Hague
Edward F. Heaton

Herman Koester, Jr.
Dominic M. Masi
Edmund C. Mathez
John W. Thompson, Jr.
Francis V. Toppin, Jr.
Rupert von Vittinghoff
John K. Waterbury

FOR THE FIRST HALF OF THE COLLEGE YEAR, 1934-1935

SENIOR CLASS

(CLASS OF 1935)

Richard S. Arnold
John Boustead
Joseph C. Boyle
Frank W. Disch
Donald C. Exler
Raymond E. Hansen
Charles F. Hildenbrand

Daniel F. Hoth
Richard MacHenry
Alfred G. Nash
Harold D. Peterson, Jr.
Benjamin F. Tyson
Frederick T. Varcoe
Edgar E. Wrege

JUNIOR CLASS

(CLASS OF 1936)

Edward W. Bunke
Mitchell H. Cubberley
Herbert P. Culp
Everett B. De Luca
George A. Hanlon
Eugene B. Hauser
Kenneth Kasschau
Robert A. Le Massena
Frederick J. Madea

Foster A. Olson
Harry W. Phair
Alexander Quayle
James C. Quinn
Thomas A. Robertson
Alvin C. Scholp
Everett R. Sprague
Frederick R. Weaver

STEVENS INSTITUTE OF TECHNOLOGY

SOPHOMORE CLASS

(CLASS OF 1937)

John H. Andresen, Jr.	Herman Koester, Jr.
Arnold B. Arons	Dominic M. Masi
Charles A. Bogert	Edmund C. Mathez
James S. Braxton	Justin P. Neuhoﬀ
Robert L. Buchanan	Frederick Rickerich, Jr.
Peter F. Crosby	Sigurd Smyth
Bruno Ehrman, Jr.	Francis V. Toppin, Jr.
Harry D. Forrest	Rupert von Vittinghoﬀ
Robert Z. Hague	John K. Waterbury
Edward F. Heaton	

FRESHMEN

(CLASS OF 1938)

Freshmen are not eligible for the Dean's list until they have been in College for one full term.

GRADUATE COURSES

FORMALLY organized courses leading to the degree of Master of Science (M.S.) were first offered by Stevens Institute of Technology in the academic year 1930-1931. These courses are given during the day to properly qualified students who wish to pursue studies of an advanced character in science and engineering.

ADMISSION

1. *Requirements for Admission.* The essential requirement for admission as a candidate for the degree of Master of Science is graduation from an engineering school of recognized standing at which the applicant has made a satisfactory scholastic record. An applicant for admission who is not a graduate of Stevens Institute of Technology should submit on or before the last day of registration, September 17, 1935, an official transcript of his undergraduate record from the school or schools attended.

Any qualified person may be admitted to an advanced course without being a candidate for a degree.

Eligibility for admission and for candidacy for the degree will be determined by the Committee on Graduate Instruction.

2. *Application for Admission.* A candidate for the Master's degree or an applicant for admission to one or more advanced courses is required to fill out and submit on or before September 17, 1935, to the Committee on Graduate Instruction, a blank entitled "Application for Admission to Graduate Courses." Copies of these blanks may be obtained from the Registrar.

REQUIREMENTS FOR MASTER'S DEGREE

1. *Thesis.* An approved thesis is a requirement for the Master's degree. The thesis subject must be chosen in that field of science and engineering in which the candidate elects to take the major part of his graduate courses.

2. *Credits.* To be eligible for the Master's degree, the candidate must have satisfactorily completed courses having a total value of twenty-four credits, and have presented an acceptable thesis which is evaluated at six credits. The credits are ordinarily computed on the basis of one unit for each classroom or laboratory period per week for one term.

The candidate, by permission granted in advance by the Committee on Graduate Instruction, may receive credits not to exceed six units for satisfactorily completing approved courses at the summer session of another college.

Credits for the Master's degree must be gained within a period of four calendar years.

3. *Program of Courses.* Each candidate for the Master's degree should have his program of courses approved by the Committee on Graduate Instruction at the beginning of each academic year of his graduate study.

A full-time graduate student may take courses having a total of not more than twelve credits a term.

A part-time instructor in the college may take courses having a total of not more than six credits a term.

A full-time instructor in the college may take courses having a total of not more than three credits a term, except that during his second year of service and subject to the approval of the chairman of his Department he may take courses having a total of not more than six credits a term, and cannot expect to receive a Master's degree in less than three academic years, even with the approved summer work.

SCHOLARSHIPS

The Henry Morton Scholarship. The Trustees of Stevens Institute of Technology offer a graduate scholarship of the value of \$350 to cover full tuition in honor of Dr. Henry Morton, the first president of the college. Application for this scholarship, which is open to a graduate of an engineering college other than Stevens Institute of Technology, should be made on or before June 1, 1935, on a special form obtainable from the Registrar. The Committee on Graduate Instruction nominates to the President the recipient of this scholarship.

Unendowed Graduate Scholarships. For the assistance of notably qualified graduate students there are made available each year a number of unendowed graduate scholarships ranging in value from \$100 to one-half of the fee for graduate tuition. Application should be made on blanks obtainable from the Registrar.

TUITION AND OTHER FEES

The tuition fee for all full-time graduate students is \$350 a year payable in equal installments at the beginning of each term.

Graduate students taking a partial program will be charged at the rate of \$35 per course carrying three credits with a thesis charge of \$70.

Full-time or part-time instructors at Stevens Institute of Technology are exempt from payment of tuition fees.

A Graduation Fee of \$10 is required, at least ten days before the degree is to be conferred, of each candidate for a degree. The fee will be returned if the degree is not conferred.

