

CORNELL UNIVERSITY OFFICIAL PUBLICATION

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Announcement of the College of Architecture 1927-28

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THE UNIVERSITY CALENDAR FOR 1927-28

Observed by all the departments of the University at Ithaca.

1927

FIRST TERM

Sept. 16,	<i>Friday,</i>	Entrance examinations begin.
Sept. 26,	<i>Monday,</i>	Registration and assignment of new students.
Sept. 27,	<i>Tuesday,</i>	
Sept. 27,	<i>Tuesday,</i>	Registration and assignment of old students.
Sept. 28,	<i>Wednesday,</i>	
Sept. 29,	<i>Thursday,</i>	Instruction begins at 8 A. M.
Oct. 21,	<i>Friday,</i>	Last day for payment of tuition for the first term.
Nov. 23,	<i>Wednesday,</i>	Instruction ends at 6 P. M. } Thanksgiv-
Nov. 28,	<i>Monday,</i>	Instruction resumed at 8 A. M. } ing Recess
Dec. 17,	<i>Saturday,</i>	Instruction ends at 1 P. M. } Christmas
1928		Instruction resumed at 8 A. M. } Recess
Jan. 2,	<i>Monday,</i>	Instruction resumed at 8 A. M. }
Jan. 11,	<i>Wednesday,</i>	Founder's Day.
Jan. 28,	<i>Saturday,</i>	Instruction ends.
Jan. 30,	<i>Monday,</i>	Term examinations begin.
Feb. 8,	<i>Wednesday,</i>	Term ends.
Feb. 9,	<i>Thursday,</i>	A holiday.

SECOND TERM

Feb. 10,	<i>Friday,</i>	Registration of all students.
Feb. 13,	<i>Monday,</i>	Instruction begins at 8 A. M.
Mar. 5,	<i>Monday,</i>	Last day for payment of tuition for the second term.
Mar. 31,	<i>Saturday,</i>	Instruction ends at 1 P. M. } Spring
April 9,	<i>Monday,</i>	Instruction resumed at 8 A. M. } Recess
May 26,	<i>Saturday,</i>	Spring Day: a holiday.
June 4,	<i>Monday,</i>	Term examinations begin.
June 12,	<i>Tuesday,</i>	End of term examinations.
June 18,	<i>Monday,</i>	COMMENCEMENT.

THE COLLEGE OF ARCHITECTURE

THE FACULTY

LIVINGSTON FARRAND, A.B., M.D., L.H.D., LL.D., President of the University.

FRANCKE HUNTINGTON BOSWORTH, A.B., Dean of the College of Architecture, and Andrew Dickson White Professor of Architecture.

CLARENCE AUGUSTINE MARTIN, D.Sc., Professor of Architecture.

OLAF MARTINIUS BRAUNER, Professor of Drawing and Painting.

ALBERT CHARLES PHELPS, B.S., M.Arch., World War Memorial Professor of Architecture.

GEORGE YOUNG, JR., B.Arch., Professor of Architecture.

E. GORTON DAVIS, B.S., Professor of Landscape Architecture.

CHRISTIAN MIDJO, Professor of Freehand Drawing and Modeling.

RALPH WRIGHT CURTIS, M.S.H., Professor of Ornamental Horticulture.

LEROY P. BURNHAM, M.S.Arch., Professor of Design.

WILLIAM H. SCHUCHARDT, B.Arch., Professor of Architecture.

GEORGE RAY CHAMBERLAIN, M.E., Assistant Professor of Freehand Drawing.

EUGENE DAVIS MONTILLON, B.Arch., Assistant Professor of Landscape Architecture.

HUBERT E. BAXTER, B.Arch., Assistant Professor of Architecture.

WALTER KING STONE, Assistant Professor of Drawing.

WILLIAM McLEISH DUNBAR, B.Arch., Assistant Professor of Architecture.

EDWARD LAWSON, B.S., M.L.D., F.A.A.R., Assistant Professor of Landscape Architecture.

FREDERIC T. JOHNSON, Librarian.

EDWARD ABBUEHL, Instructor in Graphics.

MILDRED E. VANALSTYNE, Secretary to the Dean.

GENERAL STATEMENT

THE COURSES OF STUDY

The College of Architecture is a professional school offering courses of study designed as basic training preparatory to the practice of the profession of

Architecture,
Landscape Architecture,
Painting or Sculpture.

The course leading to the degree of Bachelor of Architecture is intended for the student who expects to practice architecture. In addition to the regular curriculum leading to this degree, a course is available for the student who expects to specialize more particularly in the structural phase of architecture or engage in building or in the manufacture of building materials. The course leading to the degree of Bachelor of Landscape Architecture is intended for the student who expects to practice landscape architecture. The course leading to the degree of Bachelor of Fine Arts is intended for the prospective painter or sculptor or for one who expects to engage in the practice of one of the decorative arts.

The number of students in the college is limited in order to insure, throughout the course, that close personal association between teacher and pupil which is necessary for effective instruction in any creative art. The several curricula are composed largely of courses technical in nature. In these the work is competitive, the standard of scholarship being maintained upon a professional basis. Included in these curricula is such an amount of general academic work, courses taught in other departments of the University, as would seem to furnish the minimum essential cultural background. It is inadvisable for anyone not vitally interested to attempt the work of any of these courses of study.

The course leading to any one of the three degrees granted by the college requires, normally, five years of work. It is possible, however, for a thoroughly prepared student to qualify for a degree in less time. In order to do so, it would be necessary to present for entrance Advanced Algebra, Trigonometry, Physics, and Chemistry, inasmuch as these subjects, if not presented for entrance, must be taken in the University. Students presenting these subjects for entrance are not required to repeat them. The rate of a student's progress in the college is determined in large part by the quality of his work and not alone by the quantity of it. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record. The time element in the preparation for any creative profession is such, however, that crowding of the work is deemed unwise.

BUILDINGS AND EQUIPMENT

The College of Architecture occupies the third and fourth floors and a portion of the basement of White Hall and the top floor of Franklin Hall. The college offices, the college library, the lecture room and exhibition rooms occupy the third floor of White Hall. A suite of three drafting rooms, opening together so as to form virtually a single room approximately 45 by 156 feet in dimension, occupies the entire fourth floor. On the top floor of Franklin are well-lighted studios devoted to the work in freehand drawing, painting, and modeling.

