School of Architecture

Donald D. Hanson, Dean
William J. Lauer, Assistant Dean

The School of Architecture presents a comprehensive program of undergraduate courses, offering opportunities for both general studies and professional specialization. The intent of the school's program is to complement the University's learning opportunities by providing curricula and course offerings in the art and science of design. Accordingly, the program is composed of informational, analytical, and integrative studies related to the human role in shaping and changing the built environment. The welfare of this environment, which is a vital factor in the well-being of people everywhere, depends upon the knowledge and skill which those educated in the design sciences can contribute to continuing processes of developmental change.

A goal of this revised program is to provide undergraduate studies in scholarly and professional areas related to the knowledge base and methodologies for working with the built environment, while at the same time utilizing the school's resources, faculty, and facilities to their maximum effectiveness.

Facilities

The design laboratories, classrooms, computer room, library, and administrative offices of the school are located in three buildings—Estabrook Hall, Melrose Annex, and Alumni Gym. It is entirely appropriate that one of the newest schools, and particularly architecture, should be temporarily housed in venerable Estabrook Hall constructed in 1888. Other disciplines that share direct interests with the school—engineering, fine arts, and industrial arts—are also located in the building. The Melrose Annex provides additional space for upperclass research and design activities.

The principal library holdings of the school are contained in the James D. Hoskins Library. Extensive general collections and reference volumes in architecture and the fine arts are housed there. These sources are augmented by the branch library of the school where students have access to all the reference books in current use.

Student Sponsorship

A number of $500 sponsorships are made available each year by architectural firms of Tennessee. These grants cover tuition and fees, travel expenses to a designated U.S. city for study purposes, subscription to an architectural journal, purchase of special drafting equipment, and purchase of special reference books for the student recipients' personal libraries. Honor students in all the upper four years are eligible for this aid, but it is primarily awarded to students of third- and fourth-year standing.

Lecture Program

ROBERT B. CHURCH MEMORIAL LECTURES

The income from the endowment is used to sponsor outstanding speakers from the profession.

General Information

Students are advised to consult the University's general requirements as stated in the front section of this catalog as well as the requirements for the School of Architecture.

Self-advising will not be permitted in the School of Architecture. Students must plan their schedule by consulting with an assigned adviser in the student's area of concentration. Electives will be chosen with the concurrence of the adviser and with full consideration of the necessary prerequisites.

Requirements for Admission to Second-Year Architecture

(1) Satisfactory completion of first year architectural program with grade point average at least 2.3; exceptions may be made by petition only;
(2) a personal interview and evaluation of applicant's work by a designated member of the School of Architecture;
(3) application to the School of Architecture no later than June 15 preceding the start of the second year.

Students must maintain an overall 2.3 grade point average by the end of 48 hours (attempted) in order to maintain "full status" in the program. Delinquent students will be put on "temporary status" for one quarter. These students will have one quarter to raise overall GPA to a 2.3 or have minimum 2.3 on each quarter's work until overall average is raised to a 2.3. If GPA is not brought up to a 2.3, the student will be dropped from the architecture program.

Third-Year Prerequisites

Students are required to have all first- and second-year courses satisfactorily completed before entering the third-year design courses, Architecture 3001-02-03. Students who register for a third-year design course holding first- or second-year deficiencies may be required to drop the course at any point during the quarter.

Minor

An undergraduate minor in architecture is offered in order to enable students in other colleges to pursue studies in architecture which are relevant to their major areas of concentration. The minor will consist of not less than 18 hours. Persons interested must obtain the consent of the School of Architecture Current Curriculum Committee and dean of the School of Architecture, who will approve specific programs of study proposed by students.
Course Load
The average course load in any quarter is 16 credit hours. The minimum which may be taken by full-time students is 12 hours; the maximum which may be taken without approval of the dean is 20 hours.

Satisfactory/No Credit Courses
These courses, if successfully completed, will count as hours for graduation, although neither S nor NC grades will be calculated in the student’s grade point average. Satisfactory is defined as C or better work on the traditional grading scale, and no credit is defined as less than C. The following regulations apply: (1) S/NC courses may not count for required courses or controlled electives; (2) A student who desires to take a course S/NC should indicate this intention at the start of registration. A change from S/NC grading to regular grading or from regular grading to S/NC will not be permitted beyond the add deadline for each quarter. Exception: students who register for a course S/NC in a restricted area will be required to change to regular grading when the error is discovered.

