

IV.4.2 Course Description

ARCH 121 IA INTRODUCTION TO DESIGN (major sections)

Credits	3 credits; 3 contact hours
Type of Course	Lecture 2 credits, Recitation 1 credit
Required or Elective	Required, designated as a University Inquiry in the Arts Core Course (IA)
Course Description	Introduction to the design and creative process through global architecture and allied professions. Exploration of the history of design. Emphasis on 20th and 21st century architecture. Individual projects where students apply and explore creative process are required.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will understand the methods used to discover and create the factual and theoretical knowledge of our discipline.• Students will understand the social, cultural and aesthetic concepts that generate design strategies and values (Creative Beginnings).• Students will explore the forces shaped design throughout history (Firmness, Commodity and Delight).• Students will learn the relationship between use and aesthetics (Art vs. Design).• Students will learn the theoretical positions that distinguish the post-modern habit of thought and action from modernism (The Particular vs. the Utopian).
Student Performance Criteria	A. 9. Historical Traditions and Global Culture C. 2. Human Behavior
Topical Outline	Lecture's regarding stylistic periods and architects 50% Recitation discussions and production regarding digital programs & applications 15% Reading discussions regarding allied fields 25% Research, writing and graphic presentation regarding 20 th architects/projects 10%
Prerequisites	None
Textbooks/Learning Resources	Clay, Robert, <i>Beautiful Thing, an Introduction to Design</i> (Berg. 2009) Weston, Richard, <i>Key Buildings of the 20th Century</i> (WW Norton. 2004. 2010) Gregory, Rob, <i>Key Contemporary Buildings</i> (WW Norton. 2008)
Dates Offered	Fall, Spring, Summer
Past Instructors	Sean Anderson 2011-2012,
Current Instructors	Ralph Johnson 2008-2013, Maire O'Neill 2008-2013, Chere LeClair 2012-13, Jack Smith 2008, 2009, 2010, 2013

ARCH 121 IA INTRODUCTION TO DESIGN (non-major sections)

Credits 3 credits; 3 contact hours

Type of Course Lecture 2 credits, Recitation 1 credit

Required or Elective Required, designated as a University Inquiry in the Arts Core Course (IA)

Course Description Introduction to the design and creative process through global architecture and allied professions. Exploration of the history of design. Emphasis on 20th and 21st century architecture. Individual projects where students apply and explore creative process are required.

Course Goals & Objectives

- Provide students with an understanding of the methods used to discover and create the factual and theoretical knowledge of the discipline of architecture.
- Expose students from all disciplines to qualitative thinking and problem-solving.
- Challenge students with no prior experience to explore ideas and express themselves in visual media.
- Explore the formation, evolution, and interaction of cultural values as expressed through architectural design internationally.
- Investigate environmental, economic, ethical, cultural/behavioral, and political forces manifest in design solutions, in addition to emerging aesthetic sensibilities.
- Recognize the dichotomy between leading architectural design during the 20th Century and the world the average person inhabited.

Student Performance Criteria

- A. 9. Historical Traditions and Global Culture
- C. 2. Human Behavior

Topical Outline	Reading 2-D architectural drawings as 3-D	20%
	Types of spatial organization, human spatial experience	35%
	Basic structural understanding	5%
	Vernacular building and landscape	10%
	Research and critical thought	20%
	Diagramming - Translation of architectural idea	10%

Prerequisites None

Textbooks/Learning Resources Analyzing Architecture by Simon Unwin, Routledge

Dates Offered Fall, Spring, Summer

Past Instructors Sean Anderson 2011-2012,

Current Instructors Ralph Johnson 2008-2013, Maire O'Neill 2008-2013, Chere LeClair 2012-13, Jack Smith 2008, 2009, 2010, 2013

ARCH 151RA DESIGN FUNDAMENTALS I

Credits 4 credits; 6 contact hours

Type of Course Lecture 2 credits, Studio 2 credits

Required or Elective Required, designated as a University Research in the Arts Core Course (RA)

Course Description A study of the creative design process with emphasis on two-dimensional design, basic three dimensional design concepts and introduction to the essential tools for graphic communication. Development of students' self-critical skills.

Course Goals & Objectives

- Students will develop analytical skills and an ability to establish critical inquiry in drawn and made objects
- Students will develop the capacity to think spatially
- Students will explore various, natural and formal ordering systems and will apply them to 2-dimensional and 3-dimensional design projects
- Students will explore the relationship of human body to the above systems
- Students will develop graphic and model-making skills
- Students will acquire a basic understanding of graphic conventions
- Students will develop the capacity to speak and write about their ideas and work in direct ways

Student Performance Criteria

A. 8. Ordering Systems Skills

Topical Outline	Analytical thinking and critical inquiry through drawing and making	30%
	Understanding and use of ordering systems	30%
	Drawing and model making skills and drawing conventions	25%
	Writing and speaking about students' own work	15%

Prerequisites Consent of Director. Restricted enrollment. Must be admitted into pre-environmental design program or be a landscape design major.

Textbooks/Learning Resources

Architecture Form, Space and Order by Francis D.K. Ching, , John Wiley & Sons Inc.
Design Drawing by Francis D.K. Ching with Steven P. Juroszek, John Wiley & Sons Inc.
101 Things I Learned in Architecture School, Matthew Frederick, MITPress

Dates Offered Fall, Summer

Instructors Heath "Tad" Bradley 2008-2012, Bill Rea 2008-2011, Zuzanna Karczewska 2008-2010, Lindsay Shack 2008, Chere LeClair 2009, Sean Anderson 2010, Jessica Jellison 2011,

Current Instructors Chere LeClair 2013, Elisa Renouard 2012-13, Thomas Allen 2013

ARCH 152 DESIGN FUNDAMENTALS II

Credits	4 credits; 6 contact hours
Type of Course	Recitation 2 credits, Studio 2 credits
Required or Elective	Required
Course Description	A continuation of the study of the design process, introduction to architectonic principles and architectural graphic skills and further understanding of the creative process. Continued development of student's ability to make critical and analytical judgments.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will further develop analytical skills and an ability to establish critical inquiry through drawing and making, in relation to a specific site and place• Students will develop an ability to understand ordering systems existing within a particular place• Students will explore the position of the human body within the place and its systems• Students will develop an ability to abstract the existing ordering system and use it in a design problem.• Students will explore various graphic and modeling techniques and develop a repertoire of presentation techniques
Student Performance Criteria	A. 8. Ordering Systems Skills
Topical Outline	Analytical thinking and critical inquiry (through drawing and making) into a particular place 30% Understanding, analysis and abstracting of existing ordering systems 45% Drawing, modeling and presentation techniques 25%
Prerequisites	ARCH 151RA or advanced placement based on approved portfolio; pre-environmental design and landscape design majors only.
Textbooks/Learning Resources	Architecture Form, Space and Order by Francis D.K. Ching <i>Design Drawing</i> by Francis D.K. Ching with Steven P. Juroszek <i>The Eyes of the Skin: Architecture and the Sense</i> , Juhani Pallasmaa
Dates Offered	Spring, Summer
Past Instructors	Heath "Tad" Bradley 2009-2012, Bill Rea 2009-2011, Lindsay Shack 2009-2010, Jessica Jellison 2012-2013
Current Instructors	Zuzanna Karczewska 2009-2014, Elisa Renouard 2014, Gretchen Miller 2014

ARCH 241 BUILDING CONSTRUCTION I

Credits 3 credits; 3 contact hours

Type of Course Lecture 2 credits, Recitation 1 credit

Required or Elective Required

Course Description Introduction to the materials of construction and an overview of building construction systems. Emphasis upon an understanding of materials and systems as a means to effective and creative design utilization.

Course Goals & Objectives

- Students will have the ability to gather, assess, record, apply and compare relevant information on building construction systems and assemblies.
- Students will understand the basic principles involved in the appropriate application of building envelope systems.
- Students will understand the basic principles utilized in making the appropriate selection of construction materials, products, components and assemblies.
- Students will collaborate with others in multidisciplinary teams
- Students will understand the responsibility to elicit, understand and reconcile the needs of the client, owner, user groups and public/community domains
- Students will understand the techniques and skills used to work collaboratively in the building design and construction process.

Student Performance Criteria

- A.5. Investigative Skills
- B. 11. Building Service Systems
- B. 12. Building Materials and Assemblies
- C. 1. Collaboration
- C. 3. Client Role in Architecture
- C. 6. Leadership

Topical Outline	Investigative Skills	15%
	Building Envelope Systems	30%
	Building materials and Assemblies	30%
	Collaboration	15%
	Client Role in Architecture	5%
	Leadership	5%

Prerequisites None

Textbooks/Learning Resources

Building Construction: Principles, Materials, & Systems (2nd Edition) by Medan Mehta Ph.D., Walter Scarborough and Diane Arm Priest

Dates Offered Fall

Instructors Tom McNab 2005-2013, Bradford Watson 2012-13

ARCH 243 (343) ARCHITECTURAL STRUCTURES I

Credits 4 credits; 5 contact hours

Type of Course Lecture 3 credits, Recitation 1 credit

Required or Elective Required

Course Description Introduction to structural design/analysis of horizontal and vertical members as applied to architectural works; basic statics, moment and shear of rigid bodies and architectural forms; strength concepts using stress and strain assessment; application of analytical and intuitive structural concepts in a design context.

