

UNIVERSITY OF PENNSYLVANIA  
 School of Design  
**DEPARTMENT OF ARCHITECTURE**

**Fall 2008 Course Descriptions**

Course No.	Course Title	Co-Req	Day-Time	Instructor	Location	CUs
<b>Graduate</b>						
<b>Required Design Studios</b>						
<b>ARCH 501 201</b>	Design Studio I	ARCH 521	MWR 2-6	Russo/Faculty	MEYH STD 2	2
An introductory architectural design studio through which students develop critical, analytical and speculative design abilities in architecture. Students develop representational techniques for the analysis of social and cultural constructs, and formulate propositions for situating built form in the arena of the urban and suburban environment. The studio initiates innovation through the analysis of complex systems, algorithms and the cultivation of spatial formations and behaviors that are emergent and yet defined. It introduces computation, geometric techniques, and digital fabrication. Projects explore the formation of space in relation to the body, and the development of small scale public programs.						
<b>ARCH 501 202</b>	Design Studio I	ARCH 521	MWR 2-6	Beckman	MEYH STD-2	2
An introductory architectural design studio through which students develop critical, analytical and speculative design abilities in architecture. Students develop representational techniques for the analysis of social and cultural constructs, and formulate propositions for situating built form in the arena of the urban and suburban environment. The studio initiates innovation through the analysis of complex systems, algorithms and the cultivation of spatial formations and behaviors that are emergent and yet defined. It introduces computation, geometric techniques, and digital fabrication. Projects explore the formation of space in relation to the body, and the development of small scale public programs.						
<b>ARCH 601 201</b>	Design Studio III	ARCH 621	M12-6 W2-6 R12-6	Veikos/Faculty	MEYH STD 3	2
The first intermediate design studio consisting of six independent sections, each with its own orientation to issues of technology and ecology. Design projects involve more complex public or institutional buildings, and require the detailed resolution of one ecological and technological dimension. Ecologies are considered in their natural, social, and technological dimensions, and in various degrees of abstraction and realization. This includes affinities between modes of analyzing and operating within natural ecosystems and systemic models of analysis of organizations, economies, urbanisms and material cultures, alternative economies, and the cultural politics of environmentalism, as well as the study of energy and resource use, recycling, environmental quality, and biomimetics. The studio is taught in close collaboration with Visual Studies Workshop III, whose techniques and exercises are tailored to each studio section.						
<b>ARCH 701 201</b>	Design Studio V		M12-6 W2-6 R12-6	Rahim/Faculty	MEYH	2
Advanced architectural design studio; Topics and sites vary by instructor.						
<b>ARCH 701 211</b>	Design Studio V in London		TBD	Farjadi	London	2
An advanced Architectural Design Studio taught by Homa Farjadi in London at the Architectural Association's School of Architecture. Topics engage aspects of urban life and urban form in London, and vary from year to year.						
<b>ARCH 703 201</b>	Post-Professional Design Studio		MR 12-6	Dubbeldam	MEYH	2
An Advanced Architectural Design Studio specifically tailored to post-professional students. Through this studio, students engage in the challenges and opportunities presented by changes in society, technology, and urban experience. Through design projects, they explore alternative modes and markets for practice, along with new directions and new tools for design.						

