

Architecture (ARCH)

Courses

ARCH 0835. Guerrilla Altruism: A Mini-Manual of Subversive Activism. 3 Credit Hours.

A multi-disciplinary investigation into the unorthodox strategies deployed by contemporary guerrilla artists and activists, reformers and humanitarians, eventually culminating in the design and realization of one or more small-scale humanitarian interventions within Temple's surrounding communities. NOTE: This course fulfills the Human Behavior (GB) requirement for students under GenEd and Individual & Society (IN) for students under Core.

Course Attributes: GB

Repeatability: This course may not be repeated for additional credits.

ARCH 0875. Architecture and the American Cultural Landscape. 3 Credit Hours.

This course explores the relation of the physical environment, understood as both given and constructed, to the larger and more ephemeral cultural context which it at once delimits and enables. The resultant scene-like spatial situations have been described within some academic disciplines as "cultural landscapes," a term meant to describe distinct geographical areas or properties uniquely representing the combined work of nature and humans. Deploying this concept of cultural landscapes as a framework, the course will plumb American culture with an emphasis on its physical dimension, exploring the ways that culture is engaged, reflected, and modified in the substance and configuration of those places wherein and through which we live our individual and collective lives. The course will ask students to explore how geography, topography, ecology, landscape, economics, and politics have influenced the reading and making of the American cultural landscape, and, perhaps more importantly, how the corporeal characteristics of constructed places have in turn shaped cultural developments and impacted, by extension, our world. At base, then, the course facilitates consideration of the fundamental interdependencies of nature, human nature, and the constructed environment in the context of U.S. culture. The politics of place are central to these explorations, but do not encompass them, since place intersects U.S. culture and society on many extra-political levels. The course will be founded on historical precedent and case studies, considered in light of key texts from various disciplines including urbanism, architecture, geography, film, philosophy, fiction, anthropology, and sociology, topical discussion, site visits, and the students' own analyses. NOTE: This course fulfills the U.S. Society (GU) requirement for students under GenEd. Students cannot receive credit for this course if they have successfully completed ARCH 0975.

Course Attributes: GU

Repeatability: This course may not be repeated for additional credits.

ARCH 0935. Honors Guerrilla Altruism: A Mini-Manual of Subversive Activism. 3 Credit Hours.

A multi-disciplinary investigation into strategies deployed by contemporary community based architects, artists and activists. The course engages community groups and results in collaborative planning and design strategies, proposals, and projects in Philadelphia and surrounding communities. NOTE: This course fulfills the Human Behavior (GB) requirement for students under GenEd.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: GB, HO

Repeatability: This course may not be repeated for additional credits.

ARCH 0975. Honors Architecture & the American Cultural Landscape: Physical Dimensions of Cultural Settings. 3 Credit Hours.

This course explores the relation of the physical environment, understood as both given and constructed, to the larger and more ephemeral cultural context which it at once delimits and enables. The resultant scene-like spatial situations have been described within some academic disciplines as "cultural landscapes," a term meant to describe distinct geographical areas or properties that represent the combined work of nature and humans. Deploying this concept of cultural landscapes as a framework, the course will plumb American culture with an emphasis on its physical dimension, exploring the ways that culture is engaged, reflected, and modified in the substance and configuration of those places wherein and through which we live our individual and collective lives. The course will ask students to explore how geography, topography, ecology, landscape, economics, and politics have influenced the reading and making of the American cultural landscape, and, perhaps more importantly, how the corporeal characteristics of constructed places have in turn shaped cultural developments and impacted, by extension, our world. At base, then, the course facilitates consideration of the fundamental interdependencies of nature, human nature, and the constructed environment in the context of U.S. culture. The politics of place are central to these explorations, but do not encompass them, since place intersects U.S. culture and society on many extra-political levels. The course will be founded on historical precedent and case studies, considered in light of key texts (from various disciplines including urbanism, architecture, geography, film, philosophy, fiction, anthropology, and sociology), topical discussion, site visits, and the students' own analyses. NOTE: This course fulfills the U.S. Society (GU) requirement for students under GenEd. Students cannot receive credit for this course if they have successfully completed ARCH 0875.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: GU, HO

Repeatability: This course may not be repeated for additional credits.

ARCH 1001. Introduction to Design and the Environment. 3 Credit Hours.

An introduction to the complex and contingent relationship between architects and the environments in which they intervene. Using contemporary and historical materials, students will begin to understand how architects establish and position design processes in response to their social, technological, and material situations. Coursework includes both position papers in response to particular reading topics as well as diagrammatic interrogations of the city around us. NOTE: (1) Open to non-majors. (2) A required course for all students interested in majoring in architecture and an elective university Core course in the Arts category. (3) This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university Gen Ed requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

ARCH 1011. Visual Literacy for Architects 1. 3 Credit Hours.

This course focuses on the development of visual literacy, graphic techniques, and 3D formal exploration. Through projects supported by research, graphically-based exercises, and formal investigations, students will be exposed to the process of representation in architecture. Units dealing with line, patterning, surface articulation, form, and assembly will be explored through 2D and 3D analog constructions. Thematic concepts linked to each unit will be presented through the work and representation of architects and artists. NOTE: Course previously titled "Design Representation I."

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

ARCH 1012. Visual Literacy for Architects 2. 3 Credit Hours.

This course continues to focus on the development of visual literacy, graphical techniques, and 3D formal exploration. Through projects supported by research, graphically-based exercises, and formal investigations, students will be exposed to the process of representation in architecture. Methods of deconstruction and filtering, narrative assemblies, motion systems, propositional imagery, and visual assembly will be explored through 2D and 3D analog and digital constructions. Thematic concepts linked to each unit will be presented through the work and representation of architects and artists. NOTE: Course previously titled "Design Representation II."

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

ARCH 1013. Architectural Representation for Non-Majors. 3 Credit Hours.

Introduction to architectural representation and design. This is a studio based course for non-majors. Students are introduced to 2D and 3D architectural design graphic techniques, and engage in drawing and model making in a studio setting. Note: This course may not count as an Architecture elective course for the BS in Architecture, BS in Facilities Management, BS in Architectural Preservation, BS in Historic Preservation or Certificate in Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

ARCH 1017. Photography and Visual Literacy. 3 Credit Hours.

Photography is explored as a visual language, complete with vocabulary, syntax, and modes of expression. This course introduces the principles of visual design that are particularly important for creating articulate and aesthetically engaging photographs. Using their own digital cameras, students develop sufficient technical competence to be able to make photographs that investigate the fundamental issues of visual design, in the context of environmental studies. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

ARCH 1031. Design Fundamentals I. 4 Credit Hours.

Exploration of the fundamental principles of design, with an emphasis on the body in the natural landscape; introduction to landscape research and site analysis; consideration of design logics drawn from nature - natural systems, processes and patterns; introduction to the desk critique and design review as teaching methods.

Repeatability: This course may not be repeated for additional credits.

ARCH 1032. Design Fundamentals II. 4 Credit Hours.