The college library is one of the best in the country, and the student is permitted and encouraged to use the books, photographs, and drawings freely.

A carefully selected collection of about 24,000 lantern slides is used constantly in connection with the lectures upon history, theory, and construction.

The exhibition rooms are in use for the exhibition of current student work in design and in art or for exhibitions of drawings, paintings, and textiles, which serve to keep the student in touch with the work of other schools of architecture, and to familiarize him with the work of the best practitioners and artists.

ADMISSION TO THE COLLEGE

Admission to the College of Architecture is to be obtained only through the Committee on Admissions of that College.

The requirements and rules of admission will be found in the General Circular of Information.

ADMISSION TO THE FRESHMAN CLASS

Admission to the freshman class is permitted at the beginning of the first term in September.

After the applicant's academic credentials have been received and accepted by the Registrar, they will be sent to the College of Architecture. The Committee on Admissions will then pass upon the application, considering the academic record and all other available information bearing upon the case, and will make a ruling upon the admission of the candidate. All applicants will be notified of the ruling of the Committee on Admissions not later than August 15.

ADMISSION TO ADVANCED STANDING

A student who has already attended a technical school or other institution of collegiate rank may be admitted at the beginning of the first or, if a satisfactory schedule of work can be arranged, at the beginning of the second term. Such an applicant is required to fulfill all academic and other entrance requirements.

In addition he should file with the Committee on Admissions of the College of Architecture an official transcript of record of his work at the institution already attended together with a certificate of honorable dismissal therefrom. He should also send to the Committee a catalogue of the institution, writing his name thereon, and marking the courses which he has taken as listed in the official transcript.

Advance credit for courses in the College of Architecture is given only upon examination by the department concerned but a preliminary ruling will be made by the Committee on Admissions on the evidence submitted.

Applications for admission should be made by August 1, as is required in the case of freshmen applications; or, for admission at the beginning of the second term, not later than January 1.

ADMISSION OF SPECIAL STUDENTS

All correspondence concerning admission of special students should be addressed to the Committee on Admissions of the College of Architecture. A special form of questionnaire will be sent to such applicants. Special students are primarily those of advanced experience in the practice of their art. They must be at least twenty-one years of age, and must have had a high school training or its equivalent, including a working knowledge of plane geometry and solid geometry and, in the case of architects, of algebra through quadratic equations. They should have at least three years' practical experience or its equivalent and submit with their application examples of their work or draftsmanship. Special students may be admitted at the beginning of either term, but applications accompanied by deposit should be filed by August 1, or January 1. See also the General Circular of Information. A high scholastic performance is expected of special students and is made a condition of their remaining enrolled in the college. The college does not issue a certificate for special work.

A SIX-YEAR COURSE LEADING TO THE DEGREES OF BACHELOR OF ARCHITECTURE AND CIVIL ENGINEER

A student may arrange a course of about six years leading to the degrees of Bachelor of Architecture and of Civil Engineer. Such an arrangement must in every instance have the special approval of the College of Architecture and of the School of Civil Engineering.

ADMISSION AS A GRADUATE STUDENT

All correspondence relating to graduate work should be addressed to the Dean of the Graduate School.

In all departments of the College of Architecture work is arranged to meet the special needs of graduate students. Candidates for ad-

vanced degrees in architecture or in landscape architecture must be graduates of schools of equal standing with the College of Architecture, and their training in design or other subjects elected for graduate study must be equivalent to the training required in the same subjects by the College of Architecture for the degree of Bachelor of Architecture or for the degree of Bachelor of Landscape Architecture.

TUITION AND OTHER FEES

Information regarding tuition and other fees, and regarding the expenses of living in Ithaca, will be found in the General Circular of Information.

FELLOWSHIPS: SCHOLARSHIPS: PRIZES

For information concerning scholarships that are open to students of this college in common with other students of the University, consult the General Circular of Information.

A University Fellowship of the value of \$400 with free tuition is awarded annually for graduate study, by the Faculty of Architecture. *The Pendleton Scholarship*, of the value of \$500, is awarded annually for graduate study.

The Beckwith Brown Memorial Medal may be awarded each year to the two members of the graduating class who have made the best record in design in their senior year.

The Sands Memorial Medal may be awarded for special excellence in any individual piece of work in any course in the college.

The Student Medal of the American Institute of Architects is awarded to the member of the graduating class in architecture whose record is the best throughout the entire course.

Through the *Beaux-Arts Institute of Design* numerous prizes are offered for excellence of work in design. These prizes are open to students in the College of Architecture who frequently compete for them with success and distinction to themselves and to the college.

The Fuertes Memorial Prizes in Oratory (first prize \$125, second prize \$35, and third prize \$25) are open to students in architecture on equal terms with students in engineering.

THE HONOR CODE IN EXAMINATIONS

Under a constitution proposed and adopted by the students, and approved by the University Faculty on March 9, 1921, all students of Cornell University are put upon their honor with respect to their conduct in examinations and in other tests of work by which they are earning academic credit. The students have made themselves responsible for maintaining the code. For the trial of charges of breach

of honor they elect committees of their own—a central committee for the University, and a committee in each of the colleges. Every student is expected to do his share in upholding the code, not only by honorable conduct on his own part, but also by refusal to conceal or condone fraud on another's part. A fraud observed in any college should be reported to a member of the student honor committee of that college.

COURSES OF STUDY

I. The Course Leading to the Degree of BACHELOR OF ARCHITECTURE.

This course is designed for the student who expects to become a practicing architect.

II. A Course Leading to the Degree of BACHELOR OF ARCHITECTURE and Related Especially to CONSTRUCTION.

This course is designed for the student who plans to engage particularly in the structural field of architectural practice or who wishes to prepare himself for the business of contractor or of manufacturer of building materials.

III. The Course Leading to the Degree of BACHELOR OF FINE ARTS.

This course is designed for the student who expects to become a painter or sculptor.

IV. The Course Leading to the Degree of BACHELOR OF LANDSCAPE ARCHITECTURE.

This course is designed for the student who expects to become a practicing landscape architect.

SEQUENCE OF COURSES LEADING TO DEGREES

The schedules on the next four pages show the normal sequence of the courses of instruction that lead to the several degrees. In order to become eligible to the degree corresponding to any one of the four courses of study, the student must complete the required work in Hygiene and Military Drill (or Physical Training; see the General Circular of Information) and the courses of instruction that are comprised in that curriculum. Normally any of these courses of study requires five years for completion.

