

SCHOOL OF ARCHITECTURE, DESIGN & PLANNING

Graduation requirements and regulations for every academic program are provided in this catalog. Degree requirements and course descriptions are subject to change. In most cases, you will use the catalog of the year you entered KU (see your advisor (<http://www.advising.ku.edu>) for details). *Other years' catalogs»*

Architecture (<http://catalog.ku.edu/architecture/architecture>)

Master of Architecture (5-year) (<http://catalog.ku.edu/architecture/architecture/master-architecture-five-year>)

Bachelor of Arts in Architectural Studies (<http://catalog.ku.edu/architecture/architecture/ba-architectural-studies>)

Undergraduate Certificate in Architecture Acoustics (<http://catalog.ku.edu/architecture/architecture/architecture-acoustics-undergraduate-certificate>)

Master of Architecture (3-year) (<http://catalog.ku.edu/architecture/architecture/master-architecture-three-year>)

Master of Arts in Architecture (<http://catalog.ku.edu/architecture/architecture/master-arts-architecture>)

Doctor of Philosophy in Architecture (<http://catalog.ku.edu/architecture/architecture/phd>)

Graduate Certificate in Building Information Modeling (BIM) (<http://catalog.ku.edu/architecture/architecture/building-information-modeling-gcert>)

Graduate Certificate in Designbuild (<http://catalog.ku.edu/architecture/architecture/designbuild-gcert>)

Graduate Certificate of Public Interest Design (<http://catalog.ku.edu/architecture/architecture/public-interest-design-gcert>)

Design (<http://catalog.ku.edu/architecture/design>)

Bachelor of Fine Arts in Design (<http://catalog.ku.edu/architecture/design/bfa>)

Master of Arts in Design with a concentration in Design Management (<http://catalog.ku.edu/architecture/design/ma-design-management>)

Master of Arts in Design with a concentration in Interaction Design (<http://catalog.ku.edu/architecture/design/ma-interactive-design>)

Urban Planning (<http://catalog.ku.edu/architecture/urban-planning>)

Master of Urban Planning (<http://catalog.ku.edu/architecture/urban-planning/master>)

Introduction

The School of Architecture, Design and Planning offers undergraduate and graduate degree programs for students interested in a variety of design-based professions. The School's three departments—Architecture, Design and Urban Planning—share a common dedication to the professional education of students. Degree programs in all three departments emphasize the mastery of appropriate skills, technologies and bodies of knowledge as well as the development of critical thinking and creative problem-solving abilities. Our faculty are dedicated to educating students who will excel in their professional paths or career lines.

The School's students also share a common interest, as well, in the design and construction of buildings, environments, objects and visual forms of communication. They take courses that incorporate knowledge and theory related to sustainability and sustainable design, to human wellness and the creation of healthy environments, places and lifestyles, and to the design of client- or user-oriented buildings, places, objects and communications. They have many unique opportunities for interdisciplinary course work, service learning and study abroad in the School's degree programs.

Facilities

The School of Architecture, Design and Planning is at the western end of Jayhawk Boulevard on the Lawrence campus. It occupies several large adjacent buildings with additional facilities in Lawrence and Kansas City.

The school has been headquartered in **Marvin Hall** since its founding. The main administrative offices are there along with the departmental offices for Architecture, Design and Urban Planning. The Architectural Resource Center and Hatch Reading Room are in Marvin Hall along with 18 design studios, several classrooms, offices for architecture and planning faculty, woodworking and metal shops, three computer labs, an acoustics lab and critique spaces on each floor. In 2014 the School's Studio 804 completed design and construction of a LEED Platinum, 120-seat auditorium, critique space and addition to Marvin Hall known as the Forum. It provides a central gathering area within the School.

Snow Hall, directly across Jayhawk Boulevard from Marvin Hall, contains 5 architecture studios and a number of faculty and staff offices. An open-access computer lab and a well-equipped model-building shop are in Snow Hall, along with a large critique and display area for student work. **Marvin Studios**, formerly known as Broadcasting Hall when it housed the campus radio station, is just behind Marvin Hall. It includes studios as well as robotics, laser-cutter, 3-D printing and various other digital fabrication labs as well as faculty offices.

The school's **Design-Build Center** is in the East Hills Industrial Park on Highway K-10 in East Lawrence. This 63,000-square-foot, open-span building acquired in 2009 is the site of design-build studios, including the internationally acclaimed Studio 804. It includes studio design spaces, offices, conference areas, shop facilities, and large assembly areas for indoor construction of modular buildings.

Since 1987, the school has supported an urban design studio and a public education and community outreach center in Kansas City. The two programs operate together in the **Kansas City Design Center** at 1020 Baltimore Avenue in the heart of downtown Kansas City. This large street-

front location includes working space for an entire architectural design studio as well as offices for instructors, exhibitions areas, and conference and meeting spaces for events that include community partners and sponsors.

The 130,000-square-foot **Chalmers Hall**, next to Marvin Hall, houses the main Design Department programs, including studios and classrooms. The building also houses the 2,100-square-foot **Art and Design Gallery**, which features new exhibits every two weeks and is an important component of the teaching mission. Each major program offers all students spacious work areas and a range of equipment, from traditional to the newest digital technology. Students have access to multi-platform computer labs with the most commonly used current software for photography, animation, CAD, 3-D modeling, video production, desktop publishing, scanning, illustration, large- and medium-format plotters, and color and black-and-white laser printers. Unique satellite computer areas are dedicated to each major area. Students have access to a traditional film Photography Lab, which includes a dark room for black-and-white photography as well as a digital processing lab with dedicated spaces for video and digital image production and an equipment checkout facility. The 6,400-square-foot Common Shop includes a range of woodworking equipment, metal-working equipment, and classroom space. All computer and photo labs and the common shop have professionally trained technical support staff.

The historic **Chamney Farm**, on the western edge of the Lawrence campus, is the site of the school's **Center for Design Research**, an award-winning building that connects a converted native limestone farmhouse and 19th-century restored barn. Corporate-sponsored projects are supervised by design faculty and executed by graduate students and advanced undergraduates. This fully equipped facility has become a connection between the academic and professional worlds of design as well as a focus for collaborations among applied design areas and other KU units.

The **Helen Foresman Spencer Museum of Art** houses the only comprehensive art collection in Kansas. Collections are particularly noteworthy in medieval art, 17th- and 18th-century German and Austrian painting, sculpture, American painting, prints, American photography, Japanese art of the Edo period, textiles (especially quilts), and decorative arts. Spencer Museum sponsors exhibitions, lectures, films, workshops, and activities that support curricular instruction in the arts. Another important resource is the **Murphy Art and Architecture Library**, with 150,000 volumes and 600 current journals documenting design, and architecture from all cultures, from antiquity to the present.

School of Architecture, Design and Planning

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Phone: 785-864-4281
Fax: 785-864-5393
arch@ku.edu (archku@ku.edu)
<http://www.sadp.ku.edu/>

Undergraduate Programs

Degree programs available to entering first-year students include a 5-year professional Master of Architecture (<http://catalog.ku.edu/architecture/architecture/master-architecture-five-year>); a professional Bachelor of Fine Arts (<http://catalog.ku.edu/architecture/design/bfa>) in design with

concentrations in Illustration and Animation, Industrial Design, Photo Media, and Visual Communication Design. The Bachelor of Arts in Architectural Studies (<http://catalog.ku.edu/architecture/architecture/ba-architectural-studies>), a pre-professional degree, is also available to entering first-year students.

Admission

Information on undergraduate admission standards and requirements, as well as application procedures and deadlines, is found on the Department of Architecture and Department of Design pages. Visit the Office of Admissions (<http://admissions.ku.edu>) for information about admission to KU. Visit the Office of International Student and Scholar Services (<http://www.iss.ku.edu>) for information about international admissions. Students who need assistance should contact the Admission Coordinator at 785-864-3167. Admission information for applicants can be found at the following: Architecture Admissions (<http://www.sadp.ku.edu/architecture/admissions/undergrad>) or Design Admissions (<http://design.ku.edu/ApplytoKU>).

Advising

In addition to advising and academic assistance from KU offices, the School has individual advisors for each student. Advisors are available throughout the course of study by appointment, and students are expected to see their advisors at enrollment times. For architecture advising information, students should contact Barb Seba at bseba@ku.edu or 785-864-5130. For design advising information (<http://design.ku.edu/advising>), contact Samantha Raines at sraines@ku.edu or 785-864-2959.

University Honors Program

The School encourages qualified students to participate in the University Honors Program (<http://www.honors.ku.edu>). Students should be aware that the course load for professional architecture and design degrees may make it difficult to participate in the Honors Program.

Graduate Programs

Graduate programs include

- Master of Architecture (<http://catalog.ku.edu/architecture/architecture/master-architecture-three-year>) (M.Arch.), a 2 or 3-year professional degree for students already holding bachelor's degrees in any field;
- Doctor of Philosophy in Architecture (<http://catalog.ku.edu/architecture/architecture/phd>) (Ph.D.);
- Master of Arts (M.A.) in Architecture (<http://catalog.ku.edu/architecture/architecture/master-arts-architecture>);
- Master of Arts (<http://catalog.ku.edu/architecture/design/ma-design-management>) (M.A.) in Design with a concentration in Design Management;
- Master of Arts (<http://catalog.ku.edu/architecture/design/ma-interactive-design>) (M.A.) in Design with a concentration in Interaction Design; and
- Master of Urban Planning (<http://catalog.ku.edu/architecture/urban-planning/master>) (M.U.P.).

Undergraduate Scholarships and Financial Aid

Awards and scholarships are available to students at all year levels. All students who wish to be considered for KU financial aid or for the

scholarships available within the School must complete applications with Financial Aid and Scholarships (<http://financialaid.ku.edu>).

Graduate Fellowships and Assistantships

For information about graduate assistantships, contact the School of Architecture, Design and Planning (<http://www.sadp.ku.edu>).

Visit the Graduate Studies website for information about funding opportunities (<http://graduate.ku.edu/funding>) for graduate students at KU.

The Office of Financial Aid and Scholarships (<http://financialaid.ku.edu>) administers grants, loans, and need-based financial aid.

Undergraduate University Regulations

For information about University regulations, see Regulations (<http://catalog.ku.edu/regulations>) or visit the University of Kansas Policy Library (<http://www.policy.ku.edu>).

Absences

A student with excessive absences may be withdrawn from the course by the dean.

Credit/No Credit

A Credit/No Credit option is available to all degree-seeking undergraduates. You may enroll in one course a semester under the option, if the course is not in your major or minor. Students must submit a form in 205 Marvin during the two week period designated by the University in order to elect a course for Credit/No Credit. For more information, visit the KU Policy Library (<https://documents.ku.edu/policies/governance/USRR.htm#art2sect2>).

Warning: Certain undesirable consequences may result from exercising the option. Some schools, scholarship committees, and honorary societies do not accept this grading system and convert grades of No Credit to F when computing grade-point averages.

Credit/No Credit is allowed for electives not in the major. It is not allowed for required courses or electives in the major.

ARCH 690 can only be taken for Credit/No Credit.

Graduation with Distinction and Highest Distinction

Students who rank in the upper 10 percent of their graduating class graduate with distinction. The upper third of those awarded distinction graduate with highest distinction. The list is compiled each spring and includes July, December, and May graduates.

Honor Roll (Dean's List)

Students in the upper 10 percent of undergraduate student body who have completed at least 15 hours with letter grades are recognized on the honor roll or dean's list in fall and spring. An Honor Roll notation appears on the transcript.

Independent Study Through KU Continuing Education

Students may take 9 hours of elective credit in Independent Study courses offered through KU Continuing Education.

Maximum and Minimum Semester Enrollment

No student may enroll in more than 19 credits without the approval of the department. No more than 15 hours for architecture students and no more than 9 hours for design students may be taken in summer session.

Prerequisites and Corequisites

The School strictly enforces prerequisites for all courses. Students enrolled in a course without successfully completing the appropriate prerequisites may be administratively dropped without notice in the first weeks of the semester.

Probation

Master of Architecture (5-year) and B.A. in Architectural Studies Probation

Student records are reviewed after each semester. A student is placed on probation if the KU semester or cumulative grade-point-average is below 2.0. Students placed on probation are sent a letter stating the length of probation and the requirements for being returned to good standing.

Continued on Probation

A student on probation may be continued on probation for one more semester if the following KU semester and cumulative grade-point-averages show considerable improvement, but the semester or cumulative grade-point-average is lower than 2.0.

Dismissal

A student may be dismissed for poor scholarship if any of the following situations apply:

1. Fall and spring KU semester or cumulative grade-point-averages are below 2.0 with no considerable improvement.
2. The student has been placed on probation and has failed to meet the conditions required to return to good standing.
3. The student has repeatedly failed to make progress toward graduation.

Reinstatement

Appeals for reinstatement may be submitted to the department's probation committee, 206 Marvin Hall. A student reinstated has one semester to return to good standing.

Good Standing

Students with KU semester and cumulative grade-point-averages of 2.0 or above are in good standing.

B.F.A. in Design Probation

A student is placed on probation after completing a semester at KU without a 2.0 grade-point average. Students placed on probation are informed of their probationary terms and must have a mandatory advising meeting with a departmental advisor. For admissions purposes, students with strong portfolios may be admitted on a probationary basis if their grades or ACT scores are not strong enough.

Continued on Probation

A student on probation may be continued on probation for an additional semester if the student's cumulative grade-point average shows considerable improvement.

Dismissal

A failure to raise the grade-point average above 2.0 in a semester while on probation may be grounds for dismissal. Students may also be

dismissed by the Department of Design chair at any time for excessive absences or for failing to make progress toward the degree.

Good Standing

Students with KU semester and cumulative grade-point-averages of 2.0 or above are in good standing.

Required Work in Residence Architecture Students

All architecture students must complete 30 hours of KU work. Architecture students who have grade-point averages of 2.0 in total and in residence hours may take up to 12 of the final 30 hours in nonresident study. Such an enrollment requires prior approval by petition and excludes fifth-year studios.

Design Students

Six of the final 30 hours may be taken for nonresident credit, with advance permission. Nonresident credit may fill only elective requirements not in the major field of study.

Transfer of Credit

CredTran (<http://credittransfer.ku.edu>) is a transfer course equivalency system that lists more than 2,200 colleges and universities from which KU has accepted transfer courses in the past. If your school or course is not listed, your evaluation will be completed when you are admitted to KU.

Architecture Students

Only grades of C- or higher are accepted in transfer credit toward a degree. Architecture students who wish to transfer design courses may do so only upon submission of a portfolio of work done in such courses. Placement in the professional curriculum is based on completed course work, a review of the comprehensive portfolio of prior work in architecturally oriented courses, and on a space-available basis. The student must conform to the work in residence requirements stated above.

Design Students

Only grades of C or higher in general course work are accepted as transfer credit toward degrees. Grades for studio related course work must be B or higher for transfer credit. Applicants with a lapse of four or more years since their last full-time enrollment may not expect studio credits to be accepted for transfer.

Graduate University Regulations

For information about university regulations, see Regulations (<http://catalog.ku.edu/regulations>) or visit the University of Kansas Policy Library (<http://www.policy.ku.edu>).

Credit/No Credit

The Credit/No Credit option is not authorized for graduate students' enrollments, including, but not limited to, courses taken to fulfill the research skills requirements, undergraduate deficiencies, etc.

Master of Architecture (2 & 3-year) Probation

Student records are reviewed after each semester. A student is placed on probation if the KU cumulative grade-point-average is below 3.0. Students placed on probation are sent a letter stating the length of probation and the requirements for being returned to good standing.

Continued on Probation

A student on probation may be continued on probation for one more semester if the cumulative grade-point-averages show considerable improvement, but the semester or cumulative grade-point-average is lower than 3.0.

Dismissal

A student may be dismissed for poor scholarship if any of the following situations apply:

1. Cumulative grade-point-averages are below 3.0 with no considerable improvement.
2. The student has been placed on probation and has failed to meet the conditions required to return to good standing.
3. The student has repeatedly failed to make progress toward graduation.

Good Standing

Graduate Students with KU cumulative grade-point-averages of 3.0 or above are in good standing.

Architecture Courses

ARCH 100. Architectural Foundations I. 4 Hours.

An introductory design studio directed toward the development of spatial thinking and the skills necessary for the analysis and design of architectural space and form. This course is based on a series of exercises that include direct observation: drawing, analysis and representation of the surrounding world, and full-scale studies in the making of objects and the representation of object and space. Students are introduced to different descriptive and analytical media and techniques of representation to aid in the development of critical thought. These include freehand drawing, orthographic projection, paraline drawing, basic computer skills, and basic materials investigation. Prerequisite: Approval from the Dean of the School of Architecture and Urban Planning. LAB.

ARCH 101. Architectural Foundations II. 6 Hours.