Geometry, measurement and fabrication processes as the basis of design; consideration of material processes of form making and methods of assembly - stacking, folding, bending, folding etc.; development of rigorous design thinking through making; integration of material, craft, tectonic and visual practice; further development of the desk critique and design review as teaching methods.

Repeatability: This course may not be repeated for additional credits.

ARCH 1196. History of Form of Cities. 3 Credit Hours.

Study of the physical design of cities with particular emphasis on the emergence of settlement patterns and their relationship to landforms and social intentions. NOTE: This course can be used to satisfy a university Core Arts (AR) and Writing Intensive (WI) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

ARCH 1502. Investigations into Built Environment Professions. 1 Credit Hour.

This course for entry level students in Architecture and Environmental Design introduces students to educational and career paths in the built environment professions (architecture, architectural preservation, community development, facilities management, horticulture, landscape architecture, and city planning). Note: Prior to fall 2017, the course title was "Investigations in Architecture."

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 1996. Honors History of Form of Cities. 3 Credit Hours.

Study of the physical design of cities with particular emphasis on the emergence of settlement patterns and their relationship to landforms and social intentions. NOTE: This course can be used to satisfy a university Core Arts (AR) and Writing Intensive (WI) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: AR, HO

Repeatability: This course may not be repeated for additional credits.

ARCH 2121. Foundation Architectural Design 1. 4 Credit Hours.

The development of design logics drawn from natural systems, processes and measurement; introduction to landscape research and site analysis; development of the desk crit as a teaching method; craft based modes of drawing, model making, and visualization; emphasis on graphic and spatial relationships, active plotting and site analysis. Scale: the body in the natural landscape.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1011|Minimum Grade of C-|May not be taken concurrently

OR AR11 Y|May not be taken concurrently)

AND (ARCH 1012|Minimum Grade of C-|May not be taken concurrently

OR AR12 Y|May not be taken concurrently)

ARCH 2122. Foundation Architectural Design 2. 4 Credit Hours.

Developing rigorous design thinking through making and the integration of material, craft, tectonic and visual practice. Further development of the design crit plus methods of communicating design objectives. Scale: artifact, body and spatial envelope.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1011|Minimum Grade of C-|May not be taken concurrently
OR AR11 Y|May not be taken concurrently)
AND (ARCH 1012|Minimum Grade of C-|May not be taken concurrently
OR AR12 Y|May not be taken concurrently)
AND (ARCH 2121|Minimum Grade of C-|May not be taken concurrently
OR AR21 Y|May not be taken concurrently)

ARCH 2123. Facility Management Foundation I. 3 Credit Hours.

Studio with a focus on interior architecture, space occupation, and qualities of space. Analysis and practical application of use of space, adjacencies, to provide a general understanding of place making, methods of construction, tectonics and detailing as design concerns; introduction to precedent study as research technique.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Co-requisites: ARCH 2153.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1011|Minimum Grade of C-|May not be taken concurrently
OR AR11 Y|May not be taken concurrently)
AND (ARCH 1012|Minimum Grade of C-|May not be taken concurrently
OR AR12 Y|May not be taken concurrently)

ARCH 2124. Facility Management Foundation II. 3 Credit Hours.

Studio with environmental sustainability focus for facility management - energy and resource use, hydrology, sustainable materials, infrastructure and building methods, recycling, environmental performance and quality; emphasis on systems and details (very large and very small); development of techniques for environmental analysis (observation, data analysis, etc.); development of ecological and environmentally responsive design proposals; program development; introduction to design collaboration.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Co-requisites: ARCH 2154.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 2121|Minimum Grade of C-|May not be taken concurrently
OR AR21 Y|May not be taken concurrently
OR ARCH 2123|Minimum Grade of C-|May not be taken concurrently
OR AR23 Y|May not be taken concurrently.

ARCH 2141. Architectural History: Ancient through Renaissance. 3 Credit Hours.

Traces the history of Western architecture from the ancient world to the high renaissance and mannerism of the late 16th century. The evolution of architectural thought, various formal languages (styles) and theoretical concepts are studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Emphasis on the analysis of the ancient temple and the Christian church. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

ARCH 2142. Architectural History: Renaissance through 20th Century. 3 Credit Hours.

Traces the history of Western architecture from the 17th century through the 20th century. The evolution of architectural thought, various languages (styles) and theoretical concepts studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Analysis of the significant buildings of the baroque and rococo, the neo-classic and the romantic, modernist, and post-modernism periods. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Course Attributes: AR

Repeatability: This course may not be repeated for additional credits.

ARCH 2151. Architecture, Technology, and the Environment. 3 Credit Hours.

Introduction to behavioral, environmental and technological factors in relation to the building design process. Basic exploration of functional, sustainable and material aspects of architecture.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1001|Minimum Grade of C-|May not be taken concurrently
OR AR01 Y|May not be taken concurrently)
AND (ARCH 1011|Minimum Grade of C-|May not be taken concurrently
OR AR11 Y|May not be taken concurrently)

ARCH 2153. Facility Management Case Study Research I. 1 Credit Hour.

Case study research course focused on available products and applications of architectural interiors. This is a one-credit lab component for ARCH 2123: Facility Management Foundation I.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Co-requisites: ARCH 2123.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1011|Minimum Grade of C-|May not be taken concurrently
OR AR11 Y|May not be taken concurrently)
AND (ARCH 1012|Minimum Grade of C-|May not be taken concurrently
OR AR12 Y|May not be taken concurrently)

ARCH 2154. Facility Management Case Study Research II. 1 Credit Hour.

Case study research course focused on available products, applications, and issues pertaining to sustainable architecture. This is a one-credit lab component for ARCH 2124: Facility Management Foundation II.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Co-requisites: ARCH 2124.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 2121|Minimum Grade of C-|May not be taken concurrently
OR AR21 Y|May not be taken concurrently
OR ARCH 2123|Minimum Grade of C-|May not be taken concurrently
OR AR23 Y|May not be taken concurrently.

ARCH 2941. Honors Architectural History: Ancient through Renaissance. 3 Credit Hours.

Traces the history of Western architecture from the ancient world to the high renaissance and mannerism of the late 16th century. The evolution of architectural thought, various formal languages (styles) and theoretical concepts are studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Emphasis on the analysis of the ancient temple and the Christian church. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: AR, HO

Repeatability: This course may not be repeated for additional credits.

ARCH 2942. Honors Architectural History: Renaissance through the 20th Century. 3 Credit Hours.

Traces the history of Western architecture from the 17th century through the 20th century. The evolution of architectural thought, various languages (styles) and theoretical concepts studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Analysis of the significant buildings of the baroque and rococo, the neo-classic and the romantic, modernist, and post-modernism periods. NOTE: This course can be used to satisfy the university Core Arts (AR) requirement. Although it may be usable towards graduation as a major requirement or university elective, it cannot be used to satisfy any of the university GenEd requirements. See your advisor for further information.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: AR, HO

Repeatability: This course may not be repeated for additional credits.

ARCH 3010. Seminar: Special Topics in Communications. 1 to 3 Credit Hour.

Special seminar dealing with current topics in communications in the field of architecture. NOTE: Course may be taken more than once for credit when each topic is unique.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3012. Computer Aided Facility Management. 3 Credit Hours.