I. The Course Leading to the Degree of BACHELOR OF ARCHITECTURE

Of these four subjects, those which have been presented for entrance need not be taken in the University:

Trigonometry (Mathematics, 3).....	3	
Advanced Algebra (Mathematics, 2).....	3	
Physics (Physics, 3 and 4).....	6	
Chemistry (Chemistry, 101 and 105).....	6	

FIRST YEAR	Theory of Architecture, 101.....	1	0
	Elementary Design, 111, 112.....	3	3
	Elementary Drawing, 131, 132.....	3	3
	History of Architecture, 142.....	0	3
	Descriptive Geometry, 151, 152.....	3	3
	English, 1.....	3	3
	Total number of hours each term	13	15

SECOND YEAR	Theory of Architecture, 201.....	1	0
	Architectural Design, 213, 214.....	4	4
	Elements of Color, 233.....	2	0
	History of Architecture, 241, 242.....	3	3
	Perspective, 251.....	1	0
	Modeling, 234.....	0	2
	Materials of Construction, 262.....	0	2
	History of Painting and Sculpture, 341, 342.....	1	1
Analytic Geometry and Calculus (Mathematics, 8)	3	3	
	Total number of hours each term	15	15

THIRD YEAR	Architectural Design, 213, 314.....	4	6
	Life and Antique, 231, 232.....	3	3
	Water Color, 332.....	0	2
	Mechanics, 321.....	2	0
	Strength of Materials, 322.....	0	3
	Masonry Construction, 361.....	2	0
	Carpentry, 363.....	2	0
	Heating and Plumbing, 364.....	0	2
Public Speaking, 1.....	3	0	
	Total number of hours each term	16	16

FOURTH YEAR	Architectural Design, 313, 414.....	6	10
	Structural Design, 421, 422.....	3	2
	Concrete Construction (C.E., 280).....	0	3
	Working Drawings, 461.....	4	0
	Modern Architecture, 541.....	3	0
Elective.....	0	2	
	Total number of hours each term	16	17

FIFTH YEAR	Architectural Design, 413.....	10	0
	Architectural Thesis, 511.....	0	6
	Elective.....	7	6
	Total number of hours each term	17	12

II. A Course Leading to the Degree of BACHELOR OF ARCHITECTURE and Related Especially to CONSTRUCTION

Of these four subjects those which have been presented for entrance need not be taken in the University:

Trigonometry (Mathematics, 3)	3	3
Advanced Algebra (Mathematics, 2)	3	3
Physics (Physics, 3 and 4)	6	6
Chemistry (Chemistry, 101 and 105)	6	6

FIRST YEAR	Theory of Architecture, 101	1	0
	Elementary Design, 111, 112	3	3
	Elements of Drawing, 131, 132	3	3
	History of Architecture, 142	0	3
	Descriptive Geometry, 151, 152	3	3
	English, 1	3	3
	Total number of hours each term	13	15

SECOND YEAR	Theory of Architecture, 201	1	0
	Architectural Design, 213, 214	4	4
	Elements of Color, 233	2	0
	History of Architecture, 241, 242	3	3
	Perspective, 251	1	0
	Analytic Geometry and Calculus (Math. 5a, 5b)	5	5
Public Speaking, 1	0	3	
	Total number of hours each term	16	15

THIRD YEAR	Architectural Design, 213	4	0
	Life and Antique, 231, 232	3	3
	Modeling, 234	0	2
	Mechanics (C. E., 220-221)	6	4
	Mechanics Lab. (C. E., 220a-221a)	1	1
	Materials of Construction (C. E., 225)	3	0
	Heating and Plumbing, 364	0	2
Elementary Surveying (C. E., 110)	0	3	
	Total number of hours each term	17	15

FOURTH YEAR	Architectural Design, 313, 314	6	6
	Carpentry, 363	2	0
	Structural Design (C. E., 270-271)	4	3
	Concrete Building Design (C. E., 282)	0	3
	Concrete Construction (C. E., 280)	3	0
	Materials Laboratory (C. E., 226)	0	3
History of Painting and Sculpture, 341, 342	1	1	
	Total number of hours each term	16	16

FIFTH YEAR	Thesis	0	6
	Working Drawings, 461	4	0
	Steel Buildings (C. E., 273)	3	0
	Elective	9	6
	Total number of hours each term	16	12

III. The Course Leading to the Degree of BACHELOR OF FINE ARTS

Of these four subjects, those which have been presented for entrance need not be taken in the University:

Trigonometry (Mathematics, 3).....	3	
Advanced Algebra (Mathematics, 2).....	3	
Physics (Physics, 3 and 4).....	6	
Chemistry (Chemistry, 101 and 105).....	6	

FIRST YEAR	Theory of Architecture, 101.....	1	0
	Elementary Design, 111, 112.....	3	3
	Elementary Drawing, 131, 132.....	3	3
	History of Architecture, 142.....	0	3
	Descriptive Geometry, 151, 152.....	3	3
	English, 1.....	3	3
	Total number of hours each term	13	15

SECOND YEAR	Theory of Architecture, 201.....	1	0
	Life and Antique, 231, 232.....	3	3
	Elements of Color, 233.....	2	0
	Water Color, 332.....	0	2
	History of Architecture, 241, 242.....	3	3
	Perspective, 251.....	1	0
	Advanced Perspective, 252.....	0	1
	Modeling, 234.....	0	2
	History of Painting and Sculpture, 341, 342.....	1	1
English.....	3	0	
History.....	3	3	
	Total number of hours each term	17	15

THIRD YEAR	Third Year Drawing or Modeling, 333, 334.....	4	4
	Still Life in Oils, 335.....	3	0
	Historic Ornament, 742.....	0	2
	History of Greek Sculpture, 1.....	0	3
	Philosophy of the Fine Arts, 4.....	3	0
	Anatomy, 24.....	3	3
	History.....	3	3
	Total number of hours each term	16	15

FOURTH YEAR	Fourth Year Painting or Modeling, 435, 436.....	4	6
	Graphic Arts, 434.....	0	3
	Philosophy.....	3	3
	Elective.....	8	3
	Total number of hours each term	15	15