STEVENS INSTITUTE OF TECHNOLOGY

GRADUATE COURSES OFFERED 1934-1935

Each Course Has a Credit Value of Three Units

FIRST TERM	SECOND TERM
Differential Equations I	Differential Equations II
Functions of a Complex Variable	Operational Calculus
Vector Analysis	Electromagnetic Wave Theory
	{ Partial Differential Equations of
	Physics (TE)
	Actuarial Mathematics (TE)
	Ballistics (TE)
Advanced Dynamics	Differential Equations (TE)
	Mechanics of Elastic and Fluid
	Bodies
	{ Introduction to Modern Physics
	Vibrating Bodies and Sound
	Heat Conduction and Emission
	(TE)
Advanced Organic Chemistry I	Advanced Organic Chemistry II
	Chemical Thermodynamics
Industrial Chemistry and Chemical	Industrial Chemistry and Chemical
Technology I	Technology II
	General Organic Chemistry (TE)
Communication Networks	Electric Wave Filters
Theory and Design of Electromag-	Theory and Design of Electromag-
netic Devices I	netic Devices II
	Electron Tubes (TE)
Advanced Thermodynamics	Fuel Injection Engines
	Internal Combustion Engines
	(TE)
	Ship and Airplane Design Prob-
	lems (TE)
	Power Plant Problems (TE)
Advanced Analysis of Structures	Steel and Reinforced Concrete
	Structures (TE)
	{ Business Statistics
Economic History	Business Law
{ Advanced Economics	Management (TE)
{ Manufacturing Industries	Business Problems (TE)
	Economics of Invention (TE)
	*Aptitude Testing

*Aptitude Testing

† Offered in alternate years.

* May have a credit value of six units.

(TE)—Courses open, as Technical Electives, to undergraduate Seniors.

GRADUATE COURSES

GRADUATE COURSES, 1934-1935

Differential Equations I and II

The theory and methods of solution of ordinary and partial differential equations with applications to problems in geometry and engineering. The topics treated include: ordinary differential equations of the first order and of the first and higher degrees, linear equations with constant coefficients, singular solutions, equations of second and higher orders, simple partial differential equations and the application of Fourier half-range series to problems involving boundary conditions, fundamental existence theorem of Picard and its extension to a system of equations of first order, existence theorem for equations of Mth order, fundamental systems, the development of the condition for the linear independence of a set of solutions of a linear homogeneous equation of Nth order, the solution of differential equations in series such as those of Bessel, ordinary differential equations in three variables, partial differential equations of first and second orders.

FIRST AND SECOND TERMS

Professor APPUHN

Functions of a Complex Variable

Graphical representation. Transformations. Conformal mapping. Applications to alternating-current loci and to potential problems. Contour integration. General properties of analytic functions: Taylor and Laurent series; singularities; analytic extension. Partial fraction series. Solution of equations.

FIRST TERM

Professor HAZELTINE

Operational Calculus

The algebra of operators in general. Distributive operators. Applications to electric circuit problems. Use of the Heaviside function. Fractional derivatives. Derivative operators with several arguments, and application to partial differential equations. Expansions into infinite series, Fourier

STEVENS INSTITUTE OF TECHNOLOGY

and others. Derivation of interpolation formulas. Summing of series.

SECOND TERM

Professor HAZELTINE

Vector Analysis

Elements of vector algebra and of vector calculus, scalar and vector fields, scalar and vector potential functions.

FIRST TERM

Professor FREYGANG

Electromagnetic Wave Theory

Radiation of electromagnetic energy, development of Maxwell's equations, propagation of electromagnetic disturbances.

Prerequisite: *Vector Analysis*.

SECOND TERM

Professor FREYGANG

Partial Differential Equations of Physics

A consideration of the development and solution of some partial differential equations of physics with applications to problems of vibrations and of conduction of heat and electricity.

(Offered in 1934-1935—Alternates with *Actuarial Mathematics*)

SECOND TERM (Technical Elective)

Professor APPUHN

Actuarial Mathematics

The course is based on the syllabus of examinations for admission as Associate of the Actuarial Society of America. Some of the subjects considered are: college algebra, including theory of equations; higher algebra; theory of probabilities; calculus of finite differences; compound interest and annuities; and elements of statistics. The course includes the solution of problems covering a wide field of application.

(Offered in 1935-1936—Alternates with *Partial Differential Equations of Physics*)

SECOND TERM (Technical Elective)

Professor APPUHN

GRADUATE COURSES

Ballistics ✓

Explosives. Theory of explosives. Proving-ground instruments. Numerical integration. Interior ballistics. Exterior ballistics. Inspection trips: Picatinny Arsenal, Dover, N.J.; Ordnance Field Service School at Raritan Arsenal, Metuchen, N.J., Aberdeen Proving Ground, Maryland.

SECOND TERM (Technical Elective)

Professor GUNTHER

Differential Equations

A course in ordinary differential equations.

SECOND TERM (Technical Elective)

Professor ARMSTRONG

Advanced Dynamics ✓

Motion of particles and rigid bodies in a plane and in space. General equations of translation and rotation. Generalized co-ordinates. Oscillations and waves. Stability.

FIRST TERM

Professor DEIMEL

Mechanics of Elastic and Fluid Bodies ✓

General stress and strain relations in an elastic medium. Theorems of Gauss, Stokes, and Green. Laplace's equation. Harmonic functions. Curvilinear coordinates. Conformal representation. Singularities and connected space. Applications to torsion, concentrated stress, bending.

Kinematics of fluids. Velocity potential and stream function. Circulation. Equations of Euler, Lagrange, and Bernoulli. Vortex motion. Relative motion of a body in a fluid. Lift and drag. Kutta-Joukowski profiles. Turbulence.

SECOND TERM

Professor DEIMEL

Introduction to Modern Physics ✓

Such topics as: the electron theory; conduction of electricity by gases; the photo-electric effect; thermionic emission; and X-rays. Lectures—theoretical and experimental—and laboratory work.

(Offered in 1934-1935—Alternates with *Vibrating Bodies and Sound*)

SECOND TERM

Professor HODGE

Vibrating Bodies and Sound

The course will include such topics as the following: free and forced vibrations; resonance; vibration of membranes and diaphragms; analysis and synthesis of complex sounds; acoustics of auditoriums; echo sounding as applied to geology and depth finding; supersonic vibrations, etc. Mathematical analysis will be introduced in so far as it is necessary to an understanding of the various phenomena, and experimental demonstrations will be frequently used.

(Offered in 1935-1936—Alternates with *Introduction to Modern Physics*)

SECOND TERM

Professor HODGE

Heat Conduction and Emission ✓

Fundamentals of heat conduction and temperature distribution in solids for both steady and transient states. Applications of Fourier's analysis. Heat transfer through solids into air. Film theory, etc.

SECOND TERM (Technical Elective)

Professor FRANK

Advanced Organic Chemistry I and II

Fundamental principles and theories of organic chemistry, accompanied by a detailed study of selected topics such as the hydrocarbons, alcohols and esters. Research work in organic chemistry will be offered to properly qualified students.

FIRST AND SECOND TERMS

Professor POND

Chemical Thermodynamics

The fundamental thermodynamic relations will be studied, and the equations developed will be applied to thermo-chemistry, equilibria in chemical systems, and electro-chemistry.