Consideration of current trends and practices in computer aided facility management (CAFM), computerized maintenance management systems (CMMS) and integrated computer-aided design (CAD) applications and databases.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Facilities Management.

Repeatability: This course may not be repeated for additional credits.

ARCH 3013. Project Planning & Programming. 3 Credit Hours.

A course covering the general processes related to the planning, programming, design, construction and occupancy of facilities, including long range, strategic and tactical planning, the relationship between facility planning and business planning, organization of sites, buildings and interiors. Also covered are specific tools and techniques for these functions, including design and construction documentation and contracts, facility inventories, space planning and relocation management, construction and installation specifications, value engineering, post-occupancy evaluation, contract management and cost estimating techniques.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 1011|Minimum Grade of C-|May not be taken concurrently
OR AR11 Y|May not be taken concurrently)
AND (ARCH 1012|Minimum Grade of C-|May not be taken concurrently
OR AR12 Y|May not be taken concurrently)
AND (ARCH 2121|Minimum Grade of C-|May not be taken concurrently
OR AR21 Y|May not be taken concurrently
OR (ARCH 2123|Minimum Grade of C-|May not be taken concurrently
AND ARCH 2153|Minimum Grade of C-|May not be taken concurrently))

ARCH 3020. Special Topics Studio. 6 Credit Hours.

Special design studio. Topics vary with year and instructor. Consult Architecture office for more information.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3030. Special Topics in Design. 3 to 6 Credit Hours.

Special studio dealing with issues of architectural design. Topics vary with year and instructor. Consult Architecture office for more information. May be taken more than once for credit when each topic is unique. NOTE: Architecture majors only.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3040. Seminar: Special Topics in History and Theory. 3 Credit Hours.

Special seminar dealing with history and theory of architecture. Topics vary with year and instructor. Consult Architecture Program office for more information. NOTE: Course may be taken more than once when each topic is unique.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3050. Seminar: Special Topics in Technology. 1 to 3 Credit Hour.

Special seminar dealing with current topics in digital or building technology in the field of architecture. NOTE: Course may be taken more than once for credit when each topic is unique.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3070. Seminar: Special Topics in Site and Context. 1 to 3 Credit Hour.

Special seminar dealing with current topics in site and context in the field of Architecture. NOTE: Course may be taken more than once for credit when each topic is unique.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3080. Seminar: Special Topics in Behavior & Culture. 1 to 3 Credit Hour.

Special seminar dealing with current topics in behavior and culture in the field of architecture. NOTE: Course may be taken more than once for credit when each topic is unique.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may be repeated for additional credit.

ARCH 3096. Vernacular Architecture. 3 Credit Hours.

Study of vernacular architecture as an embodiment of site, culture, indigenous materials and craft.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Facilities Management, Architectural Preservation, Historic Preservation.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

ARCH 3097. Introduction to Facility Management. 3 Credit Hours.

Overview of the profession of facility management, including the organizational, managerial, ethical and legal principles behind facility management services. The course includes the history of facility management and related professions, concepts, roles and responsibilities of the profession, basic facility management functions and techniques, organizational issues (including corporate culture, relationships between facility units and other organizational divisions, facility management and industry structure, etc.) and codes and other regulatory issues. The course is writing intensive.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Facilities Management.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Science.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

ARCH 3111. Introduction to Historic Preservation. 3 Credit Hours.

This course introduces students to the scope of architectural conservation, preservation and adaptive reuse, their histories, philosophies and theoretical bases. It introduces techniques for the preservation of buildings, including those for observation, recording and intervention.

Field of Study Restrictions: Must be enrolled in one of the following Fields of study: Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

ARCH 3145. Architecture History Non-Western. 3 Credit Hours.

An examination of non-western architecture from its ancient and primitive beginnings to its contemporary expressions, focusing on Africa, the Middle East, the Far East and Southeast Asia, India, and Pre-Colombian America. Special emphasis is placed on the understanding of non-western religions Islam, Hinduism, and Buddhism, and also on Judaism, and on the shaping of appropriate worship places.

Repeatability: This course may not be repeated for additional credits.

ARCH 3146. Engaging Places: Observations. 2 Credit Hours.

This course introduces students to the study of buildings and public places in Philadelphia using a set series of investigative and observation methods.

Repeatability: This course may not be repeated for additional credits.

ARCH 3152. Materials and Methods. 4 Credit Hours.

Introduction to construction materials, fundamentals of building construction, methods of assembling building systems in an integrated manner, and costing. Introduces specific regulatory issues dealing with zoning regulations, building codes, and barrier-free access requirements within the context of contemporary building techniques. Methods of construction in wood, masonry, concrete, and steel are described in detail and issues of enclosure, roofing, insulation, and finishes are presented. The course carries technical drawing requirements.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2151|Minimum Grade of C-|May not be taken concurrently
OR AR51 Y|May not be taken concurrently)
AND (MATH 1031|Minimum Grade of C-|May not be taken concurrently)
AND (PHYS 1021|Minimum Grade of C-|May not be taken concurrently)
OR ECE 2142|Minimum Grade of C-|May not be taken concurrently)

ARCH 3174. Site Investigations. 3 Credit Hours.

The course focuses on the discourse on urban form, the environment and design process that has emerged since the middle of the 20th century. It will examine theories and projects that address the integration of architecture, landscape and urbanism, so that students will be better prepared to address complex issues surrounding building sustainable environments. The subject is explored through readings, lectures, and case studies. NOTE: This course is offered to Bachelor of Architecture majors only.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2121|Minimum Grade of C-|May not be taken concurrently
OR AR21 Y|May not be taken concurrently)
AND (ARCH 2122|Minimum Grade of C-|May not be taken concurrently)
OR AR22 Y|May not be taken concurrently)

ARCH 3196. Architecture History Non-Western. 3 Credit Hours.

An examination of non-western architecture from its ancient and primitive beginnings to its contemporary expressions, focusing on Africa, the Middle East, the Far East and Southeast Asia, India, and Pre-Colombian America. Special emphasis is placed on the understanding of non-western religions Islam, Hinduism, and Buddhism, and also on Judaism, and on the shaping of appropriate worship places.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 2141|Minimum Grade of C-|May not be taken concurrently

OR AR41 Y|May not be taken concurrently.

ARCH 3212. Introduction to CAD. 3 Credit Hours.

This lecture and hands-on lab course will introduce students to the implementation of CADD and other integrated software within the field of Architecture.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

ARCH 3231. Architectural Design III. 6 Credit Hours.

Sustainable urban design studio, at a neighborhood scale; development of a variety of techniques to analyze, map, represent and generate urban environments - geographical, economic, social, cultural, formal; development of urban program; collaboration within a group and with aligned fields - real estate, planning, civic, neighborhood etc.; introduction of peer critique and self evaluation.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Architecture, Bach of Sci in Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2121|Minimum Grade of C-|May not be taken concurrently

OR AR21 Y|May not be taken concurrently)

AND (ARCH 2122|Minimum Grade of C-|May not be taken concurrently

OR AR22 Y|May not be taken concurrently)

ARCH 3232. Architectural Design IV. 6 Credit Hours.