FIFTH YEAR	Fifth Year Painting or Modeling and Thesis, 535, 536.....	6	10
	Color Composition, 531.....	3	0
	Elective.....	6	6
	Total number of hours each term	15	16

IV. The Course Leading to the Degree of BACHELOR OF LANDSCAPE ARCHITECTURE

Of these four subjects, those which have been presented for entrance need not be taken in the University:

	Trigonometry (Mathematics, 3).....	3	
	Advanced Algebra (Mathematics, 2).....	3	
	Physics (Physics, 3 and 4).....	6	
	Chemistry (Chemistry, 101 and 105).....	6	
FIRST YEAR	Theory of Architecture, 101.....	1	0
	Elementary Design, 111, 112.....	3	3
	Elementary Drawing, 131, 132.....	3	3
	History of Architecture, 142.....	0	3
	Descriptive Geometry, 151, 152.....	3	3
	English, 1.....	3	3
	Total number of hours each term	13	15
SECOND YEAR	Theory of Landscape Architecture, 203.....	1	0
	Landscape Design, 215, 216.....	4	4
	Elements of Color, 233.....	2	0
	Water Color, 332.....	0	2
	History of Architecture, 241, 242.....	3	3
	Perspective, 251.....	1	0
	Woody Plant Materials, 8.....	0	3
	Analytic Geometry and Calculus (Mathematics, 8)	3	3
	Total number of hours each term	14	15
SUMMER SESSION (Second Summer)			
	Woody Plant Materials, S5.....	3	
	Herbaceous Plant Materials, S4.....	2	
	Total hours.....	5	
THIRD YEAR	Theory: Public Properties, 302.....	0	1
	Landscape Design, 215, 316.....	4	6
	History of Landscape Design, 343.....	3	0
	Mechanics, 321.....	2	0
	Strength of Materials, 322.....	0	3
	Woody Plant Materials, 8.....	3	0
	Planting Design, 366.....	0	2
	Elementary Surveying (C. E., 110).....	3	0
	Advanced Surveying (C. E., 211A).....	0	3
	Total number of hours each term	15	15
FOURTH YEAR	Landscape Design, 315, 416.....	6	8
	Life and Antique, 232.....	3	3
	Planting Design, 463, 464.....	1	1
	Earthwork Computations, 296.....	3	0
	Concrete Construction (C. E., 280).....	0	3
	Elective.....	3	2
	Total number of hours each term	16	17
FIFTH YEAR	Landscape Design, 415.....	8	0
	Landscape Thesis, 513.....	0	6
	Geology, 100.....	3	0
	Elective.....	6	3
	Total number of hours each term	17	9

COURSES OF INSTRUCTION

GIVEN IN THE COLLEGE OF ARCHITECTURE

In the numbering of the courses the first figure indicates the year, the second the general subject, and the third the term; odd numbers being first term courses and even numbers, second term courses. All courses numbered 700 and over are elective.

THEORY OF ARCHITECTURE

101. Theory of Architecture. First term. Credit one hour. Professor BOSWORTH. Lectures, with sketches and essays by the class.

201. Theory of Architecture. First term. Credit one hour. Prerequisite course 101. Professor BOSWORTH. Lectures, with sketches and essays by the class.

203. Theory of Landscape Architecture. First term. Credit one hour. Professor DAVIS. Lectures and assigned reading.

302. Theory: Planning of Parks and Park Systems. Second term. Credit one hour. Professor DAVIS. Lectures and assigned reading.

701. Theory of Architecture. Elective. First term. Credit one hour. Prerequisite course 314. Professor SCHUCHARDT. Lectures, with sketches and assigned work.

702. Theory of Architecture. Elective. Second term. Credit one hour. Prerequisite course 314. Continuation of Course 701. Either term or both may be taken. Professor SCHUCHARDT.

DESIGN

Instruction in Landscape and Architectural Design is given by the Design Staff and consists of individual criticism over the drafting board.

111, 112. Elementary Design. Throughout the year. Credit three hours a term. Professor BOSWORTH and Professor BURNHAM. Elementary composition, with drawings in pencil and ink, rendered in wash and color.

213, 214. Sophomore Architectural Design. Throughout the year. Credit four hours a term. Assistant Professor DUNBAR. Prerequisite courses 111, 112. A series of problems in architectural composition and planning. Two of the problems each term are identical with those given in course 215, 216.

215, 216. Sophomore Landscape Design. Throughout the year. Credit four hours a term. Assistant Professor MONTILLON. Prerequisite, course 111, 112. A series of problems in Landscape composition and planning. Two of the problems each term are identical with those given in course 213, 214.

313, 314. Junior Architectural Design. Throughout the year. Credit six hours a term. Professor SCHUCHARDT. Prerequisite 900 points in course 213, 214. A series of problems in architectural composition and studies of detail. One problem each term is identical with that given in course 315, 316.

315, 316. Junior Landscape Design. Throughout the year. Credit six hours a term. Assistant Professor LAWSON. Prerequisite, 900 points in course 215, 216. A series of problems in landscape composition and studies of detail. One problem each term is identical with that given in course 313, 314.

413, 414. **Senior Architectural Design.** Throughout the year. Credit ten hours a term. Professor BOSWORTH and Professor BURNHAM. Prerequisite 600 points in course 313, 314. Prerequisite course for thesis.

415, 416. **Senior Landscape Design.** Throughout the year. Credit eight hours a term. Assistant Professors MONTILLON and LAWSON. Prerequisite 600 points in course 315, 316. Prerequisite course for thesis.

511. **Architectural Thesis.** Credit six to ten hours. Prerequisite for beginning the thesis 500 points in Design 413-414.

513. **Landscape Thesis.** Credit six to ten hours. Prerequisite for beginning the thesis 500 points in Design 415-416.

714. **Architectural Rendering.** Second term. Credit three hours. Prerequisite course 314. Professor BURNHAM.

716. **City Planning.** Second term. Credit one hour. Professor SCHUCHARDT. Lectures and assigned work. Hours to be announced. Open to upperclassmen and graduates only.

THEORY OF CONSTRUCTION

321. **Mechanics.** First term. Credit two hours. Prerequisite course, Mathematics 8. Professor YOUNG and Assistant Professor BAXTER. A brief study of the principles of analytic and graphic statics with reference to their application in Course 322. Recitations.