SECOND TERM

Professor JACOBUS

Industrial Chemistry and Chemical Technology I and II

The application of fundamental chemical and physical

principles to the materials, processes and products of typical chemical industries.

1. *Inorganic.* Acids, alkalies, cements, refractories and other selected topics.

2. *Organic.* Fuels, oils, fats, and other selected topics.

This course will be supplemented by visits to chemical manufacturing plants.

FIRST AND SECOND TERMS

Professor BACKER

General Organic Chemistry

An introduction to the chemistry of compounds of carbon.

SECOND TERM (Technical Elective)

Professor POND

Communication Networks

Network theorems, equivalent networks. Resonance and antiresonance. Harmonic analysis. Symmetrical and unsymmetrical recurrent networks. Iterative and image impedances. Insertion loss. Long line theory, loaded lines, reflection. Transformers and transducers. Bridge circuits.

FIRST TERM

Professor STOCKWELL

Electric Wave Filters

Reactance theorems, inverse and equivalent reactance arms. Constant-k filter sections, composite filters. Dissipation in filters. Coupled circuits with non-resonant meshes and with like and unlike tuning. Impedance matching. Correcting and balancing networks.

SECOND TERM

Professor STOCKWELL

Theory and Design of Electromagnetic Devices I & II

Normal, incremental, and demagnetization properties of iron, steel, and their alloys. Energy changes occurring during the operating cycle of an electromagnet. Magnetic circuit calculations: normal, incremental, demagnetization, and permanent; estimation of leakage permeance. Properties, temperature rise and design of magnet coils. Magnetic force formulas.

Force-stroke characteristics of various types of electromagnets. Design of direct-current magnets with heating as a limitation. Relays. Speed of action, time-delay electromagnets. Design of alternating-current magnets, shading coils. Magnetic motors.

Experiments on electromagnets built according to design specification to check their predetermined characteristics.

FIRST AND SECOND TERMS

Professor ROTERS

Electron Tubes

Physics of electron emission from solids and of ionization. Study of hot-cathode vacuum tubes, hot-cathode gas-filled tubes, and photoelectric tubes. Analysis of circuits in which these tubes are used for rectification, amplification, etc.

SECOND TERM (Technical Elective)

Professor ROTERS

Advanced Thermodynamics

Special problems in thermodynamics selected with reference to the interests of the class. Among the topics that may be discussed are: available energy as a design tool; properties of binary and ternary mixtures; rectification; the computation of steam tables.

FIRST TERM

President DAVIS

Fuel Injection Engines

Brief history of development: Diesel, pre-combustion, dual combustion, modified Otto. Fundamental requirements: charging, combustion, scavenging; control of skin metal temperatures; machine member maintenance. Analysis of recent research on combustion, injection, chamber design, etc. Fields of use. Discussion of development trends.

SECOND TERM

Professor FEZANDIÉ

Internal Combustion Engines

Fundamentals of internal combustion engines. Comparison

of cycles; combustion fuels; fuel systems, ignition, cooling, lubricating, and governing systems; valves; structural arrangements; fields of use. Critical analysis of design; problems in engine development. Discussion of engineering compromises involved in existing types.

SECOND TERM (Technical Elective) Professor FEZANDIÉ

Ship and Airplane Design Problems

Ship, yacht, and power boat hull form—comparison with airplane requirements. The resistance problem in surface ships, submarines, and airplanes. Airplane lift and the high-speed motor boat. Stability and control. Model testing.

SECOND TERM (Technical Elective) Professor DAVIDSON

Power Plant Problems

Combustion and boiler-plant losses. Heat transfer studies. Steam turbine design, including a drafting board layout and some study of mechanical and thermodynamic requirements. Condenser heat transfer and pumping requirements.

SECOND TERM (Technical Elective)

Mr. YELLOTT

Advanced Analysis of Structures

Advanced stress analysis and design of various classes of structures of steel, reinforced concrete, and masonry, with most emphasis on the statically indeterminate types, and the increasing importance and use of certain advanced methods in design. Methods of analysis and design of wind bracing of high steel frames. Analysis and design of rigid structural frames. The flat-slab system of reinforced concrete design.

FIRST TERM

Professor SNADER

Steel and Reinforced Concrete Structures

Recent improved methods of stress analysis and their applications in design. Methods of area moments and slope deflection. Continuous beams and building frames. The universal occurrence of disintegration of concrete. Study of the

STEVENS INSTITUTE OF TECHNOLOGY

composition of Portland cement and of its inherent characteristics and properties. Laboratory work on methods of proportioning concrete and the production of concrete of highest quality. Some microscopic studies of structure may be made.
SECOND TERM (Technical Elective) Professor SNADER

Economic History

A study of the economic history of the United States from the industrial revolution with stress on economic development, industrial expansion, and the struggle for social legislation.

FIRST TERM

Professor MASON

Advanced Economics

An advanced study of economic problems in business and industry, including such subjects as computation of index numbers, business cycles, price stabilization, banking, foreign trade, international debts, the tariff, and transportation. Individual problems will be assigned.

(Offered in 1934-1935—Alternates with *Manufacturing Industries*)

FIRST TERM

Professor BARNWELL

Manufacturing Industries

A study of the principal manufacturing industries of the United States, with particular emphasis on the relationship between the technological and economic characteristics of each industry.

(Offered in 1935-1936—Alternates with *Advanced Economics*)

FIRST TERM

Professor BARNWELL

Business Statistics

A first course designed to familiarize the student with the statistical method as applied to business problems, such as budgeting, forecasting, market and investment analysis, as

GRADUATE COURSES

well as to executive control and management.

(Offered in 1935-1936—Alternates with *Business Law*)

SECOND TERM

Professor BARNWELL

Business Law

A survey of the rôle that law plays in modern business, with particular emphasis on those phases which are of special concern to the engineer.

(Offered in 1934-1935—Alternates with *Business Statistics*)

SECOND TERM

Professor BARNWELL

Management

A treatment of the subject of factory management and plant operation, dealing with such detailed topics as plant location and layout; power, light, and air conditioning; materials handling and storeroom control; personnel, safety, wage systems, and labor problems; standards and inspection; planning, scheduling, routing, and job analysis; the use of production charts and statistical methods; and the determination of economic manufacturing quantities.