Elective studio: Students will select from a range of the studio topics, with offerings depending on faculty expertise. Topics will be drawn from the following: Innovation, materials and fabrication studio; Interdisciplinary studio; Big and complex building studio; Community design studio; Global urban systems studio. Not all topics will be offered every year.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Architecture, Bach of Sci in Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 3231|Minimum Grade of C-|May not be taken concurrently.

ARCH 3233. Architecture Design Studio in Tokyo (Undergraduate). 6 Credit Hours.

Complex design investigation incorporating analysis of urban systems, observational research, data collection and analysis and the study of architectural precedent. This course aims to develop understandings of a foreign architectural and urban culture and how to engage it and promotes cosmopolitan values. Scale: variable.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

ARCH 3234. Architectural Design Studio in Rome. 6 Credit Hours.

Architectural design studio at the Rome Campus with noted architectural faculty from Italy. Special application required. Consult Architecture Department office for more information. Course may be used to satisfy one of the upper level studios [Architecture 3231 (0231), 3232 (0232), or 4332 (0332)] but may only be taken once.

Repeatability: This course may not be repeated for additional credits.

ARCH 3241. Seminar Analysis of Urban Structure in Rome. 3 Credit Hours.

Research on urban systems and forms that have marked the development of Italian and Roman architecture from the 15th to the 18th century and that are now a reference point in every Western city: the piazza, the Roman palazzo, the theater, the garden. The course is intended to be a theoretical and analytical complement to the Rome Campus design course.

Repeatability: This course may not be repeated for additional credits.

ARCH 3242. Urban Seminar in Tokyo (Undergraduate). 3 Credit Hours.

This course provides students an overview of architecture and urbanization in historic and contemporary Japan. Economic, socio-political and technological forces that have shaped the built environment and architecture are discussed and the work of contemporary Japanese architects are studied and analyzed. The course is a theoretical and analytical complement to the Architecture Design Studio.

Repeatability: This course may not be repeated for additional credits.

ARCH 3251. Structural Analysis for Architects. 3 Credit Hours.

This course covers loadings determination and evaluation, resolution and equilibrium of force systems, truss analysis, centroids, moments of inertia, shear and bending moment diagrams, basic beam, column, and system design.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(MATH 1031|Minimum Grade of C-|May not be taken concurrently)
AND (PHYS 1021|Minimum Grade of C-|May not be taken concurrently)
OR ECE 2142|Minimum Grade of C-|May not be taken concurrently)

ARCH 3255. The Art of Detailing. 3 Credit Hours.

Exploration of architectural details and their application and evolution in architectural works through a historical perspective. Students research, analyze, describe, and document their findings into a bound volume.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2122|Minimum Grade of C-|May not be taken concurrently)
OR AR22 Y|May not be taken concurrently)
AND (ARCH 2151|Minimum Grade of C-|May not be taken concurrently)
OR AR51 Y|May not be taken concurrently)

ARCH 3273. Housing and Community Design. 3 Credit Hours.

This course explores the context of housing and the design of communities in the Modern era and uses examples both local and world-wide as case studies.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

ARCH 3296. Movements in Modern Architecture. 3 Credit Hours.

History and theories of the architecture and urbanism of the modern period, from the beginning of the 19th century until the 1960's. Key ideas, texts and iconic buildings from the USA, Europe and other sites of the modernist diaspora are discussed. NOTE: This is a writing-intensive course.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2141|Minimum Grade of C-|May not be taken concurrently)
OR AR41 Y|May not be taken concurrently)
AND (ARCH 2142|Minimum Grade of C-|May not be taken concurrently)
OR AR42 Y|May not be taken concurrently)

ARCH 3354. Sustainability and Architecture. 3 Credit Hours.

The study of the ecological, environmental, socio-cultural, and behavioral principles of sustainable architecture, including climatic considerations, total energy systems, resource management, energy-efficient technologies, ecological design strategies, as well as issues of social equity and environmental justice.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 2151|Minimum Grade of C-|May not be taken concurrently
OR AR51 Y|May not be taken concurrently)
AND (MATH 1031|Minimum Grade of C-|May not be taken concurrently)
AND (PHYS 1021|Minimum Grade of C-|May not be taken concurrently)
OR ECE 2142|Minimum Grade of C-|May not be taken concurrently)

ARCH 3362. Architecture Workshop. 3 Credit Hours.

Preparation for and classroom experience with an interdisciplinary team that introduces an awareness of the principles of architecture and the built environment to young children in city schools. Teams are composed of an architecture student, a practicing architect, and a school teacher; in collaboration with the Foundation for Architecture, the School District of Philadelphia, and the Graduate School of Fine Arts of the University of Pennsylvania, as well as volunteers from architectural firms.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

ARCH 3391. Independent Research. 3 to 7 Credit Hours.

A project assigned with the approval of the Program Director and conducted under the supervision of a faculty sponsor.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

ARCH 3970. Honors Special Topics in Architecture, Site and Context. 3 Credit Hours.

Special topics seminar dealing with issues of site and context in the field of Architecture. Topics vary with year and instructor. Consult Architecture program office and honors course catalog for more information. NOTE: May be taken more than once for credit when each topic is unique.

Cohort Restrictions: Must be enrolled in one of the following Cohorts: SCHONORS, UHONORS, UHONORSTR.

Course Attributes: HO

Repeatability: This course may be repeated for additional credit.

ARCH 4011. Research Methods for Facility Management. 3 Credit Hours.

Research and analytical methods for facility management, including literature searches, data collection, analysis and application, basic descriptive and inferential statistics, benchmarking, audits, post-occupancy evaluation and diagnostic, performance and needs assessment. The course is project based and will engage in working relationships with companies in the Philadelphia region.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Facilities Management.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 3013|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3097|Minimum Grade of C-|May not be taken concurrently)

ARCH 4096. Professional Practice. 3 Credit Hours.

Administrative and business aspects of the architectural profession, professional relations between architect, engineer, owner, and contractor. Legal aspects of modern practice. Marketing architectural services, project organization, and production.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Facilities Management, Architectural Preservation, Historic Preservation.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

ARCH 4099. Capstone Research Seminar for Facility Management. 4 Credit Hours.

The capstone course for all B.S. Facility Management majors that focuses on a self defined individual research topic within the field of facility management based on case study analysis requiring investigative research, problem definition, alternative considerations and solution building. It has a seminar format with discussion and commentary expected from all participants. The course results in the development and presentation of a senior level thesis.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Facilities Management.

Repeatability: This course may be repeated for additional credit.

Pre-requisites:

(ACCT 2101|Minimum Grade of C-|May not be taken concurrently)
OR ACCT 2901|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3012|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3013|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3097|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3152|Minimum Grade of C-|May not be taken concurrently)
OR AR31 Y|May not be taken concurrently)
AND (ARCH 4011|Minimum Grade of C-|May not be taken concurrently)
AND (RE 3501|Minimum Grade of C-|May not be taken concurrently)

ARCH 4141. Global Preservation Practice. 3 Credit Hours.