322. **Strength of Materials.** Second term. Credit three hours. Prerequisite course 321. Professor YOUNG and Assistant Professor BAXTER. A brief study of the effects of loading in producing stress and deformations. The classroom work is supplemented by problems relating to beams, columns, and masonry. Two recitations and one computing period.

421, 422. **Structural Design.** First term, credit three hours; second term, credit two hours. Prerequisite courses 321, 322. Professor YOUNG and Assistant Professor BAXTER. The principles studied in Courses 321 and 322 are applied to the structural design of typical architectural problems. Lectures and reports.

721. **Structural Analysis.** First term. Credit three hours. Prerequisite course 422. Professor YOUNG. Open to a limited number of qualified upperclassmen and graduates.

FREEHAND DRAWING AND FINE ARTS WORK

131, 132. **Elementary Drawing.** Throughout the year. Credit three hours a term. Assistant Professor CHAMBERLAIN. Pencil and charcoal drawing from geometric models and the cast.

231, 232. **Life and Antique.** Throughout the year. Credit three hours a term. Professors BRAUNER and MIDJO. The work consists of drawing from the antique and from life.

233. **Elements of Color.** First term. Credit two hours. Assistant Professor STONE. Elementary color work from still life.

234. **Modeling.** Second term. Credit two hours. Prerequisite course 131, 132. Professor MIDJO.

332. **Water Color.** Second term. Credit two hours. Assistant Professor STONE.

333, 334. **Third Year Drawing or Modeling.** Throughout the year. Credit four hours a term. Professors BRAUNER and MIDJO.

335. **Still Life in Oils.** First term. Credit three hours. Assistant Professor STONE.

433, 434. **Graphic Arts.** Throughout the year. Credit two hours a term. Assistant Professor STONE. A study of illustrative mediums: etching, engraving, lithographing.

435, 436. **Fourth Year Painting or Modeling.** Throughout the year. Credit four hours first term; six hours second term. Professors BRAUNER and MIDJO.

531. **Color Composition.** First term. Credit three hours. Open only to upperclassmen by permission. Professor MIDJO.

535, 536. **Fifth Year Painting or Modeling.** Throughout the year. Credit six hours first term; ten hours second term. Professors BRAUNER and MIDJO.

731. **Composition.** First term. Credit one hour. Professor MIDJO. Exercises in composition in black and white and in color.

HISTORY

142. **History of Architecture.** Second term. Credit three hours. Professor PHELPS and Assistant Professor DUNBAR. Egyptian, Western Asiatic, Greek, Roman, and Byzantine architecture. Lectures with assigned readings, sketches, and examinations.

241. **History of Architecture.** First term. Credit three hours. Prerequisite course 142. Professor PHELPS and Assistant Professor DUNBAR. Romanesque and Gothic architecture. Lectures with assigned readings, sketches, and examinations.

242. **History of Architecture.** Second term. Credit three hours. Prerequisite course 241. Professor PHELPS and Assistant Professor DUNBAR. Architecture of the Renaissance and to the beginning of the nineteenth century in the principal European countries. Lectures with assigned readings, sketches, and examinations.

341, 342. **History of Painting and Sculpture.** Throughout the year. Credit one hour a term. Professor ————. A brief survey of the history of Greek sculpture and of Italian painting.

343. **History of Landscape Design.** First term. Credit three hours. Professor DAVIS. Lectures, sketches, and assigned reading.

541. **Modern Architecture.** First term. Credit three hours. Prerequisite course 242 and at least one term of Junior Design. Professor PHELPS and Assistant Professor DUNBAR. Nineteenth century and more recent work in the principal European countries, and the architecture of the United States from Colonial times to the present.

742. **Historic Ornament.** Second term. Credit two hours. Prerequisite course 242. Professor PHELPS. Some of the great historic styles of decoration will be analyzed and studied in detail, and the development of furniture, stained glass, and other minor arts will be briefly outlined. Lectures, sketches, and examinations.

743, 744. **Historical Seminary.** Throughout the year. Credit one hour a term. Professor PHELPS. Investigation of assigned topics in the history of architecture: review of books and discussions of current periodical literature. For graduates and open to qualified upperclassmen by permission.

GRAPHICS

151, 152. **Descriptive Geometry.** Throughout the year. Credit three hours a term. Professor YOUNG and Assistant Professor BAXTER. The fundamental principles of descriptive geometry are studied and applied to the solution of problems in projection. Lectures and drawing.

251. **Perspective.** First term. Credit one hour. Prerequisite courses 151, 152. Professor MARTIN. Lectures and drawing.

252. **Advanced Perspective.** Second term. Credit one hour. Prerequisite course 251. Professor MARTIN. Lectures and drawing.

APPLIED CONSTRUCTION

262. **Materials of Construction.** Second term. Credit two hours. Professor MARTIN. A brief study of the properties, characteristics, manufacture, and use of the more common materials used in building construction, as plaster, lime, cement, clay products, stone, metals, and wood.

361. **Masonry Construction.** First term. Credit two hours. Prerequisite course 262. Professor MARTIN. Masonry construction as applied to buildings, including survey and setting out, foundation soils, drainage and water-proofing, structural foundations, concrete, stonework, brickwork, tile and terra cotta work, fireproofing, plaster, and stucco.

363. **Carpentry and Roofing.** First term. Credit two hours. Prerequisite course 262. Professor MARTIN. A study of carpentry and joinery as applied to the construction and finish of buildings and a study of roofing with shingles, sheet metals, bituminous compositions, slates, tiles, etc.

364. **Heating, Plumbing, and Lighting.** Second term. Credit two hours. Professor MARTIN. A brief study of the principles of heating, ventilation, plumbing, and lighting. Lectures and exercises.

461. **Working Drawings and Specifications.** First term. Credit four hours. Prerequisite courses 361 and 363. Professor MARTIN. The work of this course consists in the preparation of scale drawings and details approximating office practice as closely as possible, and including specification notes and a brief study of the principles of specification writing.

296. **Earthwork Computations.** First term. Credit three hours. Assistant Professor LAWRENCE. Engineering problems peculiar to landscape work. Given in the College of Engineering (C. E. 296).

762. **Fire Resisting Construction.** Second term. Credit two hours. Professor MARTIN. A study of fire prevention and fire protection in the design, construction, and equipment of buildings. Lectures and assigned reading. Given in 1927-28 and in alternate years.