Course Goals & Objectives

- Students will understand the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.
- Students will understand the basic principles utilized in the appropriate selection of construction materials, products, components, and assemblies, based on their inherent characteristics and performance.
- Students will be able to use structural principles to shape each structure to respond effectively to the forces that it must withstand and the human activities that it involves.
- Students will be able to work in collaboration with others and in teams to successfully complete design projects.

Student Performance Criteria

B. 9. Structural Systems

Topical Outline	Elements of Structures	10%
	Tension and Compression	15%
	Equilibrium	15%
	Internal Forces & Moments	25%
	Material Properties	10%
	Beams and Columns	15%
	Rigid Frames	10%

Prerequisites M 151Q or M171Q and PHSX 205, Admission into Environmental Design Program

Textbooks/Learning Resources

[The Structural Basis of Architecture](#) by Bjorn N. Sandaker, Arne P. Eggen and Mark R. Cruvellier
[Structures \(7th Edition\)](#) by Daniel Schodek and Martin Bechthold

Dates Offered Fall

Past Instructors Bruce Wrightsman 2008-2012

Current Instructors Xuemie Li 2013

ARCH 244(344) ARCHITECTURAL STRUCTURES II

Credits 4 credits; 5 contact hours

Type of Course Lecture 3 credits, Recitation 1 credit

Required or Elective Required

Course Description Understanding of design for structural elements in wood, steel, masonry, and concrete. Lateral considerations and calculations including wind, soil and seismic loads. Understanding of structural systems; building systems; diaphragms; connections; structural engineer-architect communications.

Course Goals & Objectives

- Students will gather, assess, record, apply, and comparatively evaluate relevant information within architectural structures coursework and design processes.
- Students will examine and comprehend the fundamental principles present in relevant structures precedents and be able to make choices regarding the incorporation of such principles into the structural design of architecture and urban design projects
- Students will comprehend the role of applied research in determining structural function, form, and systems and their impact on human conditions and behavior.
- Students will understand the basic principles of structural behavior in withstanding gravity and lateral forces and the evolution, range, and appropriate application of contemporary structural systems.
- Students will understand the basic principles utilized in selecting construction materials, products, components, and assemblies, based on their inherent characteristics and performance, including their environmental impact and reuse with a focus on architectural structures.

Student Performance Criteria

B. 9. Structural Systems

Topical Outline	Connections, Deflection	15%
	Shear	10%
	Lateral Resisting Systems	15%
	Seismic and Wind	20%
	Steel Systems	10%
	Wood Systems	10%
	Concrete Systems	10%
	Foundations	10%

Prerequisites ARCH 243

Textbook/Learning Resources

The Structural Basis of Architecture by Bjorn Sandaker
The Architects Studio Companion by Edward Allan and Joseph Iano

Dates Offered Spring

Past Instructors Bill Rea 2004-2013

Current Instructors Xuemie Li 2014

ARCH 253 ARCHITECTURAL DESIGN I

Credits 5 credits; 10 contact hours

Type of Course Recitation 1 credits, Studio 4 credits

Required or Elective Required

Course Description Small-scale design projects requiring integration of spatial, visual concepts, emphasizing relationship of architecture to its context with principles of order, constituents of form, light, structural awareness, nature of materials, architectural coherency. Includes inclusive orthographic graphics design drawing conventions.

Course Goals & Objectives

- Students will have the ability to use appropriate representational media, such as traditional graphic and digital technology skills, to convey essential formal elements at each stage of the programming and design process.
- Students will have the ability to effectively use basic architectural and environmental principles in design
- Students will have the ability to examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design
- Students will have the ability to respond to site characteristics such as soil, topography, vegetation, and watershed in the development of the project.
- Students will have an understanding of how to apply the basic principles of life-safety systems with an emphasis on egress.
- Students will have an understanding of the basic principles of structural behavior in withstanding gravity and lateral forces

Student Performance Criteria

A. 6. Fundamental Design Skills B. 4. Site Design
A. 7. Use of Precedents

Topical Outline

Lecture's regarding life safety and structural systems	5%
Reading & discussions regarding architectural methods and philosophy	10%
Site analysis and precedent research	10%
Design	75%

Prerequisites ARCH 152, Admission into the environmental design program.

Textbooks/Learning Resources

Building Construction Illustrated, by Francis D.K. Ching
Diagramming the Big Idea by Jeffrey Balmer and Michael Swisher
In Praise of Shadows by Junichiro Tanizak

Dates Offered Spring

Past Instructors David Fortin 2009-2010, Chere LeClair 2009-2010, Heath "Tad" Bradley 2009-2012, Angie Keesee 2009, 2011, Tammy Minge 2009, Jessica Jellison 2009, Maire O'Neill 2010, 2012, Mara Gai Katz 2011, Henry Sorenson 2012

Current Instructors Ralph Johnson 2009-13, Faith Rifki 2012-13, Elisa Renouard 2013, Xuemei Li 2013

ARCH 261

ARCHITECTURAL GRAPHICS I

Credits

3 credits; 5 contact hours

Type of Course

Lecture 1 credit, Studio 2 credits.

Required or Elective

Required

Course Description

Fundamental techniques in architectural graphics. Course utilizes observation and design drawing studios supplemented by design drawing lecture/demonstration sessions. Topics include freehand observation drawing and constructed multi-view, paraline, perspective and shade/shadow drawing leading towards the formal graphic presentation of architectural intentions.

Course Goals & Objectives

- Students will learn and explore various techniques in drafted drawing with focus on orthographic and oblique projection
- Students will use orthographic and oblique drawing as design tools, in direct application to a design project
- Students will explore various free-hand drawing techniques and media
- Students will apply free-hand drawing as a tool of inquiry and analysis

Student Performance Criteria

A. 3. Visual Communication Skills

Topical Outline

Orthographic and oblique drawing	25%
Design Drawing	25%
Sketch Perspective	25%
Free-hand drawing	25%

Prerequisites

Admission into Environmental Design Program

Corequisites

Arch 243

Textbooks/Learning Resources

Drawing from the Mind's Eye by Henry Sorenson
ARCH 261 Course Reader by Henry Sorenson

Dates Offered

Fall

Instructors

Henry Sorenson 2008-2011, 2013, Zuzanna Karczewska 2008-2013, Jessica Jellison 2009, 2012

ARCH 262 ARCHITECTURAL GRAPHICS II

Credits	3 credits; 5 contact hours
Type of Course	Lecture 1 credit, Studio 2 credits
Required or Elective	Required
Course Description	Basic techniques in architectural graphic expression. Course emphasizes observation drawing studio supplemented by design drawing lecture/demonstration sessions. Topics include freehand, perspective, and shade and shadow drawing techniques. Two and three-dimensional digital applications introduced. Notebook computer required.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will utilize drawing as a means for communication, speculation and generation in the design process• Students will understand and be able to utilize drawing conventions and architectural graphic techniques• Students will develop observation drawing skills• Students will be able to develop 3D digital models• Students will learn to operate digital fabrication tools: laser cutter and 3D printer.• Students will develop digital diagrams using vector based software, desktop publishing software and image processing software.
Student Performance Criteria	A. 3. Visual Communication Skills
Topical Outline	Exterior line drawings 10% Exterior tone drawings 10% Exterior wash drawings 15% Exterior design drawing 15% 3D modeling 25% Digital Fabrication 15% Digital Diagramming 10%
Prerequisites	ARCH 261
Corequisites	ARCH 253
Textbooks/Learning Resources	Drawing from the Mind's Eye by Henry Sorenson <i>ARCH 261 Course Reader</i> by Henry Sorenson On-line video tutorials by Steve Juroszek
Dates Offered	Spring
Instructors	Henry Sorenson 2008-2012, Steve Juroszek 2008-2012

ARCH 313 (413) PROFESSIONAL PRACTICE

Credits 3 credits; 4 contact hours

Type of Course Lecture 2 credit, Studio 1 credits

Required or Elective Required

Course Description Architecture as a process by which social, economic, and environmental ideas are realized. Topics include: marketing, business planning, project management, legal issues, delivery methods, technology, regulation, ethics, accessibility, interdisciplinary relations, community relations, client relations, and trends of practice. Notebook computer required.

Course Goals & Objectives

- Students will understand the fundamentals of building costs, such as acquisition costs, project financing and funding, financial feasibility, operational costs, and construction estimating with an emphasis on life-cycle cost accounting.
- Students will understand the responsibility of the architect to elicit, understand, and reconcile the needs of the client, owner, user groups, and the public and community domains.
- Students will understand the methods for competing for commissions, selecting consultants and assembling teams, and recommending project delivery methods.
- Students will understand the basic principles of architectural practice management such as financial management and business planning, time management, risk management, mediation and arbitration, and recognizing trends that affect practice.
- Students will understand the techniques and skills architects use to work collaboratively in the building design and construction process and on environmental, social, and aesthetic issues in their communities.
- Students will understand the architect’s responsibility to the public and the client as determined by registration law, building codes and regulations, professional service contracts, zoning and subdivision ordinances, environmental regulation, and historic preservation and accessibility laws.
- Students will understand the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.