Program Description
The undergraduate curriculum has two major components: a core of general and professional studies, and a range of concentrations for in-depth study. Within the scope of a professional degree program, it thus provides a number of study areas from which students may select according to their individual interests and aptitudes. Four areas of concentration—administration, design, history/humanities, and technology—each with a subset of paths, are offered; they share a common core which provides the basic prerequisites for entry into one of the study concentrations.

GENERAL CORE
The general core is an introduction to the knowledge base of the school’s professional program. The courses are neither highly specialized nor overly technical; thus they are open and accessible to other disciplines within or outside the University. Although it is recommended that the series of core courses be taken in sequence, it is so constituted as to permit flexibility in scheduling, particularly to accommodate transfer students seeking elective credits. Courses in the general core, in addition to English, math, and physics, are from the following five divisions:

Basic Design and Visual Studies
Analytical Studies
Man-Environment Systems
Physical Systems
Historical Studies

PROFESSIONAL CORE
Courses in the professional core represent subjects fundamental to professional competence in architecture. The following four divisions constitute this core:

Structural Analysis and Materials
Environmental Control Systems
Professional Practice
Architectural Design

Program for Architecture

Degree: Bachelor of Architecture
Major: Architecture

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<tr>
<th>Concentrations:</th>
<th>Design</th>
<th>History/ Humanities</th>
<th>Administration</th>
<th>Technology</th>
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Through controlled electives, required in this core, students can intensify and extend their professional skills and technical knowledge.

ACCELERATED CORE
Students demonstrating an exceptional proficiency in any of the professional core subjects may be approved for selected accelerated studies, thereby reducing the time needed to complete core requirements and allowing more time for concentration in the student’s chosen area. Formal review and approval by the school are required of all accelerated core candidates.

Curricula for Architecture
All students studying for a Bachelor of Architecture degree will include the following requirements in their first three years of study. During the fourth and fifth years, the students’ work will be concentrated in one of the following tracks: design, history, criticism, restoration/preservation, management, production, development, structures, systems building, or environmental controls. Refer to numbers in the 4300 sequence for architecture design lab electives. Any exceptions to the curriculum outline have been footnoted. For any additional specialized requirements, the student should inquire at the School of Architecture.

SERVICE PRACTICUM REQUIREMENT
A three-month, non-credit internship in an architect’s, engineer’s, or contractor’s office or related work may be approved by the school. This must be evidenced by a letter from the employer indicating type and quality of student’s work and time of employment prior to graduation.

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Total: 240 hours

HISTORY/HUMANITIES CONCENTRATION

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RESTORATION/PRESERVATION TRACK

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### Second Baccalaureate Degree Program

A program leading to a Bachelor of Architecture is available for students who already have a bachelor's degree or an advanced degree in another field.

This program consists of a core of accelerated and professional courses making up the knowledge and skills fundamental to prequalification for professional competence. The length of the program is three years. Advanced standing through proficiency credit may be given to applicants who have had advanced academic work in architecture. Exceptional professional experience may also be considered.

Applicants must show at least a 2.5 overall grade point average as well as goals and abilities appropriate to the program. Prerequisite courses include Math 1840-50 or 1550-60 and Physics 2240-50-60 or their equivalents.

The Second Baccalaureate Degree Program will be replaced by a graduate program upon its approval.

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**Controlled Electives Lists**