8. **Woody-Plant Materials.** Second and first terms. Credit three hours a term. Lectures, laboratories, and field trips. Professor CURTIS. A brief study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. Laboratory fee \$1.50. (Given in the College of Agriculture. Floriculture 8.)

366. **Planting Design.** Second term. Credit two hours. Prerequisite course 8. Assistant Professor LAWSON.

463, 464. **Planting Design.** Throughout the year. Credit one hour. Prerequisite course 366. Professor DAVIS.

COURSES OF THE REGULAR CURRICULA GIVEN
OUTSIDE THE COLLEGE OF ARCHITECTURE

MILITARY SCIENCE AND TACTICS, AND PHYSICAL TRAINING

All men in the first two years of undergraduate courses must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Military Science and Tactics. This department is a unit of the Reserve Officers' Training Corps of the United States Army. The students are organized in an infantry regiment of twelve regular companies, a battalion of field artillery of three batteries, one headquarters company, one machine gun company, and a band.

For details of the work in the Department of Military Science and Tactics, see the General Circular of Information.

All women in the first two years of undergraduate courses, and all men of those two classes who are excused from military drill, must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Physical Training.

For details of the work in the Department of Physical Training, see the General Circular of Information.

HYGIENE AND PREVENTIVE MEDICINE

All students in the first two years of undergraduate courses are required to attend lectures on Hygiene and Preventive Medicine given once a week throughout the college year.

COURSES GIVEN IN THE COLLEGE OF ARTS AND SCIENCES

MATHEMATICS

2. **Advanced Algebra.** Repeated in second term. Credit five hours.
3. **Plane Trigonometry.** Repeated in second term. Credit three hours.
- 5a, 5b. **Analytic Geometry and Calculus.** Primarily for students in the College of Engineering. Prerequisite, Mathematics 1, 2, 3, or the equivalent.
 - 5a. Credit five hours. Repeated second term.
 - 5b. Credit six hours. Continuation of course 5a. Repeated second term.
8. **Analytic Geometry and Calculus.** Throughout the year. Credit three hours a term. Prerequisite, Mathematics 1, 2, 3, or the equivalent. Primarily for students in the College of Architecture.

ENGLISH

1. **Elementary Composition and Literature.** Throughout the year. Credit three hours a term. Messrs. BALDWIN, CARROLL, GREENE, JOHNSON, P. F. JONES, LINDSAY, and WILDER.

This course is designed for underclassmen in Agriculture, Architecture, and Chemistry who have satisfied the entrance requirements in English. A study of composition in connection with the reading of representative works in English literature. Students who have not taken the course in the first term may enter in the second term in sections provided for them.

Registration in the course is in charge of Mr. Baldwin. Students who elect English 1 must apply at *Roberts 292* on Wednesday, Thursday, Friday, or Saturday of registration week for assignment to sections.

PUBLIC SPEAKING

1. **Public Speaking.** Throughout the year. Credit three hours a term. Not open to freshmen. Assistant Professors MUCHMORE and WICHELNS, and Messrs. HANNAH, PARRISH, WOEL, and GILMAN.

Planned to give the fundamentals of speech preparation and to develop simple and direct speaking. Required readings on selected topics.

All students intending to take course 1 must apply at *Goldwin Smith 21* on Friday or Saturday of registration week of each term for assignment to sections.

- 1a. **Public Speaking.** Second term. Credit three hours. Not open to freshmen. Assistant Professors MUCHMORE, HUNT, and WICHELNS and Messrs. HANNAH, PARRISH, WOEL and GILMAN.

This course repeats the work of the first term of course 1.

All students intending to take course 1a must apply at *Goldwin Smith 21* on Friday or Saturday of registration week for assignment to sections.

THE CLASSICS

1. **History of Greek Sculpture.** Repeated in second term. Credit three hours. Professor ANDREWS.

PHILOSOPHY

4. **The Fine Arts; their Philosophy and History in Outline.** First term. Credit three hours. Professor HAMMOND. An elementary course on aesthetics. Lectures, assigned readings, and examinations.

PHYSICS

3. **Introductory Experimental Physics.** First term. Credit three hours. Lectures, Assistant Professor HOWE. Laboratory, Messrs. BARNES, CHILDS, FISHER, GARTLEIN, KINCAID, LARSEN, WARBURTON, and WHITE. One two-hour period a week to be arranged.

Demonstration lectures and laboratory work covering properties of matter, sound, and light.

Courses 3 and 4 form a continuous first course. Course 4 may be taken before course 3 if this sequence is preferred.

4. **Introductory Experimental Physics.** Second term. Credit three hours. Lectures, Professor MERRITT. Laboratory, Messrs. BARNES, CHILDS, FISHER, GARTLEIN, KINCAID, LARSEN, WARBURTON, and WHITE. One two-hour period a week to be arranged.

Demonstration lectures and laboratory work covering heat, magnetism, and electricity.

CHEMISTRY

101. **Introductory Inorganic Chemistry.** Lectures. Repeated in the second term. Credit three hours.

Professor BROWNE and Assistant Professor MCKINNEY.

Examinations for those who were unavoidably absent from the final examination in course 101 will be held at 2 p. m. on the day before instruction begins in the fall.

105. **Introductory Inorganic Chemistry.** Recitations and laboratory practice. Repeated in the second term. Credit three hours.

Recitations, one hour a week, to be arranged.

Professor BROWNE, Assistant Professor MCKINNEY, and assistants.

Chemistry 101 and 105 must be taken simultaneously unless permission is obtained by the student from the Dean of his college and from the Department of Chemistry to take either course alone.

GEOLOGY

100. **Introductory Geology.** Repeated in the second term. Credit three hours. Professor RIES and assistants. Lectures and laboratory.

Students must register for laboratory assignment at *Geology Laboratory, McGraw*, before the beginning of the course. The fundamental principles of this branch of science. The inorganic aspects of the subject are emphasized more than the organic.

COURSE GIVEN IN THE MEDICAL COLLEGE

24. **Anatomy.** Throughout the year. Credit three hours a term. Professor KERR. A study in anatomy for the artist. Lectures and drawing periods.