Student Performance Criteria	B. 7. Financial Considerations	C. 6. Leadership
	C. 3. Client Role in Architecture	C. 7. Legal Responsibilities
	C. 4. Project Management	C. 8. Ethics and Professional Judgment
	C. 5. Practice Management	

Topical Outline	Building Costs and Financial Considerations	15%
	Client Role in Architecture	15%
	Project Management	15%
	Business Management, Leadership and Collaboration	35%
	Legal Responsibilities, Ethics and Professional Judgment	20%

Prerequisites None

Textbooks/Learning Resources *The Architects Handbook of Professional Practice*, Student Edition. The American Institute of Architects, Edited by Joseph A. Demkin (required text)
Ethics for Architects: 50 Dilemmas of Professional Practice (Architecture Briefs) by Fisher
Professional Practice: A Guide to Turning Designs into Buildings by Paul Segal

Dates Offered Fall

Instructors Mike Everts

ARCH 322IA WORLD ARCHITECTURE I

Credits	3 credits; 3 contact hours										
Type of Course	Lecture 3 credits										
Required or Elective	Required, designated as a University Inquire in the Arts Core Course										
Course Description	A survey of world architectural history from primitive developments to the Gothic.										
Course Goals & Objectives	<p>Upon completion of this course, students will:</p> <ul style="list-style-type: none">• Demonstrate an understanding of the connection between architecture and social, cultural, and environmental contexts;• Demonstrate an understanding of how architectural works reflect the philosophies, religions, politics, and societal needs of various cultures;• Demonstrate the ability to conduct independent historical research and analysis of architectural works;• Demonstrate the ability to communicate analytical ideas both through writing and graphics;• Be able to identify major works of architecture by key stylistic elements, tectonic character, time period, and geographic location;• Employ the correct technical terminology in speaking and writing about historic works of architecture;• Demonstrate an understanding of tectonic evolution as a response to cultural and environmental needs.										
Student Performance Criteria	<p>A. 9. Historical Traditions and Global Culture A. 10. Cultural Diversity C. 2. Human Behavior</p>										
Topical Outline	<table><tr><td>Primitive and Ancient</td><td>35%</td></tr><tr><td>Asian and Persian</td><td>10%</td></tr><tr><td>Greek and Roman</td><td>30%</td></tr><tr><td>Early Christian, Byzantine, Romanesque and Gothic</td><td>15%</td></tr><tr><td>Islamic</td><td>10%</td></tr></table>	Primitive and Ancient	35%	Asian and Persian	10%	Greek and Roman	30%	Early Christian, Byzantine, Romanesque and Gothic	15%	Islamic	10%
Primitive and Ancient	35%										
Asian and Persian	10%										
Greek and Roman	30%										
Early Christian, Byzantine, Romanesque and Gothic	15%										
Islamic	10%										
Prerequisites	Junior standing for non-majors, sophomore standing for majors, ENGL 121W.										
Textbooks/Learning Resources	<p>A History of Architecture: Settings and Rituals by Spiro Kostof, Gregory Castillo and Richard Tobias <i>Sir Banister Fletcher's A History of Architecture.</i> (Twentieth Edition) by Dan Cruickshank, Sir Banister Fletcher, Andrew Saint and Kenneth Frampton</p>										
Dates Offered	Fall										
Past Instructors	Jack Smith 2008-2010, Sean Anderson 2011,										
Current Instructor	Elisa Renouard 2012-13										

ARCH 331 ENVIRONMENTAL CONTROLS I

Credits 4 credits; 4 contact hours

Type of Course Lecture 4 credits

Required or Elective Required

Course Description Analysis and design of basic heating, ventilating, and air-conditioning systems. Analysis and design of water supply, sanitation, and vertical transportation systems. Notebook computer required.

Course Goals & Objectives

- To gain an awareness and understanding of the local and global energy impacts of buildings and the affect of design decisions on energy use patterns.
- To understand human thermal comfort requirements and the basic heat flow mechanisms that occur in buildings as the result of design decisions and construction practices.
- To understand the passive heating and cooling strategies available to the designer which help to minimize energy consumption and contribute to a sustainable future.
- To be able to calculate basic heat loss and heat gain through the complete building envelope.
- To understand the general heating and cooling systems available today and to be able to preliminarily size the systems.
- To gain enough of an understanding of HVAC and water systems that you will be able to effectively communicate with mechanical and plumbing consultants and installers.
- To understand the importance of water quality and conservation practices in building design.

Student Performance Criteria

B. 8. Environmental Systems
B. 11. Building Service Systems

Topical Outline	HVAC	56%
	Plumbing	24%
	Vertical Transportation	20%

Prerequisites M150Q or M170Q

Textbooks/Learning Resources

Mechanical and Electrical Equipment for Buildings by Stein, Reynolds, Grondzi and Kwok

Dates Offered Fall

Past Instructors Tom Wood 1994-2012

Current Instructors Gretchen Miller 2013

ARCH 332 ENVIRONMENTAL CONTROLS II

Credits 4 credits; 4 contact hours

Type of Course Lecture 4 credits

Required or Elective Required

Course Description Analysis and design of architectural lighting systems, acoustics, electrical systems, fire protection, and signal-systems. Notebook computer required.

Course Goals & Objectives

- To understand both the physics and psychology of light so that your designs might be enlivened and enhanced by the proper use of daylight and electric light.
- To understand the characteristics of the available light sources so that the proper balance of color rendering, illumination, and energy conservation may be achieved
- To understand the elements and design of electrical power distribution systems commonly used in buildings today.
- To understand the behavior of sound within and between rooms and to design spaces that properly reinforces sound and/or blocks noise
- To understand the basic fire detection and suppression systems available today and to understand the role of design in occupant safety.

Student Performance Criteria

B. 8. Environmental Systems
B. 11. Building Service Systems

Topical Outline	Lighting	44%
	Acoustics	24%
	Electrical	18%
	Photovoltaic	2%
	Signal	4%
	Fire Protection	8%

Prerequisites M151Q or M171Q, ARCH 331

Textbooks/Learning Resources

Mechanical and Electrical Equipment for Buildings by Stein, Reynolds, Grondzi and Kwok

Dates Offered Spring

Instructors Tom Wood

ARCH 354 (254) ARCHITECTURAL DESIGN II

Credits	5 credits; 10 contact hours
Type of Course	Recitation 1 credit, Studio 4 credits
Required or Elective	Required
Course Description	Small-to medium-size projects extending the development of the design process to site and adjacency analysis, diagramming, fundamental relationship to landscape and context. Topics include hybrid uses of hand and digital graphic communication including 2D and 3D drawing, and modeling. Field trip required.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will demonstrate the ability to gather, assess, record, apply, and comparatively evaluate relevant information within architectural coursework and design processes.• Students will develop a comprehensive program for an architectural project• Students will develop a site design for a project that responds to the specific site conditions• Students will design and present a small to medium scale architectural project located within an urban context.
Student Performance Criteria	A. 7. Use of Precedents B. 2. Accessibility B. 5. Life Safety
Topical Outline	Research 10% Precedents – SPC A.7. 10% Site analysis 10% Conceptual design 15% Design development 25% Accessibility – SPC B.2. 10% Life safety – SPC B.5. 10% Presentation 10%
Prerequisites	ARCH 253
Corequisites	ARCH 241 and ARCH 363
Textbooks/Learning Resources	The Architect's Studio Companion: Rules of Thumb for Preliminary Design by Edward Allen and Joseph Iano The Diagrams of Architecture: AD Reader by Mark Garcia Materials, Structures, and Standards: All the Details Architects Need to Know But Can Never Find by Julia McMorrough
Dates Offered	Fall
Past Instructors	Maire O'Neill 2008, 2010, Bruce Wrightsman 2008, 2010-2012, David Fortin 2008-2010, 2012, Chere LeClair 2008-2010, Heath "Tad" Bradley 2008-2009, Bill Rea 2008, 2010, Michael Shephard 2008, Steve Juroszek 2009, Jack Smith 2009, Tyler Call 2009, Angie Keese 2010, Keith Anderson 2010, Chris Livingston 2011-2012, Fatih Rifki 2011, Bradford Watson 2012
Current Instructors	John Brittingham, Zuzanna Karczewska 2011-2013, Bradford Watson, Xuemei Li

ARCH 355 ARCHITECTURAL DESIGN III

Credits	5 credits; 10 contact hours		
Type of Course	Lecture 1 credits, Studio 4 credits		
Required or Elective	Required		
Course Description	Further exploration of ecologically-sound design with emphasis on the integration of structures, building envelope service systems, and building materials, including design for life safety and accessibility. Building scale and program complexity increases, utilizing long-span structural systems. Notebook computer required. Field trip required.		
Course Goals & Objectives	<ul style="list-style-type: none"> • Students will investigate and apply relevant information related to a design project • Students will develop a comprehensive program for an architectural project • Students will develop a site design for a project that responds to the specific site conditions • Students will apply basic principles of life-safety systems with an emphasis on egress. • Students will design and present a small to medium scale architectural project located within an urban context. • Students will understand the ethical issues involved in forming professional judgment regarding architectural design and practice and the architect's responsibility to respect resources and improve the quality of life. 		
Student Performance Criteria	A.5. Investigative Skills	B. 5. Life Safety	
	B.1 . Pre-Design		C. 8. Ethics and Professional Judgment
	B. 4. Site Design		C.9. Community and Social Responsibility
Topical Outline	Research + precedents	5%	Design development
	Investigative skills - A.5.	5%	Life safety - B.5.
	Pre-design - B.1.	10%	Ethics – C.8
	Conceptual design	10%	Community – C.9
	Site design - B.4.	20%	Presentation
			10%
Prerequisites	ARCH 354		
Textbooks/Learning Resources	History of Cohousing-Internationally and in Sweden by Dick Vestbo <i>Reality Check</i> by Laura Cooper, Master's Project Research, 1996		
Dates Offered	Spring		
Past Instructors	Maire O'Neill 2009, 2012, Chris Livingston 2009, Chere LeClair 2009-2010, Michael Shephard 2009, Josh Vernon 2009, Tyler Call 2009, Michael Everts 2010-2011, Bill Rea 2010, Steve Juroszek 2010, Sean Anderson 2011-2012, David Fortin 2011, Mara Gai Katz 2011,		
Current Instructors	John Brittingham 2010-13, Barry Newton 2010-2011, 2013, Jack Smith 2009-2012, Bruce Wrightsman 2010-2013, Maire O'Neill 2013		