A continuation of ARCH 100 with major emphasis on the design relationships among people, architectural space, and the environment. The course is based on a series of exercises leading to the understanding of architectural enclosure as mediating between people and the outside world. Issues of scale, light, proportion, rhythm, sequence, threshold, and enclosure are introduced in relation to the human body, as well as in relation to architectural form, environment, and social and psychological factors. Students will engage in drawing, perspective projection, model building, and basic computer graphics. Prerequisite: ARCH 100. LAB.

ARCH 103. Introduction to Architecture. 3 Hours.

An introduction to the study and practice of architecture. This course aims at orienting the student to the various disciplinary facets which make up the total architectural curriculum as well as to the various professional roles which architects can be expected to perform. Architectural study is seen as both an art and a science, and architectural practice is seen as a complex, interdisciplinary professional activity. Students taking this course must bring a lap top computer to class. LEC.

ARCH 104. Principles of Modern Architecture. 3 Hours.

A lecture course covering the emergence of technological, theoretical and aesthetic principles of modern design beginning with the socio-cultural impact of industrialization and the crisis in architecture at the end of the 19th century. Attention is given to functionalist theory, mechanical analogies and the so-called machine aesthetic of 1910-1930 and to the precedents of important design principles of modern architecture, including modular coordination, the open plan, interlocking universal space, unadorned geometry, structural integrity, programmatic and tectonic expression, efficiency and transparency and briefly explores their development in post-war and late 20th century examples. LEC.

ARCH 105. B.A. Architectural Studies Seminar. 1 Hour.

The seminar provides a discussion section that supplements the lectures presented in ARCH 103. The course must be taken concurrently with ARCH 103 and is open only to students in the B.A. in Architectural Studies Program, or with approval by the School of Architecture and Urban Planning. SEM.

ARCH 106. B.A. Architectural Studies Seminar II. 1 Hour.

This seminar provides a discussion section that supplements the lectures presented in the lectures of ARCH 104. The course must be taken concurrently with ARCH 104 and is open only to students in the B.A. in Architectural Studies program, or with consent of the Dean of the School of Architecture and Urban Planning. LEC.

ARCH 108. Architectural Foundations I. 6 Hours.

An introductory design studio directed towards the development of spatial thinking and the skills necessary for the analysis and design of architectural space and form. This course is based on a series of exercises that include direct observation: drawing, analysis and representation of the surrounding world, and full-scale studies in the making of objects and the representation of object and space. Students are introduced to different descriptive and analytical media and techniques of representation to aid in the development of critical thought. These include but are not limited to freehand drawing, orthographic projection, para-line drawing, basic computer skills, and basic materials investigation. Students must bring a lap top computer to this class. Prerequisite: Approval from the Dean of the School of Architecture and Urban Planning. LAB.

ARCH 109. Architectural Foundations II. 6 Hours.

A continuation of ARCH 108 with major emphasis on the design relationships among people, architectural space, and the environment. The course is based on a series of exercises leading to the understanding of architectural enclosure as mediating between people and the outside world. Issues of scale, light, proportion, rhythm, sequence, threshold, and enclosure are introduced in relation to the human body, as well as in relation to architectural form. Students will engage in drawing, perspective projection, model building, and basic computer graphics. Students must bring a lap top computer to this class. Prerequisite: ARCH 108. LAB.

ARCH 152. Professional Practice I. 1 Hour.

This course will introduce students to the history and nature of the architecture profession and its relationship to education, internship, registration and certification. The various roles which architects are expected to perform and the ethical standards they are expected to uphold are explored in the context of different models of practice. Prerequisite: Must be admitted to M.Arch 5-year program, Arch Studies Program or approval by the School of Architecture and Urban Planning. LEC.

ARCH 200. Architectural Foundations III. 6 Hours.

A continuation of ARCH 101 with a series of studio exercises following a succession based on analysis, form, and syntax, with an emphasis on the communication of architectural ideas. Students explore plan, section, and spatial organization, spatial sequence, structure and materiality in relation to human dwelling and the building site. The course aims for student integration of these issues into building designs that require the organization of multiple spaces. Students will consider natural forces as they both shape and affect buildings, including gravity, wind, light, heat, sound, and fluids. Precedent studies, direct observation, building analysis, and site analysis are significant aspects of the semester. Prerequisite: ARCH 101. LAB.

ARCH 208. Architectural Design I. 6 Hours.

The second year studios are responsible for introducing students to the basic form determinants of architecture-from limited scope exercises to complete building designs. Using diagrams and sketches, plans, sections, elevations and models, students explore the spatial ordering of human activity, site and landscape analysis, light and air modulation, simple environmental controls and energy conservation, basic framing systems, volumetric organization and the materials of building skins and envelopes. Students must bring a lap top computer to this class. Prerequisite: ARCH 109. LAB.

ARCH 209. Architectural Design II. 6 Hours.

A continuation of ARCH 208 with an emphasis on the synthesis of basic form determinants of medium-sized, multi-story public building in the urban environment.. Students will demonstrate competence in basic architectural design, and preparedness for the third-year focus on materials and methods of building construction. Students are required to bring a lap top computer to this class. Prerequisite: ARCH 208. LAB.

ARCH 280. Design Workshop I: Visual Narratives. 3 Hours.

This lab-based course will develop the skills and understanding necessary to visually communicate compelling narratives of complex data and situations. Students will engage in hand-sketching and diagramming as well as utilizing digital tools designed to facilitate clear and persuasive data display. Environmental scales ranging from settlement patterns down to product interface will be addressed. Students will learn the visualization pipeline, processing data for visualization, visual representations, the design of interaction in visualization systems, and the impact of perception. Students will also develop the skills necessary to solve visualization problems and critique and evaluate information visualization. This material will be covered through class discussions, readings, and a number of assignments and projects. The assignments and large group project will provide students with practical experience in the construction of visual narratives. LEC.

ARCH 281. Design Workshop II: Design Thinking. 3 Hours.

This course aims to enhance student's abilities to apply concepts and methods associated with design thinking with an emphasis on ill-structured problem-solving and human-centered design. Students will gain exposure to design thinking processes including forecasting, scenario planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation. This material will be covered through class discussions, readings, and a number of assignments and projects. Students will have the opportunity to develop their design-thinking competence through their final project which may be at the level of models, product, spatial, building and/or community designs. LEC.

ARCH 310. Computer Applications. 3 Hours.

The course will immerse students in the exploration of the generation, manipulation, and production of graphic images through the use of computers. The goal of the course is to help reach an understanding of computers that allows for future growth in an environment in constant change, and to provide an overview of what is currently possible. The format of the course will be a combination of lectures and workshops. The lectures will introduce students to theoretical and application-oriented topics. Group discussions will focus on the computer as a conceptual construct, the computability of design, and computers as design partners. The workshops will provide students with hands-on experience. The vehicles used for these investigations will be desktop publishing, paint, and drafting tools. As resources become available this list will be augmented. LEC.

ARCH 320. Drawing for Architects. 3 Hours.

This course will focus on drawing as a tool of communication through exercises that explore observation and perception, form and proportion, representation and diagramming using a variety of materials and Media. This course will also use two and three-dimensional modeling software. Prerequisite: Open only to Bachelor of Arts in Architectural Studies students or by department consent. LEC.

ARCH 359. Special Problems. 1-3 Hours.

Special problems in architecture. The study of a particular problem in architecture involving individual research and presentation. Conferences and reports. (May be taken for Credit/No Credit.) Prerequisite: Student must submit to his or her faculty advisor, in advance, a statement of the problem he or she wishes to pursue, the methodology he or she plans to use in the program, and the objectives of the special problems. He or she must also be in agreement with the faculty member he or she proposes as instructor for the course. IND.

ARCH 360. Introduction to Landscape Architecture. 3 Hours.

This course situates landscape architecture in a broad cultural and social context with the intention of developing skills in critical thinking about the role of exterior place-making in the built environment. Lectures and assigned readings will explore central issues in the history and theory of landscape architecture and look at key sites and their designers. Other topics will include environmental attitudes and perception, the human experience of place, and ideas of nature. LEC.

ARCH 380. Design Workshop: Ideas and Methods in Planning and Design. 3 Hours.

This course focuses on design methods, ideas and approaches at the city, neighborhood and community levels. The course will introduce approaches to urban design and planning which are responsive to social, environmental and ecological issues. The goal is to develop core competencies in design thinking such as analyzing specific problems and developing possible design interventions by understanding relevant theories and analyzing case studies. Students will critically analyze past and current urban trends through case studies to inform design ideas for more equitable and sustainable communities. This material will be covered through class discussions, readings, and a number of design-oriented team projects and assignments. LEC.

ARCH 381. Design Workshop IV: Designing Sustainable Futures. 3 Hours.

This problem-based service-learning course aims to enhance students' abilities to apply the concepts and methods associated with effective and facilitative leadership focused upon sustainable design problems. This material will be covered through class discussions, readings, and design-oriented team projects. Students learn core competencies such as analyzing organizational problems and goals, strategic planning, intervention, and evaluation. In the service-learning component, students apply these skills to issues that matter to them and to the communities they serve to generate design solutions for their client's consideration. These projects may be at the level of interaction models, product, spatial, building and/or community designs. LEC.

ARCH 400. Interior Architecture Studio I. 6 Hours.

This course is an introduction to the basic principles and elements used in spatial organization, innovative design solutions and the practice of interior architecture, from predesign through final presentations. Prerequisite: Must be admitted to the Bachelor of Arts in Architecture Studies with an emphasis in Environmental Design. LEC.

ARCH 401. Interior Architecture Studio II. 6 Hours.

This course is an introduction to materials resources, specifications and sustainability; and helps students further their understanding of the design process by creating innovative design solutions and spatial organization for interior architecture. Prerequisite: Must be admitted to the Bachelor of Arts in Architecture Studies with an emphasis in Environmental Design. LEC.

ARCH 480. Senior Seminar. 3 Hours.

This seminar will expose students to normative and critical approaches in the profession of architecture. Through field trips, attendance at juries, readings, and presentations by architects and designers, they are to develop an understanding of the precedence, theories, and practices of the profession. This is the capstone course for the B.A. in Architectural Studies. Prerequisite: ARCH 381. LEC.

ARCH 502. Accelerated Design I. 6 Hours.

The first of two accelerated design studios, this course emphasizes the design relationships among people, architectural space, and the environment. Issues of shelter, light, sequence and threshold are considered in relation to physical, psychological and sociological factors. The course gives the basic notion of site, structure, materiality, and develops an understanding of building program. Focus is on developing the ability to think spatially and an understanding of human behavior relative to the physical environment. Prerequisite: Admission to M.Arch 3-yr program and permission of the Dean of Architecture, Design and Planning. LAB.

ARCH 503. Accelerated Design II. 6 Hours.

The second of three accelerated design studios, this course emphasizes construction and technology as expressive mediators in the relationship between human dwelling and site. Students will consider natural forces as they both shape and affect buildings, including gravity, wind, light, heat, sound and fluids. Prerequisite: ARCH 502 and/or permission of the Dean of the School of Architecture and Urban Planning. Corequisite: ARCH 626. LAB.

ARCH 504. Accelerated Design III. 6 Hours.

The third of three accelerated design studios, this course focuses on the integration of material learned in previous studios with urban-based design problems of increasing scale and complexity within the frameworks of sustainability and universal design. Students will demonstrate an ability to use research and critical thinking skills, including the use of case precedents, and the ability to integrate various building systems in building design. Prerequisite: ARCH 503 (see studio grading policy) or permission of the Dean of the School of Architecture and Urban Planning. Corequisite: ARCH 627. LAB.

ARCH 508. Architectural Design III. 6 Hours.

A continuation of ARCH 209 with an increased emphasis of studies in urban spaces and design development of building envelopes as related to urban public-life, structural and mechanical systems, and principles of sustainability. Students shall work individually on an advanced building design. Work will focus on medium scale, multi-story, urban-infill, buildings developed to an appropriate level of technical resolution as evidenced in clear schematic wall sections and structural proposals. Students shall demonstrate an understanding of formal ordering and building-concept development as related to the tectonic form determinants. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 209. LAB.

ARCH 509. Architectural Design IV. 6 Hours.

A continuation of ARCH 209 with an emphasis on materiality and construction of built assemblies through hands-on activities. Development of craft, process, collaboration and technical documentation skills will be primary objective of the course. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 209. LAB.

ARCH 510. Problems in Computer Applications. 3 Hours.

The study of a particular problem in architecture involving the application of computer-aided design and analysis techniques. Individual or group tutorials. Prerequisite: Consent of instructor based on the student's advance submission of a written proposal outlining the plan of study. Completion of one course in computer programming and/or specific experience in writing original computer programs. LEC.

ARCH 515. Building Information Modeling. 3 Hours.

This course will expose students to building information modeling: a digital representation of the building process that facilitates exchange and interoperability of information in digital format. The focus will be on the software's potential for reducing the information loss that occurs during each handoff of the project during the traditional delivery method. Possibilities for integrated practice including lifecycle costing and knowledge management are discussed. LEC.

ARCH 516. Portfolio Development. 3 Hours.

The aim of the course is to teach practical presentation skills using computer software, in addition to graphic design theories and strategies. This course will provide an opportunity for students to design and produce a design portfolio appropriate for internship and/or graduate school applications. LEC.

ARCH 520. Architectural Acoustics. 3 Hours.

An introduction to the physics of sound. Objective and subjective evaluation and control of sound as applied to architectural spaces. Room shaping, mechanical and electrical system noise and vibration control, and electro-acoustic sound reinforcement. Prerequisite: PHSX 114 and ARCH 626 or equivalent, or consent of instructor. LEC.

ARCH 521. Electro-Acoustical Systems. 3 Hours.

A study of electro-acoustic sound reinforcement and reproduction systems for buildings. Prerequisite: PHSX 212, or consent of instructor. LEC.

ARCH 524. Structures I. 3 Hours.

The fundamental principles of structural behavior including stress and deformation in structural components and systems. Open to architecture students only. Prerequisite: PHSX 114. LEC.

ARCH 529. Problems in Architectural Acoustics. 1.5 Hour.

This course has the objective to introduce the students to practical problem-solving in architectural acoustics. Precedents will be introduced to frame discussions on how proper acoustical conditions can be realized within the functional parameters of a particular architectural space. Student will develop the understanding of how sound behaves in an enclosed architectural space. The course will include several visits to existing architectural spaces that have specific acoustical requirements and interesting acoustical characteristics. LEC.

ARCH 530. Environmental Systems I. 3 Hours.

This introductory course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: climate and weather; environmental health; indoor air quality; thermal comfort; passive and active systems and design strategies for heating, ventilating, and air-conditioning; plumbing; noise control; building management systems; and life safety systems. Prerequisite: PHSX 114. LEC.

ARCH 531. Environmental Systems II. 3 Hours.

This course addresses human needs and comfort in relation to the natural and man-made environments. Specific topics include: daylighting, electrical lighting systems, building acoustics, electrical power distribution systems, alternative energy sources, communication systems, and transportation systems. Prerequisite: ARCH 530. LEC.

ARCH 539. Global History of Construction and Materials. 3 Hours.

This course offers a survey of the global history of structural systems, construction techniques, and building materials from pre-history to contemporary times. The course will emphasize that historical evolution of construction system has not only been informed by technical and mathematical innovations, but has also been determined by the cultural practices of a region. Examples will be taken from across the globe to show that structure and construction have been historically associated with diverse cultural values and had profound influence on the evolution of architecture and the spatial practices of society. LEC.

ARCH 540. Global History of Architecture I: Origins to Industrial Revolution (3500 BCE-1700 CE). 3 Hours GE3H.

The first unit of the two-part survey history course explores the historical changes of architecture in relation to civilizational change, techno-spatial experiments and town-building efforts, from the earliest evidence of human dwelling to the beginning of the industrial revolution. Emphasis is on the architecture as an integrated development of commercial, technological, and ideological transferences among different regions, nascent religious groups and evolving political enterprises. In regard to the geographical and geopolitical regions, the course includes South and Central America, Europe, Classical Greece and Italy, Asia Minor, North Africa and Asia. LEC.

ARCH 541. Global History of Architecture II: From Industrial Revolution to Present (1700 CE-Present). 3 Hours AE42.

The second unit of study of the two-part survey history course offers a global perspective of the development of modern architecture from the industrial revolution to contemporary times. This course traces the genealogy of modern architecture to its multiple roots in European enlightenment, global dissemination of industrial knowledge, invention of new building materials and techniques, and development of architectural theory. Emphasis is on the historical context of how the diverse approaches of architects from different regions create variations of formal expressions, spatial program and theoretical underpinning, and thus create multiple meanings and images of modern architecture. Prerequisite: ARCH 340 or ARCH 540 or ARCH 640 or consent of instructor. LEC.

ARCH 542. History of Architecture III: Modern. 3 Hours.

A continuation of ARCH 541, History of Architecture II, covers the period from around 1800 to the present. Particular emphasis is placed on the major cultural shifts that have impacted architectural representation and have contributed to its differentiation as Modern, not only in Europe, North and South America but also with examples in India and Pakistan. Weekly lectures and readings including original sources. Supplementary readings and/or assignments may be assigned. Prerequisite: ARCH 341 or ARCH 541 or ARCH 641 or consent of instructor. LEC.