COURSES GIVEN IN THE COLLEGE OF AGRICULTURE

1. **General Botany.** First and second terms. Credit three hours a term. Lectures and laboratories. This course is designed to furnish a general knowledge of the fundamental facts and principles of plant life. Laboratory fee \$2.50 a term; deposit, \$3, for the first term only.

SIX WEEKS SUMMER SESSION

S 4. **Plant Materials, Herbaceous.** Credit two hours. Lectures and laboratories. Miss MINNS and Mr. PORTER. Must be accompanied by S 5. Laboratory fee, \$2.

S 5. **Plant Materials, Woody.** Credit three hours. Lectures, laboratories and field trips. Professor CURTIS and Assistant Professor PORTER. Must be accompanied by S 4. Laboratory fee, \$2.

COURSES GIVEN IN THE COLLEGE OF ENGINEERING

110. **Elementary Surveying.** Freshmen. Either term as assigned. Credit three hours. Use of steel tape, level and transit; fundamental surveying methods; measurement of lines, angles and differences of elevation; land surveying, areas and plotting. Recitations, field work, computations, and mapping. Textbook: Breed and Hosmer's *Elementary Surveying*. First Term, one recitation and two field or computation periods a week; Second Term, three recitations a week for the first six weeks and three field or computation periods a week for the remainder of the term. Professor UNDERWOOD, Assistant Professor LAWRENCE and assistants.

211A. **Advanced Surveying.** For students in Forestry and Landscape Architecture. Second term. Credit three hours. Prerequisite course 110. Topographic, hydrographic, mine, and geodetic surveying and field astronomy; United States Public Land Surveys; precise measurements; transit and stadia; plane table; sextant; stream measurement; topographic reconnaissance; road location; circular curves; triangulation for the control of local surveys; base lines; field determinations of time, latitude, and azimuth. Recitations and field work. Textbook: Breed and Hosmer's *Higher Surveying*. Professor UNDERWOOD and Assistant Professor LAWRENCE.

220. **Mechanics of Engineering.** Sophomores. First term. Credit six hours. Repeated in one section, second term. Prerequisite course, Mathematics 5b. Statics of material point and of rigid bodies by graphic and by algebraic methods of analysis; chains and cords; centers of gravity; moments of inertia of plane figures; dynamics (kinetics) of a material point; impact; virtual velocities; centrifugal and centripetal forces; pendulums; moments of inertia of rigid bodies; dynamics (kinetics) of rigid bodies. Textbooks: Church's *Mechanics of Engineering*, and *Notes and Examples in Mechanics* supplemented by other printed notes and problems. Four recitations and one computing period a week. The computing period will be devoted to the solution of mechanics problems, the use of the slide rule, planimeter, etc. Emphasis will be placed upon correct numerical work and consistent use of proper units. Each student is required to provide himself with a slide rule of approved type. Professors GEORGE and RETTGER and Assistant Professor HOWELL.

220-A. **Mechanics Laboratory.** Credit one hour. One two-and-one-half hour period a week. This course consists of experiments (both qualitative and quantitative) designed to illustrate the principles of Mechanics studied in Mechanics 220, the experiments to be performed by the students themselves. Working models will be used when practicable. Courses 220 and 220-A are closely correlated and must be taken concurrently. Professors GEORGE and RETTGER and Assistant Professor HOWELL.

221. **Mechanics of Engineering.** Sophomores. Second term. Credit four hours. Continuation of Mechanics 220. Prerequisite course, Mechanics 220.

Work; power; energy; fly-wheels; friction; dynamometers; general theorem of work and energy applied to machines; mechanics of materials including stress and strain, tension, shearing, compression, torsion, flexure; elastic curves; safe loads; columns; flexure of beams by semigraphic treatment. Review problems showing application of principles in Engineering Design. Text books: Church's *Mechanics of Engineering*, and *Notes and Examples in Mechanics*, supplemented by other printed notes and problems. Four recitations and one computing period a week. Professors GEORGE and RETTGER, and Assistant Professor HOWELL.

221-A. Mechanics Laboratory. Credit one hour. One two-and-one-half hour period a week. Experiments designed to illustrate the principles of mechanics studied in Course 221. Courses 221 and 221-A are closely correlated and must be taken concurrently. Professors GEORGE and RETTGER, and Assistant Professor HOWELL.

225. Materials of Construction. Sophomores. Credit three hours. The materials studied are: Lime, cement, stone, brick, sand, timber, ores, cast iron, wrought iron, steel, and some of the minor metals and alloys. The chemical and physical properties, uses, methods of manufacture, methods of testing, and unit stresses of each material are considered, particular emphasis being laid on the points of importance to engineers. Three recitations a week. Textbook: Mills's *Materials of Construction*. Professor SCOFIELD.

226. Materials Laboratory. Juniors. Either term. Credit three hours. Prerequisite courses 221 and 225 and must be taken with or preceded by 280. Experimental determination of the properties of materials by mechanical tests. Study of testing machines (their theory, construction, and manipulation); calibration of testing machines and apparatus; commercial tests of iron and steel: tensile, compressive, torsional, shearing, and flexure tests of metal and various woods with stress-strain observations; tests of cement, concrete aggregate, concrete, plain and reinforced, and of road material and paving brick. The course is planned to supplement Course 225 with its study of the properties of materials by the actual handling of the materials and by observations of their behavior under stress. Laboratory work five hours a week. Professor SCOFIELD and Mr. WRIGHT.

270. Structural Design and Bridge Stresses. Juniors. First term. Credit four hours. Prerequisite courses 220 and 221.

Structural Design. The recitations cover the graphic analysis of simple beams and roof trusses. The computations and drawings include complete detail designs and working drawings of wooden joints to resist large tensile stresses, and of a wooden roof truss for given specifications. The object of the course is to show how to apply the principles of mechanics to the design of every detail of the simple structures named, and to study the forms and strength of joints and fastenings used in heavy timber framing. The computations required are to be arranged in systematic order in the form of reports. Textbook: Jacoby's *Structural Details*. Computation and drawing, two-and-one-half hours a week.

Bridge Stresses. Stresses due to dead, live, and wind loads, initial tension, and impact; panel loads and locomotive axle loads; determination of the position of live loading for greatest stresses; maximum and minimum stresses; analytic and graphic methods are used. The principal types of simple trusses employed in modern construction are considered, in several cases both with and without counterbracing; historical notes on truss bridges. The solution of many numerical examples taken from practice forms a prominent part of the class work. Three recitations a week. Professor URQUHART, Assistant Professors BURROWS and O'ROURKE, and Mr. LOTHERS.