ARCH 363 ARCHITECTURAL GRAPHICS III

Credits	3 credits; 5 contact hours												
Type of Course	Lecture 1 credit, Studio 2 credits.												
Required or Elective	Required												
Course Description	Advanced principles of computer-aided design and hand applications in architectural practice, including three-dimensional computer-aided design, hand and digital delineation, and presentations. Topics provide foundation for graphic applications in ARCH 354 design studio.												
Course Goals & Objectives	<ul style="list-style-type: none">• Students will utilize drawing as a means for communication, speculation and generation in the design process• Students will understand and be able to utilize drawing conventions and architectural graphic techniques• Students will develop observation drawing skills• Students will develop a building information model• Students will create presentation renderings and presentation boards• Students will prepare an abridged set of construction drawings												
Student Performance Criteria	A. 3. Visual Communication Skills												
Topical Outline	<table><tr><td>Interior line drawings</td><td>10%</td></tr><tr><td>Interior tone drawings</td><td>10%</td></tr><tr><td>Interior wash drawings</td><td>15%</td></tr><tr><td>Interior design drawing</td><td>15%</td></tr><tr><td>Building Information Modeling</td><td>35%</td></tr><tr><td>Rendering</td><td>15%</td></tr></table>	Interior line drawings	10%	Interior tone drawings	10%	Interior wash drawings	15%	Interior design drawing	15%	Building Information Modeling	35%	Rendering	15%
Interior line drawings	10%												
Interior tone drawings	10%												
Interior wash drawings	15%												
Interior design drawing	15%												
Building Information Modeling	35%												
Rendering	15%												
Textbooks/Learning Resources	ARCH 363 Course Manual by Henry Sorenson On-line video tutorials by Steven P. Juroszek												
Prerequisites	ARCH 262												
Corequisites	ARCH 354												
Dates Offered	Fall												
Past Instructors	Josh Vernon 2009, Jessica Jellison 2010, Lindsay Shack 2012												
Current Instructors	Steven Juroszek 2009-2013, Henry Sorenson 2009-2011, 2013, Elisa Renouard 2013, Xuemei Li 2013												

ARCH 456 (356) ARCHITECTURAL DESIGN IV

Credits	5 credits; 10 contact hours
Type of Course	Lecture 1 credit, Studio 4 credits
Required or Elective	Required
Course Description	Senior capstone course. Architectural design integrating building, landscape, and urban context using multi-story projects of medium scale and complexity with particular focus on mixed-use. Integrated topics include programming, structural and mechanical integration, ecologically-sound design, building envelope systems and building codes.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will have the ability to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards.• Students will understand the role applied research plays in determining function, form, and systems and their impact on human conditions and behavior.• Students will prepare a comprehensive program for an architectural project, such as preparing an assessment of client and user needs, an inventory of space and equipment requirements, an analysis of site conditions (including existing buildings), a review of the relevant laws and standards and assessment of their implications for the project, and a definition of site selection and design assessment criteria.• Students will be able to design projects that optimize, conserve, or reuse natural and built resources, provide healthful environments for occupants/users, and reduce the environmental impacts of building construction and operations on future generations.
Student Performance Criteria	A.1. Communication Skills A.1.1. Applied Research B. 3. Sustainability
Topical Outline	Lectures on urban responsibilities, energy, building enclosure, structural systems 5% Readings on characters and impact of tall building 10% Site analysis and precedent research 10% Project design 75%
Prerequisites	ARCH 355
Textbooks/Learning Resources	The Heights: Anatomy of a Skyscraper by Kate Ascher <i>Tall Buildings</i> by Harriet Schoenholz Bee
Dates Offered	Fall, Summer (no longer offered starting 2013)
Past Instructors	Jack Smith 2008, Angie Keesee 2008, Michael Shephard 2008, Sean Anderson 2008, Barry Newton 2008-2012, Ralph Johnson 2009-2010, 2012, Chris Livingston 2009, Ferd Johns 2009, Bill Rea 2009, 2012, Chere LeClair 2010-2011, Mike Everts 2011, Pravin Bhiwapurkar 2012, Robert Aydlett 2012, Peter Kommers 2008-2011
Current Instructors	Ralph Johnson, Tom Wood, John Brittingham, Barry Newton, Thomas Allen

ARCH 551 ADVANCED ARCHITECTURAL STUDIO

Credits	6 credits, 10 contact hours
Type of Course	Recitation 2 credits, Studio 4 credits
Required or Elective	Required
Course Description	Design projects which explore specific critical positions with regard to contemporary architectural issues. Research and analysis of theoretical positions are emphasized along with the development of contemporary methods, models and techniques for analysis.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will be able to read, comprehend and analyze texts on a specialized topic in preparation for developing a critical position for their design studio project• Students will be able to prepare visual drawings and diagrams to analyze and communicate their research findings.• Students will be able to undertake a research or design project to explore conceptual and schematic design topics.
Student Performance Criteria	A. 2. Design Thinking Skills A.11. Applied Research
Topical Outline	Will vary with instructor and project but a general example is: Reading and Research 30% Conceptual Design 20% Schematic Design/Experimentation 35% Presentation 15%
Prerequisites	ARCH 557
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring, Summer
Past Instructors	LAN 2008, 2011, John Brittingham 2008, 2010,-2012, Chris Livingston 2008-2011, Michael Everts 2008-2009, Chere LeClair 2008-2009, Zuzanna Karczewska 2009, Joel Jahnke 2009, Ken VanDeWalle 2009, , Coleman Coker 2010, Barry Newton 2010, 2012, Maire O'Neill 2011, Henry Sorenson 2011, Lance Waters 2011, Brian Brush/ Young Ju Lee 2011, Jessica Jellison 2011, Ralph Johnson 2011, David Fortin 2011, Bruce Wrightsman 2009,2012, Ron Shvartsman 2012, Brian Brush/ Carson Smuts 2012, Fatih Rifki 2012, Mike Patterson 2012
Current Instructors	Bill Rea 2013, Jack Smith 2009,2011-2013, Gretchen Miller 2013

ARCH 552 ARCHITECTURAL RESEARCH METHODS

Credits	3 credits, 3 contact hours
Type of Course	Lecture 1 credit, Recitation 2 credits
Required or Elective	Required
Course Description	An examination of the types of inquiry used to conduct architectural research. Students will engage in initial studies of traditional and non-traditional research methods in architecture and its related fields followed by an individual research project.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will further develop their abilities to read, write, speak and listen effectively• In this course students will learn to gather, assess, record, apply, and comparatively evaluate relevant information and be able to apply this ability in their graduate architectural coursework and design studios• Students will further their understanding of the role of applied research in determining function, form, and systems and their impact on human conditions and behavior• Students will understand the ethical issues involved in the formation of professional judgment regarding social, political and cultural issues in architectural design and practice.
Student Performance Criteria	A.1. Communication Skills C.8. Ethics and Professional Judgment
Topical Outline	Systems of Inquiry as the Epistemological Basis of Research; Precedent Studies and Literature Review as the Critical Step in Research; and Role and Scope of Theory in Design Research Strategies 33% Research Strategies 66% (Interpretive Research; Logical Argumentation; Qualitative Research; Correlation Research; Experimental Research; Simulation; and Case Studies)
Prerequisites	Graduate standing or seniors by petition
Textbooks/Learning Resources	Research Design: Qualitative, Quantitative, and Mixed Methods Approaches by John W. Creswell
Dates Offered	Fall, Spring
Past Instructors	Robert Aydlett 2012
Instructors	Fatih Rifki 2012-14

ARCH 557 ARCHITECTURAL DESIGN STUDIO

Credits	6 credits; 10 contact hours
Type of Course	Lecture 2 credit, Studio 4 credits
Required or Elective	Required
Course Description	Advanced architectural design projects integrating site analysis, programming, building systems, and contemporary design theory. Emphasis placed on the synthesis of conceptual processes, analysis, preliminary design investigation, and design development. Field Trip required.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will produce an advanced architectural design project integrating site analysis, programming, building systems, review of relevant laws and standards and contemporary design theory.• Students will be able to synthesis conceptual processes, analysis, preliminary design investigation, and design development.
Student Performance Criteria	A. 6. Fundamental Design Skills B. 1. Pre-Design
Topical Outline	Site analysis 15% Contemporary design theory 5% Precedent research 5% Conceptual design 20% Design development 55%
Prerequisites	ARCH 456 and Graduate standing
Textbooks/Learning Resources	Varies with each course offering and section
Dates Offered	Fall, Spring
Past Instructors	Jack Smith 2012, John Brittingham 2012, David Fortin 2012, Chere LeClair 2012
Current Instructors	Maire O'Neill 2013, Jack Smith 2013