SECOND TERM (Technical Elective) Professor BARNWELL

Business Problems

A topical and case treatment of such subjects as wages, prices, business organization and finance, with particular reference to changes brought about by New Deal legislation.

SECOND TERM (Technical Elective) Professor BARNWELL

Economics of Invention

A treatment of the problems of market analysis and engineering development involved in new products and inventions, including the essentials of patent law and an examination of points of view of inventor, investor, and consumer. Class discussions of prepared cases, supplemented by lec-

tures from persons engaged professionally in the development of processes and mechanisms.

SECOND TERM (Technical Elective)

Mr. BERLE

Aptitude Testing

Measurements of aptitudes, skills, and knowledge, and their interpretation. The first third of the course deals with the administration of modern psychological tests; the last two-thirds with the mathematical handling of psychological data, and with some of the problems encountered in designing tests. This course can be taken in six weeks by industrial executives who wish to concentrate their training by working from nine to five daily. Meetings of the course will be scheduled by arrangement with Professor O'Connor.

FIRST AND SECOND TERMS

Professor O'CONNOR

The list of courses is subject to change as registration in the various courses may indicate change to be advisable.

ECONOMIC CONFERENCE FOR GRADUATE ENGINEERS

HELD AT CAMP STEVENS, AUGUST 11 TO AUGUST 18, 1934

Fourth Annual Session: August 10 to 17, 1935

This Conference, initiated by Stevens Institute of Technology in 1931, has had as its sponsors engineering alumni associations of several colleges; the American Society of Mechanical Engineers and the American Institute of Chemical Engineers; also, for two seasons, the American Association for Adult Education. The Conference in 1934 had as its general theme An Economic Appraisal of The New Deal. Seminars and lectures were under the direction of President Harvey N. Davis and Professor William D. Ennis.

SCHEDULE OF CONFERENCES AND ADDRESSES—1934

- August 11—"Collectivism and Individualism in Industrial Management"; Chester I. Barnard, President of the Bell Telephone Co. of N.J.
- August 12—"Revolt of the Small Business Man"; Lyman Bryson, of the Des Moines Forum and Columbia University.
"Democratic Premises and the New Deal"; Malcolm C. Rorty, President of the American Management Association.
- August 13—"Costs and Prices Under NRA"; William D. Ennis, Professor of Economics of Engineering at Stevens Institute of Technology.
"Rehabilitation of City Finances"; Louis M. Faulkner, Deputy Chamberlain of the City of New York.
"An Analysis of the Railroad Situation"; William J. Cunningham, Professor of Transportation, Harvard School of Business Administration.
- August 14—"Costs and Prices Under NRA"; Dr. Ennis.
"Labor Under the New Deal"; Emanuel Stein, Professor of Economics, New York University.
"Paper Money and Gold in International Trade"; James D. Mooney, President of General Motors Export Company.

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- August 15—"Tariff Bargaining"; Kurt W. Jappe, formerly President of the Brookmire Economic Service.
 "Labor Under the New Deal"; Carroll R. Daugherty, Assistant Professor of Economics, University of Pittsburgh.
 "Oil Production and Control Under NRA"; Charles B. Ames, Chairman of the Board, The Texas Company.
- August 16—"Economics of Industry Planning"; Leon B. Lent, Executive Officer, Code Authority, Scientific Apparatus Industry.
 "Legalities of NRA"; Benjamin S. Kirsh, Counselor at Law.
 "Government Experimentation in Business, 1776-1933"; Warren M. Persons, Consulting Economist.
- August 17—"Some Aspects of Utility Investments"; Henry R. Hayes, Formerly President of the Investment Bankers Association of America.
 "Necessary Changes in Economic Evolution"; Colonel Rorty.
 "Distribution Problems Under NRA"; Q. Forrest Walker, Economist, R. H. Macy & Co.
- August 18—"Effects of the New Deal on Selling and Advertising"; Paul H. Nystrom, Professor, Columbia University; Vice-Chairman, Retail Code Authority.
 "Engineering Methods Applied to Prices"; John R. Hall, John R. Hall Corporation.
 "Can the Procedures of NRA Accomplish Its Objectives?"; panel discussion.
- August 19—"National Income Before and During the Depression"; Walter Rautenstrauch, Professor of Industrial Engineering, Columbia University.
 "Agricultural Planning Under the AAA"; John D. Black, Professor of Economics, Harvard University.
 "Economic Limits on Technological Advances"; panel discussion.
 "NRA"; Walter A. Janssen, Deputy Administrator, National Recovery Administration.

STUDENTS OF THE SENIOR CLASS

CLASS OF 1935

Adams, Wallace James, 10225-87th Ave., Richmond Hill, L.I., N.Y.
 Arnold, Richard Storz, 251 Battery Ave., Brooklyn, N.Y.
 Bannerman, Charles Ranald, Jr., 18 Harding Ter., Morristown, N.J.
 Berendsen, Raymond Charles, 1792 West 7th St., Brooklyn, N.Y.
 Berlowitz, Eugene Felix, 44 Magnolia Ave., Arlington, N.J.
 Berrian, Kenneth James, 563 Central Ave., Jersey City, N.J.
 Blier, Arthur Edward, 46 Oakwood Ave., Arlington, N.J.
 Boustead, John, 167 Franklin St., Paterson, N.J.
 Boyle, Joseph Cornelius, 1164 East 24th St., Brooklyn, N.Y.
 Buchan, Alexander Lucock, 274 Morrison St., Teaneck, N.J.
 Buffone, Joseph, 751 Main Ave., Clifton, N.J.
 Carbone, Walter Egidio, 157 Hunterdon St., Newark, N.J.
 Cashmore, Charles Ernest, Jr., 39 W. Westfield Ave., Roselle Park, N.J.
 Cucci, Angelo Joseph, 379 Second St., Jersey City, N.J.
 Dalton, Thomas Nelson, 11 Ash St., Garden City, L.I., N.Y.
 Deppeler, John Howard, Jr., 825 Boulevard East, Weehawken, N.J.
 Disch, Frank William, 65 St. Clair Ave., Rutherford, N.J.
 Edsall, Howard Rude, Ogdensburg, N.J.
 Exler, Donald Clifton, 246 Livingston Ave., Lyndhurst, N.J.
 Eyster, John Stuart, 64 Cornell Ave., Yonkers, N.Y.
 Fahey, Thomas Richard, 205 North 9th St., Newark, N.J.
 Fontaine, Lancaster, Delta Tau Delta House, Castle Point, Hoboken, N.J.
 Freygang, Gustav George, Jr., 131 Hamilton Terrace, Weehawken, N.J.
 Gattey, Clinton Lloyd, 66 Walnut Ave., Bogota, N.J.
 Gilchrist, Kenneth Hinchcliffe, 42 Franklin Pl., Summit, N.J.
 Handler, Henry, 123 Chestnut St., Rutherford, N.J.
 Hansen, Raymond Edward, 127 Morgan Place, North Arlington, N.J.
 Harris, Edgar Lane, 8530 123rd St., Richmond Hill, L.I., N.Y.
 Heimberger, George Frank, 46 Avenue B, Bayonne, N.J.
 Helmbrecht, Arthur John, 18 22nd St., Irvington, N.J.
 Hildenbrand, Charles Frederick, 222 Sherman Ave., Newark, N.J.
 Horenburger, William Edward, 2263 Byron Ave., Bronx, N.Y.
 Hoth, Daniel Floyd, 396 Allaire Ave., Leonia, N.J.
 Jacobsen, Ernest Louis, 87 West 46th St., Bayonne, N.J.
 Jagientowicz, Theodore Adam, 213 Manor Ave., Harrison, N.J.
 Kaestner, Paul Theodore, 161 Longview Ave., White Plains, N.Y.
 Kunz, Ernest Woodrow, 30 East Hunter Ave., Maywood, N.J.