This course introduces the agencies, global, national and regional, operating in the fields of architectural conservation, preservation and adaptive reuse. Through global, national and regional case studies, it develops a knowledge base of contemporary practice.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 3111|Minimum Grade of C-|May not be taken concurrently.

ARCH 4145. Research Methods for Historic Preservation. 3 Credit Hours.

The first half of this course introduces students to sources and methods of investigation particular to historic preservation and develops techniques employed in the physical, verbal, and quantitative documentation of structures, buildings, and sites. Students become acquainted with archival resources, methods of graphical recording and annotation, and preparation of narrative and quantitative records. The second half of this course provides an overview of the physical processes that affect the stability of buildings, structures, and sites and the range of available remedial actions.

Field of Study Restrictions: Must be enrolled in one of the following Fields of study: Architectural Preservation, Historic Preservation.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 3111|Minimum Grade of C-|May not be taken concurrently.

ARCH 4182. Independent Study in History and Theory. 1 to 7 Credit Hour.

Individual study of advanced nature exploring aspects of architectural history and theory, under the guidance of a faculty advisor.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

ARCH 4199. Capstone Research Seminar for Historic Preservation. 4 Credit Hours.

This is the capstone course for all B.S. Architectural Preservation majors that focuses on a self-defined individual research topic within the field of architectural preservation or adaptive re-use. Students are required to demonstrate competence through a reality-based case study. The course has a seminar format with discussion and commentary expected from all participants. It results in the development and presentation of a senior-level thesis.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

Pre-requisites:

(ARCH 3111|Minimum Grade of C-|May not be taken concurrently
AND ARCH 4141|Minimum Grade of C-|May not be taken concurrently
AND ARCH 4145|Minimum Grade of C-|May not be taken concurrently
AND CHEM 1011|Minimum Grade of C-|May not be taken concurrently)

ARCH 4211. Computer Graphics. 3 Credit Hours.

This course involves lectures and hands-on lab experience in advanced use and applications of computers. The course focuses on graphic programs that allow animation, mapping, visualization, and special rendering techniques. NOTE: Special authorization required for non-majors.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Repeatability: This course may not be repeated for additional credits.

ARCH 4282. Independent Study in Technology. 2 to 7 Credit Hours.

Individual study of advanced nature exploring aspects of architectural history and theory, under the guidance of a faculty advisor.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

ARCH 4296. Design, Behavior and Culture. 3 Credit Hours.

This course aims to develop students' understanding of how users perceive environments and adapt to them, to investigate the potential role of environmental psychology factors in architectural design; and to develop a working methodology for thinking about the environment based on behavioral and social science principles. The course is writing-intensive.

Class Restrictions: May not be enrolled in one of the following Classes: Freshman 0 to 29 Credits.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 2141|Minimum Grade of C-|May not be taken concurrently
OR AR41 Y|May not be taken concurrently.

ARCH 4331. Architectural Design V. 6 Credit Hours.

Comprehensive design studio: the integration of structural and environmental systems, programming, tectonics and detailing into architectural design and expression in holistic and environmentally sustainable ways; comprehensive representation of design; development of time management skills, peer critique and self-evaluation; interaction with consultants.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Architecture, Bachelor of Science in Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 3231|Minimum Grade of C-|May not be taken concurrently.

ARCH 4332. Architectural Design VI. 6 Credit Hours.

Elective studio: students will select from a range of the studio topics, with offerings depending on faculty expertise. Topics will be drawn from the following: Innovation, materials and fabrication studio; Interdisciplinary studio; Big and complex building studio; Community design studio; Global urban systems studio. Not all topics will be offered every year.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Architecture, Bach of Sci in Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 3231|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 3232|Minimum Grade of C-|May not be taken concurrently)
AND (ARCH 4331|Minimum Grade of C-|May not be taken concurrently)
OR ARCH 3233|Minimum Grade of C-|May not be taken concurrently
OR ARCH 3234|Minimum Grade of C-|May not be taken concurrently)

ARCH 4351. Environmental Control Systems for Buildings. 3 Credit Hours.

Heating, ventilating, air conditioning, electric power, lighting, acoustics, vertical transportation, plumbing, and fire protection for buildings.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 3152|Minimum Grade of C-|May not be taken concurrently)
AND PHYS 1021|Minimum Grade of C-|May not be taken concurrently)

ARCH 4382. Independent Study: Site and Context. 3 to 7 Credit Hours.

Individual study of advanced nature exploring aspects of site, context, or urbanism in architecture, under the guidance of a faculty advisor.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

ARCH 4431. Advanced Architectural Design. 6 Credit Hours.

Research-driven upper-level elective design studio to develop capacity for research (archival, social, urban etc.) as basis of design; development of initiative, collaboration and peer critique; development of written and graphic skills. Focus will be defined by the faculty teaching the studio and vary from year to year.

Degree Restrictions: Must be enrolled in one of the following Degrees: Bachelor of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 4482. Independent Study: Behavior & Culture. 3 to 7 Credit Hours.

Individual study of advanced nature exploring aspects of behavior and culture in architecture, under the guidance of a faculty advisor.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Repeatability: This course may be repeated for additional credit.

ARCH 4596. Seminar in Architectural Theory. 3 Credit Hours.

Theories of architecture and urbanism during the modern and contemporary periods; participation in critical theoretical discussions and the development of a research paper in response to critical feedback. The course serves to lay the ground for the theoretical development of thesis ideas.

Field of Study Restrictions: Must be enrolled in one of the following Majors: Architecture, Architecture Undeclared, Facilities Management, Architectural Preservation, Historic Preservation.

Course Attributes: WI

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 3243|Minimum Grade of C-|May not be taken concurrently
OR ARCH 3296|Minimum Grade of C-|May not be taken concurrently.

ARCH 5011. Graduate Representation Intensive 1. 3 Credit Hours.

This course focuses on the development of visual literacy, graphic techniques, and 3D formal exploration. Through projects supported by research, graphically-based exercises, and formal investigations, students will be exposed to the process of representation in architecture. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5012. Graduate Representation Intensive 2. 3 Credit Hours.

This course focuses on the development of visual literacy, graphical techniques, and 3D formal exploration. Through projects supported by research, graphically-based exercises, and formal investigations, students will be exposed to the process of representation in architecture. Methods of 2D and 3D analog and digital representation will be addressed. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5013. Facilities for Health Workshop 1. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to address innovation in health design and facilities. The workshop focuses on human factors and dimensions, habits, and motions of the human body and human bodies as the initiator of design. As such, the workshop looks at issues such as movement, tactility, human engagement, mobility, and related factors as they relate to space and organization.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 5014. Facilities for Health Workshop 2. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to promote innovation in health design and facilities. The workshop focuses on the spatial and procedural functions of healthcare facilities. As such, the workshop explores relationships between small and large user-groups, equipment, and various architectural configurations within healthcare facilities.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 5013|Minimum Grade of B-|May not be taken concurrently.