### DESIGN CONCENTRATION

Accounting 2110-20; Anthropology 2510, 2530, 3410; Audiology and Speech Pathology 4750; Architecture 2101, 2102, 3113, 3712, 3910, 4110, 4137, 4160, 4710, 4720, 4721-22, 4725-26-27, 4734, 4743, 4753-37, 4739, 4771-72-73, 4775, 4780, 4785, 4900, 4910; Art 3735, 3736, 3745, 3746, 3765; Botany 1110-20, 3030, 3090; Broadcasting 3650, 4029, 4030; Business Law 4110; Child and Family Studies 2110, 3510, 3515, 3520, 4260, 4430, 4830; Chemistry 1110-20-30; Civil Engineering 4430; Crafts, Interior Design and Housing 3125, 3256, 4155, 4156, 4130; Communications 1110; Computer Science 2010, 3410, 4410; Educational Curriculum and Instruction 3310; Economics 2110-20-30, 3110, 3340, 4140; Electrical Engineering 4850; Environmental Engineering 3000, 4700; Finance 3110, 3120-30, 4350-80, 4370; Food Systems Administration 3310; Geography 2400, 3000, 3430, 3520, 3530, 4720, 4740; Geology 3510, 3520; History 4670, 4740; Industrial Engineering 4150; Journalism 3710; Landscape Architecture 3110, 3210; Mechanical Engineering 4220; Office Administration 2750; Philosophy 1510-20-20; Physical Education 3090; Political Science 4580-90; Psychology 2500, 2530, 3150, 3210, 3430, 4230; Real Estate 2610, 3610, 4120, 4130; Sociology 3010, 3130, 3410, 4330; Statistics 2100, 3220, 3310, 3320, 3330, 3340, 3350; Engineering Studies 4100, 4200, 4300; English—all courses 2000 level and above; Environmental Engineering 4820; Geography 3000, 3430, 3450, 3940, 4240; Germanic and Slavic Languages—all German and Russian courses; History—all courses 2000 level and above; Philosophy 3330, 3740-50, 3910; Romance Languages—all Arabic, French, Italian, Portuguese and Spanish courses; Sociology 3410, 4320.

### ADMINISTRATION CONCENTRATION

Accounting 3500, 4500, 4520, 4530, 4531, 4532, 4535, 4540, 4545, 4550, 4560, 4565; Business Administration 1110; Business Law 4110, 4120, 4130, 5050; Economics 2110-20-30, 3050-60; Finance 3510, 3120-30, 5050; Journalism 3710; Management 3010, 5050; Marketing 3110, 3120, 5050; Office Administration 4510, 4540, 3050; Real Estate 2610, 3610, 3630, 4110, 4120, 4130; Statistics 2100.

### TECHNOLOGY CONCENTRATION

Architecture 3712, 4710, 4711-12, 4715, 4721-22, 4725-26-27, 4731-32, 4734, 4735, 4736-37, 4739, 4771-72-73, 4775, 4780, 4785, 4910, 4920; Audiology and Speech Pathology 4750; Civil Engineering 3210, 3230, 3310, 4110, 4230, 4410, 4420, 5110-20, 5270; Computer Science 3410; Electrical Engineering 4650; Environmental Engineering 3000; Geography 4730; Industrial Engineering 4150; Mathematics 2610; Mechanical Engineering 4220; Planning 4100, 5230; Statistics 3450; Theatre 3321-22, 4341-42.

### Faculty


Associate Professors: J. Burin, M. Arch. Academy of Fine Arts (Prague); A.J. Delong, Ph. D. Pennsylvania; State; A. Derman, Ph.D. Pennsylvania State; J.A. Kersavage, D.Sc. S. California; R.M. Kelso, M.S. Tennessee; W.E. Martella, B. Arch. California (Berkeley); J.G. Merz, B. Arch. Pratt Institute.


Lecturers: A.G. Anderson, M.A. Missouri; M.C. Martin; A. Wharton, B.S. Landscape Architecture, West Virginia.
1001 Introduction to Human and Environmental Properties and Transactions (4) Schematic, architectural and graphic studies describing and analyzing human-environmental systems. Interrelation of context, values, behavior, and design decisions.

1002 Visual Studies (4) Classification and properties of visual elements and their ability to communicate information and create legible visual systems.

1003-04-05 Introduction to Architecture (1, 1, 1) Lectures in field of architecture with special emphasis on design methodologies and analytic techniques. Introduction to visual organizations, structures, environmental controls, behavioral and natural systems, design philosophy, history and criticism. Presentations include lectures by faculty from this school and university, visiting speakers, and multimedia programs. Held once a week. In addition, special lectures are announced each quarter.

1006 Physical Systems (4) Introduction to properties of space-spanning and environmental control systems. System properties analyzed in clout state and dynamic investigations of material composition component structures, and infrastructural system behavior. Anticipated sensory and environmental response to systems variation shall be studied.