ARCH 558 COMPREHENSIVE DESIGN STUDIO

Credits	6 credits										
Type of Course	Lecture 2 credit, Studio 4 credits										
Required or Elective	Required										
Course Description	Comprehensive architectural studio which integrates design thinking and investigative skills with site design, accessibility and life safety, sustainability and environmental, and structural systems in the design and presentation of a programmatically complex building.										
Course Goals & Objectives	<ul style="list-style-type: none">• Students will develop a comprehensive design project which investigates issues of materiality, human activity, site conditions, and history/theory.• Students will undertake research and analysis as well as investigations of issues related to their design project.• Students will develop technical documentation that articulate the building systems, including environmental systems and structural systems, within their building design• Students will identify conservation and reuse of natural and built resources within their design project• Students will develop a site plan that responds to new and preserved landscapes, vegetation and on-site water management.• Students will demonstrate an understanding of life safety requirements with an emphasis on egress.										
Student Performance Criteria	B. 6. Comprehensive Design										
Topical Outline	<table><tr><td>Research</td><td>20%</td></tr><tr><td>Site analysis</td><td>10%</td></tr><tr><td>Precedent research</td><td>5%</td></tr><tr><td>Conceptual design</td><td>15%</td></tr><tr><td>Design development</td><td>50%</td></tr></table>	Research	20%	Site analysis	10%	Precedent research	5%	Conceptual design	15%	Design development	50%
Research	20%										
Site analysis	10%										
Precedent research	5%										
Conceptual design	15%										
Design development	50%										
Prerequisites	ARCH 551										
Textbooks/Learning Resources	Varies with course offering and instructor										
Dates Offered	Fall, Spring, Summer										
Past Instructors	John Brittingham 2008-2010, 2012 Sean Anderson 2009, Michael Shephard 2009, Barry Newton 2010-2011, Michael Everts 2010, Chere LeClair 2011-2012										
Instructors	Ralph Johnson 2011-13, Jack Smith 2008-2013, Christopher Livingston 2013										

ARCH 590 MASTER'S THESIS (this class offering ended Spring of 2012)

Credits	1-10 credits, maximum credits unlimited
Type of Course	Individual Study
Required or Elective	Required prior to 2010
Catalogue Description	--
Course Goals & Objectives	<ul style="list-style-type: none">• Students will be able to independently pursue an architectural investigation of the student's own choosing.• Students will be able to synthesis their design education as an exploration of new ideas or opportunities in the field of architecture.
Student Performance Criteria	B. 6. Comprehensive Design
Topical Outline	Varies with each student and advisor
Prerequisites	Master's standing
Textbooks/Learning Resources	Varies with each student and advisor
Dates Offered	Fall, Spring, Summer
Instructors	All tenured, tenure-track and full time adjunct faculty

Fourth Year Studio Options

Students choose from one of the fourth year studio course offerings listed on the following pages—ARCH 44, ARCH 450, ARCH 458 and ARCH 490. Because our students do not take a common studio option, we have not listed the Studio Options as meeting any of the Student Performance Criteria for our degree. However, we see these studios as very strong enrichment experiences for all of our students.

ARCH 414 ARCHITECTURAL STUDY ABROAD

Credits	9 credits												
Type of Course	Lecture 6 credits, Independent Study 3 credits												
Required or Elective	Fourth Year Design Studio Option – one of four design studio options that students choose from as part of their fourth year curriculum.												
Course Description	Structured study in foreign countries under the direction of an architecture faculty member to obtain an understanding of modern and historical architecture and the forces shaping them. Holistic study of urban environments combines design, urban design, architectural history, drawing, and pre-travel design and research. Itineraries include opportunities for additional destinations and independent travel.												
Course Goals & Objectives	<p>At the conclusion of this course, students will:</p> <ul style="list-style-type: none">• Gain knowledge about the architecture of the specific countries and places that were a part of the itinerary for their study abroad semester.• Learn about the cultures the specific counties and people that were a part of their itinerary for their study abroad semester.• Develop illustrative skills for in-depth perception, critical analysis, and understanding of space• Develop an understanding of the nature of the relationship between built form and economics, politics, social issues, cultural issues and function.• Develop skills for critiquing architecture and analyzing what creates successful architectural and urban space												
Student Performance Criteria	<p>A. 3. Visual Communication Skills A.6. Fundamental Design Skills A.9. Historical Traditions and Global Culture C.2. Human Behavior</p>												
Topical Outline	<p>Topical outline can vary with each course offering, itinerary and instructor. One example outline is:</p> <table><tr><td>Exploration of Cities</td><td>15%</td></tr><tr><td>Site Research</td><td>10%</td></tr><tr><td>Site planning and conceptual Design</td><td>15%</td></tr><tr><td>Schematic Design</td><td>25%</td></tr><tr><td>Presentation</td><td>5%</td></tr><tr><td>Independent Travel and Sketching</td><td>30%</td></tr></table>	Exploration of Cities	15%	Site Research	10%	Site planning and conceptual Design	15%	Schematic Design	25%	Presentation	5%	Independent Travel and Sketching	30%
Exploration of Cities	15%												
Site Research	10%												
Site planning and conceptual Design	15%												
Schematic Design	25%												
Presentation	5%												
Independent Travel and Sketching	30%												
Prerequisites	ARCH 355												
Corequisite	ARCH 428												
Textbooks/Learning Resources	Varies with each course offering and instructor.												
Dates Offered	Spring, Summer												
Instructors	John Brittingham 2013, Henry Sorenson 2009, 2013, Zuzanna Karczewska 2013, Fatih Rifki 2011, 2013, Mike Everts 2012, David Fortin 2012, Peter Kommers 2007-12, Maire O’Neill 2011-12, Steve Juroszek 2012, Christopher Livingston 2008-2009												

ARCH 450 COMMUNITY DESIGN CENTER

Credits	5 credits, 12 contact hours												
Type of Course	Lecture 1 credit, Studio 4 credits												
Required or Elective	Fourth Year Design Studio Option – one of four design studio options that students choose from as part of their fourth year curriculum.												
Course Description	The Community Design Center (CDC) assists public and non-profit groups by providing planning, programming, and conceptual design ideas. Emphasis and scope of projects are determined by the community needs. Projects are intended to complement and promote the professional practice of architecture in the State of Montana.												
Course Goals & Objectives	<p>At the conclusion of this course, students will</p> <ul style="list-style-type: none">• Be able to work in a collaborative professional practice experience• Be able to determine appropriate design proposals and meet production schedules• Conduct meetings and presentations with project clients• Use graphic communication to present information and alternatives to clients and team members												
Student Performance Criteria	<p>A.5. Investigative Skills A. 6. Fundamental Design Skills C. 1. Collaboration C. 8. Ethics and Professional Judgment C.9. Community and Social Responsibility</p>												
Topical Outline	<p>Topic outline will vary depending upon specific project undertaken in CDC, but a general outline would be as follows:</p> <table><tr><td>Client meetings and site visits</td><td>10%</td></tr><tr><td>Project research</td><td>20%</td></tr><tr><td>Programming</td><td>10%</td></tr><tr><td>Conceptual Design</td><td>15%</td></tr><tr><td>Schematic Design</td><td>25%</td></tr><tr><td>Presentation materials</td><td>20%</td></tr></table>	Client meetings and site visits	10%	Project research	20%	Programming	10%	Conceptual Design	15%	Schematic Design	25%	Presentation materials	20%
Client meetings and site visits	10%												
Project research	20%												
Programming	10%												
Conceptual Design	15%												
Schematic Design	25%												
Presentation materials	20%												
Prerequisites	ARCH 355												
Textbooks/Learning Resources	Varies with the subject matter in each course offering.												
Dates Offered	On demand												
Instructors	Tom McNab, 2003-13												

ARCH 458 ARCHITECTURAL DESIGN VI

Credits	5 credits; 10 contact hours								
Type of Course	Lecture, 1 Studio 4 credits								
Required or Elective	Fourth Year Design Studio Option – one of four design studio options that students choose from as part of their fourth year curriculum.								
Course Description	A continuation of the holistic design synthesis encountered in ARCH 456 or 457 with emphasis on development of student's emerging design values and theoretical perspective.								
Course Goals & Objectives	<p>At the conclusion of this course, students will:</p> <ul style="list-style-type: none">• Develop clear, conceptual proposals with a practical system of construction• Make presentations to clients in visual and/or verbal form• Develop details, material selection, and project site location• Be able to work with sub-contractors on fabrication and cost estimating• Implement the construction of an approved design including project coordination, and site management• Be knowledgeable in the proper use of tools and materials								
Student Performance Criteria	<p>A. 6. Fundamental Design Skills B. 4. Site Design</p>								
Topical Outline	<table><tr><td>Conceptual Design</td><td>20%</td></tr><tr><td>Client Presentations</td><td>10%</td></tr><tr><td>Technical development</td><td>25%</td></tr><tr><td>Construction of design project</td><td>45%</td></tr></table>	Conceptual Design	20%	Client Presentations	10%	Technical development	25%	Construction of design project	45%
Conceptual Design	20%								
Client Presentations	10%								
Technical development	25%								
Construction of design project	45%								
Prerequisites	ARCH 355								
Corequisites	none								
Textbooks/Learning Resources	Varies with each course offering and section								
Dates Offered	Fall, Summer								
Instructors	Lori Ryker (Remote Studio)								