ARCH 5015. Facilities for the Arts Workshop 1. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to address innovation in arts facilities design and planning. The workshop focuses on human factors and dimensions, habits, and motions of the human body and human bodies as the initiator of design. As such, the workshop looks at issues such as movement, tactility, human engagement, mobility, and related factors as they relate to space and organization.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 5016. Facilities for the Arts Workshop 2. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to address innovation in arts facilities design and planning. The workshop focuses on the spatial and procedural functions of arts facilities. As such, the workshop explores relationships between small and large user-groups, equipment, and various architectural configurations within arts facilities.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 5015|Minimum Grade of B-|May not be taken concurrently.

ARCH 5017. Facilities Workshop 1. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to address innovation in facilities design and planning. The workshop focuses on human factors and dimensions, habits, and motions of the human body and human bodies as the initiator of design. As such, the workshop looks at issues such as movement, tactility, human engagement, mobility, and related factors as they relate to space and organization.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 5018. Facilities Workshop 2. 3 Credit Hours.

The workshop uses interdisciplinary and collaborative approaches to address innovation in facilities design and planning. The workshop focuses on the spatial and procedural functions of facilities. As such, the workshop explores relationships between small and large user-groups, equipment, and various architectural configurations within facilities.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 5017|Minimum Grade of B-|May not be taken concurrently.

ARCH 5033. Project Planning and Programming. 3 Credit Hours.

A course covering the general processes related to the planning, programming, design, construction and occupancy of facilities, including long range, strategic and tactical planning, the relationship between facility planning and business planning, organization of sites, buildings and interiors. Also covered are specific tools and techniques for these functions, including design and construction documentation and contracts, facility inventories, space planning and relocation management, construction and installation specifications, value engineering, post-occupancy evaluation, contract management and cost estimating techniques.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 5096. Health Facilities Practice and Management. 3 Credit Hours.

The course exposes students to the history, development and current status of the health facilities management profession and develops understandings of the trends and dynamics of contemporary health facilities management practice.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 5131|Minimum Grade of B-|May not be taken concurrently.

ARCH 5122. Graduate Design Foundation Intensive. 6 Credit Hours.

Students in this course will develop rigorous design thinking through making and the integration of material, craft, tectonic and visual practice. Development of the design crit plus methods of communicating design objectives. Scale: artifact, body and spatial envelope. Development of individual portfolio of design and graphic work as required for the M Arch degree.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5131. Form and Function in Health and Environments. 3 Credit Hours.

The course examines the relationship of form, space, and function in healthcare facilities and environments. Using case studies of current facilities, the course looks at the role of design and particular needs for healthcare. The course examines the role of an interdisciplinary approach, where health experts, facilities and design experts, and other related professionals work together to develop state of the art healthcare facilities and environments.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

Repeatability: This course may not be repeated for additional credits.

ARCH 5132. Current Topics in Health Facilities Planning and Design. 1 Credit Hour.

The course examines trends and best practices in health facilities planning and design. Industry experts will present and discuss their work and share relevant case studies of leading projects in healthcare design and facilities. Topics include design processes and solutions, integrated strategic planning, client and community relationships, long-term projections for facilities, and post-occupancy evaluation. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5133. Current Topics in Healthy Communities and Design. 1 Credit Hour.

The course examines the role of design for human well-being, including physical, mental, and social health. Industry experts will present and discuss their work and share relevant case studies that explore the challenges, opportunities and successful strategies to create communities that encourage healthy practices. Topics include healthy buildings; social equity; healthy transportation networks; innovative urban design; active communities and public space; food access; high performance affordable housing; air quality; secure communities; and mobility and accessibility. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5134. Current Topics in Resilience and Design. 1 Credit Hour.

The course examines trends and best practices in how to design buildings, plan communities, and construct infrastructure that persist and thrive amid predicted and unforeseen disruptions. Industry experts will present and discuss their work and share relevant case studies in the purposeful design of buildings, communities, and regions capable of maintaining livable conditions when faced with an interruption of normal services. Topics include adaptation to a wide range of impacts as a result of climate change, such as increased intensity of storms, higher precipitation, coastal and inland flooding, increased severity of droughts, wildfires, warming temperatures, power outages, and thawing permafrost. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5135. Current Topics in Energy and Performance. 1 Credit Hour.

The course examines innovative practices used to predict and measure energy usage in buildings. Industry experts will present and discuss their work and share relevant case studies that explore the challenges, opportunities and successful strategies to design energy efficient, high performance buildings. Topics include energy modeling and simulations; energy-efficient building operations; energy-related problems in buildings; and metrics of energy flows in buildings. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5136. Current Topics in Fabrication and Making. 1 Credit Hour.

The course examines innovative design and fabrication techniques. Industry experts will present and discuss their work and share relevant case studies that explore tools, processes, and techniques by which products, components, and buildings are made. Topics include digital and analog fabrication; robotics; prefabrication; prototyping; and mass production. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5137. Current Topics in Visualization. 1 Credit Hour.

The course examines innovative practices used for the visualization, representation, and documentation of objects, buildings, and environments. Industry experts will present and discuss their work and share examples of the current tools and techniques. Topics include still image production such as rendering and collage; building information modeling; augmented and virtual reality; and animation. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5138. Current Topics in Materials and Design. 1 Credit Hour.

The course examines innovative materials and their applications and use in design. Industry experts will present and discuss their work and share relevant case studies. Topics will address a range of issues related to sustainable and advanced materials include traditional and novel materials and uses; responsive materials; smart materials; haptic technologies; manufacturing innovations. Note: This course may be taken up to three times provided that there is a different instructor each time. For further information, check with your advisor.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

College Restrictions: Must be enrolled in one of the following Colleges: College of Public Health, Art Architecture, Tyler School.

ARCH 5141. Architectural History 1: Ancient through Renaissance. 3 Credit Hours.

Traces the history of Western architecture from the ancient world to the high renaissance and mannerism of the late 16th century. The evolution of architectural thought, various formal languages (styles) and theoretical concepts are studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Emphasis on the analysis of the ancient temple and the Christian church. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5142. Architectural History 2: Renaissance through 20th Century. 3 Credit Hours.

Traces the history of Western architecture from the 17th century through the 20th century. The evolution of architectural thought, various languages (styles) and theoretical concepts studied through the examination of selected buildings within their specific political, social, economic, and cultural milieu. Analysis of the significant buildings of the baroque and rococo, the neo-classic and the romantic, modernist, and post-modernism periods. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5152. Materials and Methods of Construction. 3 Credit Hours.

Introduction to construction materials, fundamentals of building construction, methods of assembling building systems in an integrated manner, and costing. Introduces specific regulatory issues dealing with zoning regulations, building codes, and barrier-free access requirements within the context of contemporary building techniques. Methods of construction in wood, masonry, concrete, and steel are described in detail and issues of enclosure, roofing, insulation, and finishes are presented. The course carries technical drawing requirements. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5231. Graduate Design Studio 1. 6 Credit Hours.

The house as essential site of architecture. Consideration of relationships between program, culture, society and form making at a domestic scale; consideration of structure, space, shelter and place making; methods of construction, tectonics and detailing as design concerns; introduction to precedent study as research technique. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

ARCH 5122|Minimum Grade of B-|May not be taken concurrently.

ARCH 5232. Graduate Design Studio 2. 6 Credit Hours.