ARCH 552. Ethics and Leadership in Professional Practice. 3 Hours AE51.

This course takes the perspective that architectural design is inherently an ethical act. Through this lens, students will learn the essentials of office practices, the many definitions of client and their roles in the design process, the legal responsibilities of the profession, the importance of continuous professional development and the obligation the profession has to provide civic leadership in regard to the built and natural environment. LEC.

ARCH 560. Site Design. 3 Hours.

This course introduces concepts of architectural context and site through a combination of lectures and field studies. Natural, social and built systems are presented using a range of perspectives, including holistic ones. Students will develop visual and written skills of analysis through specific site analytic and design techniques. Application exercises and ongoing analysis assignments are required. Restricted to 3.5 and 5 year Master of Architecture students. Prerequisite: ARCH 208 for undergraduate students. LEC.

ARCH 570. Contemporary Issues Seminar I. 1 Hour.

A series of seminars on contemporary issues facing the profession. LEC.

ARCH 571. Contemporary Issues Seminar II. 1 Hour.

These seminars will consist of three to four guest lecturers each semester. All students enrolled in this course will attend the same lecture as ARCH 572. Topics will be selected to reflect major issues covered in the course work, or contemporary issues facing the profession. LEC.

ARCH 572. Contemporary Issues Seminar III. 1 Hour.

These seminars will consist of three to four guest lecturers each semester. All students enrolled in this course will attend the same lecture with ARCH 571. Topics will be selected to reflect major issues covered in the course work, or contemporary issues facing the profession. LEC.

ARCH 573. Financial and Economic Issues in Architecture Management. 3 Hours.

This course will focus on the fundamentals of accounting, macroeconomics and the construction industry, and concepts related to the development and implementation of a strategic business plan. LEC.

ARCH 574. Organizational Issues in Architecture Management. 3 Hours.

Topics that will be covered in this course include the organization of a professional practice, personnel management, and the development of effective communication skills. LEC.

ARCH 575. Architecture Management: Managing a CAD System. 3 Hours.

This course covers the various procedures involved in managing a CAD system within a design organization. It also explores the different applications and uses of current CAD technology. Topics to be addressed include: selecting a system; billing CAD services; support services and personnel; marketing CAD; customization, file management, menus and script files; AutoLisp Programming; and integrating CAD with other programs. Prerequisite: An introductory CAD class or permission of the instructor. LEC.

ARCH 576. Project Delivery in Architecture Management. 3 Hours.

Conventional methods for project delivery will be reviewed along with design/build, fast-track, and other techniques. The relationship of the architect and development will also be explored, as will the relationship of project development to urban design concepts. LEC.

ARCH 577. Marketing Architectural Services. 3 Hours.

The emphasis of this course will be on the development and implementation of a marketing plan, techniques related to the marketing of specific projects, and the relationship of marketing to other components of a firm. LEC.

ARCH 578. Legal Issues in Architectural Management. 3 Hours.

A course designed to familiarize the student with legal considerations related to a professional practice. Case studies and selected readings will serve as the basis for discussion of registration, contracts, business formation, taxes, employment practices, copyright, and patent law. In addition, the course will draw upon the knowledge and experience of members of the professional community. LEC.

ARCH 600. Special Topics in Architecture: _____. 3 Hours.

This course is for the study of architectural topics on a one time or experimental basis in response to changing needs and/or resources in the Program. It may be offered concurrently by different instructors under different subtitles as announced in the Timetable. May be repeated for credit. Prerequisite: Variable. IND.

ARCH 601. Design Research. 3 Hours.

This course will examine issues in architectural research. It will provide an overview of graduate level studies with regard to definitions, methods, skills, and techniques. The course will consist of lectures, seminars, readings and guest presentations. The class will enable students to make informed judgments about matters of quality and quantity on architectural issues. Students will be expected to formulate sensible systems of classification for their chosen material. Students will be expected to produce papers and essays, make sample research proposals, and other research based assignments. Limited to students in M. Arch Program with Undergraduate status. Prerequisite: ARCH 608. LEC.

ARCH 602. Accelerated Design IV. 6 Hours.

Graduate studio emphasizing urban context and design theories. Students will undertake specialized research projects. Prerequisite: ARCH 504 (see studio grading policy) or permission of the Dean of the School of Architecture, Design and Planning. LAB.

ARCH 605. Visualizing Natural Forces. 3 Hours.

The course advances empirical understanding of natural forces as they both shape and affect buildings, including gravity, wind, light, heat, sound, and fluids. Two class hours and one laboratory per week. This course emphasizes the development of conceptual thinking and problem solving skills through sensory-based demonstrations, lectures, and laboratory experimentation. The course will emphasize concepts of PHSX 114 as they relate to the built environment. Prerequisite: PHSX 114. LEC.

ARCH 608. Architecture Design V. 6 Hours.

An advanced studio with an emphasis on program analysis and design of urban building(s) and urban spaces with culture, context and precedent as major form determinants. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 408 and ARCH 409; or ARCH 508 and ARCH 509; or ARCH 602. LAB.

ARCH 609. Integrated Design. 8 Hours AE61.

An advanced studio with an emphasis on given to the individual student's demonstration of integration of all previously learned design skills. These include program analysis, site design, structure, formal composition, materials and methods of construction, technical development of building fabric, environmental systems, code and zoning compliance, and principles of sustainability. Students should also demonstrate an appropriate awareness of history, theory, and culture. The level of project development should be demonstrated by technically precise drawings and well-researched written documentation in addition to other means of representation. Prerequisite: ARCH 608. LAB.

ARCH 610. Computers and Project Development. 3 Hours.

This course introduces one to the use of computers in project development (final and execution drawings, specifications). Initiates advanced computer aided design systems. Emphasis is to be on CAD potential in generating complex representation; lectures and laboratory work on extent and limits of CAD systems in design; familiarizes with software and hardware (basic training, plotting, etc.); encourages the use of CAD process for exploration (three-dimensional representation); introduces editing and report preparation. Lectures on computers and profession. No computer language is taught in this course. Prerequisite: ARCH 310 or introductory CAD course. LEC.

ARCH 613. Visual Thinking Studio I. 3 Hours.

An intensive course covering the graphics topics described in ARCH 113 and ARCH 114. Graduate level course that supplements the core syllabus or ARCH 102 with weekly seminars, expanded reading lists, and additional classroom assignments. Prerequisite: Undergraduate degree in area other than architecture with three credits in calculus, four credits in physics, three semesters of English, and/or permission of the Dean of the School of Architecture and Urban Planning. LAB.

ARCH 614. Freehand Drawing. 3 Hours.

Open to all SADP non-graduating students interested in enhancing current freehand drawing skills, generally in the architectural realm. While a broad range of expression and graphic materials is explored, emphasis is on drawing as a notational skill, the instrument of creative expression for professional purposes as well as for lifelong artistic fulfillment. Prerequisite: Consent of instructor. LAB.

ARCH 615. Integrated Systems. 3 Hours.

This course provides a holistic understanding of building systems and active sustainable strategies. Students will examine the appropriate selection, development, and integration of environmental and structural systems covered in previous architecture courses. An emphasis is placed on the interconnectedness of these systems to building form, function, and performance. Use of simulation programs are expanded upon to quantify building performance. Prerequisite: Must be admitted to M.Arch I, II or III or Bachelor of Arts in Architectural Studies degrees. LAB.

ARCH 616. Advanced Architectural Presentation Techniques. 3 Hours.

An advanced studio course intended for students who have a working knowledge of basic presentation techniques wishing to refine their existing skills and experiment with new techniques. The course will review basic techniques and explore new ones through a series of lectures and these techniques will be put to use in the concurrent development of complete presentations of architecturally significant buildings. The lectures and studio work will be supplemented by slide presentations, demonstrations, guest lecturers, and field trips. Not intended as a remedial course or substitute for ARCH 615. Prerequisite: Consent of instructor. LEC.

ARCH 618. Architectural Photography. 3 Hours.

A basic course in black and white photography intended to enable the student to utilize photography routinely as a medium for visualization, documentation and presentation of images useful for design. It is organized in relation to the controls of the roll film camera so that assignments reinforce the understanding of this tool and its creative possibilities. Experiences include making photograms, developing black and white film, printing black and white images, mounting and presenting prints, photocopying, photographing buildings and architectural models, photomontage, high contrast graphics effects and an introduction to color materials. Enough technical information is included for the student to pursue black and white photography on his/her own to the desired level of proficiency. LAB.

ARCH 619. Advanced Architectural Photography. 3 Hours.

An advanced course in photography specifically dealing with the skills and techniques of the professional architectural photographer. Students will use and experiment with large format photography, manipulation of the exposure and development process, special developers and processes; negative retouching, specialized film and their application, simulation, model photography, and photographic rendering. Brochure development, marketing services, and professional ethics will also be discussed. Prerequisite: ARCH 618 or equivalent, submission of a brochure, and consent of instructor. LAB.

ARCH 622. Material Investigations. 3 Hours.

This course will provide opportunities for students to learn about research methods in the realm of architectural materials. The course will have two concurrent phases: the first phase will consist of a series of field trips to materials manufacturers, fabricators and distributors in the Lawrence, Topeka and Kansas City area. The purpose of these trips is to see, first-hand, how materials are developed and made, and to understand the research involved in their development. The second phase will consist of a self-directed research project based on the students' natural curiosity about a particular material or process. The project will have three components: 1) a research agenda, rigorously developed and executed; and 2) a "built" component, with actual materials, executed by the students' own hands and financial resources; and 3) final documentation of the research project. LEC.

ARCH 623. Building Practicum. 3 Hours.

The building technology practicum is offered as a course that will afford students a "real world" experience outside of the academic setting. Students can bring their own project proposals to the practicum committee or faculty members on the committee can suggest local preservation efforts, including planning and administration, or actual physical implementation of such projects. It could also be in the interest of some students to develop skills in a specific area, i.e. model building, architectural photography, historic reconstruction, or technical documentation. Those interested in specific areas will need to work closely with the practicum committee to develop a working list of goals and objectives. Students can elect to work individually or in teams, can work outside of the semester schedule with grades assigned at the completion of the project, and will be bound by a contract approved by the practicum committee. LEC.

ARCH 624. Structures II. 3 Hours.

A continuation of ARCH 524, with focus on applying learned principles to basic contemporary structural systems such as concrete, steel, and wood framing systems. Open to architecture students only. Prerequisite: ARCH 524 or ARCH 620 and ARCH 621. LEC.

ARCH 625. Analysis and Design of Structures for Architects. 3 Hours.

Analysis of statically indeterminate beams and frames. Fundamentals of structural design in concrete and steel. Open to architecture students only. Prerequisite: ARCH 624. LEC.

ARCH 626. Building Technology I: Construction Systems and Assemblies. 3 Hours.

This course is an introduction to the materials, processes and craft of construction. Along with presenting the information required for understanding the basic principles and appropriate application and performance of construction systems and assemblies, the course also provides a conceptual framework to bridge between the physical conditions of construction and the more abstract processes of design. Teaching method includes modeling and hands-on building experiences. Prerequisite: ARCH 200 or ARCH 209 or Corequisite: ARCH 408 or ARCH 409 or ARCH 503. LEC.

ARCH 627. Building Technology II: Culture of Building Technology. 3 Hours.

A continuation of ARCH 626. Introduction to industrialized production. A consideration of the detailed sub-systems and cultural practices that comprise the built environment, and the factors responsible for their design and installation. Includes discussion of building codes, mechanisms of failure, and materials selection. Lectures and demonstrations by the instructors and visitors, films, slide projections, quizzes and written examinations. A student should demonstrate an understanding of elementary systems of construction and be able to relate this understanding to the design process. Prerequisite: ARCH 626. LEC.

ARCH 628. Structure in Nature and Architecture. 3 Hours.

The course deals with the historical development of structure, first in nature and then in architecture. In nature, the course discusses the evolution of structural materials, systems, connections and anchorage (foundations) in geological structure, botanical structure, endoskeleton structure, exoskeleton structure and insect architecture. The course then analyzes the growth of structure from anthropological structure through ancient and medieval structure to modern architecture. In these broad architectural periods in world history, the course examines the structural materials, structural behavior and construction of some of the important buildings that helped to define and delineate the architecture of their time. This course helps students to understand structural systems and their behavior, in a non-mathematical way, by relating the structural principles involved to our common experience of the world around us. The course will have every student do a research project on an assigned topic in geological structure, botanical structure, exoskeleton structure, insect architecture or anthropological structure. LEC.

ARCH 629. Acoustic Studio. 3 Hours.

This course has the objectives of introducing the art and science of "listening" to architectural spaces; exploring, from both historical and current viewpoints, how proper acoustical conditions have and can be realized within the aesthetic and functional parameters of the particular architectural space; understanding the importance of building acoustics in architectural design; obtaining the ability to discuss building acoustics with the proper use of acoustical terms and descriptions; and understanding the basics of how sound behaves in an enclosed architectural space. The course will include several visits to existing architectural spaces that have specific acoustical requirements and interesting acoustical characteristics. LEC.

ARCH 630. Theory and Context of Architecture. 3 Hours.

An examination of architectural theories that understand the designed environment as a cultural medium and product of a sociocultural process that expresses values and ideas. Understanding of these theories will be enhanced through the analysis of paradigmatic buildings, urban form and ideologies that have influenced architectural culture. LEC.

ARCH 631. Issues in Contemporary Architecture. 3 Hours.

This class focuses the student on directed readings and provides the student the opportunity to select a topic for the semester's duration. With a very crammed schedule, the student is given a venue to concentrate on issues that they wish to pursue. A seminal reading is provided to the class, at the beginning of the semester, and this reading forms the basis of the semester's discussion. The selected reading is "current" and is the device used to distribute other readings pertinent to the author's argument. The basis of selection is related to current thought and discourse affecting the evolving nature of architectural culture. Class discussion may include slides, videos, sound tapes, etc. These are intended to complement the assigned readings. LEC.

ARCH 632. Contemporary French Architecture. 3 Hours.

This course introduces the student to contemporary trends in French architecture. Social, technological, economic, and theoretical perspectives will be investigated, and the work of the major French architects of the latter half of the twentieth century will be studied in depth. This course supplements the Paris studio program. LEC.

ARCH 635. Visualizing Airflow In and Around Buildings. 3 Hours.

It is often difficult to predict the way certain environmental design features will perform if not built and tested which can be costly and time consuming. This course will analyze the performance of such designs in an efficient and cost effective manner within a visual medium using computational fluid dynamics (CFD). CFD will provide a visual understanding of airflow behavior in and around buildings. In addition, thermal comfort and air quality will be investigated in this animated environment. The culmination of the course will be an analysis of a portion of one's studio design project. Prerequisite: ARCH 530. LEC.

ARCH 636. Art of Architectural Machines. 3 Hours.

This course emphasizes architectural trends of the twentieth century, which have been influenced by significant technological advances. The purpose of the course is to familiarize the student with the achievements and failures of architectural concepts that were influenced by modern technology. Examples will be drawn primarily from buildings and architects in Western Europe and North America. LEC.

ARCH 637. Architecture and Cosmos. 3 Hours.

Ideas of symmetry, harmony, proportion, and ideal form have long been used by architectural theorists and practitioners as a way of translating a traditional knowledge of the world into architectural form. Such traditional knowledge is embedded in the mathematics of Pythagoras, the philosophy of Plato, and the four part study of the cosmos (known in Western thought as "the quadrivium"—arithmetic, geometry, music, and astronomy). This course will entail the study of selected readings in this intellectual tradition as well as the analysis of buildings as they relate to the concepts learned through this study. Prerequisite: ARCH 641, History of Architecture II: Renaissance, or consent of instructor. LEC.

ARCH 638. Architecture, Art and Science. 3 Hours.

This course explores the relationship between architecture and the liberal arts and sciences through the principle of isomorphic correspondence—a term from Gestalt psychology to describe similar structures occurring in different media. Emphasis on the historical connections to music and on aesthetic principles on the natural sciences. Prerequisite: Six hours of architectural history or consent of instructor for non-majors. LEC.

ARCH 639. Current/Historical Directions in Architecture. 3 Hours.

A study of contemporary or historical trends in architecture which relate to the development of individual or broad philosophies of architecture. LEC.

ARCH 646. American Architectural History. 3 Hours.

This course surveys the history of architecture in the USA from the beginning of European settlements to mid-20th century. It is organized based on place types that include, among others, townships, housing, commercial developments, civic structures, agricultural and rural buildings and settlements, and religious buildings and communities. It also covers a range of topics such as architectural styles, typologies, building tectonics, patterns of diffusion, and socio-economic factors that influenced the development of these historic place types. LEC.

ARCH 647. Historic Preservation Theory. 3 Hours.

This course presents the historical development and contemporary status of the theories and philosophies of historic preservation. It particularly covers the concepts and approaches developed by UNESCO for the management of tangible and intangible cultural heritage resources worldwide and the related international charters, conventions, operational guidelines, and institutions. Using international case studies, it illustrates a range of theoretical, philosophical, ethical, and practical issues and debates in historic preservation in a global context. LEC.