ARCH 498 INTERNSHIP

Credits	3-12 credits
Type of Course	Independent study
Required or Elective	Fourth Year Design Studio Option – one of four design studio options that students choose from as part of their fourth year curriculum.
Course Description	Students arrange for employment in an architectural office for a continuous period of 12-16 weeks. Students will participate in a structured work/study professional practice experience and are required to present the content of this experience upon their return to campus.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will be exposed to the spectrum of the architectural profession through the course of their internship experience.• Students will have the opportunity of living and working in an environment different from her/his past experience in addition to gaining invaluable experience.
Student Performance Criteria	<p>A.4. Technical Documentation A. 6. Fundamental Design Skills C. 1. Collaboration C. 3. Client Role in Architecture C.9. Community and Social Responsibility</p> <p>Additional criteria may be included depending upon specific firm needs and responsibilities</p>
Topical Outline	Varies with each particular firm. Students are required to work full time at a firm for the duration of the Internship course/semester.
Prerequisites	ARCH 340, ARCH 355 and all other architectural courses through the third year.
Textbooks/Learning Resources	Varies with each particular firm
Dates Offered	Fall, Spring, Summer
Past Instructors	Steve Juroszek 2008-2009, Fatih Rifki 2009-2010
Current Instructors	Lindsay Shack 2010-2013-Internship Coordinator

Elective Courses

New Elective Courses

As part of our work on the changes to the 2014-16 undergraduate and graduate catalog, the following courses will be added as electives in our graduate program

- ARCH 510 LEADERSHIP IN PROFESSIONAL PRACTICE*
- ARCH 519 SYNTHESIS OF ARCHITECTURAL PRACTICE*
- ARCH 526 ADVANCED ARCHITECTURAL THEORY
- ARCH 527 ARCHITECTURE: MEANING AND PLACE
- ARCH 535 ADVANCED BUILDING SYSTEMS INTEGRATION
- ARCH 566 PHOTOGRAPHY FOR ARCHITECTS
- ARCH 575 RESEARCH OR PROFESSIONAL PAPER/PROJECT

*courses added as part of our new Professional Practice of Architecture Graduate Certificate Program which is scheduled to begin Spring 2014.

Existing Elective Courses

The existing elective courses on the following pages are offered on a regular basis. They are included here to show the breadth of elective offerings that students have to choose from. Many of these electives are offered by different faculty each semester which has led to a variety of topics and textbooks being utilized for some courses.

ARCH 231CS ISSUES IN SUSTAINABILITY

Credits	3 credits;
Type of Course	Lecture 3 credits
Required or Elective	Elective, designated as a Contemporary Issues in Science (CS)university core course
Course Description	Introduction to concepts and practices intended to create more sustainable communities where present generations are accountable for the needs of future generations and the natural environment. The course will explore current multi-disciplinary practices in "ecological design".
Course Goals & Objectives	After successfully completing this course, students will: <ul style="list-style-type: none">• Identify the common threads of causality that brought about the failure of ancient communities.• Identify the social, cultural and economic conditions in contemporary communities which in some way parallel the circumstances and lessons learned from ancient precedents.• Identify, explain and contrast the characteristics of the two fundamental types of built environments, the conventional/high-carbon community in contrast with resilient/low-carbon built environments.• Compare and contrast the characteristics associated with transportation, energy, water, the natural environmental, food production/agriculture, solid waste and economic systems as they relate to conventional/high-carbon communities versus resilient/low-carbon built environments.
Student Performance Criteria B. 3. Sustainability	
Topical Outline	A history of failed societies - 10% Two types of built environments (high carbon & low carbon) and their supporting systems - 5% Sustainable neighborhoods -10% Transportation and the sustainable corridor - 5% Minimizing the impact of the automobile - 5% Energy systems - 5% High performance buildings - 10% Sustainable water and wastewater strategies - 5% Water, food and the energy nexus - 5% The natural environment - 5% The realm of biophilia - 5% The realm of recycling - 5% Sustainable economics - 5% Sustainable retail - 5% Healthy neighborhoods - 5% The regulatory environment - 5% The process of transforming people, societies and cultures - 5%
Prerequisites	None
Textbooks/Learning Resources	Collection of readings
Dates Offered	On Demand
Instructors	Ralph Johnson 2010-13

ARCH 426 IDENTITY OF CONTEMPORARY PLACES

Credits	3 credits; Maximum 6 cr.
Type of Course	Lecture 3-6 credits
Required or Elective	Elective
Course Description	A course in applied architectural history and theory. Lectures, discussions, and student projects investigate characteristics which convey a sense of place based on historical development, architectural styles, and urban design.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will develop an understanding of issues of identity and the characteristics that define the concept of place• Students will read, comprehend and analyze texts that explore issues of identify and place• Students will develop skills to analyze and critique landscapes and built environments in order to determine the unique and/or common characteristics of a place.
Student Performance Criteria	Varies with each course offering
Topical Outline	Topical outline can vary with each course offering but the most recent course offerings as part of the Remote Studio have been: Readings and discussions of texts 60% Exploration and analysis of landscapes 40%
Prerequisites	ARCH 322IA and ARCH 323IA
Textbooks/Learning Resources	Varies with each course offering
Dates Offered	On Demand
Instructors	Lori Ryker (Remote Studio)

ARCH 428 FOREIGN STUDY HISTORY

Credits	3 credits
Type of Course	Lecture 2 credits, Independent Study 1 credit
Required or Elective	Elective
Course Description	An on-site study in a foreign country of the social, cultural, and historic influences on architectural design. This course is only offered in conjunction with the foreign study program within the School of Architecture. Course shall include research on-site visits documented in an appropriate media form.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will understand the historical context of visited sites including precedents, historical antecedents, general timelines of related interest,• Students will understand the context of civilization's development.
Student Performance Criteria	A.9. Historical Traditions and Global Culture A.10. Cultural Diversity C.2. Human Behavior
Topical Outline	Varies with each course offering and instructor. A typical topical outline has been: Readings 20% Discussions 20% Field Visits to selected sites 60%
Prerequisites	ARCH 322IA and ARCH 323IA
Corequisites	ARCH 414
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Spring, Summer
Instructors	John Brittingham 2013, Henry Sorenson 2009, 2013, Zuzanna Karczewska 2013, Mike Everts 2012, David Fortin 2012, Peter Kommers 2007-12, Maire O'Neill 2011-12, Steve Juroszek 2012, Fatih Rifki 2011, 2013

ARCH 451 DESIGN FOR THE COMMUNITY

Credits	3 credits
Type of Course	Independent study 3 maximum 6 credits
Required or Elective	Elective
Catalogue Description	Students will be engaged in architecturally-related activities with government and non-profit agencies. This will enable students to be involved in a service learning academic experience.
Course Goals & Objectives	At the conclusion of this course, student will <ul style="list-style-type: none">• Undertake service learning opportunities within the communities of the state.• Use graphic communication to present information and alternatives to clients and team members
Student Performance Criteria	A.5. Investigative Skills A. 6. Fundamental Design Skills C. 8. Ethics and Professional Judgment C.9. Community and Social Responsibility
Topical Outline	Varies with each course offering and the specific service-learning project that a student will be working on in the course.
Prerequisites	ARCH 355
Textbooks/Learning Resources	Varies with each course offering
Dates Offered	On demand
Instructors	Tom McNab 2003-2013

ARCH 521 ARCHITECTURAL THEORY

Credits	3 credits, maximum 9credits
Type of Course	Seminar
Required or Elective	Elective
Course Description	Specific architectural, urban, planning and preservation theories, their application and context within contemporary practice will be investigated through the study of essays, drawings, models and built projects.
Course Goals & Objectives	<p>Specific objectives vary with the faculty member teaching the course.</p> <ul style="list-style-type: none">• Students will engage in an area of architectural theory.• Students will gain knowledge on architectural theory through directed readings, discussions, papers and presentations.• Students will be able to read, comprehend and analyze texts on a specialized topic in preparation for developing a critical position
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor
Prerequisites	Graduate standing or seniors by petition.
Textbooks/Learning Resources	Varies with each course offering and instructor
Dates Offered	On-demand
Instructors	Zuzanna Karczewska 2011, Maire O'Neill 2011, Barry Newton 2012013, Jack Smith 2013

ARCH 522 HISTORICAL ISSUES IN ARCHITECTURE AND URBAN DESIGN

Credits	3 credits, maximum 9 credits
Type of Course	Seminar 3 credits
Required or Elective	Elective
Course Description	Close examination of historic periods and individuals. Emphasis upon in-depth studies of particular personalities and the social, cultural, artistic and scientific developments that influenced the progress of architecture, urban design and city planning.
Course Goals & Objectives	<p>Specific objectives vary with the faculty member teaching the course.</p> <ul style="list-style-type: none">• Students will engage in an area of architectural history.• Students will gain knowledge on architectural history through directed readings, discussions, papers and presentations.• Students will be able to read, comprehend and analyze texts on a specialized topic in preparation for developing a critical position
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor
Prerequisites	ARCH 322IA, ARCH 323IA, Graduate standing or seniors by petition
Textbooks/Learning Resources	Varies with each course offering and instructor
Dates Offered	On-demand
Instructors	Ciaran Fitzgerald 2008, John Brittingham 2008, 2010, 2012 Jack Smith 2010-2013, Sean Anderson 2011-2012

ARCH 523 ISSUES IN CITY PLANNING

Credits 3 credits

Type of Course Recitation/Discussion 3 credits

Required or Elective Elective

Course Description Problems and issues, processes and regulations in planning, urban design, and historic preservation.