STEVENS INSTITUTE OF TECHNOLOGY

Leuang, William Arthur, 271 Carlton Ave., East Rutherford, N.J.
 Lloyd, Frank Somerville, 402 Chestnut St., Nutley, N.J.
 Luce, Ramey Philip, Jr., 343 Vandelinda Ave., Teaneck, N.J.
 MacHenry, Richard, 21 Grand Ave., Atlantic Highlands, N.J.
 McAuley, Robert Louis, 109 Humphrey Ave., Bayonne, N.J.
 McAvoy, Thomas Aloysius, 27 Claremont Ave., Jersey City, N.J.
 Marvinney, Louis George, 72 Lincoln St., Hoboken, N.J.
 Mascarich, Frank, 1000 Hudson St., Hoboken, N.J.
 Menne, Chester LeRoy, 662 Church Lane, North Bergen, N.J.
 Mickelson, Warren Louis, 321 Hayward Ave., Mount Vernon, N.Y.
 Mladinov, John George, 135 Garden St., Hoboken, N.J.
 Molinari, Wilfred Henry, 104 Mountain Way, Rutherford, N.J.
 Moneagle, Otto Frank, 252 Lincoln Ave., Madison, N.J.
 Morris, Edward Anthony, 527 Bushwick Ave., Brooklyn, N.Y.
 Moser, Raymond Jacob, 10 Spencer St., Elizabeth, N.J.
 Mueller, Edward Charles, 600 Hackensack St., Carlstadt, N.J.
 Muller, Edward Stephen, 20 East First St., Clifton, N.J.
 Nash, Alfred Gordon, 37 Parkview Terrace, Hillside, N.J.
 Nensel, Emil Philip, 42 George St., Tenafly, N.J.
 Norcross, Gilbert Floyd, 470 West 24th St., New York, N.Y.
 Oliver, Horace Gismond, Jr., 108 Grand Ave., Leonia, N.J.
 Ostocka, Edward Andrew, 616 Bloomfield St., Hoboken, N.J.
 Pagano, Thomas, 202 Maple Ave., Irvington, N.J.
 Peterson, Harold David, Jr., 1048 Madison Place, Brooklyn, N.Y.
 Pink, John Sandgren, 243 Third St., Ridgefield Park, N.J.
 Pinkerton, James Russell, 47 Jasper St., Paterson, N.J.
 Porter, Richard Cochran, 124 Lincoln Rd., Westfield, N.J.
 Price, Robert John, 102 Mountain Way, Rutherford, N.J.
 Reichard, Arthur DePuy, 88 Overpeck Ave., Ridgefield Park, N.J.
 Relyea, Kenneth Ralph Ernest, 521 Bainbridge St., Brooklyn, N.Y.
 Remeschatis, Ralph Ernest, 31 Drake St., Malverne, L.I., N.Y.
 Rubens, Joseph Gabriel, 215 Forbell Ave., Brooklyn, N.Y.
 Salvatori, William, 27 Wiegands Lane, Secaucus, N.J.
 Schaedel, Henry John, 65 St. Paul Ave., Newark, N.J.
 Schaefer, Frederick Frank, 709 South 14th St., Newark, N.J.
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 Schoolcraft, John Kenneth, 20 Charles St., Boston, Mass.
 Schwartz, Alfred, 256 Liberty Ave., Jersey City, N.J.
 Searl, John, 93 Rose Ave., New Dorp, S.I., N.Y.
 Szita, Edward Michael, 51 Avenue B, Bayonne, N.J.
 Taff, Frederick Nishwitz, Jr., Millington, N.J.
 Taranto, Monroe, Midland Park, N.J.
 Tarzy, Thomas James, 838 Bergenline Ave., Union City, N.J.
 Thompson, Grove George, Hill View Farm, R.F.D. No. 3, Winsted, Conn.

SENIOR CLASS

Trowbridge, William Howard, 530 Passaic Ave., Nutley, N.J.
 Tyson, Benjamin Franklin, 13 Chestnut St., Chatham, N.J.
 Ullman, Robert Ira, 1 Grumman Ave., Newark, N.J.
 Vacca, Gennaro Anthony, 43 Midland Place, Newark, N.J.
 Varcoe, Frederick Turner, 736 Highland Ave., Newark, N.J.
 Ward, Winslow Allison, 42-17 Judge St., Elmhurst, L.I., N.Y.
 Wasvary, Rudolph Frederick, 2508 46th St., Long Island City, N.Y.
 Watkinson, Roland Martin, 941 E. 37th St., Brooklyn, N.Y.
 Wood, Charles Speed, 35 Courrier Pl., Rutherford, N.J.
 Wrege, Edgar Ewart, 25 Bidwell Ave., Jersey City, N.J.