Studio with environmental sustainability focus - energy and resource use, hydrology, sustainable materials, infrastructure and building methods, recycling, environmental performance and quality; emphasis on systems and details (very large and very small); development of techniques for environmental analysis (observation, data analysis etc.); development of ecological and environmentally responsive design proposals; program development; introduction to design collaboration. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

Pre-requisites:

(ARCH 5122|Minimum Grade of B-|May not be taken concurrently
AND ARCH 5231|Minimum Grade of B-|May not be taken concurrently)

ARCH 5251. Structural Analysis for Architects. 3 Credit Hours.

This course covers loadings determination and evaluation, resolution and equilibrium of force systems, truss analysis, centroids, moments of inertia, shear and bending moment diagrams, basic beam, column, and system design. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5252. Str Des for Architects 1. 3 Credit Hours.

Application of principles of engineering mechanics to layout, analysis, design, and detailing of structural elements in steel and wood of simple buildings. Flexural theory including elastic and plastic design is taught. Students will be familiarized with current building design codes as they relate to the structural design of building elements.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5253. Str Des for Architects 2. 3 Credit Hours.

Application of principles of engineering mechanics to layout, analysis, design, and detailing of structural elements in concrete and masonry of simple buildings. Students will be familiarized with current building design codes as they relate to the structural design of building elements.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5296. Movements in Modern Architecture. 3 Credit Hours.

History and theories of the architecture and urbanism of the modern period, from the beginning of the 19th century until the 1960's. Key ideas, texts and iconic buildings from the USA, Europe and other sites of the modernist diaspora are discussed. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5351. Env Control Systems 1. 3 Credit Hours.

This course discusses the thermal and environmental processes that affect buildings and develops techniques for designers to respond to and manipulate thermal environments in ways that are integral with other building systems. Mechanical, electrical, and plumbing systems, heating, ventilation, and air-conditioning (HVAC) equipment, vertical transportation, communication, security, and fire protection systems and introduced. These are discussed against a backdrop of the principles of sustainability and environmental responsibility.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 5596. Seminar in Architectural Theory. 3 Credit Hours.

Theories of architecture and urbanism during the modern and contemporary periods; participation in critical theoretical discussions and the development of a research paper in response to critical feedback. The course serves to lay the ground for the theoretical development of thesis ideas. Development of individual portfolio of design work, a requirement for graduate students in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8000. Spec Top Sem in Practice. 3 Credit Hours.

Graduate level seminar to familiarize and engage students in issues of Integrated Practice. The course centers on a discussion of major impacts of practice, and the ethical issues and responsibilities that we are faced with in the current era where BIM has the potential to change the roles in built environment disciplines, and impacts of globalization and sustainability drive our needs. The course addresses changes brought on in technology and practice management. Discussion and research can span a range of issues that affect practice.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8011. Adv Arch Des Studio 1. 6 Credit Hours.

Design studio to familiarize students with current urban design strategies and their historical precedents. Students will engage in generative analysis of urban systems, economies, structures, infrastructures, spaces and / or cultures, involving observation and data collection, visualization, program development and its spatio / temporal resolution and visualization. The studio may involve collaboration with aligned fields or disciplines e.g. landscape architecture, media studies, geography and urban studies, community and regional planning and / or outside agencies or groups. Peer critique and evaluation are utilized as learning techniques.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8012. Elect Arch Des Studio. 6 Credit Hours.

Advanced architectural design studio. The topic of the studio varies in accordance with faculty expertise and research focus. This might include, but not be limited to an area of architectural, spatial, social, cultural or political practice, an interdisciplinary intersection such as architecture + biology / geology / war / the media / gender or business; research into materials, energy, structure, scripting, fabrication or other computational technologies. The course develops observational techniques and data collection, management and visualization appropriate to the topic of the studio. It requires spatio / temporal / material development, resolution and representation of an architectural design strategy at appropriate scales. Collaboration with aligned fields or disciplines may be undertaken if it is appropriate to the topic of the studio. Peer critique and evaluation are utilized as learning techniques and the capacity for independent work is developed. The course must be taken once, but may be taken up to three times for required credits as long as the topic covered is substantially different each time.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8013. Comp Arch Design Studio. 6 Credit Hours.

Comprehensive design studio: the integration of structural and environmental systems, programming, tectonics and detailing into architectural design and expression in holistic and environmentally sustainable ways; comprehensive representation of design; development of time management skills, peer critique and self evaluation; interaction with consultants.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8014. Architectural Design for Health. 6 Credit Hours.

Advanced architectural design studio focused on design for health and health facilities. This will include understanding of human factors, equipment needs and trends, health design guidelines, design for well-being, etc. The course develops observational techniques and data collection, management and visualization appropriate to the topic of the studio. It requires spatio / temporal / material development, resolution and representation of an architectural design strategy at appropriate scales. Collaboration with aligned fields or disciplines may be undertaken if it is appropriate to the topic of the studio. Peer critique and evaluation are utilized as learning techniques and the capacity for independent and collaborative design work is developed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ARCH 8015. Urban Ecologies and Design. 6 Credit Hours.

Advanced architectural design studio focused on urban design. This will include understanding of human and community well-being in urban environments, environmental design trends, urban design guidelines, etc. The course develops observational techniques and data collection, management and visualization appropriate to the topic of the studio. It requires spatio / temporal / material development, resolution and representation of an architectural design strategy at appropriate scales. Collaboration with aligned fields or disciplines may be undertaken if it is appropriate to the topic of the studio. Peer critique and evaluation are utilized as learning techniques and the capacity for independent and collaborative design work is developed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ARCH 8016. Advanced Technologies and Design. 6 Credit Hours.

Advanced architectural design studio focused on advanced technologies in architectural design. This can include the range of current and emerging technologies in design process and implementation, visualization, etc. The course develops observational techniques and data collection, management and visualization appropriate to the topic of the studio. It requires spatio / temporal / material development, resolution and representation of an architectural design strategy at appropriate scales. Collaboration with aligned fields or disciplines may be undertaken if it is appropriate to the topic of the studio. Peer critique and evaluation are utilized as learning techniques and the capacity for independent and collaborative design work is developed.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ARCH 8096. Professional Practice. 3 Credit Hours.

The course is required for internship in the architectural profession. It exposes students to the history, development and current status of the architectural profession and professional education and develops understandings of the trends and dynamics of contemporary architectural practice. It discusses what is required to properly serve clients and the common good; how to pursue, win, negotiate and prepare agreements and contracts; how to organize, manage, design, control costs, produce and administer contracts for the construction of architectural projects and how to organize, build and maintain architectural firms.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8100. Spec Top Case St in Arch. 3 Credit Hours.

Graduate level seminar that centers on comprehensive case studies in architecture as a form of primary research. The seminar discussion and research will focus on architectural works with the aim of learning about important aspects and overlaps that make architecture. In each case, the topics that drive the research and analysis will vary. Topics and issues will be guided by class discussion and the nature, scale and context of the architectural works. The course will address methods of analysis and techniques for visualization and presentation. It requires active participation in class discussions.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8131. Arch Research Seminar 1. 3 Credit Hours.