Course Goals & Objectives

- Students will be able to read, write, speak and listen effectively
- Students will be able to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, and test alternative outcomes against relevant criteria and standards
- Students will use appropriate representational media, such as traditional graphic and digital technology to convey essential formal elements at each stage of the programming and design process
- Students will examine and comprehend the fundamental principles present in relevant precedents and to make choices regarding the incorporation of such principles into architecture and urban design projects
- Students will understand the social and spatial patterns that characterize different cultures and individuals and the implication of this diversity on the societal roles and responsibilities of architects
- Students will understand the architect's responsibility to work in the public interest, to respect historic resources, and to improve the quality of life for local and global neighbors

Student Performance Criteria Varies with each course offering and instructor

Topical Outline Varies with each course offering and instructor

Prerequisites Graduate standing or seniors by petition.

Textbooks/Learning Resources Varies with each course offering and instructor

Dates Offered On-demand

Instructors Ralph Johnson 2009, 2011-2013, Fatih Rifki 2011-2013

ARCH 524 DESIGN COMPETITION

Credits	3 credits, maximum 6 credits
Type of Course	Lab/Studio 3-6 credits
Required or Elective	Elective
Course Description	Students will work under the direction of a faculty member in the research, design, development and presentation of a project in response to a design competition.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will undertake research and creative activities to research and analyze design problems• Students will develop a design competition solution
Student Performance Criteria	A.6. Fundamental Design Skills
Topical Outline	Varies with each course offering and instructor
Prerequisites	ARCH 355 or consent of instructor. Admission to graduate program or seniors by petition.
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On-demand
Instructors	Mike Everts 2011

ARCH 525 SPECIAL DESIGN TOPICS

Credits	3 credits, maximum 12 credits
Type of Course	Lab/Studio 3 credits
Required or Elective	Elective
Course Description	Students will work under the direction of a faculty member in the research, design, development and presentation of a design, research, or historic preservation project.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will undertake research in a specialized area• Students will undertake a creative activity in a specialized area of architecture or in an allied field
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor
Prerequisites	ARCH 355 and consent of instructor. Admission to graduate program or seniors by petition.
Textbooks/Learning Resources	Varies with each course offering and instructor
Dates Offered	On-demand
Past Instructors	Chris Livingston 2009, 2012, Bruce Wrightsman 2009-2012, Michael Everts 2009, 2011, Michael Shephard 2009, John Brittingham 2009, Maire O'Neill 2009, Barry Newton 2009, Lindsay Shack 2009-2011, Ralph Johnson 2010, Zuzanna Karczewska 2010, 2012, David Fortin 2010-2012, Tom McNab 2011-2012, Steve Juroszek 2011, Chere LeClair 2011, Heath "Tad" Bradley, Ron Shvartsman 2012, Carson Smuts 2012
Instructors	Dan Wise 2008-2013, Sherrill Halbe 2008, 2011-2013

ARCH 533 ADVANCED ENVIRONMENTAL CONTROL SYSTEMS

Credits	3 credits
Type of Course	Seminar 3 credits
Required or Elective	Elective
Course Description	Advanced environmental controls systems explored through experimental exercises, calculations, physical modeling and computer simulations with the goal of designing high-performance buildings with an emphasis on lighting and HVAC systems
Course Goals & Objectives	<ul style="list-style-type: none">• Students will explore new tools, techniques, and materials available to the lighting designer.• Students will understand how to evaluate high performance building designs.• Students will utilize the tools and techniques in a project design
Student Performance Criteria	B. 8. Environmental Systems
Topical Outline	Energy Simulation 20% Lighting and Daylighting 15% Sustainable Topics 45% Project Design 20%
Prerequisites	ARCH 331 and ARCH 332. Admission to graduate program or seniors by petition.
Textbooks/Learning Resources	IESNA ED-150 Lighting Education Binder
Dates Offered	Fall
Instructors	Tom Wood

ARCH 543 ADVANCED APPLIED DESIGN AND CONSTRUCTION

Credits	3 credits, maximum 6 credits								
Type of Course	Lab/Studio								
Required or Elective	Elective								
Course Description	Small scale projects industrial products, furniture, buildings, etc., will be designed and built by students as an exploration of the opportunities and limitations of materials, technology, economics, and construction methods.								
Course Goals & Objectives	<p>At the conclusion of this course, students will:</p> <ul style="list-style-type: none">• Design and construct an original furniture piece, fused glass piece, or material exploration• Understand and be able to use stationary woodworking machinery, hand held machines and hand tools for woodworking or appropriate tools and equipment for fused glass.• Understand and be able to utilize wood or glass characteristics, joining and finishing techniques as an integral part of their design and construction process.								
Student Performance Criteria	A. 6. Fundamental Design Skills								
Topical Outline	<table><tr><td>Safety Training and orientation</td><td>5%</td></tr><tr><td>Conceptual design</td><td>15%</td></tr><tr><td>Drawing development</td><td>20%</td></tr><tr><td>Construction</td><td>60%</td></tr></table>	Safety Training and orientation	5%	Conceptual design	15%	Drawing development	20%	Construction	60%
Safety Training and orientation	5%								
Conceptual design	15%								
Drawing development	20%								
Construction	60%								
Prerequisites	ARCH 241, consent of instructor, and graduate standing or seniors by petition.								
Textbooks/Learning Resources	Varies with course offering								
Dates Offered	On-demand								
Past Instructors	Heath "Tad" Bradley 2010-2012								
Current Instructors	Bill Clinton 2008-2013								

ARCH 564 ADVANCED ARCHITECTURAL GRAPHICS

Credits	3 credits, maximum 6 credits
Type of Course	Lab/Studio 3 credits
Required or Elective	Elective
Course Description	Advanced architectural presentation strategies for exploring visual perception and design development through graphic exploration.
Course Goals & Objectives	<p>At the conclusion of this course, students will:</p> <ul style="list-style-type: none">• Be able to engage the visual imagination in their design process by blending skills for translating the actual landscape as drawing.• Develop techniques for representing the inner landscape of ideas,• Incorporate visual imagination in their architectural expression.• Utilize both hand drawing/sketching techniques and digital tablet drawing techniques and software
Student Performance Criteria	A. 3. Visual Communication Skills
Topical Outline	Observation drawing 50% Design Drawing and presentation drawing 50%
Prerequisites	ARCH 363, admission to graduate program or seniors by petition
Textbooks/Learning Resources	Architectural Field Sketching Course Reader by Henry Sorenson <i>Architectural Field Drawing</i> , by Henry Sorenson <i>Drawing From The Mind's Eye</i> , by Henry Sorenson <i>Painter 11 Creativity</i> , by Jeremy Sutton <i>The Drawing Aperture</i> , by Henry Sorenson
Dates Offered	Summer, Fall
Instructors	Henry Sorenson 2008-2013

ARCH 565 ADVANCED COMPUTER APPLICATIONS II

Credits	3 credits, 3 contact hours
Type of Course	Recitation 1 credit, Lab 2 credits
Required or Elective	Elective
Course Description	Computer-aided design and theory for architecture. Lectures and projects may include topics of three-dimensional modeling, animation, delineation or digital fabrication.
Course Goals & Objectives	<ul style="list-style-type: none">• Students will develop complex three-dimensional models• Students will explore parametric families and advanced building information modeling techniques• Students will experiment with a range of digital presentation techniques• Students will explore workflow as a part of the digital modeling/rendering process
Student Performance Criteria	A. 3. Visual Communication Skills
Topical Outline	Varies with each course offering, instructor and selected software application. An example of an outline from 2012 is: Three-dimensional Modeling 30% Building Information Modeling 40% Rendering 30%
Prerequisites	ARCH 363
Textbooks/Learning Resources	Handouts given in class.
Dates Offered	On-demand
Instructors	Steve Juroszek 2008, 2010, Scott Deitle 2012, Mike Everts 2013, Thomas Allen 2013

ARCH 589 GRADUATE CONSULTATION

Credits	1-3 credits
Type of Course	Independent study
Required or Elective	Elective
Course Description	This course may be used only by students who have completed all of their course work but who need additional faculty or staff time or help.
Course Goals & Objectives	This course is intended to serve those graduate students who have substantially completed ARCH 592, Master's Studio in Architecture or ARCH 558 Comprehensive Design Studio, but require additional research, design or critique to fulfill all of the course requirements established by the student's graduate committee. This course continues to be listed in our catalog to accommodate students who entered the graduate program under an earlier catalog.
Student Performance Criteria	Varies with each course offering and instructor.
Topic Outline	Varies with each course offering and committee.
Prerequisites	Master's standing and approval of the Dean of Graduate Studies..
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring, Summer
Instructors	Architecture faculty

Variable Elective Courses with Common University Rubrics—offered as Needed

The courses shown on the following pages are seminar, independent study and directed research courses that are not required but are utilized to accommodate unique and typically one-time courses of study that students will take under the supervision of a faculty member.