STUDENTS OF THE JUNIOR
CLASS

CLASS OF 1936

Amore, Joseph, 1202 Eighth Ave., Brooklyn, N.Y.
 Axt, William John, Jr., 50 Eastern Parkway, Newark, N.J.
 Baksa, Stephen, 160 High St., Carteret, N.J.
 Bechle, Rudolph Paul, 15 Soundview Ave., Yonkers, N.Y.
 Bilyk, Mathew Harold, 168 Ogden Ave., Jersey City, N.J.
 Bingham, Sabin Holden, York Village, Mountain Lakes, N.J.
 Brown, Lloyd Irving, Intervale Road, Mountain Lakes, N.J.
 Brunschwig, Marvin, 2316 Quentin Road, Brooklyn, N.Y.
 Bunke, Edward William, 1000 Woodycrest Ave., Bronx, N.Y.
 Childs, Samuel Jack, 346 E. 67th St., New York, N.Y.
 Clarkson, Donald Alton, 86 W. 39th St., Bayonne, N.J.
 Cubberley, Mitchell Horace, 121 Bell St., Belleville, N.J.
 Culp, Herbert Paul, 1325 W. Broad St., Quakertown, Pa.
 Cuny, Julien Edward, 924 19th St., Union City, N.J.
 D'Arcy, Albert Joseph, 54 W. 94th St., New York, N.Y.
 Daume, Harold Charles, 154-15th St., West New York, N.J.
 Decker, Gerard Quick, Jr., 30 Park Ave., Maplewood, N.J.
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 Gaya, William Leon, 34 Morton St., New York, N.Y.
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 Giblon, Robert Philip, 157 Maple Ave., Red Bank, N.J.
 Gmitter, George, 18 Stevens Ave., Jersey City, N.J.
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 Reid, William Robertson, 1801 Avenue T., Brooklyn, N.Y.
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 Rossi, Boniface Ernest, 417 Grand St., Hoboken, N.J.
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 Scholp, Alvin Conrad, 58 Columbia Ave., Grantwood, N.J.
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 Sprague, Everett Russell, Box 201, Peapack, N.J.
 Steinmetz, Arthur Martin, 50 Oakwood Ave., Bogota, N.J.
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STEVENS INSTITUTE OF TECHNOLOGY

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 Wiegiers, Henry Ernest, 83 May St., Hawthorne, N.J.
 Willenborg, Walter John, Jr., 36 Clifton Terrace, Weehawken, N.J.
 Willis, Robert Everett, Jr., 109 Hudson Ter., Yonkers, N.Y.
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 Wright, Richard, Jr., 792 Fairview Lane, Grantwood, N.J.
 Young, Edward Wilson, 175 Washington Ave., Belleville, N.J.
 Zahn, Lawrence Herbert, 230 Hamilton Ave., Hasbrouck Heights, N.J.
 Zappa, Joseph Francis, 339 Park Ave., Hoboken, N.J.

STUDENTS OF THE SOPHOMORE CLASS

CLASS OF 1937

Anderson, Jonas, 48 New York Ave., Union City, N.J.
 Andresen, John Henry, 285 Hamilton Ave., Glen Rock, N.J.
 Apolant, Stanley Grier, 335 Knickerbocker Rd., Tenafly, N.J.
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 Arons, Arnold Boris, Hillcrest Rd., Watchung, Plainfield, N.J.
 Axt, Wallis Clayton, 9 Garden St., Montclair, N.J.
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 Bauer, Jacob Louis, Jr., 320 St. Georges Pl., Westfield, N.J.
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 Bogert, Charles Albert, 162 Slocum Ave., Englewood, N.J.
 Bookhult, Donald Hayden, 322 Vine St., Elizabeth, N.J.
 Braun, Herbert Cornelius, 512 37th St., Union City, N.J.
 Braxton, James Sylvester, 711 Ocean Ave., Jersey City, N.J.
 Brundage, Clifford Bernard, Jr., Pine St., Ramsey, N.J.
 Buchanan, Robert Lester, 24 Mill Rd., Morristown, N.J.
 Budell, William, Blanche Ave., Norwood, N.J.
 Butler, Irving Thomas, 20 Hornblower Ave., Belleville, N.J.
 Carriere, Maurice DeMonbrun, 79 Danforth Ave., Jersey City, N.J.
 Chan, Harry Shiu-Ning, 142 E. 27th St., New York, N.Y.
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 Dill, John Harding, R.F.D. 1, Wilmington, Dela.
 DiMasi, Thomas Joseph, 262 New Main St., Yonkers, N.Y.
 Downham, Albert Frederick, 822 Hudson St., Hoboken, N.J.
 Duckworth, Donald Trayser, 1212 College St., Scranton, Pa.
 Ehrman, Bruno, Jr., Cedar Lane, Secaucus, N.J.
 Fiedler, Eugene Francis, 1431 E. 27th St., Brooklyn, N.Y.
 Florea, Harold Robert, 27 E. 124th St., New York, N.Y.
 Forrest, Harry Dean, 670 Oradell Ave., Oradell, N.J.
 Fox, Clifford Stanley, 143-37 Beech St., Flushing, N.Y.
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STEVENS INSTITUTE OF TECHNOLOGY

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 Greten, Richard Herman, 33 Sixth St., Weehawken, N.J.
 Haag, Herbert Charles, 507 Hoboken Rd., Carlstadt, N.J.
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 Heaton, Edward Francis, 4716 11th Ave., Brooklyn, N.Y.
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 Hermansen, Frederick Charles, East Ave., Caledonia, N.Y.
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 Hornstein, Abraham David, 2308 Avenue K, Brooklyn, N.Y.
 Hough, Lyle Perry, 170 S. Washington Ave., Bergenfield, N.J.
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 Hubeny, Frank George, 19 W. Linden Ave., Rahway, N.J.
 Hunt, Robert Gallatin, 641 55th St., Brooklyn, N.Y.
 Iig, Henry Lucas, Jr., 122 Bellevue Pl., Yonkers, N.Y.
 Jahnig, Charles Edward, 14 Lafayette St., Springfield, Mass.
 Johnson, Joseph Richard, Mount Arlington, N.J.
 Jones, Robert Morrow, Wauwimet, Nantucket, Mass.
 Junge, William Edmund, 189 Liberty St., Bloomfield, N.J.
 Kamlookhine, Igor, 111 E. 78th St., New York, N.Y.
 Kociol, Allan Kerth, 537 Belmont Ave., Newark, N.J.
 Koester, Herman, Jr., 41 Columbia Blvd., Waterbury, Conn.
 Kohanow, Nicholas, 1141 Third Ave., New York, N.Y.
 Kornylak, Andrew Thomas, 9 Nunda Ave., Jersey City, N.J.
 Kreisa, Lester Claude, 540 St. John's Pl., Brooklyn, N.Y.
 Kruty, Joseph George, 640 Bergenline Ave., West New York, N.J.
 Lamont, Charles, 11 Howard Pl., Bayonne, N.J.
 Lasky, Leonard, 112-14 Liberty Ave., Richmond Hill, N.Y.
 Lewis, John Henry, 1023 Anderson Ave., Palisade, N.J.
 Lichtenstein, John Herbert, 104 Combs Ave., Woodmere, L.I., N.Y.
 Locke, Frederick William, 49 Slocom Crescent, Forest Hills, L.I., N.Y.
 MacLean, Gordon, Jr., 34-20 Parsons Blvd., Flushing, N.Y.
 Mainka, Albert Pierre, 750 Ninth Ave., New York, N.Y.
 Manthey, Robert Berthold, 208 Danforth Ave., Jersey City, N.J.
 Masi, Dominic Michael, 20 Boulevard, Summit, N.J.
 Mathez, Edmond Constantin, 115 Reis Ave., Englewood, N.J.
 McCoy, Rawley Deering, 30 McIntyre St., Bronxville, N.Y.
 McDonald, Newell Douglas, 44 Greystone Park, Yonkers, N.Y.
 Mendel, Oscar Melville, 243 Manhattan Ave., Crestwood, N.Y.
 Meyer, William Henry, 3604 Waldo Ave., Bronx, N.Y.