271. Structural Design. Juniors. Second term. Credit three hours. Prerequisite course 270. An elementary course in Steel Design. Complete design, detail drawing, bill of material and estimate of weight of a steel roof truss and of a through and deck railroad plate girder bridge. Textbook: Johnson, Bryan and Turneaure's *Modern Framed Structures*, Part III. Three computation and drawing periods a week. Professor URQUHART, Assistant Professors BURROWS and O'ROURKE, and Mr. LOTHERS.

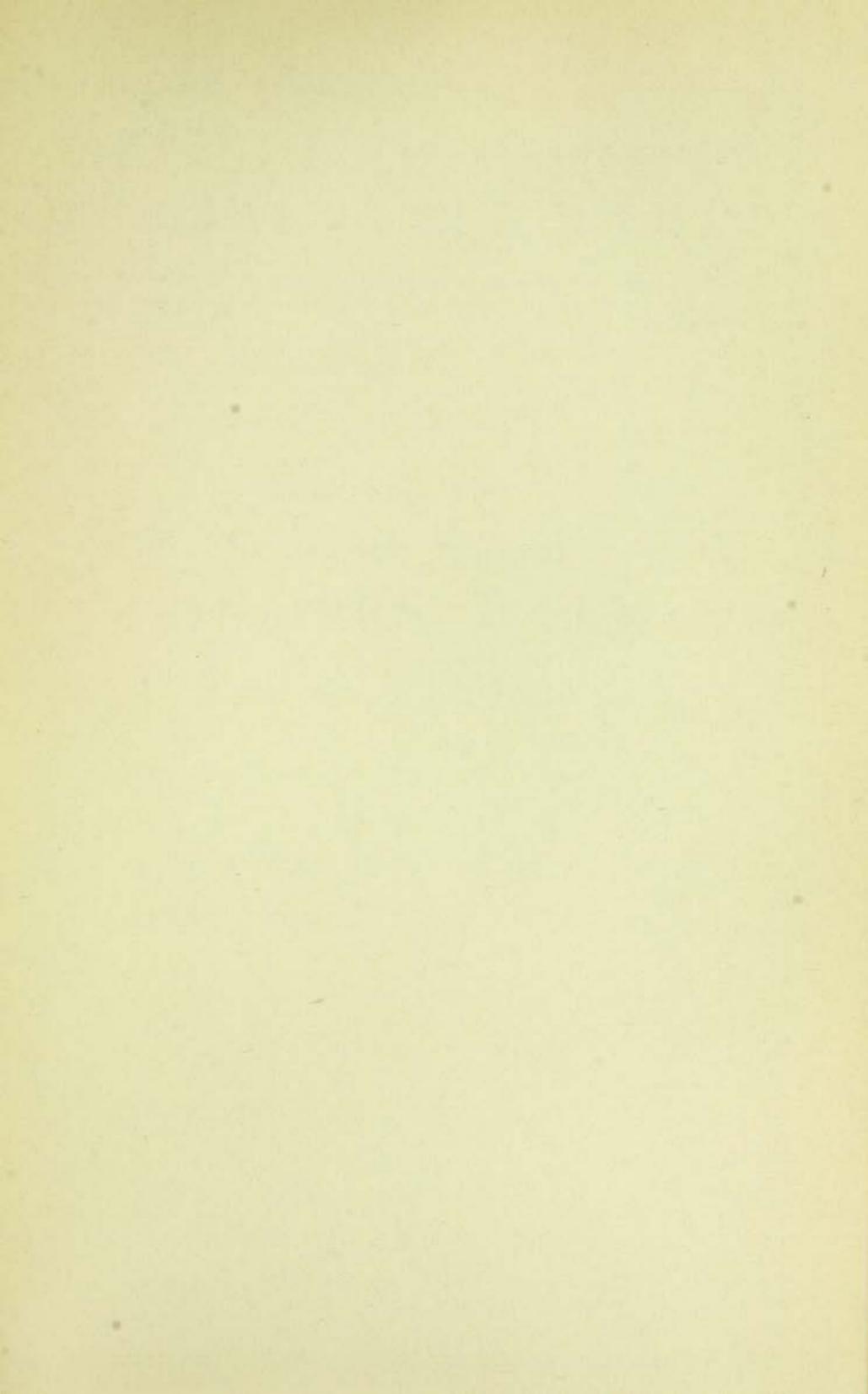
273. **Steel Buildings.** Elective. Seniors and graduates. First term. Credit three hours. Prerequisite courses 220, 221, and 271. This course comprises the design of the steel framework for building of the prevailing type used in power house or shop construction. Dead, snow, and wind stress diagrams are drawn for the roof trusses. Provision is made for an electric crane moving the full length of the building and the stresses in the framework due to the movement of the crane are determined. The effect of the wind and the eccentric load due to the crane girder are considered in the design of the columns. Textbook: Ketcham's *Steel Mill Buildings*. Report and drawings. Three two-hour periods a week. Assistant Professor BURROWS.

280. **Concrete Construction.** Juniors. Either term. Credit three hours. Prerequisite courses 220, 221, 225, and 226. Concrete materials, properties of plain concrete, its making and deposition; elementary theory of reinforced concrete as applied to columns, rectangular beams and slabs; T-beams and beams reinforced for compression; direct stress combined with flexure. Three two-hour periods a week. Textbook: Urquhart and O'Rourke's *Design of Concrete Structures*. Professor URQUHART, Assistant Professor O'ROURKE, and Mr. GARRELTS.

282. **Reinforced Concrete Building Design.** Elective. Seniors and graduates. Either term. Credit three hours. Prerequisite course 280. Design of a reinforced concrete flat-slab building and investigation of various other types of floor systems for commercial buildings. Complete detail design for one building, including stairway, elevator shafts, penthouses, etc. Working drawings and steel schedules. Seven and one-half hours a week. Textbook: Urquhart and O'Rourke's *Design of Concrete Structures*. Professor URQUHART and Assistant Professor O'ROURKE.

ELECTIVE COURSES

The elective hours required in any of the regular courses leading to a degree may be taken either within or without the College of Architecture, subject only to the approval of the professor in charge of such course and of the Dean of the College of Architecture.



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