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<b>Required Courses</b>						
<b>ARCH 511 001</b>	History and Theory I	ARCH 511 201	W10-12	Payne	CHEM B13	1
<p>In ARCH511, we will undertake to do three things: to describe, through an examination of selected issues in the history of pre-modern architecture in the European context, the intellectual and cultural background against which the fundamental commitments of modern architecture emerge; to describe that emergence in two national contexts, French and German, paying special attention to the importance of Claude Perrault in the first context, Karl Friedrich Schinkel in the second; and, finally, to describe, through close examination of selected works of Gottfried Semper, Adolf Loos, Le Corbusier, and Mies van der Rohe, how the architecture connate with industrial modernization represents the technical operationalization of intellectual and cultural commitments whose emergence can be traced to the contexts of Perrault and Schinkel. Although the themes explored in course lectures will vary from architect to architect, a series of questions and problems will be seen as decisive in determining the direction of architectural practice and theory in the modern period. They are: the problem of architectural origins, the shift from a mimetic to a constructive aesthetic, the problem of "dwelling" in the metropolitan context, the problem of finding an aesthetic appropriate to the conditions (technological, economic, and cultural) of modernity, and, finally, the question of the relationship between technological and cultural development under those conditions. A concluding lecture will use this set of questions and problems as a key to summarizing our cumulative understanding of the issues that</p>						
<b>ARCH 511 201</b>	Recitation	ARCH 511-001	F10-12	TBA	MCNB 395	0
<b>ARCH 521 101</b>	Visual Studies I	ARCH 501-001	TBD	Veikos/Faculty	TBD	0.5
<p>The study of analysis and projection through drawing and computer visualization.</p>						
<b>ARCH 531 401</b>	Construction I		R10:30-12	Falck	MEYH B3	0.5
<p>A course on the basic principles and concepts of architectural technology and describes the interrelated nature of structure, construction and environmental systems.</p>						
<b>ARCH 533 401</b>	Environmental Systems I		T12-1:30	Malkawi	MEYH B3	0.5
<p>An introduction to the influence of thermal and luminous phenomenon in the history and practice of architecture. Issues of climate, health and environmental sustainability are explored as they relate to architecture in its natural context. The classes include lectures, site visits and field exploration.</p>						
<b>ARCH 535 401</b>	Structures I	ARCH 535-402	T10:30-12	Farley	MEYH B3	0.5
<p>Theory applied toward structural form. A review of one-dimensional structural elements; a study of arches, slabs and plates, curved surface structures, lateral and dynamic loads; survey of current and future structural technology. The course comprises both lectures and a laboratory in which various structural elements, systems, materials and technical principles are explored. Register for ARCH 535-402.</p>						
<b>ARCH 535 402</b>	Structures I Lab	ARCH 535-401	F2-5	Farley	MEYH B3	0
<p>A lab that supports ARCH 535, Structures I. Dates vary. Schedule will be distributed in class by the instructor.</p>						
<b>ARCH 611 001</b>	History and Theory III	ARCH 611-201	R9-1	Furjan	STIT B26	1
<p>This is the third and final required course in the history and theory of architecture. It is a lecture course that examines selected topics, figures, projects, and theories from the history of architecture and related design fields during the 20th Century. The course also draws on related and parallel historical material from other disciplines and arts, placing architecture into a broader socio-cultural-political-technological context. Recitations with teaching assistants complement the lectures. Register for ARCH 611-001 + one recitation ARCH 611-201.</p>						
<b>ARCH 611 201</b>	Recitation	ARCH 611-001	F10:30-12	TBA	TOWN 315	0

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<b>ARCH 621 101</b>	Visual Studies III	ARCH 601201	TBD	Veikos/Faculty	TBD	0.5
A continuation of the study of analysis and projection through drawing and computer visualization.						
<b>ARCH 631 001</b>	Technology Case Studies I		T2-5	Falck/AI Khayer/Yi	MEYH B3	1
A study of the active integration of various building systems in exemplary architectural projects. To deepen students' understanding of the process of building, the course compares the process of design and construction in buildings of similar type. The course brings forward the nature of the relationship between architectural design and engineering systems, and highlights the crucial communication skills required by both the architect and the engineer.						
<b>ARCH 671 001</b>	Professional Practice I		T9-12	Gardner	STIT B 26	0.5
This course consists of a series of four workshops that introduce students to a diverse range of practices that architects currently employ and the architectural profession more generally.						
<b>Elective Courses</b>						
<b>ARCH 698 001</b>	Architecture Assoc. Elective		TBD	Faculty	TBD	2
Students enrolled in the London Study Abroad program may take two elective courses offered by the Architecture Association (AA) School of Architecture. This course number serves to register for these courses.						
<b>ARCH 711 001</b>	Tourism		MT 9-12	Castillo	MEYH B2	1
Tourism is not only the world's largest industry, but a spatial and temporal practice that transforms territories through economic, social and physical techniques as well as the specific management of time. This seminar will look into some of these techniques and procedures undertaken by tourism as they relate to the transformation of space, and uncover the effects and potentials they have on architecture, cities and landscapes. The seminar will dwell into specific cases, projects, histories and readings that frame the architecture/tourism relationship. The students are expected to use maps, diagrams and other representational and documentation techniques to discover its impacts on architecture and planning. This seminar meets every other week.						
<b>ARCH 711 401</b>	Cultural Ecology: Uncovering the Roots of		W10-12 F10-11	Leatherbarrow/Wesley	MEYH B7	1
This course will study and argue a single thesis: that the architects of the early 20th century did not neglect the environmental and cultural context of their buildings because they were narrowly focused on the production of free-standing and radically new objects of design, but developed green buildings that combined attention to environmental issues with both imaginative approaches to social and cultural purposes, and a new understanding of aesthetic content. A review of contemporary ecological mandates will begin the course. In depth studies of specific buildings will follow, looking again at works we assume we know perfectly well. The course will end with a return to contemporary conditions. With a more nuanced view of our inheritance we will ask what is not only possible but necessary for architecture in our time. The course is envisaged as an upper level course in architectural theory, for both graduate and undergraduate students. Student work will involve reading, writing, and drawing.						