1007 Historical Studies I (4) Introduction to evolution of architectural periods with selected illustrations. Emphasis on relationship of historical and cultural developments to the built environment from antiquity through Byzantine period. Applications to present-day design issues.


2007 Historical Studies II (4) Relationship of historical and cultural developments to the built environment from Romanesque period through neoclassicism. Applications to present-day design issues. Study of historical research methodologies and analysis. PreReq: 1007.


2014 Analytical Studies II (4) Introduction to basic research methods and to environmental problem solving; information and skills necessary for collecting, organizing, manipulating and displaying (communicating) a wealth of diverse data for research and evaluation purposes. Course objective is to qualify students with routines and techniques to utilize electronic data processing technologies as a research tool.


2101 Pre-modern Survey I (4) Classical tradition in architecture from 2nd millennium BC to Renaissance and neoclassical revolutions.

2102 Pre-modern Survey II (4) Medieval and Byzantine architecture.

3001 Architectural Design Lab I (8) Controlled exercises designed to demonstrate integration and application of theory and methodologies into design process. Exercises directed to aspects of architectural issues such as site analysis and integration of multiple complex architectural systems into comprehensive architectural resolutions.

3002 Architectural Design Lab II (8) Experimental exercises designed to demonstrate integration and application of design theory and methodologies into a creative design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems into comprehensive architectural resolutions.


3007 Historical Studies III (4) Relationship of historical and cultural events from Industrial Revolution which gave rise to modern movement in architecture and design. Applications to present-day issues. Changing concepts of ethics, aesthetics, and architectural theory. PreReq: 1007 and 2006.

3013 Professional Practice I (4) Survey of legal responsibilities of architect in servicing contractual arrangements; contract documents, contract administration, codes and zoning regulations, liability and insurance factors in building delivery. PreReq: Third-year standing.

3014 Professional Practice II (4) Principles and methods of business management; project production and management, costs and analysis budgeting, programming and construction management. PreReq: 3013.

3015 Service Practicum (16) Employment for one quarter in public or private office, firm or corporation or other projects approved by the school. PreReq: 3001 and 3002.

3016 Structural/Environmental Applications to a Built Environment (4) Case study of small-scale built environment with emphasis on applications of structural and mechanical systems. Analysis and selection of components with purpose of integrating environmental issues into a unified design solution. Involves individual and group participation, technical analysis and formal presentation. PreReq: 2006, 2013, 2016.

3017 American Architecture (4) Architecture in United States since 1607; medieval, neoclassical, and Greek Revival traditions; eclecticism.

3012 History of the City (4) Evolution of town planning theories; modern theory; city of today and tomorrow.

3110 Oriental Survey (Architecture of non-Western traditions.

3113 Contemporary Architecture (4) Styles and theories from 1865 to present; design and technology; definition of architecture.

3115 Latin American Survey (4) Native and colonial architecture in Central and South America.

3120 Indigenous Traditions (4) Vernacular building traditions in non-European civilizations.

3125-26 History of Architectural Technology I, II, (4, 4) History of construction techniques, hardware, materials and systems; I: before 1500, II: 1550 to present.

3130 History of Architectural Theory (4) Philosophies of science, the emergence of technology, and theories of design since 1500.

3155 Tennessee Architecture (4) Immigrant traditions, regional developments, national styles, contemporary architecture.

3178 Architecture Since 1945 (4) New directions and views of the future.

3140 Studies of Architectural Writing (4) Survey of European architectural writers from Pugin to the present; the relation between literature and design. May be repeated. Maximum credit 8 hours.

3701-02 Application of Computer in Architecture (4, 4) Survey of computer applications in the architectural profession. Computer graphics; use of commercial programs and systems; computer planning and implementation. PreReq: 3701 for 3702.

3712 Mathematical Models in Architecture (4) Illustrates and develops application of mathematical methods in architectural science. Survey and classification of use of mathematical problems in architectural science, including numerical methods and use of digital computer.