Graduate level research seminar to familiarize and engage students in an area of contemporary urban research, its history, networks, strategies and techniques. It will develop methods and skills for the research and analysis of urban systems, economies, structures, infrastructures, spaces and / or cultures and techniques to visualize data and present research findings. The topic of the seminar varies in accordance with faculty expertise and research focus and might include, but not be limited to, approaches to sustainable urban development, ludic urban design strategies, advocacy based urbanism, user generated cities, computational urbanism, etc. The course takes a seminar format and requires active participation in class discussions. The course is required to be taken once in conjunction with ARCH 8011, but may be taken again for elective credit provided that the topic covered is different each time.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8132. Arch Research Seminar 2. 3 Credit Hours.

Graduate level seminar to familiarize and engage students in an area of contemporary architectural research, its history, networks, strategies, techniques. The topic of the seminar varies in accordance with faculty expertise and research focus. This might include, though not be limited to, questions about research as architectural practice, about architectural design as research, about architectural history, about architecture as spatial or political practice, or engage in any one of the interdisciplinary intersections currently re-energizing architecture - architecture + biology / war / media studies / post-colonial studies / gender studies / business etc. The course will develop methods and skills for architectural research and analysis and techniques for data visualization and research presentation. The course takes a seminar format and requires active participation in class discussions. The course is required to be taken once, but may be taken again for elective credit provided that the topic covered is different each time

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8133. Arch Research Seminar 3. 3 Credit Hours.

Graduate level seminar to familiarize and engage students in contemporary research in an area of architectural technology, its history, networks, strategies and techniques. The topic of the seminar varies in accordance with faculty expertise and research focus. This might include, though not be limited to materials research, energy research, structural research, fabrication, computational technologies, etc. The course will examine the history of the field, develop methods and skills for research and analysis and techniques for data visualization and research presentation. The course takes a seminar format and requires active participation in class discussions. The course is required to be taken once, but may be taken again for elective credit provided that the topic covered is different each time.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 8134. Architecture Research Seminar 4 - Urban Innovations: Technology, Environment and Health in Society. 3 Credit Hours.

Graduate level research seminar to familiarize and engage students in an area of current and future trends and innovations in the urban context with a focus on technology, environment, and health. It will develop methods and skills for the research and analysis of urban systems, economies, structures, infrastructures, spaces and / or cultures and techniques to visualize data and present research findings. The topic of the seminar includes approaches to innovation and the integration of technology, natural and designed systems, strategies for a holistic approach to sustainability and healthy cities, human and environmental health and well-being. The course takes a seminar format and requires active participation in class discussions. The course is required to be taken by students in the Architecture for Health concentration of the MS Architecture degree and is an elective for other students.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may not be repeated for additional credits.

ARCH 8146. Graduate Field Work Report. 1 Credit Hour.

This course requires that students prepare an independent report of their study abroad, field work, or internship experience in a format that is agreed upon with the course coordinator.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 8233. Arch Des St Tokyo (G). 6 Credit Hours.

A complex design investigation incorporating analysis of urban systems, observational research, data collection and analysis and the study of architectural precedents. The course immerses students in a foreign urban and architectural culture and asks them to engage in a complex design investigation, whose topic and scale is variable. Course may be used as equivalent of ARCH 8012 but may only be taken once.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8234. Arch Des Studio Rome (G). 6 Credit Hours.

A complex design investigation incorporating analysis of urban systems, observational research, data collection and analysis and the study of architectural precedents. The course immerses students in a heritage urban and architectural locale and asks them to engage in a complex design investigation, whose topic and scale is variable. Course may be used as equivalent of ARCH 8012 but may only be taken once.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8241. Seminar: Analysis Urb Str (G). 3 Credit Hours.

Research on urban systems and forms that have marked the development of Italian and Roman architecture from the 15th to the 18th century and that are now a reference point in every Western city: the piazza, the Roman palazzo, the theatre, the garden. The course is intended as a theoretical and analytical complement to the graduate architecture design studio in Rome. It fulfils the requirements of ARCH 8132.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8242. Urban Seminar Tokyo (G). 3 Credit Hours.

This course provides students an overview of architecture and urbanization in historic and contemporary Japan. Economic, socio- political and technological forces that have shaped the built environment and architecture are discussed and the work of contemporary Japanese architects are studied and analyzed. The course is a theoretical and analytical complement to the Architecture Design Studio. It fulfils the requirements of ARCH 8132.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 8352. Env Control Systems 2. 3 Credit Hours.

This course covers visual and audio environmental stimuli and architectural design responses to them. In addition, it discusses and introduces techniques for measuring the design of building systems for improved environmental performance, in terms of the efficiency of systems, environmental impact and capital and operational costs.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may not be repeated for additional credits.

ARCH 9182. Independent Study in Architecture. 1 to 3 Credit Hour.

Graduate level independent study carried out by students interested in research that focuses on the various subdisciplines in architecture. Students must submit a proposal to a faculty member for review and approval that follows departmental guidelines for independent study. Topics and issues that guide the independent study can vary.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9280. Special Topics in Communication. 1 to 3 Credit Hour.

Graduate level course that addresses current topics in graphic and visual communication in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9285. Architecture Internship. 1 to 3 Credit Hour.

This course expands students' knowledge and professional experience through internships in architectural and other built environment firms. Students will be exposed to methods of practice and design thinking. The course requires that the student prepare a report in a format agreed upon with the course coordinator.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9380. Special Topics in History or Culture. 1 to 3 Credit Hour.

Graduate level course that addresses current topics related to architectural history and/or cultural studies.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9480. Special Topics in Technology. 1 to 3 Credit Hour.

Graduate level course that addresses current topics in digital or building technology in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9580. Special Topics in Site and Context. 1 to 3 Credit Hour.

Graduate level course that addresses current topics in site and context in architecture.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9682. Independent Research. 1 to 3 Credit Hour.

Graduate level independent research in architecture. Students work with a faculty member according to an agreed upon syllabus and schedule. Topics and issues that guide the course work will vary.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Repeatability: This course may be repeated for additional credit.

ARCH 9991. Directed Research. 3 Credit Hours.

The development of a self motivated architectural design inquiry under the guidance of a faculty co-coordinator. This includes design research, the development of a design program, site investigation, analytical and speculative design investigations and / or experimentation with advanced visualization techniques. The course is seminar based and engages students in critical dialogue with their own and other students' work. It prepares students for undertaking an architectural design thesis the following semester.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.

ARCH 9996. Arch Design Thesis. 6 Credit Hours.

Self directed architectural design thesis that follows on the research and design inquiries conducted in the fall semester. The course requires that students demonstrate the ability to undertake design research, develop a design program, conduct analytical and speculative design investigations and utilize advanced visualization techniques in the representation of their work. It culminates in a formal juried presentation and a textual document of a publishable standard of a graduate level design thesis.

Level Registration Restrictions: Must be enrolled in one of the following Levels: Graduate.

Degree Restrictions: Must be enrolled in one of the following Degrees: Master of Architecture.

Repeatability: This course may be repeated for additional credit.