ARCH 648. Historic Preservation. 3 Hours.

The focus of this course is on the development of concepts and practices of retrieving, recycling, and curating the built environment from the mid-nineteenth century to the present. After a series of introductory readings and discussions, students are encouraged to investigate particular environmental, technological, social, or ideological questions of their choice, focusing on structures that demonstrate persistence over great distances and, co-existing with this persistence, ability to accommodate changes over time. LEC.

ARCH 649. Historic Preservation Technology. 3 Hours.

This course introduces students to architectural historiography and preservation technology. It covers a range of curatorial issues in preservation and adaptive reuse of historic buildings. The topics include technical documentation of historic buildings, archival research, assessment of causes of deterioration and preservation needs in historic buildings, selection of preservation strategies, and techniques of building material preservation. Also covered are the integration of sustainable technologies into historic construction and examination of the ecological advantages of adaptive reuse and preservation. LEC.

ARCH 650. Architect-Led Design-Build. 1 Hour.

This is a 5-week course covering an introduction to the design-build method of project delivery, highlighting the role of architect as leader of the design-build team. The course covers team structure; ethical issues; forming a design-build firm; project management; licensing, corporate and insurance issues; public design-build laws and bridging. LEC.

ARCH 651. Advanced Design-Build for Architects. 2 Hours.

This is a 10-week course covering a more advanced examination of the design-build method of project delivery, highlighting the role of architect as leader of the design-build team. The course covers team structure; ethical issues; forming a design-build firm; project management; licensing, corporate and insurance issues; public design-build laws and bridging; as well as history, architect-as-prime contractor, architect-as-subcontractor, business issues and marketing, bonding, design-build contracts, cost estimating and OSHA, risks and legal liabilities. LEC.

ARCH 652. Architect-Client Relations. 1 Hour.

The intent of this five-week course is to provide a forum for the examination of varied aspects of the architect-client relationship. Components of this relationship will be explored both from the point of view of the practicing architect and of the project owner or client. LEC.

ARCH 653. Non-Traditional Careers in Architecture. 1 Hour.

The intent of this five week course is to provide a forum for the examination of the wide range of career options that are open to architects. The positive impact, to both the built environment and society as a whole that architects in alternative roles are ideally suited to provide, will be explored. LEC.

ARCH 654. Ethics in Architectural Practice. 1 Hour.

This course is designed to develop an understanding of the underpinnings of ethical reasoning including the structure and vocabulary of moral argumentation; apply this knowledge to common ethical issues confounding contemporary architects, demonstrated through presentations and interaction with leading Kansas City architects, interactive analysis of case studies, participatory discussions, reading comprehension and analytical writing. LEC.

ARCH 658. Programming and Pre-Design Issues. 3 Hours.

This course will introduce the concepts, methods, techniques, and information used by the architect to establish the parameters of a project, prior to entering the formal design process. The course will introduce the student to the social, technical, leagan and economic dimensions of architectural programming,. The content will introduce the core competencies in programming, site, and environmental analysis required by the profession. Programming theory, research techniques, information analysis, evaluation of significance, and creative synthesis of the multivalent factors acting upon the pre-design process of project definition will be covered. Exercises may include programming and analysis of projects and sites assigned in the Architectural Design Studio sequence. Prerequisite: ARCH 209 or ARCH 504. LEC.

ARCH 661. Eighteenth to Twentieth Century American Landscape Design. 3 Hours.

This course will explore eighteenth, nineteenth, and twentieth-century American landscape design including gardens, estates, rural cemeteries, campuses, suburbs, urban parks, and national parks, as well as the beginnings of landscape architecture as a profession. Topics of inquiry will include European contributions in landscape theory, practice, and aesthetics, and American adaptations in response to climatic, social, and political differences. An important focus will be whether one can look at a designed landscape and see the expression of an attitude toward nature. LEC.

ARCH 662. Twentieth Century American Landscape. 3 Hours.

The purpose of this course is to investigate the relationships between the American culture and the resulting built and natural landscape. Issues of building types, public places, and land use arrangements will be studied from a socio-historical perspective. (Same as UBPL 662.) LEC.

ARCH 663. Darwin, Humboldt, and Changing Ideas in Landscape Architecture. 3 Hours.

The seminar explores the influence of the natural historians Alexander von Humboldt and Charles Darwin on American writings in landscape architecture in the late 19th and early 20th centuries. The original texts of Humboldt (including *Aspects of Nature and Cosmos*) and Darwin (including *On the Origin of Species and Insectivorous Plants*), will be studied in conjunction with significant authors in landscape architecture including A. J. Downing, George Perkins Marsh, Frederick Law Olmsted, Horace William Shaler Cleveland, Mariana Griswold van Rensselaer, Jens Jensen, Garrett Eckbo, Daniel Kiley, and James C. Rose. The emerging ideas of conservation and ecology found in these works will also be examined. LEC.

ARCH 665. History of Urban Design. 3 Hours.

An exploration of the evolution of cities through the cultural and spatial development of human settlement patterns. The role of cities in the transformations of human culture from tribal communities to post industrial society is defined in terms of the historical origins of urban institutions and functions and their transformation into spatial structure and physical form. LEC.

ARCH 670. Spreadsheet Applications. 1 Hour.

This course will focus on the application of electronic spreadsheets in the management of project fees, company staffing, and business cash flow. Topics covered include spreadsheet linkage, creation of lookup tables, data consolidation, writing macros and charting results. LEC.

ARCH 671. Database Management. 1 Hour.

This course focuses on the development of database applications to track the information generated during the normal course of business operations. Topics include database design, table creation, queries, forms, reports, and macros. LEC.

ARCH 672. Project Management Software. 1 Hour.

This course uses software packages to manage a simulated design project. The topics in this section include creating tasks and linkages, assigning and managing resources, monitoring a project and creating reports. LEC.

ARCH 673. Presentation Tools. 1 Hour.

This course covers the use of various software packages in the development of on-screen and hard-copy presentations. Topics include presentation design, importing graphics, output strategies, and communications techniques. LEC.

ARCH 674. Electronic Communication. 1 Hour.

This course focuses on the use of electronic data communications in operating a design organization. Topics include use of the Internet, electronic research, telecommunication technologies and remote access. LEC.

ARCH 675. Graphics Packages. 1 Hour.

This course focuses on the development of graphic images. Students are taught to generate vector-based graphics and bit-mapped images that can be incorporated into various software packages. LEC.

ARCH 676. Facility Management: Tools and Techniques. 3 Hours.

The application of Information Technology to Facility Management has changed a formerly basement operation into a center of corporate support. In this course, we explore the use of Computer Aided Facility Management (CAFM) software and its application to real world facility management. LEC.

ARCH 677. Construction Cost Estimating for Architects. 1 Hour.

The main objective of this course is to introduce and inform the student of the processes involved in construction estimating. This course will focus on commercial construction and the fundamentals of estimating a commercial project. This course will acquaint the student with quantity surveying, costing methods, types of estimates, estimating software, the construction estimating process, and estimating the various parts of a project. LEC.

ARCH 678. Construction Project Management for Architects. 1 Hour.

The main objective of this course is to introduce and inform the student of the processes involved in construction project management. This course will focus on commercial construction and the fundamentals of managing a commercial project. The course will acquaint the student with transferring a project from the estimating stage to actual construction, the buyout process, contracts, purchase orders, responsibilities of project managers, responsibilities of superintendents, planning and scheduling, management of changes in a project, financial reporting, accounting processes, payment procedures, and the close-out process in construction. LEC.

ARCH 680. Design Workshop III: Ideas and Methods in Planning and Design. 3 Hours.

This course focuses on design methods, ideas and approaches at the city, neighborhood and community levels. The course will introduce approaches to urban design and planning which are responsive to social, environmental and ecological issues. The goal is to develop core competencies in design thinking such as analyzing specific problems and developing possible design interventions by understanding relevant theories and analyzing case studies. Students will critically analyze past and current urban trends through case studies to inform design ideas for ore equitable and sustainable communities. This material will be covered through class discussions, readings, and a number of design-oriented team projects and assignments. Prerequisite: Consent of department. LEC.

ARCH 681. Design Workshop IV: Designing Sustainable Futures. 3 Hours.

This problem-based service-learning course aims to enhance students' abilities to apply the concepts and methods associated with effective and facilitative leadership focused upon sustainable design problems. This material will be covered through class discussions, readings, and design-oriented team projects. Students learn core competencies such as analyzing organizational problems and goals, strategic planning, intervention, and evaluation. In the service-learning component, students apply these skills to issues that matter to them and to the communities they serve to generate design solutions for their client's consideration. These projects may be at the level of interaction models, product, spatial, building and/or community designs. Prerequisite: Consent of department. LEC.

ARCH 690. Architecture Study Abroad. 3-6 Hours.

May be repeated up to a maximum of 9 credits. Students participate in a study abroad program approved by the Architecture Chair. Students will be evaluated upon a submitted journal, sketchbook, or equivalent assignments assigned by the instructor. Graded on a satisfactory/unsatisfactory basis. IND.

ARCH 691. Architecture Practicum. 6 Hours.

Based upon the student's approved proposal, each student will explore the process of creating the built environment by working in a setting that is intended to provide a new perspective for that student. The range of venues may include non-profit organizations, research settings, hands-on building experiences, and other professional settings as approved by the instructor. Students evaluation will include an assessment by the supervisor in the practicum settings as well as on a final paper using appropriate graphics to illustrate key points. Graded on a satisfactory/unsatisfactory basis. IND.

ARCH 692. Documentation. 3 Hours.

Students will document their experience in ARCH 690 or another approved study abroad program. This is intended as a critical reflection upon the student's experience and is additional documentation produced beyond the work done for the study abroad credit. The final product will include a written paper, using appropriate graphics to illustrate key points. IND.

ARCH 693. Workplaces. 3 Hours.

This course is about the design of places where people work. The workplace is important for many reasons. Not only do we spend a considerable amount of our waking life there, but our work often becomes one of the central features of our life. In some senses it can be considered to be a homelike activity; people often identify with their work and personalize their workplaces and make them responsive to their daily life needs. Workplaces are also social places where people meet and interact. And, of course they are also places of work, where they must respond to work needs and be conducive to efficient and productive work activities. This course will raise questions about how to design good workplaces. LEC.

ARCH 694. Homeplaces. 3 Hours.

Architects design buildings and spaces which they hope will contribute to making significant, enriching, and rewarding places. The quality of places, however, is not identical to the quality of buildings which contribute to them. This course will explore ways in which physical environments, in this case, houses can become and be experienced as rich and embraced homeplaces. It will look at the various processes through which residents, dwellers, designers, real-estate agents, builders, and others are involved with home environments. Implications for design and production processes will be investigated with reference to particular case studies. LEC.

ARCH 695. Internship Documentation. 3 Hours AE61.

Students will document their experience in ARCH 691 or other approved internship or relevant work experience. The purpose of this course is to give students a structured opportunity to select, explore, research, and document a topic relevant to their internship experience and that goes beyond the work done for the internship credit. RSH.

ARCH 697. The Making of Place in an Aging Society. 3 Hours.

This course explores both theoretical and applied perspectives as to how design at the scales of settlement, neighborhood, building and room enables enhanced quality of life for society's elderly and their families. Discussion will center on readings, case studies and lecture material, with a focus on arriving at a critical understanding of how built fabric choreographs the aging experience. Prerequisite: Graduate standing or consent of instructor. LEC.

ARCH 700. Directed Readings in Architecture. 1-3 Hours.

Individual study of special topics and problems. May be repeated for credit. Prerequisite: Graduate standing. RSH.

ARCH 701. Introduction to Graduate Studies. 3 Hours.

This course will examine issues in architectural research. It will provide an overview of graduate level studies with regard to definitions, methods, skills, and techniques. The course will consist of lectures, seminars, readings and guest presentations. The class will enable students to make informed judgments about matters of quality and quantity on architectural issues. Students will be expected to formulate sensible systems of classification for their chosen material. Students will be expected to produce papers and essays, make sample grant applications, and thesis formulations. Prerequisite: Students must be admitted to the 3.5 or 5 year Master of Architecture Professional plan and have successfully completed ARCH 409 or ARCH 608. LEC.

ARCH 706. Thesis or Project Definition. 1 Hour.

Seminar oriented to the clarification of the thesis or project problem and to the development of the thesis or project proposal. Prerequisite: Graduate standing. RSH.

ARCH 707. Furniture Design and Production. 3 Hours.

The object of this course is an intensive examination of the aesthetic problems of perceiving and making quality objects. Students will be expected to engage in a series of short-term, limited scope design exercises and experiments of an architectural nature. LEC.

ARCH 720. Architectural Acoustics. 3 Hours.

An introduction to the physics of sound. Objective and subjective evaluation and control of sound as applied to architectural spaces. Room shaping, mechanical and electrical system noise and vibration control, and electro-acoustic sound reinforcement. Prerequisite: PHSX 114 and ARCH 626 or equivalent, or consent of instructor. LEC.

ARCH 721. Electro-Acoustical Systems. 3 Hours.

A study of electro-acoustic sound reinforcement and reproduction systems for buildings. Prerequisite: PHSX 212, or consent of instructor. LEC.

ARCH 730. The Environmental Psychology of Health and Well-Being. 3 Hours.

This seminar examines the theories and understandings that address the health and well-being outcomes resulting from the complexity of interaction between human beings, their behavior, and designed systems or objects and how this varies across the life course. Environmental stimulation, orientation, control, restoration and their relationship to health outcomes through mediating concepts including stress, place identity and person-environment fit will be addressed. Students will engage in several research/assessment projects through the semester. Participation in class discussion will be an essential component of the class. Prerequisite: Graduate status or consent of the instructor. LEC.

ARCH 731. Architecture of Health. 3 Hours.

This is a seminar that will focus on the architectural dimensions of health and wellness. The course will investigate the ways the environment contributes to the well being (physical, emotional, spiritual) of people. The history of healthcare environments will be explored to show how healthcare environments have evolved to meet changing medical protocols and environmental technologies. A range of contemporary building types will be studied, from critical-care hospitals to assisted-living residences and health spas. Students will research bibliographic sources, prepare case studies of existing health and wellness environments and prepare preliminary planning and design proposals for an environment that human well being. LEC.

ARCH 732. Environmental Pattern Languages. 3 Hours.

An introduction to the theory of pattern languages with particular emphasis on the work of Christopher Alexander; analysis of its relationships to other architectural theories; exploration of its implications for architectural practice. LEC.

ARCH 733. Analogous Thinking in Design. 3 Hours.

This seminar will seek analogs in psychology, medicine, biology, anthropology, and other disciplines; analogs that can serve to develop problem-seeking and problem-solving skills in design. Practice sessions in morphological analysis, synectics, bisociation, and triadization will link rigorous research to methods of application. LEC.

ARCH 735. Graduate Seminar in Environmental Systems. 3 Hours.

The intention of this seminar is to provide a substantive overview of the literature and themes in environmental systems. It will serve to introduce students to skills required to conduct research in environmental systems. In addition, the course will entail discussions of students' works in progress, peer review sessions, and completion of a conference paper. LEC.

ARCH 754. Design Ethics. 3 Hours.

This seminar will explore both Western and Eastern concepts of ethics and morality through readings, papers, discussion, and guest speakers. The role of ethics in providing guideposts for social and societal responsibility in design will be developed. LEC.

ARCH 762. Urban Design Studies. 3 Hours.

Seminar concerned with the factors, processes, techniques, and current issues in urban design practice. LEC.

ARCH 765. Theory of Urban Design. 3 Hours.

An examination of the relationship between architecture and urban planning through contemporary interpretations of future urban form and the determinants of the location, spatial structure, growth and decline of cities. Foundations for an interdisciplinary synthesis are examined in an attempt to bridge the hiatus between large-scale architectural design and incremental adjustments to urban dynamics. LEC.

ARCH 770. Contemporary Issues Seminar I. 1 Hour.

A series of seminars on contemporary issues facing the profession. LEC.

ARCH 771. Contemporary Issues Seminar II. 1 Hour.

These seminars will consist of three to four guest lecturers each semester. All students enrolled in this course will attend the same lecture as ARCH 772. Topics will be selected to reflect major issues covered in the course work, or contemporary issues facing the profession. LEC.

ARCH 772. Contemporary Issues Seminar III. 1 Hour.

These seminars will consist of three to four guest lecturers each semester. All students enrolled in this course will attend the same lecture with ARCH 771. Topics will be selected to reflect major issues covered in the course work, or contemporary issues facing the profession. This course will be graded Satisfactory/Unsatisfactory. LEC.

ARCH 773. Financial and Economic Issues in Architecture Management. 3 Hours.

This course will focus on the fundamentals of accounting, macroeconomics and the construction industry, and concepts related to the development and implementation of a strategic business plan. LEC.

ARCH 774. Organizational Issues in Architecture Management. 3 Hours.