3905 Architectural Graphics (4) Principles and theories of orthographic, geometric and perspective drawing systems in communication of architectural concepts and solutions. Introduction of techniques for delineation of form, space, material, texture, light/shadow, and figurative interest. Both freehand and mechanical drafting techniques developed through variety of media. Problems of graphic and layout decisions in relationship to audience and desired presentation impact and sophistication addressed.

3910 Research Methods for Designers (4) General introduction to variety of research methods and techniques available to designer, and appropriate research methodology and requirements during design process. PreReq: 2000.

3920 Environmental Design Education: Problems, Practice and Structures (4) Focus directed at surveying existing models of learning, educational, curricula goals, objectives and implementation formats, and methods of program evaluation. Role of existing architectural professional practice and its relation to design education explored. Required for teaching assignments in architecture. PreReq: Consent of instructor.
3650 Behavioral Approaches to Environmental Design (8) Of major concern in the lecture content of this course is the effect of the built environment on human behavior. Particular emphasis will be placed upon the role of environmental factors in human development, learning, adaptation, and behavior. Students will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions. Studio problems will explore the design of environments for children and adults, including the creation of behavior, and life cycle functions.

3490 Behavioral Approaches to the Design of Prosthetic Environments (6) Many standard features of the built environment are unsuitable to the physical needs and capacities of individuals with various types of physical disability; study of architectural barriers in relation to the physically handicapped constitutes the course lecture content. Studio problems explore design of barrier-free environmental features and design of disability-specific environments and behavioral supports. Two credits for lecture and four credits for lab. Prereq: 3930 for non-architecture students. 3410 Aesthetics in Architecture (4) Architecture among the arts; theory and philosophy of space, imagination, design, and materials. 3111 Special Topics in Architectural History, Criticism, and Theory (1-4) Seminar on a topic of special concern to the department. Offered only when there is sufficient interest on the part of students. 3130 Seminar in Medieval Architecture (4) 3135 Architecture and the Romantic Movement (4) Architecture and critical literature of nineteenth century in England and United States. 3137 Forms of Utopia (4) Ideals, spaces, and places; proposals and programs which have formed Utopian tradition; successes and failures of its architectural forms. 3140 Criticism Seminar (4) Theories, function, and techniques of architectural criticism. 3150 Advanced Reading (4) Advanced studies in special topics of archival history. 3160 Architects in Social Criticism (4) Writings which illustrate technological, political, and anthropological assumptions of some 19th- and 20th-century architects. 3170 Introduction to Preservation and Restoration (4) History and theory of restoration and preservation. 3175 Technology of Preservation (4) History of technology and materials, methods analysis and dating, techniques of preservation. 3180 Descriptive Analysis of Historic Buildings (4) Identification and analysis of characteristic elements and features, with emphasis on the architectural periods. 3185 Contemporary Preservation Practice (4) History and theory of contemporary practice; preservation law. 3191 Historic Preservation Laboratory (8) Directed study for buildings of historic significance. Techniques of preservation; research of historic methods of construction; and studies of building uses. Rehabilitation, restoration, preservation, building codes, and building codes. Two credits for lecture and four credits for lab. May be repeated. Maximum credit 16 hrs.

3432-22-23 Macro Structures Laboratory I, II, III (8, 8, 8) Design studies of a large scale and complex nature with emphasis on reinforcing architectural design, environmental perception, social and psychological aspects of site locations and development, study of movement systems, program development, site design, including locations and layout of streets and utilities, earthwork, site management and development.

3430 Architecture Research Lab (8) Research projects on specific architectural design subjects under the direction of faculty members. 3432-32-33 Micro Studies Laboratory I, II, III (8, 8, 8) Series of design exercises to demonstrate range of human uses and the utilization of micro environmental elements and systems.

3440 Independent Studies Lab I-B (8) Individual architectural or related projects under the direction of faculty members. Credit adjusted to reflect problems of level and effort. May be repeated. Maximum credit 24 hrs.

3450 Visiting Lecturers Laboratory (8) Architectural or related projects under the direction of visiting lecturers. Credit determined by visiting lecturer. May be repeated. Maximum credit 16 hrs.

3451 Build Laboratory (8) Design and construction under the direction of faculty member of small scale building project for a public service agency or organization. Work with client includes programming, cost estimation, and specification of ordering, subcontracting, and on-site construction.