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<b>ARCH 713 001</b>	Ecology Technology and Design		M9-12	Pratt	MEYH B7	1
<p>This course will examine the ecological nature of design at a range of scales, from the most intimate aspects of product design to the largest infrastructures, from the use of water in bathroom to the flow of traffic on the highway. It will draw on the history and philosophy of technology, as well as the history and theory of ecological design to examine the interaction between the built environment and on the biosphere, and especially to investigate the dynamic, systematic effects that have resulted. Over the past few decades, the attention of environmentalists has turned from the control of pollution to the productive use of natural resources, and consequently we must also understand the markets, fashions, and technological cycles that drive consumption. The course will ask both “how much is enough?” and “to what end” do we design and build. It is a first principle of ecological design that everything is connected, and that activities at one scale can have quite different effects at other scales, so the immediate goal of the course will be to identify useful and characteristic modes of analyzing the ecological nature of design work, from the concept of the ecological footprint to market share.</p>						
<b>ARCH 715 002</b>	Writing on Architecture		T10-1	Rybczynski	TBD	1
<p>The practice of architecture relies on the clear and effective communication of design ideas, to clients, reviewing agencies, the public, and other interested parties. This communication occurs through drawings, models, and verbal presentations, and often—especially in the early stages of a project—through the written word. The aim of this course is to train students in the principles and techniques of nonfiction writing as it relates to architecture. Readings will include different types of architectural prose, but you can only learn to write by writing. Writing exercises will include brief critical reviews of existing buildings and unbuilt projects, opinion pieces, and formal presentations of buildings and projects. Throughout the course the emphasis will be on clear, jargon-free expression in all forms of professional communication</p>						
<b>ARCH 717 001</b>	Self-Organization & Dynamics of Cities		W6-9	DeLanda	MEYH B3	1
<p>Cities are among the most complex entities that arise out of human activity. For some of these cities (Versailles, Washington DC) the process through which they emerge is not hard to grasp because it is planned up to the last detail by a human bureaucracy. Other cities, such as Venice and its labyrinthian system of streets, emerged spontaneously without any central agency making the relevant decisions. But even those cities in which urban structure was the result of a deliberate act of planning, house many processes which, like Venice, represent the spontaneous emergence of order out of chaos. This seminar will examine a variety of these processes, from markets to symbiotic nets of small producers, from epidemics of urban diseases to the creation of new languages and urban dialects. It will also explore the interaction between these self-organized phenomena and centrally controlled processes which are the result of human planning.</p>						
<b>ARCH 718 401</b>	Japanese Architecture		T1:30-4:30	Steinhardt	EDUC 114	1.00
<p>An introduction to the visual, aesthetic, historical, religious, philosophical, and symbolic aspects of Japanese structures from earliest times to the mid -19th century. Through a discussion of shrines, temples, palaces, tombs, cities, and gardens the student will explore what makes Japanese architecture distinctive and how the traditions of Japanese architecture evolve over time.</p>						