Topics that will be covered in this course include the organization of a professional practice, personnel management, and the development of effective communication skills. LEC.

ARCH 775. Architecture Management: Managing a CAD System. 3 Hours.

This course covers the various procedures involved in managing a CAD system within a design organization. It also explores the different applications and uses of current CAD technology. Topics to be addressed include: selecting a system; billing CAD services; support services and personnel; marketing CAD; customization, file management, menus and script files; AutoLisp Programming; and integrating CAD with other programs. Prerequisite: An introductory CAD class or permission of the instructor. LEC.

ARCH 776. Project Delivery in Architecture Management. 3 Hours.

Conventional methods for project delivery will be reviewed along with design/build, fast-track, and other techniques. The relationship of the architect and development will also be explored, as will the relationship of project development to urban design concepts. LEC.

ARCH 777. Marketing Architectural Services. 3 Hours.

The emphasis of this course will be on the development and implementation of a marketing plan, techniques related to the marketing of specific projects, and the relationship of marketing to other components of a firm. LEC.

ARCH 778. Legal Issues in Architecture Management. 3 Hours.

A course designed to familiarize the student with legal considerations related to professional practice. Case studies and selected readings will serve as the basis for discussion of registration, contracts, business formation, taxes, employment practices, copyright, and patent law. In addition, the course will draw upon the knowledge and experience of members of the professional community. LEC.

ARCH 790. Architectural Study Abroad: _____. 1-3 Hours.

Organized field visits and study of selected architectural and urban sites abroad. Pre- and post-travel readings on themes selected to supplement and reinforce thesis or project research or areas of concentration. Students will be expected to maintain a diary and/or sketch book and submit a final paper. Prerequisite: Graduate standing and permission of instructor. FLD.

ARCH 799. Independent Study. 1-3 Hours.

May be repeated for credit up to a total of nine (9) credits. Prerequisite: Graduate standing and consent of instructor. IND.

ARCH 800. Special Topics in Architecture: _____. 1-3 Hours.

Advanced or experimental courses on specialized topics representing unique or changing needs and resources in the graduate program in architecture. LEC.

ARCH 801. Urban and Community Issues I. 6 Hours.

A workshop-based course involving approved self and group directed investigations into issues of urban and community design with a focus on problem-setting, discovery and analysis. Students are required to bring a lap top computer to this studio class. Prerequisite: Successful completion of ARCH 609 and consent of the Architecture Program Chair. LAB.

ARCH 802. Urban and Community Issues II. 6 Hours.

Continuation of the critical and rigorous investigations into issues of urban and community design with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 801. LAB.

ARCH 803. Design-Build and Materiality I. 6 Hours.

An advanced studio with an emphasis on issues of design-build and/or materiality with a focus on problem-setting, discovery, and analysis. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 609 and/or consent of the Architecture Department Chair. LAB.

ARCH 804. Design-Build and Materiality II. 6 Hours.

Continuation of the critical and rigorous investigations into issues of design-build and/or materiality with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 803. LAB.

ARCH 805. Architectural Cooperatives. 6 Hours.

An advanced studio with an emphasis on professional collaboration and scholarship. Faculty-directed investigations within the context of an internship experience will focus on the development of a research topic in areas such as health and wellness, global issues, public interest, and entrepreneurship. Graded on a satisfactory/unsatisfactory basis. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 609. LAB.

ARCH 806. Architectural Technology II. 6 Hours.

Continuation of the critical and rigorous investigations into issues of building technology with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 805. LAB.

ARCH 807. Healthy and Sustainable Environments I. 6 Hours.

A workshop-based course involving approved self and group directed investigations into healthy and sustainable environments with a focus on problem-setting, discovery and analysis. Prerequisite: Successful completion of ARCH 609 and consent of the Architecture Program Chair. LAB.

ARCH 808. Healthy and Sustainable Environments II. 6 Hours.

An advanced studio with an emphasis on investigations into healthy and sustainable environments with a focus on problem-setting, discovery, and analysis. Prerequisite: ARCH 807. LAB.

ARCH 809. Internship/Study Abroad. 6 Hours.

An advanced studio involving directed investigations with a focus on problem-setting, discovery, and analysis. Graded on satisfactory/unsatisfactory basis. Prerequisite: ARCH 609. LAB.

ARCH 810. Public Interest Design Studio. 6 Hours.

An advanced studio with an emphasis on engaging community stakeholders and the general public, with a focus on problem-setting, discovery, and analysis. Prerequisite: ARCH 809. LEC.

ARCH 811. Architectural Investigation I. 6 Hours.

A workshop-based course involving approved self and group directed investigations in a particular area of architectural investigation with a focus on problem-setting, discovery and analysis. Students are required to bring a lap top computer to this studio class. Prerequisite: ARCH 609. LAB.

ARCH 812. Architectural Investigation II. 6 Hours.

Continuation of the critical and rigorous investigations in a particular area of architectural investigation with an increasing focus on synthesis and evaluation. Prerequisite: ARCH 811. LAB.

ARCH 830. Designing Healthy Places and Communities. 3 Hours.

This seminar investigates the research-based evidence regarding health outcomes at four different levels of dwelling: settlement, institution, home and proximate. Research domains that will be explored include how the urban fabric impacts active living; the role of public parks in urban health; environmental factors on health outcomes in hospitals and workplaces; environmental pathogens in the home; and ergonomic health. Healthy design will be understood as an important variable impacting people's health by: increasing physical activity; reducing injury; improving air and water quality; minimizing environmental degradation; decreasing mental health stresses; and strengthening social fabric. Environmental assessment audits appropriate at various scales as well as space syntax as an analytic tool will be introduced and utilized. Participation in class discussion will be an essential component of the class. The semester will include a problem-based service-learning project requiring application of research in a real-life setting and active student reflection. Prerequisite: Graduate status or consent of the instructor. LEC.

ARCH 850. Special Topics in Management/Practice: _____. 2-3 Hours.

Advanced or experimental courses on specialized topics representing unique or changing needs and resources in the management/practice option. IND.

ARCH 852. Ethics and Leadership in Professional Practice. 3 Hours.

This course takes the perspective that architectural design is inherently an ethical act. Through this lens, students will learn the essentials of office practices, the many definitions of client and their roles in the design process, the legal responsibilities of the profession, the importance of continuous professional development and the obligation the profession has to provide civic leadership in regard to the built and natural environment. LEC.

ARCH 858. Architectural Management Systems. 3 Hours.

Graduate course that investigates current issues in construction technologies and management techniques. LEC.

ARCH 899. Thesis or Project Research. 1-6 Hours.

Independent study, research and project work leading to the submission of a master's thesis or master's project. May be repeated for credit. Note: In some cases a Comprehensive Oral Examination Option may be substituted. Prerequisite: Permission of the Architecture Program Chair. THE.

ARCH 930. Doctoral Seminar I. 1 Hour.

The purpose of this discussion-based seminar is to explore issues of architectural research from a variety of perspectives. May be repeated up to a maximum of two (2 credits). Prerequisite: Admission to the Ph.D. in Architecture Program or consent of the Architecture Program Chair. LEC.

ARCH 931. Theories of Architectural Inquiry. 3 Hours.

This course will introduce the doctoral student to the major historical and theoretical foundations of architectural research. Architectural inquiry will be defined from diverse and distinct perspectives, and it will be assumed that buildings should be viewed as physical and cultural artifacts, as elements within larger social, natural and urban contexts, and as products of design and fabrication processes. The course will be a seminar format in which students will contribute to the discussions through independent research and critical analyses of the assigned readings and lectures. Prerequisite: Admission to the Ph.D in Architecture Program or consent of the Architecture Program Chair. LEC.

ARCH 951. Methods of Inquiry in Architectural Research. 3 Hours.

This course will provide students a foundation in methods of inquiry in researching the built environment. The purpose is to train students in developing research strategies applicable to the areas of design-fabrication processes, dwelling and community, and health and sustainability. Students will be exposed to a variety of methods of inquiry drawn from a number of disciplines. Through critical reading and content analysis, students will consider the value of scholarly research, learn to develop research questions, understand the nature of evidence, and the writing, presentation and illustration of scholarship. The course will be a seminar format in which students will contribute to the discussions through independent research and critical analyses of the assigned readings and lectures. Prerequisite: Admission to the Ph.D. in Architecture Program or consent of the Architecture Program Chair. LEC.

ARCH 958. Research Practicum Preparation. 1-6 Hours.

In this course, the students will frame a research question and develop a research proposal. The course is intended to serve as preparation for ARCH 959. Prerequisite: ARCH 931 and ARCH 951. RSH.

ARCH 959. Research Practicum. 4 Hours.

This is a research project undertaken and completed under the supervision of the student's major professor. The student designs, executes, and completes a small scale research project and produces a document of publishable quality within his/her area of inquiry. The project is intended to serve as a pilot study leading towards the dissertation. Prerequisite: ARCH 958. RSH.

ARCH 999. Doctoral Dissertation. 1-9 Hours.

Individual research work. A minimum of nine credits is required for the degree. May be repeated for credit. Prerequisite: Successful completion of the Comprehensive Oral Examination. THE.

Design Courses**ADS 320. Hallmark Symposium Series. 1 Hour.**

Visiting professionals discuss various aspects of Design based upon their own special areas of expertise. The series is mandatory for all Design majors. Design majors must repeat this course at least 4 times for a total of 4 credit hours for graduation. Graded on a satisfactory/unsatisfactory basis. Open to all University wide students. LEC.

ADS 340. History and Philosophy of Design. 3 Hours.

Survey of design history from 1800 to present with emphasis on graphics, architecture, industrial and interior design movements, individuals and their influences. Prerequisite: BDS 102. LEC.

ADS 530. Intra Design Problems: _____. 3 Hours.

A collaborative studio across all Design Department areas of study. Students of the different areas will be organized into work groups and conduct in-depth research, investigate new problem solving methodologies, develop new applications and working knowledge of specialized subjects. Prerequisite: Junior level or higher standing in Design or Architecture or permission of the instructor. LAB.

ADS 531. Internship. 3 Hours.

Students develop professional skills and problems solving with an applied and relevant design employer's office. Supervision by faculty and a professional designer, designated and approved by the faculty in the area is mandatory. Graded on a Satisfactory/Unsatisfactory basis. May be repeated twice for credit. Prerequisite: Junior level or higher standing in the Design Department. INT.

ADS 532. Study Abroad: _____. 3 Hours.

Students will participate in a Design focused study abroad program. The student will be required to attend group meetings prior to the trip along with development of research topics of interest. Simple documentation would be required - sketchbook/journal responding to day-to-day itinerary and other events, following the trip and presented for a grade. Prerequisite: Junior level or higher standing in Design or with permission of the instructor. Corequisite: ADS 533. LAB.

ADS 533. Study Abroad Documentation. 3 Hours.

Consists of research work prior to the trip as well as follow-up and required studio work due after return. A portfolio of work will be required for a grade. Course will also fulfill Design-specific requirements or studio credits for other majors. Areas may designate specific Design courses as substitutions for this course. Prerequisite: Junior level or higher standing in Design or with permission of the instructor. Corequisite: ADS 532. LEC.

ADS 560. Topics in Design: _____. 3 Hours.

A study of different topics in different semesters in a special area of interest to a staff member and suitable qualified students. May be repeated for credit. Prerequisite: Junior standing in department or permission of instructor. LAB.

ADS 570. Design Seminar. 3 Hours.

Comprehensive examination of a complex design problem from the point of view of the various specializations. Prerequisite: Junior standing in department. LEC.

ADS 580. Special Problems in Design. 1-6 Hours.

A study of current problems in design or crafts with an emphasis on research. Special problems proposals must be discussed with and approved by the instructor and advisor prior to enrollment in the course. A student may not take more than six credit hours of special problems in any one semester. Prerequisite: Junior standing in department. IND.

ADS 710. Advanced Human Factors in Interaction Design. 3 Hours.

The study of human factors principles and guidelines are fundamental to interaction design. In this course, these principles will be illustrated and applied to real-world design projects/problems. Human physical and cognitive capabilities, computer-human interface and systems properties, interaction design methods, and the physical and socio-cultural environment will be considered. Fundamental issues in human-centered systems, basic research methods, including statistics and literature searches, will be included. Open to all university students. Graduate students will meet concurrently with INDD 510 and receive additional coursework. LEC.

ADS 712. Design Strategies and Methods. 3 Hours.

This course will cover the principles of design thinking, design processes, design strategies and methods, including techniques and tools for the development of human-technology interfaces. Abstract through concrete representation methods and techniques will be applied to interaction design projects/problems. Information collection and analysis methods, scenario and prototyping methods, evaluation methods (empirical), creativity methods, and task-oriented method (non-empirical) will also be considered. Methods common to design-related disciplines in the social sciences, business, architecture, communication studies and engineering are integrated. Graduate students will meet concurrently with INDD 512 and receive additional work. Prerequisite: Consent of instructor for all non-design students. LEC.

ADS 714. Designing Business Services and Consumer Experiences. 3 Hours.

Business products, services and environments are often intermingled in ways that require more holistic ways of thinking and development. A challenge of service innovation is to design with an understanding of the many dimensions of human experience and satisfaction. This course elaborates how, where, when, and why design can enhance the value of business services. Theory, methods, and practice aspects of services design are presented. LEC.

ADS 720. Graduate Seminar in Design. 1 Hour.

Comparative studies of various areas of specialization in design. Repeat for credit to a maximum of six credit hours. LEC.

ADS 730. Directed Reading in Design. 1-3 Hours.

Research reading and presentation of reports on specific subjects related to the students major area of specialization. Required of all graduate students. RSH.

ADS 732. Study Abroad: _____. 3 Hours.

Students will participate in a Design focused study abroad program. The student will be required to attend group meetings prior to the trip along with development of research topics of interest. Simple documentation would be required - sketchbook/journal responding to day-to-day itinerary and other events, following the trip and presented for a grade. Prerequisite: Junior level or higher standing in Design or with permission of the instructor. Corequisite: ADS 733. LAB.

ADS 733. Study Abroad Documentation. 3 Hours.

Consists of research work prior to the trip as well as follow-up and required studio work due after return. A portfolio of work will be required for a grade. Course will also fulfill Design-specific requirements or studio credits for other majors. Areas may designate specific Design courses as substitutions for this course. Prerequisite: Junior level or higher standing in Design or with permission of the instructor. Corequisite: ADS 732. LEC.

ADS 740. Special Problems in Design. 1-6 Hours.

An in-depth study of current problems in design or crafts with an emphasis on research. Special problems proposals must be discussed with and approved by the instructor and graduate advisor prior to enrollment in the course. RSH.

ADS 745. Branding and Design. 3 Hours.

A rapidly changing marketplace demands business strategy that is rooted in the dynamics of human culture, society, and psychology. Design thinking directly engages such factors and is, thus, well suited to help organizations formulate effective, versatile and strategic brands. This class focuses on strategic design analysis as a means to promote innovation in core brand development and extension into new applications and product categories. By aligning design with engineering, marketing, advertising, packaging, and service, business can innovate new sources of market value and deliver a more powerful brand messages. Prerequisite: Consent of instructor for all non-design students. LEC.

ADS 750. Design Management. 3 Hours.

Design Management has been described as "applied innovation" or the methodical capturing of talent and resources available inside and outside an organization to create valuable new offerings, brands, and business models. This course explores the design functions in business as a means to solve difficult challenges and develop new market-facing opportunities. Subjects include brand value creation, differentiation, coordination, and transformation. Numerous cases will be discussed. LEC.

ADS 751. Creating Design Scenarios and Simulations. 3 Hours.

Most organizations are imaginatively challenged and experience difficulty innovating and marketing new concept offerings. Conventional methods spotting and validating new opportunities often lack the persuasive power necessary for change to occur. Scenario-based design and simulation offers ways to vividly representing a future that is different from the past. This course presents theory, methods and practice aspects of design scenario construction and simulation. LEC.

ADS 760. Design and Strategic Innovation. 3 Hours.

As companies struggle with the demands of increasing consumer, intense competition and downward price pressures, there is a corresponding increase in the demand for more innovative business models and higher-value offerings. These forces have significantly broadened the strategic scope of design. Advanced, multi-disciplinary design teams are being engaged early to help guide new business and product development efforts. Why, where, when, and how this is done in order to deliver on the promise of innovation is the subject of this course. Prerequisite: ADS 750 or with consent of instructor. LEC.

ADS 765. Interaction Design. 3 Hours.

Interaction Design is about creating products, services or environments that offer significant experiential value to people and economic value to organizations. This course engages the comprehensive subject of design for human experience. Building on the gamut of human factors and design methods knowledge, this offers hands-on experience in the research, analysis, modeling and simulation of original and experientially compelling design solutions. Prerequisite: ADS 710, ADS 712 or with consent of instructor. LEC.

ADS 770. Design Cognition. 3 Hours.