3452 Architectural Service Laboratory (8) Off-campus studies under direction of architectural faculty member; projects related to that of public service agency or organization; programs of service are designed and determined by the agency;, or organization.

3453 Development Laboratory (8) Directed studies in development of real property. Studies of use feasibility, economics, finance and marketability, environmental impact, social considerations and consequences.

3460 Remote Centers Laboratory (8) Program extension in remote locations of various tenure.

3470 Architecture-Engineering Laboratory (8) Directed research application in new structural concepts. Architectural projects of large scale and complex nature with emphasis on the engineering system of codes, economics, urban design, utility standards, structure, environment.

3490 Interdisciplinary Laboratory (8) Action-oriented joint studies laboratory in environment-related problems involving varied components; sources and undertaken by students in faculty both in and out of the School of Architecture.

4501 Management Design I (8) Using the lab situation and case study and giving the student practical experience in project management and management process, the process of making decisions and the understanding of their ramifications; the concepts of decision, design, and the process of design is the main theme.

4502 Administrative Design I (8) Lab simulation of office experience in project planning and control, programming and preparation of contract documents.

4503 Management Design II (8) Advanced work in the field of law and management aspects of architecture. Use of computer as a management tool and simulation of an office situation is conducted in the lab. May be repeated. Maximum credit 16 hrs.

4504 Administrative Design II (8) Lab simulation of project work with emphasis on production, specifications, estimating, materials, and codes. Prereq: 4503.

4510 Project Management (4) Principles, methods, and application of project management to the total building process. Project manager, his function, responsibilities and activities investigated through case studies, job history reviews, and project simulation.

4515 Construction Management (4) Principles, methods, and application of construction management to the total building process. Project manager, his function, responsibilities and activities investigated through case studies, job history reviews, and project simulation.

4520 Professional Services (4) Marketing of architectural work by study of case studies, public relations procedures and understanding sales techniques. Architectural services, both basic and comprehensive.

4525 Personnel Relations (4) History of practice of architecture emphasizing personnel policies, theories of personnel relations, benefits, and unionization.


4531 Architectural Practice I (4) Analysis, survey, and study of the practice of architecture. Organization of practices and financial arrangement of office structure.

4532 Architectural Practice II (4) Analysis and study of contracts, insurance, taxes, and the legal position and liabilities of architects.

4535 Advanced Contracts (4) Study of contractual problems relating to architect, owner, contractor and subcontractor.

4540 Design Process, Decision Determination (4) Principles and theories of making decisions in relation to scheduling of architectural activities during building process.

4545 Programming (4) Theories and procedures for writing programs emphasizing computer application and research and development.

4550 Codes and Zoning (4) Theory, review, and research of city, county, state, regional, national codes and zoning. History and development of fire safety and building codes; history and development of zoning emphasizing architect's responsibility as related to specific project application.

4555 Cost Analysis (4) Methods and theories of estimating project cost and building cost with reference to present techniques. Research in new techniques of cost analysis.

4560 Specifications (4) Theory, analysis, and methods of specifications. Emphasis placed on development and research of specifications.

4565 Supervision (4) Theories, methods and site study of job inspection during construction phase and construction administration.

4701-02 Contract Documents/Working Drawings (4) In a practical role, prepare and present in practice of architecture or engineering. Preparation and presentation of detailed working drawings, specifications and other documents for typical project. Prereq: Consent of instructor.

4710 Architectural Models (4) Introduction to use of models in architectural studies. Display methods, materials, presentation, and special effects; structural models; laws of simili-
4711-12 Structural Design I, II (4, 4) Provides understanding of behavior, analysis and design of basic building structures. Structural and constructive elements of buildings, including the structural design of building in steel, concrete, masonry and timber to satisfy loading and building code requirements. Prereq: 2013 or equivalent.

4715 Construction Economics (4) Construction economics of small, medium and large projects. Interest and annuities, sinking funds; depreciation and replacement consideration; mortgages amortization inflation; real estate investment and speculation; syndicate loans, purchasing power and liquidity.

4721-22 Advanced Architectural Structures (4, 4) Philosophy of structural design in relation to material purpose and form. Advanced mathematical and experimental analysis of structures, including use of computer programs. Prereq: 3702 or equivalent.