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<b>ARCH 727 001</b>	Industrial Design I		T4:30-7:30	Bresler/Buck	MEYH 408	1
<p>Industrial design (ID) is the professional service of creating and developing concepts and specifications that optimize the function, value and appearance of products and systems for the mutual benefit of both user and manufacturer. Industrial designers develop these concepts and specifications through collection, analysis and synthesis of user needs data guided by the special requirements of the client or manufacturer. They are trained to prepare clear and concise recommendations through drawings, models and verbal descriptions. The profession has evolved to take its appropriate place along side Engineering and Marketing as one of the cornerstones of Integrated Product Design teams.</p> <p>The core of Industrial Design's knowledge base is a mixture of fine arts, commercial arts and applied sciences utilized with a set of priorities that are focused firstly on the needs of the end user and functionality, then the market and manufacturing criteria. This course will provide an overview and understanding of the theories, thought processes and methodologies employed in the daily practice of Industrial Design. This includes understanding of ethnographic research and methodologies, product problem solving, creative visual communication, human factors / ergonomics application and formal and surface development in product scale. This course will not enable one to become an industrial designer but will enable one to understand and appreciate what industrial design does, what it can contribute to society and why it is so much fun.</p>						
<b>ARCH 731 001</b>	Experiments in Structure		R9-12	McCleary/AI Khayer	FURN 65	1
<p>This course studies the relationships between geometric space and those structural systems that amplify tension. Experiments using the hand (touch and force) in coordination with the eye (sight and geometry) will be done during the construction and observation of physical models. Verbal, mathematical and computer models are secondary to the reality of the physical model. However these models will be used to give dimension and document the experiments. Team reports will serve as interim and final examinations.</p> <p>In typology, masonry structures in compression (e.g., vault and dome) correlate with "Classical" space, and steel or reinforced concrete structures in flexure (e.g., frame, slab and column) with "Modernist" space. We seek the spatial correlates to tensile systems of both textiles (woven or braided fabrics where both warp and weft are tensile), and baskets (where the warp is tensile and the weft is compressive). In addition to the experiments, we will examine Le Ricolais' structural models held by the Architectural Archives.</p>						
<b>ARCH 732 001</b>	Building Systems Integration		M9-12	Malkawi	MEYH B5	1
<p>This course explores the interrelationships of environmental control systems by means of building type studies. Innovative systems will be emphasized. Projects such as residential, educational and commercial buildings, office and assembly buildings will be analyzed in details. The main principles of "integrated building design" will be illustrated and studied. The relationship between energy conservation and the principles of initial building cost versus life cycle costs will be discussed.</p>						
<b>ARCH 739 401</b>	Building Pathology		F2-5	Henry	MEYH B6	1
<p>This course addresses the subject of building deterioration and intervention, with the emphasis on the technical aspects of deterioration. Construction and reconstruction details and assemblies are analyzed relative to functional and performance characteristics. Case studies cover subsurface conditions, structural systems, wall and roof systems, and interior finishes with attention to performance, deterioration, and stabilization or intervention techniques.</p>						
<b>ARCH 741 001</b>	Architectural Design Innovation		W9-12	Rahim	MEYH B6	1
<p>The mastery of techniques, whether in design, production or both, does not necessarily yield great architecture. As we all know, the most advanced techniques can still yield average designs. Architects are becoming increasingly adept at producing complexity and integrating digital design and fabrication techniques into their design process - yet there are few truly elegant projects. Only certain projects that are sophisticated at the level of technique achieve elegance. This seminar explores some of the instances in which designers are able to move beyond technique, by commanding them to such a degree so as to achieve elegant aesthetics within the formal development of projects.</p>						