In a science of design, the study of "human designers" is as important as the study of designed artifacts or design tools. Since the beginning of research in Design Cognition, many empirical studies have opened up our understanding of human designers and the ways they design. While design is largely a mental activity, it interacts strongly with heterogeneous external representations. It encompasses problem definition and solving, analogical mappings, mental imaging and other mental processes. It requires team coordination and is situated in a cultural milieu that defines roles and modes of behavior. As such, distributed cognition, situated cognition, and social cognition - all have become relevant to the understanding of design cognition. The structure of a design task, the mental representation of design form and behavior, the structure of design teams, and the associated concepts of design cognition will be the subject of the course. LEC.

ADS 810. Orientation Seminar. 1 Hour.

Studies directed to development of a thesis plan. Required of all graduate students. Offered in fall semester only. Graded on a satisfactory/unsatisfactory basis. LEC.

ADS 850. Studio Teaching Practice. 1 Hour.

Graduate students only. Must hold an assistant instructor or teaching appointment. Credit earned does not satisfy any credit requirement for a degree. Graded S or U. FLD.

ADS 860. Graduate Synthesis and Applications Seminar. 1 Hour.

Group discussion and presentations on timely industry topics. Topics will be substantial, bridging relevant program subjects and professional area boundaries. May be repeated for up to six credit hours in subsequent semesters. LEC.

ADS 861. Thesis Research Seminar. 1 Hour.

Approaches to producing original design research. Methods, resources, topics and projects are discussed and evaluated. May be repeated for up to six credit hours in subsequent semesters. LEC.

ADS 890. Thesis. 1-8 Hours.

For guidance refer to Design department graduate guidelines. THE.

Design Courses**BDS 100. Design Thinking. 1 Hour.**

Design, like almost every industry, profession, school or major on campus, is forever being changed by technology, its reach, global access, and social innovation. From the basics of how to think like a designer or how to design a better presentation in powerpoint to how design can be situated in businesses and organizations to create innovative new products, services or social change. This course will give students an awareness of design in our everyday world; an understanding of some of the cultural, theoretical, conceptual, and practical issues related to design and designing. The ultimate goal is that by the end of this course students will know how design contributes to contemporary society and how they might use this understanding throughout their life in little and big ways. Open to all majors. Graded on satisfactory/unsatisfactory basis. LEC.

BDS 101. Design Thinking and Making I. 3 Hours.

This is a course for all Design Department majors, to introduce them to creative problem solving; and the fundamentals of two, three and four-dimensional design. Drawing, photography, 2D and 3D models are used in this course as a means of design thinking to visually represent problems and solutions. Students must receive at least a grade of C (2.0) in this course to continue in the Design program. Prerequisite: Must be admitted into the Design Department or receive instructor permission. Corequisite: BDS 103. LAB.

BDS 102. Design Thinking and Making II. 3 Hours.

This is a course for all Design Department majors and serves as a continuation of BDS 101 with a greater emphasis on examining the relationships between design and other systems: environment, society and culture, and technology and economics. One and a half hours of lecture and six hours of studio-lab per week. Students must receive at least a grade of C (2.0) in this course to continue in their Design program. Prerequisite: Must be admitted into the Design Department and have completed BDS 101 and 103 with at least a grade of C (2.0) or equivalent course work, or receive instructor permission. Prerequisite: BDS 101 and 103. LAB.

BDS 103. Drawing for Design. 3 Hours.

This course will focus on drawing as a tool of communication through freehand exercises that explore observation and perception, form and proportion, dimensional illusion and expressive characteristics using a variety of materials and media. Some identified sections of this course will also use two-and three-dimensional modeling software. Students must receive at least a grade of C (2.0) in this course to continue in their Design program. Prerequisite: Must be admitted into the Design Department or receive instructor permission. Corequisite: BDS 101. LAB.

Design Courses**ENVD 200. Fundamentals of Environmental Design. 3 Hours.**

Introduction to fundamentals and processes involved in developing design concepts in the unit scale interior environment that may include residential or small scale commercial spaces. The studio focuses on developing design vocabulary, graphic representations, space planning, furniture and furnishings. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102 and ENVD 202. Corequisite: ENVD 203. Prerequisite or corequisite: ENVD 212. or permission of instructor. LAB.

ENVD 203. Materials and Sustainability. 3 Hours.

Study and analyze building materials, furniture and furnishings through investigation into their physical and technical characteristics, limitations, and applications. The course also introduces the sustainability issues that relate to the selections and specifications that impact the environment, energy use and limited resources. It covers various agencies and organizations that develop guidelines on materials, resources, building practices, processes and systems that support sustainable design. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: Corequisite: BDS 102 and ENVD 202. ENVD 200 or permission of the instructor. LAB.

ENVD 204. Fundamentals of Interior Design. 3 Hours.

This first interior design studio will introduce the principles and elements of interior design, including design composition, space planning, furniture layout, color, and finish materials. It will also provide the direction and opportunity for the student to apply basic design and drawing skills developed in the Foundation courses to meet project program requirements in a series of projects of increasing complexity. Students will be expected to produce process diagrams, plans, elevations, models and finish boards. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102 and BDS 103 or permission of instructor. Corequisite: ENVD 212. or permission of instructor. LAB LAB.

ENVD 212. Drawing for Environmental Design. 3 Hours.

Introduction to visualization tools in applications to interior environments using freehand sketching and computer aided design. The class focuses on vocabulary and theories of different drawing systems and develops basic CAD skills using Autocad and related software to generate 3D digital modeling, scene descriptions and view manipulations. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102 and BDS 103 or permission of instructor. LAB.

ENVD 304. Environmental Topics. 3 Hours.

This studio focuses on topics that relate to specific environments that may include retailing, hospitality, health care, restaurants, or work space strategies in offices. Students conduct research, explore ideas and generate concepts at a more complex scale level. Emphasis will be placed on understanding of users' operational needs, company brand or image, adjacencies, spatial analyses, understanding of material and their applications, environmental factors, codes and regulations that impact the planning and selections. Related issues include lighting, furniture systems analysis and their applications, and custom casework design. Depending on availability, studio may work with other studio in Architecture or other discipline within the department on joint projects. This class may be repeated for credit. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 200 or permission of instructor. LAB.

ENVD 305. Research and Programming. 3 Hours.

Examining and analyzing essential information necessary to determine the clients' present and future operational requirements and the space, facilities, and services required for support. Establishing pre-planning concepts and guidelines on building and space utilization. Effort is directed toward developing space into a functional, flexible, and aesthetic environment in which to work. Study includes the use of questionnaires, organization charts, space study and standards, space projections, space tabulations, and space distribution using interaction, blocking, and layering diagrams. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 200, ENVD 304 and MATH 101 or permission of instructor. LAB.

ENVD 306. Environmental Topics II. 3 Hours.

Similar to Environmental Topics with focus on large scale projects in the range of 15,000 to 20,000 square feet. Emphasis on skill building, originality and expression of personal philosophy through advance planning and design. Other related studies include furniture systems research, evaluations, and their specifications. Students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 304 LAB.

ENVD 408. Integrated Senior Problems I. 3 Hours.

This class provides individual students with the opportunity to develop a project of choice based on the individual's interest and design philosophy and incorporates the skills acquired from the integrated curriculum. Students will conduct initial research and data collection to develop a program that includes the schematic and preliminary design development. Projects may include corporate offices, retailing, health care, hospitality and restaurants, exhibitions, residential design, or specialty interior products. Effort will focus on the investigation of a component within a large or complex project. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 304 and ENVD 305. LAB.

ENVD 410. Integrated Senior Problems II and Specification. 3 Hours.

A continuation of ENVD 408 that focuses on further design development leading to final design solutions and explores in detail the design of the total environment. The use of materials and their limitations, sustainability, environmental factors, technology, graphics and signage, custom design casework and interior products, applicable codes and standards, budget, and construction document production are all part of the investigations. Final results may include a set of drawings, working drawings, detail drawings, 4D models and/or multi-media presentations. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 408. LAB.

ENVD 413. Portfolio and Professional Practice. 3 Hours.

There are two different components to this class. The first is to develop the student's graduating portfolio that relates to the individual's professional interest. The second is the standards associated with the professional practice of a design office including office personnel and organization, scheduling, fee structures, contracts, billing, marketing and professional ethics. The course will include lectures, guest speakers, and field trips. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ENVD 304 and ENVD 305. LAB.

ENVD 715. Interior Design. 2-6 Hours.

Individual research. Prerequisite: INTD 606 or equivalent. RSH.

ENVD 815. Interior Design. 2-6 Hours.

Continuation of INTD 715. RSH.

Design Courses

ILLU 205. Drawing Media for Illustration. 3 Hours.

Exploration of problems in drawing for various reproduction processes. Emphasis on perspective, head drawing, the clothed and nude figure, nature illustration, perspective, and environments. Various drawing media and materials are explored. Required for Illustration majors as a pre-review course. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 101 or permission of instructor. LAB.

ILLU 305. Image Making. 3 Hours.

Concentrated study in developing methodologies for producing contemporary illustration. Emphasis is placed on concept development, composition exploration, value and color studies, and reference creation. Required for Illustration majors as a pre-review course. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102. LAB.

ILLU 315. Introduction to Illustration. 3 Hours.

Concentrated study in developing skills and techniques with media and materials that are employed in producing contemporary illustration. Continued emphasis on methods of research and idea generation. For majors only. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C+ (2.3) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 305 and/or permission of instructor. Corequisite: ILLU 405. LAB.

ILLU 405. Drawing Media for Illustration II. 3 Hours.

Students will explore various drawing and painting media to continue developing their mastery of representational imagery for illustration. Reference collecting, model making, and the creating of photographic reference material will be addressed. Emphasis on mark making, value and color relationships, and placing the figure in an environment is also covered. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C+ (2.3) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 205 or permission of instructor. Corequisite: ILLU 315 or permission of instructor. LAB.

ILLU 410. Fundamentals of Animation. 4 Hours.

Concentrated study in developing skills and techniques with digital media and materials employed in producing basic contemporary animation. Development of concept, script, storyboard, and use of audio, music and sound effects are part of this animation experience. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 315 and ILLU 405 and/or permission of instructor. Corequisite: ILLU 415. LAB.

ILLU 415. Illustration Concepts. 3 Hours.

Focus of this course is to learn how to think visually. Concentrated study on developing different forms of concepts for illustration. Continued development of technical skills and visual literacy to gain insight on how to make images that communicate unique ideas clearly. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 305 and ILLU 315. Corequisite: ILLU 410. LAB.

ILLU 425. Concept Art. 3 Hours.

Introductory exploration of the process, skills and concepts necessary for successful concept art character design and effective blending of matte painting and film. Drawing will be of primary concern for this course, yet exploring digital means of character development will also be introduced. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 410 and ILLU 415 and/or permission of instructor. Corequisite: ILLU 435. LAB.

ILLU 435. Sequential and Narrative Illustration. 4 Hours.

Exploration of thematic illustration through the development of a series of images based on a topic or story. Aspects of continuity, consistency, storytelling, pacing, editing, packaging and a holistic method of developing illustration are addressed. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 415 and ILLU 410. Corequisite: ILLU 425. LAB.

ILLU 445. Advanced Concept Art. 3 Hours.

Continuation in exploration of the process, skills and concepts for successful concept art character design, along with continued development of digital characters and 3D modeling. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 425 and ILLU 435 and/or permission of instructor. LAB.

ILLU 510. Animation. 3 Hours.

Continued development of concepts, scripts, storyboards, and use of audio, music and sound effects in the production of a one to three minute animated film. Prerequisite: ILLU 410 or permission of instructor. LAB.

ILLU 535. Promotion and Marketing for Illustration. 4 Hours AE61.

Focus will be on preparation for entering the profession. Development and completion of a self-promotion and marketing package will supplement and support the senior portfolio. Contemporary business practices and legal issues will be addressed. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: ILLU 445. LAB.

ILLU 703. Illustration. 3-6 Hours.

LAB.

ILLU 825. Illustration. 2-6 Hours.

Individual research. RSH.

Design Courses

INDD 212. Drawing for Industrial Design. 3 Hours.

This course will focus on drawing as a tool of communication through a variety of exercises that explore observation and perception, form and proportion, dimensional illusion and expressive characteristics using a variety of materials and media. This course will also use two- and three-dimensional modeling software necessary for all Industrial Designers. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 101 and BDS 103. Corequisite: BDS 102. LAB.

INDD 284. Basic Industrial Design Studio. 3 Hours.

Course introduces tools, techniques and processes used in the professional practice of Industrial Design. Learning is through a series of short, focused projects. Techniques in drawing, computer modeling, physical modeling, and presentation are demonstrated and developed. Strategies to improve creativity are explored, while addressing market and production considerations. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102 and INDD 212. LAB.

INDD 302. Intermediate Industrial Design Studio. 3 Hours.

Course introduces tools, techniques and processes used in the professional practice of Industrial Design. Learning is through a series of short, focused projects. Techniques in drawing, computer modeling, physical modeling, and presentation are demonstrated and developed. Strategies to improve creativity are explored, while addressing market and production considerations. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: INDD 284. LAB.

INDD 378. Problems in Industrial Design: _____. 3 Hours.

Individual and/or group research projects in one of several specific design areas which will be identified on a semester by semester basis. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. May be repeated for credit. Prerequisite: Eligibility for INDD 302 or permission of instructor. LAB.

INDD 446. Advanced Industrial Design Studio. 3 Hours.

Continuation of INDD 284 and 302 but encompassing design problems of greater complexity including group research and problem solving assignments in advanced product and service design. Advanced techniques in problem solving, concept communication, visualization, and overall design expression will be demonstrated and explored. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: INDD 302. LAB.

INDD 448. Professional Industrial Design Studio Practices. 3 Hours.

Continuation of Industrial Design studios, projects are longer requiring a high level of demonstrated design ability for successful completion. Issues regarding professional ethics, accountability, and responsibility to public and client are discussed and implemented. Professional design, presentation, and visualization skills will be demonstrated and explored. Finished designs will include full production technical specifications. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: INDD 446. LAB.

INDD 508. Materials and Processes. 3 Hours.

A study of modern materials, manufacturing processes, and construction methods applicable to the fields of industrial design and interior design. Design analysis of existing products, furniture, building components, and storage systems. Design assignments in furniture, storage systems, and interior space arrangements with emphasis on materials and construction. Field trips to area manufacturing and design facilities. Prerequisite: Permission of instructor. LEC.

INDD 510. Human Factors in Design. 3 Hours.

Introduction to the field of human factors (ergonomics) appropriate to industrial, interior, and visual design. Human capabilities, human-machine interfaces and system properties, and the environment are considered, a micro-computer laboratory is integrated into the course. Open to all university students. Prerequisite: Consent of instructor for non-art and non-design majors. Corequisite: BDS 102. LEC.

INDD 512. Methods in Design. 3 Hours.

Introduction to the study of methods of designing common to industrial, interior, and visual design. Evaluation methods (semantic differential), creativity methods (scenario writing), and task-oriented method: (PERT/CPM) will be considered in relation to design problems. Open to non-design students. Prerequisite: Corequisite: INDD 302 for industrial design majors or ENVD 200 for environmental design majors respectively. Consent of instructor for all other students. LEC.

INDD 555. Portfolio. 3 Hours.

Work directed toward maximizing the quality and effectiveness of the individual student's professional portfolio. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: Corequisite: INDD 448. LEC.

INDD 580. Senior Industrial Design Studio. 3 Hours.

Course requires the negotiation and accomplishment of a comprehensive body of work, comprising independent research, ideation, refinement, detail technical specifications, renderings, and a working and tested prototype of your final design. A final report of the project is required documenting your design process, the depth and complexity of which are commensurate with expectations for entry-level professionals. Faculty may consider national or international competitions as appropriate substitutions for student derived briefs, where applicable. The nature and scope of the work (1-2 projects maximum), as well as details of anticipated accomplishment must be outlined by the student and approved by the instructor prior to the beginning of the second week of classes. In exceptional circumstances, projects may extend into both semesters, via INDD 581—this requires permission/negotiation with faculty and is to be declared as an aspiration at start of INDD 580. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: INDD 448. LAB.

INDD 581. Senior Industrial Design Studio II. 3 Hours.

Course requires the negotiation and accomplishment of a comprehensive body of work, comprising independent research, ideation, refinement, detail technical specifications, renderings, and a working and tested prototype of your final design. A final report of the project is required documenting your design process, the depth and complexity of which are commensurate with expectations for entry-level professionals. Faculty may consider national or international competitions as appropriate substitutions for student derived briefs, where applicable. The nature and scope of the work (1-2 projects maximum), as well as details of anticipated accomplishment must be outlined by the student and approved by the instructor prior to the beginning of the second week of classes. In exceptional circumstances, projects may be a continuation of those started in INDD 580—this requires permission/negotiation with faculty and is to be declared as an aspiration at start of INDD 580. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: INDD 580. LAB.

INDD 715. Industrial Design. 2-6 Hours.

Research-oriented advanced study in industrial design. Prerequisite: Graduate major in industrial design or consent of instructor. RSH.

INDD 815. Industrial Design. 2-6 Hours.