SOPHOMORE CLASS

Middleditch, Lyman, Water Witch Club, Highlands, N.J.
 Miller, Arthur Morris, 319 Lafayette Ave., Passaic, N.J.
 Miller, Robert Campbell, 332 Hawthorne Ave., Yonkers, N.Y.
 Moyes, Stuart Haughton, West St., Closter, N.J.
 Musser, Warren Ralph, 66 Maple Ave., Morristown, N.J.
 Neuhoff, Justin Paul, 217 Prince Ave., Freeport, N.Y.
 Novick, Daniel, 4336-147th St., Flushing, N.Y.
 O'Boyle, Desmond John, 1567 Birchwood Ave., Chicago, Ill.
 Pandolfo, Patrick Anthony, 286 Neptune Ave., Jersey City, N.J.
 Parkhurst, Burrell Alling, 110 Glenwood Ave., East Orange, N.J.
 Pettit, Jack Leland, 155 Nutley Ave., Nutley, N.J.
 Phair, Robert Sabens, 714 Franklin Turnpike, Allendale, N.J.
 Purdy, William F., 134-18 60th Ave., Flushing, L.I., N.Y.
 Riblet, Roy Johnson, 59 Hillcrest Rd., Arlington, N.J.
 Rickerich, Frederick, Jr., 233 Ege Ave., Jersey City, N.J.
 Rudiger, Bernhard Walter, 888 Summit Ave., Jersey City, N.J.
 Russo, Joseph Paul, 224 Washington St., Orange, N.J.
 Scherner, Robert Eugene, 27 Whitman St., Springfield, Mass.
 Schneider, Francis Russell, 2331 Grand Concourse, New York, N.Y.
 Schoppes, Lawrence Wymon, 9 Greenbrier St., Springfield, Mass.
 Scott, Robert, 338 E. 78th St., New York, N.Y.
 Seifert, Albert William, 882 Bergenline Ave., Woodcliff, N.J.
 Slobey, Robert Joseph, 463 Roosevelt Ave., Lyndhurst, N.J.
 Smith, Paul Keyes, 800 Riverside Dr., New York, N.Y.
 Smyth, Sigurd, 389 Columbia Ave., Grantwood, N.J.
 Soled, Julius, 73 Armstrong Ave., Jersey City, N.J.
 Spano, John Francis, 30 Henry St., Jersey City, N.J.
 Thatcher, Willard Henry, 56 Tiona Ave., Belleville, N.J.
 Tilley, Alvin Richard, Eatontown, N.J.
 Toppin, Francis Victor, Jr., 535 Lake Ave., Lyndhurst, N.J.
 Trenholme, Wynne Matheson, Castle Stevens, Hoboken, N.Y.
 Twist, Howard Edward, 293 W. Passaic Ave., Rutherford, N.J.
 Tyson, Thomas, 519 Wyndmoor Ave., Chestnut Hill, Pa.
 Ulrichs, Alexander John, Mahwah, N.J.
 Verdee, Edward John, 832 Willow Ave., Hoboken, N.J.
 von Vittinghoff, Rupert, 3 Hathaway Lane, White Plains, N.Y.
 Wardwell, Frederick Schuyler, 33 Cowing Pl., Glenbrook, Conn.
 Waterbury, John Kenyon, 103 N. Walnut St., East Orange, N.J.
 Weller, Arthur Clarence, 17 Margaret St., Bayonne, N.J.
 Wells, John Rushmore, "Windover" Valley Road, Plainfield, N.J.
 Weyland, Eugene Lloyd, Covent, N.J.
 Widness, John Edward, 122 Brooklyn Ave., Brooklyn, N.Y.
 Wielkopolski, Edward, 758 Elm St., Arlington, N.J.
 Willenborg, Carl Henry, 36 Clifton Ter., Weehawken, N.J.
 Wiseltier, Richard, 54 Caterson Ter., Hartsdale, N.Y.
 Wolff, Edwin Kipp, 82 Bostwick Ave., Jersey City, N.J.
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STUDENTS OF THE FRESHMAN CLASS