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<b>ARCH 743 001</b>	Form and Algorithm		R9-12	Balmond/Snooks	FURN 306	1
<p>A course on the philosophy and generative tools of Informal design, which is defined in terms of non-Cartesian, non-linear geometries and borrows algorithmic procedures from models in mathematics and the physical sciences. The course reviews readings on the topic, introductory instruction in scripting and assignments through which students gain familiarity and skill with specific non-linear models. This seminar meets every other week.</p>						
<b>ARCH 745 001</b>	Nonlinear Systems Biology & Design		R9-12	Sabin/Jones	MEYH B6	1
<p>Systems biology examines the nature of nonlinearities, emergent properties and loosely coupled modules that are the hallmarks of 'complexity'. New models for research and design in architecture have grown in response to radical breakthroughs in technology and an increasing interest in the use of algorithmic and generative tools within the design process. Algorithmic imaging and molecular tools found useful in analyzing nonlinear biological systems may therefore prove to be of value to new directions in design within architecture.</p> <p>This course explores the potential of dialogues between architecture and nonlinear systems biology to gain insight into living systems, develop techniques for digital modeling, and create experimental designs with rigor at various length scales, from the microscopic to the human. Part seminar and part workshop, it serves to deepen knowledge of nonlinear biosynthesis, a synthesis of design thinking and tooling through the study of systems biology. Students will develop a series of digital and physical models through the use of a 3D printer and a diverse range of scripting and modeling techniques in parametric and associative software. The final assignment is a design project with accompanying abstract and report.</p>						
<b>ARCH 765 001</b>	Project Management		F9-11	Arena	MEYH B6	1
<p>This course is an introduction to techniques and tools of managing the design and construction of large, and small, construction projects. Topics include project delivery systems, management tools, cost-control and budgeting systems, professional roles. Case studies serve to illustrate applications. Cost and schedule control systems are described. Case studies illustrate the application of techniques in the field.</p>						
<b>ARCH 768 401</b>	Real Estate Development		W3-6	Donohoe	SHDH 209	1
<p>This course analyzes the development process in terms of the different functions performed by real estate developers and architects, and the interrelationships between these two professions. Emphasis is placed on property evaluation site planning, building design, underlying economics and discounted cash flow analysis. Outside lecturers are featured.</p>						
<b>ARCH 780 001</b>	Architecture in the Schools		TBD	Braham	TBD	1
<b>ARCH 990 001</b>	Master Thesis		TBD	Faculty	TBD	1
<b>ARCH 999 001</b>	Independent Study		TBD	Faculty		1
<p>This course enables student to undertake a self-directed study on a topic in Architecture, under the supervision of a faculty member. Students are required to make a proposal for the study to the Department Chair, outlining the subject and method of investigation, and confirming the course supervisor at least two weeks prior to the beginning of the semester.</p>						

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<b>MS/PhD Courses</b>						
<b>ARCH 811 001</b>	Architectural Research		T1-4	Leatherbarrow	Furness Rare	1
<p>This is a required seminar for first year PhD and M.S. students; also open to upper-level Masters students. This course consists of a series of presentations by members of the Graduate Group in Architecture. Each year the several presentations address a common theme, and demonstrate different methods or styles of research. Readings come from the professor's own writings as well as relevant texts from other scholars. Students lead discussion sessions, write both synopses of the several presentations and a longer text that compares the presentations. This course acts as a foundation for scholarly research and publication.</p>						
<b>ARCH 851 000</b>	Bibliography			Faculty		1
<p>This course is essentially an independent study, undertaken by doctoral students in preparation for the Field Examination. This course should be taken in conjunction with ARCH 852; after all other courses have been completed. Normally a member of the student's Dissertation Committee supervises this course.</p>						
<b>ARCH 852 000</b>	Dissertation Proposal			Faculty		1
<p>This course is essentially an independent study, undertaken by doctoral students in order to write the Proposal for the Dissertation. The Proposal is prepared before and defended during the Field Examination. This course should be taken in conjunction with ARCH 851; after all other courses have been completed. Normally a member of the student's Dissertation Committee supervises this course.</p>						
<b>ARCH 995 001</b>	Dissertation			Faculty		1
<p>Students register for Dissertation once all other course requirements have been completed. Students should also have completed all their required exams before registering for ARCH 995. Students in this course research and write their dissertations under the guidance of their dissertation committees.</p>						
<b>ARCH 996 000</b>	Dissertation Work Abroad		TBD	Faculty		1