Prerequisite: INDD 715. RSH.

Design Courses

PHMD 101. Fundamentals of Photography. 3 Hours GE3H.

Open to students of all disciplines and experience levels, this course provides an introduction to the medium and language of photography. Basic camera operation, workflow, and digital/analog printing methods are explored, accompanied by lectures, readings, and discussions regarding the historical and theoretical concerns of the medium. A digital camera with full manual controls is required - RAW capable preferred. Open to students of all disciplines and experience levels. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. LAB.

PHMD 201. Photography I. 4 Hours.

The first of the two-part foundational Photography sequence, this majors-only course provides students with a rigorous immersion into the formal, technical, and conceptual concerns and challenges of photography by way of the view camera. Embracing both the wet and digital darkrooms, students shoot and develop sheet film that is then utilized to produce both traditional and digital prints. Intermediate digital editing methods are introduced and explored. View cameras are provided. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 101, BDS 102, and permission of instructor. LAB.

PHMD 202. Photography II. 4 Hours.

The second of the two-part foundational Photography sequence, this advanced course builds upon PHMD 201 with additional emphasis on color, RAW workflow, and advanced methods for digital capture, manipulation, editing, and compositing. Additionally, students work extensively with large-format inkjet printers to create custom ICC printing profiles. A digital SLR (RAW capable) camera with full manual controls is required. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 201 and permission of instructor. LAB.

PHMD 210. Understanding Photographs. 3 Hours.

Understanding Photographs is a lecture-based course that focuses on developing a critical understanding of how images, paired with culture and society, generate meaning in both the historical and contemporary contexts. Open to students of all disciplines and experience level. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. LEC.

PHMD 301. Lighting Studio. 3 Hours.

Lighting Studio is a fundamental course in awareness, modification, and control of light. Students work extensively with strobe and continuous light sources. Principles of natural and artificial light are introduced, explored, and applied through hands on assignments both in and out of the studio environment. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 202 or permission of instructor. LAB.

PHMD 302. The Moving Image. 3 Hours.

This course serves as an introduction to the principles and challenges of photography as a time-based medium. Fundamental concepts of production are introduced and explored through hands-on exercises, class presentations and discussions, lectures, critiques, and individual and group projects. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 202 or permission of instructor. LAB.

PHMD 315. Experimental Processes. 3 Hours.

Experimental Processes is an introduction to the understanding and production of image-based works utilizing experimental approaches and alternative processes in an interdisciplinary environment. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 202 or permission of instructor. LAB.

PHMD 316. Professional Practices. 3 Hours.

This course provides an introduction to standards and conventions with regards to professional photographic practice. Topics include portfolio development, copyright, contracts, grant/statement writing, presentation methods, and self-promotion. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 315 or instructor permission. LEC.

PHMD 402. Photo Media Seminar. 3 Hours.

This upper-level seminar is focused primarily on the development of independent and collaborative projects through on-going group critique with an emphasis on research and analysis. Learning is focused on personal development and other issues relevant to contemporary photographic practice through assigned readings, presentations, and group discussion. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. May be repeated for credit. Prerequisite: PHMD 202 or instructor permission. LAB.

PHMD 500. Portfolio. 4 Hours AE61.

Taken the final semester of study, this capstone course guides students through the research, development, and refinement of a final body of photographic work and appropriate supplemental materials. Methods and strategies of presentation and dissemination are discussed and explored. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 402 or instructor permission. LAB.

PHMD 501. Advanced Lighting Studio. 3 Hours.

A continuation of the skills and principles discussed in PHMD 301. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 301. LAB.

PHMD 502. Advanced Moving Image. 3 Hours.

A continuation of the skills and principles discussed in PHMD 302. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 302. LAB.

PHMD 515. Advanced Experimental Processes. 3 Hours.

A continuation of the skills and principles covered in PHMD 315. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: PHMD 315. LAB.

PHMD 560. Special Topics in Photo Media: _____. 3 Hours.

Special topics courses in Photo Media vary by instructor and provide additional opportunities for interdisciplinary research and advanced specialized study. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. May be repeated for credit. Prerequisite: PHMD 202 or permission of instructor. LAB.

Design Courses**VISC 177. First Year Seminar. 3 Hours GE11.**

Graphic design is everywhere, on everything we see, touching everything we do, on everything we buy. Graphic design is a popular art and a practical art, an applied art and an ancient art. Simply put, it is the art of visualizing ideas and it is a way of thinking. In this class we will explore principles of Graphic Design: how to identify them, how to be more savvy consumers of them and how to use them for good and not for evil. You will learn to look at your visual environment with designer's eyes to discern "good design" from "bad design", while putting powerful design principles in to practice in your own careers, communities and classrooms. LEC.

VISC 201. Visual Communication Design. 3 Hours.

Presentation of fundamental concepts of visual and non-visual communication. Exploration of various theories of visual perception and visual communication with emphasis on reading visual images for meaning and making meaning through the construction of visual images and typography. A special laboratory section will include design thinking and making strategies and processes which are common to visual communication design from the handmade to the computer. This course is for non-Visual Communication majors. Prerequisite: Corequisite: BDS 102. LAB.

VISC 202. Elements of Typography. 3 Hours.

Introduces the discipline, function, and tradition of typography as it relates to visual/verbal communication. Emphasis is on interrelationships of letter, word, line and page. Projects examine two-dimensional typographic space, sequence and information hierarchy. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102. Corequisite: VISC 204. LAB.

VISC 204. Principles of Visual Communication. 3 Hours.

Visual communication problems involving the student in the translation of verbal concepts and design theory into visual images. This course focuses attention on the process of defining problems, gathering information, and formulating clear, powerful, and persuasive visual statements. Introduction to methods of research, idea generation, and image making will be an integral part of this course. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: BDS 102. Corequisite: VISC 202. LAB.

VISC 302. Typographic Systems. 3 Hours.

Further exploration of typographic form and manipulation of variables which affect content; stresses the importance of typographic composition as an integral component of visual communication design. Projects examine advanced structures of typographic space, work-image structure, and typographic details and aesthetic. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C+ (2.3) or higher to continue on to the next course in the sequence. Prerequisite: VISC 202, VISC 204, and permission of instructor. Corequisite: VISC 304. LAB.

VISC 304. Designing Understanding. 3 Hours.

Exploration of the relationships among people, places, and the visual objects and information they use. Attention on the different roles of the designer as observer, empathizer, communicator and experience builder. Introduction to information design processes and procedures of understanding by ordering data into useful and persuasive information tools and experiences. Various methodologies will be explored for visualizing information for clarity, resonance, and editorial voice with special attention to the relationships among audience and context in the creation of meaning. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C+ (2.3) or higher to continue on to the next course in the sequence. Prerequisite: VISC 202, VISC 204, and permission of instructor. Corequisite: VISC 302. LAB.

VISC 310. Letterpress. 3 Hours.

This course concentrates on the traditional methods of hand typesetting, using the Department of Design's collection of lead and wood type. Learn how to use a pica rule, composing stick, leading, spacing material, the California Job Case, mix ink and operate a Vandercook proof press and CP or Golding platen. Be inspired by visits to Special Collections. Emphasis will be placed on the acquisition of skills and the creative use of type and images. Open to all majors. Prerequisite: VISC 201 or VISC 202 or permission of the instructor. LAB.

VISC 402. Designer as Author. 3 Hours.

Building from the structures and approaches of VISC 302, the course is a research-based examination of traditional, non-traditional and expressive uses of the typographic medium. Projects emphasize the student as both content generator as well as designer and include development of text + image narrative, word as image and typographic "voice" while further refining technical proficiency. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: VISC 302 and VISC 304. Corequisite: VISC 404. LAB.

VISC 404. Designing for Social Interactions. 3 Hours.

Introduces the discipline of designing for dynamic media (i.e., internet, on screen, multi-media.) Emphasis will be placed on concept development and on the fundamental principles of information hierarchy, user experience, navigation strategies, site development and site architecture. Projects, lectures and tutorials will provide a working knowledge of current tools and techniques, while exploring the issues of narrative structure, rhythm, space, animation, sound, and video. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: VISC 302 and VISC 304. Corequisite: VISC 402. LAB.

VISC 410. Letterpress II. 3 Hours.

Artists' books are books created as original works of art that push the boundaries of the traditional book. This course will focus on the interdependence of form and content through studio work, readings, and the examination of historical and contemporary models. Students will explore a wide range of book structures from basic to innovative. Final outcomes will combine images, hand set type, and digital processes to create both one-of-a-kind, and limited edition artists' books. VISC 310 Letterpress I is recommended, but not required. Open to all majors. Prerequisite: VISC 201 or VISC 202, or permission of the instructor. LAB.

VISC 414. Publication and Editorial. 4 Hours.

Exploration of topics dealing intensively with editorial concept and format organization. Projects stress advanced problems in the integration of text and image through the development of complex and variable structures. Emphasis on thorough researching of content and audience as well as understanding of production/execution implications of solutions. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: VISC 402, VISC 404. LAB.

VISC 415. Motion Graphics. 3 Hours.

Introduction to the elements, principles and history of motion design. Emphasis on the conceptualization, planning and storyboarding of time-based media with respect to some specific, clearly stated aesthetic and/or communicative purpose. Students will examine methods for synthesizing still moving imagery, typography and audio, in motion, using Adobe After Effects in combination with other software such as Final Cut Pro, Illustrator and Photoshop. Prerequisite: VISC 201, ARCH 108 or VISC 202. LAB.

VISC 420. Exhibition Design. 3 Hours.

This course will explore how exhibitions are conceptualized, designed and made. It will look at the role of curators, exhibition designers, graphic designers as well as the audience of cultural institutions. Open to all majors. Prerequisite: VISC 201, ARCH 108 or VISC 202. LEC.

VISC 425. Environmental Graphics. 3 Hours.

This course will examine core principles and practices of environmental graphic design. Many of these concepts will be concerned with the visual aspects of wayfinding, communicating identity and information, and shaping the idea of place. Some of the topics discussed will include: signage, exhibit design, identity graphics, pictogram design, mapping, civic design and themed environments. Prerequisite: VISC 201 or VISC 304. LEC.

VISC 435. Book Arts. 3 Hours.

Producing books in editions is a complex undertaking. Students work in teams to create or compile content of their choosing, then edit, design, and bind their own books in a small edition. The class combines both traditional letterpress technology and digital interface for the creation of text and image. Each student receives two copies of the team's final book, one copy is archived in Special Collections at the Spencer Research Library. This class is required for the completion of the Book Arts Certificate. Open to all majors. Prerequisite: VISC 201 or VISC 202, or permission of the instructor. LAB.

VISC 440. Bookmaking. 3 Hours.

Students will learn to make a variety of book structures and enclosures, from historical to contemporary. Prototypes and models, as well as comprehensive notes and instructions will provide the student with a library of bindings for future reference. Students will document paper that is made in class and create a record for themselves, other students, and the Department of Design. Open to all majors. Prerequisite: VISC 201 or VISC 202 or permission of the instructor. LAB.

VISC 455. Designing Information. 3 Hours.

Making preliminary visualizations, models, and prototypes. Examines words, diagrams, type, and sequencing to restructure messages so that they tell a story more effectively. Editing images to make messages clear, unambiguous and understandable by their intended audience(s). Designing the appearance of an information product so that users can find what they want and understand it when they get there. Open to all Design majors. Prerequisite: VISC 201 or VISC 304 or permission of the instructor. LAB.

VISC 520. Designing for Change. 4 Hours AE61.

Exploration of branding, service and interaction design opportunities that respond to real-life complexity: audiences, systems and contexts. Introduces business and design thinking strategies associated with brand development and the idea that design plays a vital role in our local, national, and global society and well-being. Emphasis on the methods of thinking and research which precede the making of design as well as the importance of writing and verbal presentation to the visual communication design profession. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: VISC 414 or permission of the instructor. LAB.

VISC 525. Senior Problems. 4 Hours.

Goal-oriented graphic design problem-solving with emphasis on research, analysis, and synthesis of complex visual problems. Will allow for in-depth study of professional design issues and topics; provides a forum for multi-disciplinary collaboration with related professional disciplines. May be repeated for credit. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: VISC 520 or permission of instructor. LAB.

VISC 530. Portfolio. 3 Hours.

Instruction in the organization and presentation of a professional quality visual portfolio. Readings, feedback and online collaborations will focus on the development of a focused portfolio consistent with the individual student's pursuits. If this course is required under the major studies section on the degree requirement sheet, students must receive a grade of C (2.0) or higher to continue on to the next course in the sequence. Prerequisite: Corequisite: VISC 520 or permission of instructor. LEC.

VISC 531. Professional Practice. 1 Hour.

Though class discussions, guest speakers and professional roundtables, the Professional Practice course covers writing the perfect cover letter, how to contact companies and grow professional relationships, freelancing, fees and contracts, interviewing, landing the first job and expectations, recruiters, moving to the second job. Participation in professional portfolio reviews and one-on-one sessions are a requirement of the course. Graded on a satisfactory/unsatisfactory basis. Prerequisite: VISC 520 or permission of instructor. LEC.

VISC 534. Portfolio Development. 3 Hours.

This course will provide design and non-design majors instruction in the organization and presentation of a professional quality visual portfolio. Readings, feedback and online collaborations will focus on the development of a focused portfolio consistent with the individual student's pursuits. Graded on a satisfactory/unsatisfactory basis. LEC.

VISC 560. Special Topics in Visual Communication: _____. 3 Hours.

A study of different topics in different semesters in a special area of visual communication. Entry by permission of instructor. May be repeated for credit. LAB.

VISC 701. Visual Communication. 3 Hours.

Presentation of fundamental concepts of visual and non-visual communication. Exploration of various theories of visual perception and visual communication with emphasis on reading visual images for meaning and making meaning through the construction of visual images and typography. A special laboratory section will include design thinking and making strategies and processes which are common to visual communication design from the handmade to the computer. Prerequisite: Permission of the instructor. LAB.

VISC 704. Designing Understanding. 3 Hours.

Exploration of the relationships among people, places, and the visual objects and information they use. Attention on the different roles of the designer as observer, empathizer, communicator and experience builder. Introduction to information design processes and procedures of understanding by ordering data into useful and persuasive information tools and experiences. Various methodologies will be explored for visualizing information for clarity, resonance, and editorial voice with special attention to the relationships among audience and context in the creation of meaning. Prerequisite: Permission of the instructor. LAB.

VISC 706. Graphics. 3-6 Hours.

LAB.

VISC 710. Letterpress. 3 Hours.

This introductory course in letterpress will instruct the student in methods for printing from moveable type and other type-high surfaces. The discipline will be explored from a historic as well as artistic perspective. Emphasis will be placed on the acquisition of skills and vocabulary, and the creative use of type and techniques. Prerequisite: Permission of the instructor. LAB.

VISC 712. Letterpress II: Form and Content. 3 Hours.

Artists' books are books created as original works of art that push the boundaries of the traditional book. This course will focus on the interdependence of form and content through studio work, readings, and the examination of historical and contemporary models. Students will explore a wide range of book structures from basic to innovative. Final outcomes will combine images, hand set type, and digital processes to create both one-of-a-kind, and limited edition artists' books. VISC 710 is recommended, but not required. Open to all majors. Prerequisite: Permission of the instructor. LAB.

VISC 714. Designing for Social Interactions. 3 Hours.

Introduces the discipline of designing for dynamic media (i.e., internet, on screen, multi-media.) Emphasis will be placed on concept development and on the fundamental principles of information hierarchy, user experience, navigation strategies, site development and site architecture. Projects, lectures and tutorials will provide a working knowledge of current tools and techniques, while exploring the issues of narrative structure, rhythm, space, animation, sound, and video. Prerequisite: Permission of the instructor. LAB.

VISC 715. Motion Graphics. 3 Hours.

Introduction to the elements, principles and history of motion design. Emphasis on the conceptualization, planning and storyboarding of time-based media with respect to some specific, clearly stated aesthetic and/or communicative purpose. Students will examine methods for synthesizing still moving imagery, typography and audio, in motion, using Adobe After Effects in combination with other software such as Final Cut Pro, Illustrator and Photoshop. Prerequisite: Permission of the instructor. LAB.

VISC 720. Exhibition Design. 3 Hours.

This course will explore how exhibitions are conceptualized, designed and made. It will look at the role of curators, exhibition designers, graphic designers as well as the audience of cultural institutions. Open to all majors. Prerequisite: Permission of the instructor. LAB.

VISC 725. Environmental Graphics. 3 Hours.

This course will examine core principles and practices of environmental graphic design. Many of these concepts will be concerned with the visual aspects of wayfinding, communicating identity and information, and shaping the idea of place. Some of the topics discussed will include: signage, exhibit design, identity graphics, pictogram design, mapping, civic design and themed environments. Prerequisite: Permission of the instructor. LAB.

VISC 735. Books Art. 3 Hours.

Combines wide range of traditional letterpress and digital processes for type and image for individually determined student book projects. Projects will culminate in a small printed and bound edition. Prerequisite: Permission of the instructor. LAB.