4725-26-27 Structural Innovation and Design Research Lab (4-4, 4-4, 4-4) Theory and experimentation of building design utilizing innovative structural configuration and techniques. Basic structural analysis and design form properties, and economic factors such as systems costs, and materials and process optimization are emphasized. Emphasis involves prototyping of innovative systems. Acceptable for design credit in 4th- and 5th-year standing or last quarter of 3rd-year standing with consent of instructor.


4773 Structural Design for Protection Against Extreme Hazards (4) Probability, risk, human values, insurance. Survey of possible hazards: floods, fire, hurricanes and tornadoes, earthquakes, nuclear effects, internal and external explosions. Building code and engineered design of steel, masonry, concrete and wood structures to resist extreme effects. Protective construction for human and system needs. Fire protection, life safety, seismic, fire safety analysis, high-rise building fires.

4780 Types of Systems (4) Comprehensive examination of systems types, concepts and applications. Computer hardware and software, assemblages, components, panels, boxes and self-help systems. Exploration of all building types, housing, schools, hospitals, airports, offices, departments, etc., and their cultural ramifications. Prereq: 4741.


4783 Structural and Architectural Innovations (4) Exploration of new concepts, advances and innovative approaches to design, architecture and structural systems as they affect design drawings, detailing, contract documents, and specifications. Study of component assembly, panel, and box systems; wood, steel, concrete and plastic systems. Use of computers, structurally and architecturally. Prereq: 4743.

4785 Mechanical Innovations (4) New technological concepts and techniques for heating, ventilating, air conditioning, plumbing and electrical systems. Concepts of mechanical components at factory, and mechanical connections at the site, their application and use. Coreq: 4751.

4783 Construction and Manufacturing Innovations (4) Comprehensive analysis of new technology and innovations in manufacturing and construction with emphasis on production, transportation, erection, distribution, raw material, codes, costs, regulations, quality assurance. Shop drawings, factory assembly lines and site construction methods. Understanding of construction management, computers, CPIM, fast-tracking, prefabrication, and industrialization. Prereq: 4751 and 4752.

4783-82 Systems Design Laboratory I, II (8, 8) A vertical and multidisciplinary design and research system laboratory and studio, integrating simultaneously undergraduates, graduates, professional, and extra-professionals. Total systems ("software" and "hardware") approach to individual and group problems. 4781: Defining, researching, probing and analyzing the problem and the system process. Application of new ideas, approaches and concepts to design and systems. 4782: Experimenting with new prototype forms, architecturally and with design systems, three-dimensionally, and functionally, using new materials and techniques. Coordination of the total systems process.

4785 Thesis/Systems Laboratory (16) Independent problem determination and project for group which makes a significant contribution to the art and/or science of building design, and architecture. Involves development of a systems building coordinator and the completion of the systems building core.

4771-72-73 Advanced Mechanical and Electrical Systems (4, 4, 4) In-depth study of analysis and design of heating, ventilating, air-conditioning systems, lighting systems, and electrical distribution in buildings. Prereq: Consent of instructor.


4780 Fire Protection in Structures (4) Fire protection aspects of buildings and their occupants. Characteristics of fires; fire codes; building evacuation; fire alarm systems; emergency power and lighting; fire resistant materials and construction.

4785 Sound, Noise and Vibration Control in Buildings (4) Design of single and multi-story structures. Sound, vibration control techniques. Specific methods, procedures, and materials most effective in solving acoustical problems. Prereq: 9450 or Speech Path. 4750 or Mechanical Engr. 4220.

4850 Elementary Structural Matrix Methods (4) Introduction to the generalized matrix methods of structural analysis. Vectors, matrices, determinants, bra and vectors; development of member stiffness and flexibility matrices; assembly of structures; stiffness methods; and displacement methods. Consent of instructor. (Same as Civil Engineering 4850 and Engineering Science and Mechanics 4850.)

4900 Analysis of Urban Environment (4) Interdisciplinary course in urban problems. Prereq: Consent of one of the instructors. (Same as Human Services 4900; Environmental Science 4900, Psychology 4900 and Real Estate 4900.)

4901 Architectural Photography (4) Photography as a design, research and presentation medium. Emphasis on architectural photography using black and white media.