CLASS OF 1938

Alexander, Harry Edward Vaux, 62-50 Saunders St., Rego Park, Elmhurst, N.Y.
 Armstrong, John Bertram, 30 Baker Hill Rd., Great Neck, L.I., N.Y.
 Armstrong, Matthew Anthony, 155-14th St., Hoboken, N.J.
 Barber, Robert Talcott, 157 Washington St., Morristown, N.J.
 Biddle, Richard Scull, 607 Banks Ave., Riverton, N.J.
 Bissinger, Walter Jacob, 111 Garrison Ave., Jersey City, N.J.
 Borchardt, Walter Otto, Jr., 50 Dartmouth Rd., Mt. Lakes, N.J.
 Boyajean, John Arthur, 2600 Boulevard, Jersey City, N.J.
 Brandstetter, Albert Weiblen, 425 West 114th St., New York, N.Y.
 Brown, Francis, 57 Crescent Ave., Grantwood, N.J.
 Bruland, Kenneth Warren, 55 Passaic St., Dover, N.J.
 Burghardt, Joseph Endler, 152 Belmont Ave., Jersey City, N.J.
 Bussing, Edward Frederick, Jr., 7 Livingston Ave., Lyndhurst, N.J.
 Cangialosi, John Camillo, 207 Seventh St., Hoboken, N.J.
 Clark, Henry Livingston, Jr., Crystal Lake, R.F.D., Oakland, N.J.
 Clayton, David Francis, 730 Park Ave., Hoboken, N.J.
 Clemen, John Douglas, 3477 Fort Independence St., New York, N.Y.
 Collie, Edward Martin, 327 Vose Ave., S. Orange, N.J.
 Connon, Jack Anthony, 19 Avenue B, Bayonne, N.J.
 Conover, Charles Edwin, Middletown, N.J.
 Convery, James Forrest, Jr., 413 West Englewood Ave., West Englewood, N.J.
 Craig, John Gordon, 404 Clinton Ave., Plainfield, N.J.
 Dale, Oswald Robert, 95 Cedar St., Nutley, N.J.
 Damalt, Joseph Bernat, 27 Linden St., Passaic, N.J.
 Dauman, Arnold, 1560 Selwyn Ave., Bronx, N.Y.
 Davis, Eugene Rutherford, Jr., Harrington Ave., Closter, N.J.
 Deal, John Robe, 18 Hawthorne Ave., Troy, N.Y.
 DeFreitas, William Richard, 330 N. Columbus Ave., Freeport, N.Y.
 Denzler, Rudolph Emil, 817 20th St., Union City, N.J.
 Dieckhoff, Charles Phillip, 62 Teaneck Rd., Ridgefield Park, N.J.
 Dooley, Wilbur Jay, 436 Lafayette Blvd., Long Beach, N.Y.
 Eisler, Charles, Jr., 321 Wyoming Ave., South Orange, N.J.
 Epstein, Sherwin, 19 King St., Morristown, N.J.
 Esposito, Victor Edmond, 222 Duane St., Orange, N.J.
 Faber, Norman, 143 Carmel Rd., Buffalo, N.Y.
 Faessinger, Robert William, 301 Ninth St., West New York, N.Y.

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Farley, Thomas Julian, 424 Devon St., Arlington, N.J.
 Foehl, Julian Alvin, 84 Humboldt St., East Rutherford, N.J.
 Fuller, William Raymond, Winterton, N.Y.
 Furler, Donald Ward, 65 Glen Ave., Glen Rock, N.J.
 Garrety, John Francis, Grand Ave. & Lawn St., Park Ridge, N.J.
 Garvey, Edward Joseph, 16 Lincoln Pl., Belleville, N.J.
 Gela, Theodore, 135 Lake St., Jersey City, N.J.
 Goldrick, Richard James, 36 Trenton St., Jersey City, N.J.
 Gottlieb, William, 40 W. 67th St., New York, N.Y.
 Groome, Donald Frederick, 136 Page Ave., Lyndhurst, N.J.
 Hall, William Wainwright, 618 E. 28th St., Paterson, N.J.
 Harris, Donald Sires, 8530-123d St., Richmond Hill, N.Y.
 Hartman, Melville Edward, 6198 Grove Ave., Brooklyn, N.Y.
 Heath, Armour Roy, Jr., 1278 Robert St., Hillside, N.J.
 Heath, Westcott, Jr., 17 High St., Morristown, N.J.
 Herrmann, Edgar Robert, 235 Ogden Ave., Jersey City, N.J.
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 Hills, George Clarence, Jr., 177 Amity St., Brooklyn, N.Y.
 Hooper, Charles, 50 Maltbie Ave., Suffern, N.Y.
 Houska, Vlado Joseph, 211 Lincoln Ave., Dunellen, N.J.
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 Johnsen, Avernach Worth Bagley, 53 West 5th St., Bayonne, N.J.
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SUMMARY OF STUDENT ENROLLMENT

Seniors	93
Juniors	94
Sophomores	134
Freshmen	127
Total Undergraduate	448
Others	23
Total Enrollment	471

HONORARY DEGREES

THE HONORARY DEGREE OF DOCTOR OF PHILOSOPHY (PH.D.)
HAS BEEN CONFERRED UPON

- *HENRY WURTZ, 1877.
- *JOHN MINOT RICE, 1880.
- *BENJAMIN F. THOMAS, B.S., A.M., 1880.
- *SAMUEL PIERPONT LANGLEY, 1881.
- *ALBERT ABRAHAM MICHELSON, 1887.

THE HONORARY DEGREE OF DOCTOR OF SCIENCE (SC.D.)
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- EDWARD WESTON, LL.D., 1904, Newark, N.J.
- HENRY SMITH PRITCHETT, Ph.D., LL.D., 1908.
- OTTO HILGARD TITTMANN, LL.D., 1915.
- *CHARLES FREDERICK KROEH, A.M., 1921.
- Rear Admiral WILLIAM SNOWDEN SIMS, LL.D., 1921.
- FREDERICK KING VREELAND (M.E., Stevens '95), A.M., 1921.
- GEORGE ROCKWELL PUTNAM, M.S., 1922.
- CHARLES ALBERT BROWNE, Ph.D., Sc.D., 1925.
- FRANCIS JONES POND, Ph.D., 1929.
- NATHAN SANFORD OSBORNE, Engineer of Mines, 1930.
- KARL TAYLOR COMPTON, M.S., Ph.D., 1931.
- JOHN WHITE HOWELL, (E.E., Sc.D., Stevens '99), 1932.
- ALAN HAZELTINE (M.E., Stevens '06), 1933.
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- *COLEMAN SELLERS, 1888.
- *FRANCIS BOLLES STEVENS, 1890.
- *Rear Admiral GEORGE WALLACE MELVILLE, 1896.
- *JOHN ELFRETH WATKINS, 1900.
- *PALMER CHAMBERLAINE RICKETTS, C.E., LL.D., 1905.

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STEVENS INSTITUTE OF TECHNOLOGY

- *Colonel EDWIN AUGUSTUS STEVENS, B.A., 1905.
Rear Admiral DAVID WATSON TAYLOR, 1905.
JOHN HAYS HAMMOND, M.A., 1906.
*JAMES EDGAR DENTON (M.E., Stevens '75), 1906.
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CHARLES EUGENE SCHNEIDER, 1919.
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