VISC 740. Bookmaking. 3 Hours.

This course will seek to acquaint the student with the origins of the book, paper, and pre-paper writing surfaces. Prototypes and models, as well as comprehensive notes and instructions will provide the student with a library of structures and variations for future reference. Students will document paper that is made in class and create a record for themselves, other students, and the School of Design. Prerequisite: Permission of the instructor. LAB.

VISC 755. Designing Information. 3 Hours.

Making preliminary visualizations, models, and prototypes. Examines words, diagrams, type, and sequencing to restructure messages so that they tell a story more effectively. Editing images to make messages clear, unambiguous and understandable by their intended audience(s). Designing the appearance of an information product so that users can find what they want and understand it when they get there. Open to all Design majors. Prerequisite: Permission of the instructor. LAB.

VISC 760. Designing for Change. 3 Hours.

Exploration of branding, service and interaction design opportunities that respond to real-life complexity: audiences, systems and contexts. Introduces business and design thinking strategies associated with brand development and the idea that design plays a vital role in our local, national, and global society and well-being. Emphasis on the methods of thinking and research which precede the making of design as well as the importance of writing and verbal presentation to the visual communication design profession. Prerequisite: Permission of the instructor. LAB.

VISC 815. Graphics. 2-6 Hours.

Individual research. RSH.

Urban Planning Courses

UBPL 200. Sustainability and Society. 3 Hours AE51/GE11/GE3S.

This course will introduce the concept of sustainability, examining its early iterations, recent applications, and possible future transformations. Critical analysis of sustainability as a concept and societal goal will be a course cornerstone. We will examine two contemporary social issues that are relevant to students at the University of Kansas. Social science perspectives will be emphasized, but, because sustainability necessitates an interdisciplinary perspective, the course will consider the contributions of a wide range of disciplines to these issues. LEC.

UBPL 300. Planning the Sustainable City. 3 Hours GE3S.

A broad introduction to the field of urban planning as a technical profession, a process of decision-making, and a governmental function. The multi-disciplinary nature of planning as an area for professional practice in the geographical, socio-economic and political contexts of the U.S. is stressed. We will explore the promise and limitations of planning in the context of mitigating and adapting to climate change. The course is intended for both the student who is considering planning as a major field of study and the student with primary interest in a related field who would like a working knowledge of past and current planning in the U.S. LEC.

UBPL 502. Special Topics in Urban Planning: _____. 1-6 Hours.

Intended for undergraduate individual or group projects/research in an urban planning topic. LEC.

UBPL 522. History of the American City I. 3 Hours.

This course examines the evolution of American cities from their European antecedents through the late 20th Century, from the urban planning perspective. It focuses on the changing spatial forms and functions of American cities and how these changes relate to socioeconomic and political aspects of urbanization as well as changes in technology. Emphasis is placed on analyzing the relationships between historical development patterns and the current range of problems facing most U. S. cities. (Same as UBPL 722 but gives undergraduate credit.) LEC.

UBPL 538. Environmental Planning Techniques. 3 Hours.

The course covers a variety of topics within environmental planning. Each topic is examined with respect to the scope of the issues, the methods of analyzing and/or measuring those issues, and the ways planners can address those issues in order to avoid or mitigate environmental problems. LEC.

UBPL 565. Introduction to Sustainable Land Use Planning. 3 Hours.

This course introduces students to the issues that planners and decision makers face as they strive to protect environmental resources, especially within the context of land use planning. Emphasis will be placed on the theoretical and policy considerations that guide the work of environmental planners. LEC.

UBPL 662. Twentieth Century American Landscape. 3 Hours.

The purpose of this course is to investigate the relationships between the American culture and the resulting built and natural landscape. Issues of building types, public places, and land use arrangements will be studied from a socio-historical perspective. (Same as ARCH 662.) LEC.

UBPL 701. Directed Readings. 1-6 Hours.

Designed to meet the needs of students whose study in urban planning cannot be met with the present courses. Prerequisite: Consent of instructor. RSH.

UBPL 705. Economic Analysis for Planners. 3 Hours.

An introduction to the concepts and analytical techniques of economics that are most relevant to urban planners. The first part of the course is devoted to microeconomic theory, welfare economics, and the role of the government in the economy. The remainder covers public finance, investment analysis, and methods of determining the allocation of public resources (such as benefit-cost analysis). LEC.

UBPL 710. Introduction to Housing Policy. 3 Hours.

Designed to provide an introduction to the various methods used by the public sector in order to intervene in the housing market. Many different programs are used by governments at all levels to serve many different housing goals. This course will examine many of these programs in an effort to understand what they are supposed to accomplish and how well they work. In all cases, the objective of the course is to train planners so that they have a firm understanding of housing programs that exist now as well as a grasp of the methods used to select housing strategies for implementation by the public sector. LEC.

UBPL 714. Local Economic Development Planning. 3 Hours.

This course provides a broad overview of local economic development planning. Emphasis is on the role of the practitioner and the various activities that can be pursued to encourage and enhance the economic base of a locality. The objectives of the course are to answer the questions: who are economic development planners; what backgrounds and interests do they have; what types of activities do they perform and initiate to encourage and enhance economic development; and how do they decide upon which activities to pursue? Prerequisite: UBPL 764 or permission of instructor. LEC.

UBPL 715. Community" in Neighborhood Planning and Design. 3 Hours.

This course provides a place-centered approach for understanding and applying the idea of community to local neighborhood planning. The course explores social theories of community and how these have influenced prescriptive models for neighborhood development and design. The course also evaluates the interplay of social, environmental, and economic forces at the neighborhood level and their relationship to community development and well-being. LEC.

UBPL 716. Community and Neighborhood Revitalization. 3 Hours.

The course examines the fields of community development and the revitalization of urban neighborhoods. In the course, students study the theories of community redevelopment as well as the methods of analysis guiding the planning of neighborhoods. The course also reviews the many programs that exist to assist the neighborhood revitalization process and looks at the literature evaluating the implementation of these programs. As an implementation course, students complete a project that calls for them to apply the knowledge learned to real world setting. Prerequisite: UBPL 764 or permission of the professor. LEC.

UBPL 722. History of the American City II. 3 Hours.

This course examines the evolution of American cities from their European antecedents through the late 20th Century, from the urban planning perspective. It focuses on the changing spatial forms and functions of American cities and how these changes relate to socioeconomic and political aspects of urbanization as well as changes in technology. Emphasis is placed on analyzing the relationships between historical development patterns and the current range of problems facing most U. S. cities. (Same as UBPL 522 but gives graduate credit.) LEC.

UBPL 730. Plans and Planning Processes. 3 Hours.

This course is about how to create plans and put the pieces of cities together in a sustainable manner, balancing the competing values of economy, ecology, equity, and livability. It introduces students to the planning process in the U.S., what makes great plans, the basic implementation tools for planning (zoning, capital improvement plans, engineering standards, and subdivision regulations.) We will learn about the Comprehensive Plan along with specialized plans for transportation, housing, land use, and the environment. LEC.

UBPL 735. Site Planning and Design. 3 Hours.

Site planning is the arrangement of elements (buildings, landscaping, parking, open space) on particular pieces of property. This class focuses on the site planning process and the implementation of site design standards through regulations. We will delve into the elements and principles of design and ask these big questions: What makes great public spaces? What makes great neighborhoods? What makes great streets? What can we do to steer development in the direction of greatness? LEC.

UBPL 736. Planning Institutions. 3 Hours.

This course explores the legal principles underlying the institutions, practices and processes of city planning. Subjects to be discussed include zoning, eminent domain, subdivision regulation, transfer of development rights, environmental regulation, growth management, and other planning mechanisms used to guide urban growth and control the use of land. Students should emerge from the course with a solid understanding of both the logic and routine practice of planning in a procedural and institutional context. LEC.

UBPL 737. NEPA Environmental Assessments. 3 Hours.

This course provides an understanding of how to effectively manage and conduct environmental assessments as required by the National Environmental Protection Act (NEPA). Topics include the history and intent of NEPA; the steps, players and assessment types; techniques used to balance environmental concerns with the social and economic considerations; and the role of the courts and environmental advocacy groups in challenging NEPA assessment findings. The class also addresses the role of leadership, conflict resolution, and consensus building in managing environmental assessments. Case studies are used to examine different assessment types and process approaches. LEC.

UBPL 738. Environmental Planning Techniques. 3 Hours.

The course covers a variety of topics within environmental planning. Each topic is examined with respect to the scope of the issues, the methods of analyzing and/or measuring those issues, and the ways planners can address those issues in order to avoid or mitigate environmental problems. LEC.

UBPL 739. Issues in Growth Management. 3 Hours.

This course examines various aspects of growth management including its history, legal foundations, and application at different levels of government. Growth management not only means dealing with the rapid growth of cities, it also includes managing slow growth, no growth, and negative growth with the ultimate goal being sustainability. Impacts on affordable housing, economic development, social equity, transpiration, and environmental conservation are also explored. LEC.

UBPL 741. Quantitative Methods I. 3 Hours.

Introduction to quantitative techniques utilized in planning analysis. Introduction to research design, inferential statistics, and survey methods. LEC.

UBPL 742. Quantitative Methods II. 3 Hours.

Advanced study in planning techniques in the areas of population forecasting, analysis of variance, and regression. The course makes extensive use of microcomputers. Prerequisite: UBPL 741 or consent of instructor. LEC.

UBPL 746. GIS Applications for Design and Planning. 3 Hours.

This course will explore a range of Geographic Information Systems (GIS) applications for students in architecture and planning. It will be structured as a workshop, starting with a review of basic GIS concepts and procedures. Different digital data sources will be explored, along with file sharing (import and export) capabilities. The focus will be on applications at different scales using projects in architecture, site planning, environmental planning, urban analysis, and regional analysis. Three dimensional analysis will also be introduced. Each student will develop a final project as a synthesis of earlier exercises and as an application relevant to their individual professional interests. LEC.

UBPL 750. Introduction to Transportation Planning. 3 Hours.

This course is a survey course covering multiple modes of transportation (planes, trains, buses, automobiles, bicycles, and walking). The field of transportation planning is examined within a policy analysis framework. Knowing the policy context and understanding how decisions are made will assist transportation planners in understanding the world in which they operate. In addition to the policy context, this course will focus on the technical knowledge transportation planners are expected to know like federal requirements, traffic modeling, and specific topics like bicycle and pedestrian planning and traffic calming. LEC.

UBPL 755. Planning Intercity Transportation Systems. 3 Hours.

This course explores the supply and demand of intercity multimodal movement of people and goods from megaregional to global scales. Students will learn the characteristics and performance of rail, aviation, and marine travel, the nuts and bolts of supply provision, effects of intercity connections on communities, and mechanisms for planning at across state and national borders. LEC.

UBPL 756. Travel Demand Forecasting Methods. 3 Hours.

The course is intended to provide a working knowledge of analytical transportation planning; it emphasizes two elements. One emphasis is to describe the fundamental principles of transportation planning through the review of transportation modeling theory and practice. The second emphasis is to work with the TransCad model. Students learn how to use these models by running TransCad (GIS based modeling software), building a transportation model, and using it to forecast future transportation conditions. Prerequisite: UBPL 750 or consent of instructor. LEC.

UBPL 757. Transportation Planning Implementation. 3 Hours.

A variety of transportation implementation methods and strategies are explored. Project management with an emphasis on finance is the major focus of this course. This is a significant responsibility of transportation planners, consisting of several key steps including project initiating, planning, execution, and control. Other techniques included in this course deal with air quality conformity, congestion management, environmental reviews, developing performance measures, scenario testing, highway capacity analysis and micro-simulation modeling, and executing public involvement programs. LEC.

UBPL 758. Public Transit. 3 Hours.

This course familiarizes students with core concepts and practices in public provision of local transit systems from high-capacity heavy rail to on-the-fly demand response. Course modules examine modes, system design, planning issues, organizational relationships inherent to public transit, and technical operations. The course concludes with an examination of comprehensive transit systems. LEC.

UBPL 760. Historic Preservation Planning. 3 Hours.

In addition to studying the history of the preservation movement in the United States, the course will discuss preservation at the state and local level, preservation at the private level, ordinance creation, legal aspects of preservation, technical issues and contemporary issues and controversies in the field of preservation. Projects will deal with philosophic and current issues in preservation. LEC.

UBPL 761. Historic Preservation Economics. 3 Hours.

This course considers the economic strategies for the historic preservation of the built environment. Topics include investment tax credits, tax increment financing and tax abatement, bond issues, historic preservation grants, and revolving funds. Students will analyze case studies and meet guest speakers who make preservation projects work. Class projects may include market analyses, economic feasibility studies, rehabilitation/redevelopment plans, and technical research papers. LEC.

UBPL 762. Sustainability and the Future of the Built Environment. 3 Hours.

This course critically examines the evolving relationship between rehabilitation preservation, and new construction in creating a sustainable built environment in the United States during the twenty-first century. Some observers insist that we cannot build our way to sustainability, but instead must conserve our way to it. What is the appropriate balance of rehabilitation and new construction in creating sustainable built environment? What is the appropriate role of planning and design professionals in this movement? What knowledge and skills will be necessary? The course surveys the contemporary discussion about defining and evaluating a sustainable built environment as well as the economic and social requirements for creating a sustainable society. LEC.

UBPL 763. Professional Practice. 3 Hours.

This course seeks to provide students with both skills and evaluative frameworks to enhance their work as practicing planners. We will focus specifically on issues related to ethics, citizen participation, dispute resolution, and management. Considerable attention will be paid to "real life" lessons. Prerequisite: UBPL 741 and UBPL 815. LEC.

UBPL 764. Real Estate Development I. 3 Hours.

This course is designed to provide a working knowledge of the mechanics of real estate investment analysis. As a planning course, the emphasis is placed upon the process as performed by the practicing planner working with the public sector. This means that the course covers much of the same material that is normally included in a real estate development course in a business school. However, this material is augmented with the study of techniques used to achieve public sector goals. Among the topics covered in the course are: the calculation of return on investment in real estate; the financing of real estate development; the various forms of property ownership; and the implications of tax laws upon the rehabilitation of historic properties and the provision of low-income housing. Prerequisite: Knowledge of spreadsheet software on a personal computer. LEC.

UBPL 765. Introduction to Sustainable Land Use Planning. 3 Hours.

This course introduces students to the issues that planners and decision makers face as they strive to promote sustainability, especially within the context of land use planning. Emphasis will be placed on the theoretical and policy considerations that guide the work of planners. LEC.

UBPL 768. Real Estate Development II. 3 Hours.

This course extends the study of real estate development planning begun in UBPL 764: Real Estate Development Planning I. The course will examine various forms of public-private participation in the real estate development process. Advanced study of various public sector programs to guide and direct the real estate development process will be undertaken, including the use of tax credits for affordable housing and for historic preservation. Projects developed within the region will be examined to illustrate the application of these techniques. Prerequisite: Successful completion of UBPL 764 or permission of instructor. LEC.

UBPL 773. Sustainable Land Use Planning Implementation. 3 Hours.

This course emphasizes the development of sustainability-focused plan elements that ensure successful implementation. While the course topic changes each year, the techniques and processes studied will be broadly applicable. Students will also apply their skills and knowledge to a service learning project using real-world data. Prerequisite: UBPL 765, UBPL 738, or consent of instructor. LEC.

UBPL 802. Special Topics: _____. 3 Hours.

This course is intended to afford the opportunity for individual or group projects/research in an urban planning topic. RSH.

UBPL 806. Thesis - Graduate Research. 1-6 Hours.

Independent study and research related to the master's thesis. Prerequisite: Consent of instructor. THE.

UBPL 815. History and Theory of Planning. 3 Hours.

The course serves as an introduction to the history of city planning and "how to plan" in general. Planners are particularly concerned with future consequences of current action. In looking to the future, knowing past history is a good place to start. Also, planning theorists have thought deeply about how best to plan and their thoughts and advice can serve planners and decision-makers well when they are facing unknowns. LEC.

UBPL 816. Politics and Planning. 3 Hours.

Planners operate within a highly technical yet political environment. Planners often try to bring consensus and action-taking to communities but the very structure of our democracy promotes conflict and stalemate. Understanding how power, structures and agencies influence policy-making will help planners become savvier as they balance their roles as advisors, educators, facilitators, advocates, and administrators. This class explores the trials, tribulations, and triumphs of planners as they deal with politics. LEC.

UBPL 850. Urban and Regional Theory. 3 Hours.

The course explores the forces that shape the structure and function of cities and regions, drawing upon insights from planning, geography, economics, sociology, demography, and political science. Special attention is paid to theories that can be applied by urban planners to improve the economic performance, quality of life, and social equity of urban areas. Topics covered include the origin and development of cities, agglomeration economies, location theory, central place, mix-and-share analysis, economic base, input-output, labor markets, urban models, regional development planning, globalization, high technology, urban poverty, and problems of regional governance. Prerequisite: UBPL 741 and UBPL 815. LEC.