4902 Advanced Architectural Photography (4) Application of special photographic techniques with emphasis on color printing and processing. Prereq: Consent of instructor.


4990 Senior Thesis (4) Exploration of topic and selection of thesis committee for 4995. Report which must include objective to be pursued, principal hypotheses and assumptions, research methods, and proposed schedule. Satisfactory completion requirements approval by thesis committee. Prereq: 4.0 cumulative G.P.A., fifth-year standing, and approval of preliminary abstract by thesis coordinator.

4995 Senior Thesis (8-12) Independent problem under direction of thesis committee. Aim of thesis is to demonstrate competence in dealing with concepts and theories in one's major subject area, ability to develop program at scale of major project, and proficiency at solving and documenting research and resolution. Prereq: 4990.

ACCELERATED CORE COURSES

4020 Accelerated Visual Studies (4) Identification and application of theories and methodologies of graphics analysis and communication principles, i.e., principles of visual coding and ordering, applicable to behavioral analysis. Descriptive and behavioral properties of elements of visual environments. Selected exercises shall demonstrate manipulation of both static and dynamic properties to produce varied sensory responses and/or expressions. Prereq: Permission to accelerated core program; coreq: 4022.

4021 Accelerated Basic Design and Analysis I (4) Investigation of elements and behavior of complete physical systems. Theories and methodologies of optimization applicable to design decision making and problem solving are investigated. Coreq: 4022.

4022 Accelerated Analytical Studies I (4) General systems theory and scientific methods of analysis applicable to the design of systems and design methodologies. Contextually, study traces emergence of contemporary architectural and engineering design theories, building technology, and processes of
developmental change. Prereq: Admission to the accelerated program; coreq: 4020.

4023 Accelerated Basic Design and Analysis II (4) Investigation of human response to varied configurations of built environments. Knowledge of response to human behavior and activity patterns applied through design process to create new environmental forms subjected to performance evaluation measured to anticipated response. Experimental design exercises will include varied problem types and scales. Exercises will incorporate scientific research methods and design methodologies. Prereq: 4020 and 4022; coreq: 4024.

4024 Accelerated Analytical Studies II (4) Basic research methods and environmental problem-solving techniques. Presentation of information and skills necessary for collecting, ordering, manipulating and displaying quantities of diverse data for research and evaluation purposes. Objective is to be qualified with fundamental concepts and techniques to utilize potential of electronic data processing technologies as a research tool. In addition to the regular lecture series of 2014, students are required independently to research aspects of study area for presentation to an accelerated seminar supplement. Prereq: 4022; coreq: 4023.

4027 Accelerated Man-Environment Systems (4) Study of causal, descriptive, behavioral and predictive properties of human and environmental systems and their transactions. Selected examination of cultural response variations to eco/ socio/physical change illustrate interdependence of human systems, activity systems, and physical systems. In addition to the regular lecture series of 2000, students are required to independently research aspects of this study area for presentation to an accelerated seminar supplement. Prereq: Admission to the accelerated core program.

4029 Accelerated Professional Practice (4) Examination of legal responsibilities of architect in servicing contractual agreements; contract documents, contract administration, codes and zoning, liability and insurance. Principles of economics and management; project production and management, cost analysis, budgeting, programming and construction management. Prereq: Admission to accelerated core program.

4031 Accelerated Historical Studies I (4) Introduction to evolution of architectural periods with selected illustrations from local examples. Advanced examination of relationship of historical and cultural developments to the built environment from antiquity through Byzantine period with applications to present-day design issues. Independent student projects on topics related to course materials. Prereq: Admission to accelerated core program.

4032 Accelerated Historical Studies II (4) Advanced examination of relationship of historical and cultural developments to the built environment from Romanesque period through neoclassicism with applications to present-day design issues. Study of historical research methods and analysis. Independent student projects on topics related to course material. Prereq: 4031.

4033 Accelerated Historical Studies III (4) Advanced examination of historical and cultural events of Industrial Revolution which gave rise to modern movement in architecture and design with applications to present-day design issues. Changing concepts of ethics, aesthetics, and architectural theory. Independent student projects on topics related to course material. Prereq: 4031 and 4032.