ARCH 290R ACTIVITY

UNDERGRADUATE RESEARCH/ CREATIVE

Credits	1-6 credits; 3 contact hours
Type of Course	Independent Study
Required or Elective	Elective, University Research Core
Course Description	Directed undergraduate research which may culminate in a written work or other creative project. Course will address responsible conduct of research.
Course Goals & Objectives	To encourage additional research/creative activities involving students and the faculty beyond the basic requirements of the professional program.
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor.
Prerequisites	None
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring
Instructors	Architecture Faculty

ARCH 291 SPECIAL TOPICS

Credits	1-4 credits
Type of Course	Lecture, Seminar
Required or Elective	Elective
Course Description	Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.
Course Goals & Objectives	To investigate the potential of new or opportunistic directions for the expansion and/or liberalization of the professional curriculum. To relate to emerging concerns of the profession, the School, and the University.
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor.
Prerequisites	None required but some may be determined necessary by each offering department
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On demand
Instructors	Architecture faculty

ARCH 292 INDIVIDUAL PROBLEMS

Credits	1-3 credits
Type of Course	Independent study
Required or Elective	Elective
Course Description	Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.
Course Goals & Objectives	To encourage student-initiated input to the student's own degree program, providing an appropriate degree of flexibility and individuality for the highly motivated student.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor.
Prerequisites	Consent of instructor and approval of department head
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On demand
Instructors	Architecture faculty

ARCH 294 SEMINAR

Credits	1-2 credits
Type of Course	Seminar 3 credits
Required or Elective	Elective
Course Description	Topics offered at the lower division level which are not covered in regular courses. Students participate in preparing and presenting discussion material.
Course Goals & Objectives	To provide a greater diversity of choice and more concentrated focus in specialized areas at the undergraduate level, encouraging students to take advantage of the full breadth of faculty experience and expertise beyond the basic professional curriculum.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor.
Prerequisites	Determined for each offering.
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On demand
Instructors	Architecture faculty

ARCH 471 DIRECTED RESEARCH/ CREATIVE ACTIVITY

Credits	1-2 credits, maximum 4 credits
Type of Course	Recitation
Required or Elective	Elective
Course Description	Directed research/creative activity which may culminate in a research paper, journal article, or design project.
Course Goals & Objectives	To enrich the experience of students participating in an ARCH 471 project by including instruction from a faculty member with particular expertise in the area of investigation.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor
Prerequisites	None
Corequisite:	ARCH 472
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring, Summer
Instructors	Architecture faculty

ARCH 472 DIRECTED RESEARCH/ CREATIVE ACTIVITY INSTRUCTION

Credits	1-2 credits, maximum 4 credits
Type of Course	Recitation
Required or Elective	Elective
Course Description	Classroom instruction associated with directed research/creative activity projects.
Course Goals & Objectives	To enrich the experience of students participating in an ARCH 471 project by including instruction from a faculty member with particular expertise in the area of investigation.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor
Prerequisites	None
Corequisite:	ARCH 471
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring, Summer
Instructors	Architecture faculty

ARCH 490R UNDERGRADUATE RESEARCH

Credits	1-6 credits, Maximum 6 cr.
Type of Course	Independent study
Required or Elective	Elective, University Research Core
Course Description	Directed undergraduate research which may culminate in a research paper, journal article, or undergraduate thesis. Course will address responsible conduct of research.
Course Goals & Objectives	To encourage additional research/creative activities involving students and the faculty beyond the basic requirements of the professional program.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor.
Prerequisites	None
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	Fall, Spring, Summer
Instructors	Architecture faculty

ARCH 491 SPECIAL TOPICS

Credits	1-4 credits, maximum 12 credits
Type of Course	Varies with course offering
Required or Elective	Elective
Course Description	Courses not required in any curriculum for which there is a particular one-time need, or given on a trial basis to determine acceptability and demand before requesting a regular course number.
Course Goals & Objectives	To investigate the potential of new or opportunistic directions for the expansion and/or liberalization of the professional curriculum. To relate to emerging concerns of the profession, the school, or the University.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor
Prerequisites	Course prerequisites as determined for each offering.
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On demand
Instructors	Architecture faculty

ARCH 492 INDIVIDUAL PROBLEMS

Credits	1-3 credits
Type of Course	Independent study maximum 6 credits
Required or Elective	Elective
Course Description	Directed research and study on an individual basis..
Course Goals & Objectives	To encourage student-initiated input to the student's own degree program, providing an appropriate degree of flexibility and individuality for the highly motivated student.
Student Performance Criteria	Varies with each course offering and instructor.
Topical Outline	Varies with each course offering and instructor
Prerequisites	Junior standing, consent of instructor, and approval of department head.
Textbooks/Learning Resources	Varies with each course offering and instructor.
Dates Offered	On demand
Instructors	Architecture faculty

ARCH 494 SEMINAR

Credits	1-3 credits
Type of Course	Seminar
Required or Elective	Elective
Catalogue Description	Topics offered at the upper division level which are not covered in regular courses. Students participate in preparing and presenting discussion material.
Course Goals & Objectives	To provide a greater diversity of choice and more concentrated focus in specialized areas, encouraging students to take advantage of the full breadth of faculty experience and expertise beyond the basic professional curriculum.
Student Performance Criteria	Varies with each course offering and instructor
Topical Outline	Varies with each course offering and instructor
Prerequisites	Junior standing and as determined for each offering.
Textbooks/Learning Resources	Varies with each course offering and instructor
Dates Offered	Fall, Spring, Summer
Instructors	Architecture faculty

Elective Courses That Remain in the Catalog But Have Not Been Offered Since the Last Accreditation Visit

The following courses are electives that continue to be listed in our catalog but have not been offered since our last accreditation visit. As part of our work on the changes to the 2014-16 undergraduate and graduate catalog, the School and the Curriculum Committee will review whether or not to leave these courses in our catalog.

ARCH 221 WORLD ARCHITECTURE MODERN:CONTEMPORARY

On Demand 3 cr. LEC 3

This course will examine the historical development of architecture from the 19th century to the present. Within an historical context, the course will focus on the impact of cultural and philosophic trends, technological changes and innovations and the globalization of the digital revolution on our built environment. Students will be introduced to seminal theoretical approaches professed by architects and thinkers of the 20th and early 21st centuries.

ARCH 223 INTRODUCTION TO ARCHITECTURAL THEORY

On Demand 3 cr. LEC 3

-- Introduction to theoretical approaches advocated by architects, urban designers, planners and theorists throughout history. Emphasis is placed on theoretical positions, their advocacies and their impact on architecture.

ARCH 424 CONTEMPORARY ARCHITECTURAL HISTORY AND THEORY

On Demand 3 cr. LEC 3

PREREQUISITE: ARCH 322 and ARCH 323.

-- Critique and discussion of architectural projects built and ideologies proposed in writings, drawings, and models during the 20th and 21st centuries as they relate to their social, cultural, technical and economic context.

ARCH 425 WESTERN ARCHITECTURAL HISTORY

On Demand 3 cr. SEM 3 Maximum 6 cr.

PREREQUISITE: ARCH 322 and ARCH 323.

-- A study of events and influences that led to the development of western architectural styles, ideology, and forms of individual expression.

ARCH 427 NON-WESTERN ARCHITECTURAL HISTORY

On Demand 3 cr. SEM 3 Maximum 6 cr.

PREREQUISITE: ARCH 322 and ARCH 323.

-- A study of events and influences that led to the development of non-western architectural styles, ideology, and forms of individual expression.

ARCH 444 COMPUTATIONAL DESIGN FOR STRUCTURES

On Demand 3 cr. LEC 2 STU 1.

PREREQUISITE: ARCH 243 and ARCH 263.

-- Introduction to spreadsheets and computational software; spreadsheet developments for typical structural computations used in architecture; introduction to structural design/analysis software; and development of a library of computational software tools for the application of structural architectural design. Notebook computer required.

ARCH 464 INTERMEDIATE COMPUTER APPLICATIONS

On Demand 3 cr. RCT 1 STU 2

PREREQUISITE: ARCH 263 or ARCH 363.

-- Investigation of digital design, fabrication, modeling and drawing as applied to architectural practice. Lectures and projects will explore the use of two-dimensional and three-dimensional applications to explore design and construction processes.

ARCH 465 ADVANCED COMPUTER APPLICATIONS

On Demand 3 cr. RCT 1 LAB 2

PREREQUISITE: ARCH 464, or consent of instructor.

-- The investigation and application of advanced two-dimensional and three-dimensional digital applications for design, modeling, and presentation techniques for architectural practice. Lectures and projects may include topics of three-dimensional modeling, animation, delineation, or digital fabrication.

ARCH 545 ADVANCED STRUCTURES

On Demand 3 cr. LEC 2 STU 1

PREREQUISITE: ARCH 244 or ARCH 344 and graduate standing or seniors by petition.

-- Advanced structural topics, historical and contemporary structural precedents, load path, performance design, structural system planning, connection design; structural restoration; complete 2D and 3D design/analysis/structural projects.

ARCH 553 ARCHITECTURAL STUDIO-THEORETICAL APPLICATION

On Demand 3 cr. LEC 1 RCT 2

PREREQUISITE: Graduate standing.

-- Graduate research and analysis of the formal manifestations of the specific theoretical positions advocated and illustrated through the design work of significant architectural practitioners. Notebook computer required.

ARCH 554 URBAN DESIGN STUDIO

On Demand 6 cr. RCT 2 STU 4.

PREREQUISITE: Graduate standing.

-- Urban design projects that develop an understanding of public planning goals and constraints, urban infrastructure, formal urban fabric, historic preservation, and socio-cultural issues. Notebook computer required. Field trip required.

ARCH 555 URBAN DESIGN RESEARCH/THEORY

On Demand 3 cr. LEC 1 RCT 2

PREREQUISITE: Graduate standing.

-- Methods, models, and techniques for analyzing the city as an artifact of social, cultural, historical, economic and physical significance. Notebook computer required. Field trip required.

ARCH 556 CONSTRUCTION THEORY

On Demand 3 cr. SEM 3. May be repeated as topics vary.

PREREQUISITE: Graduate standing.

-- Graduate research and analysis of contemporary and historic design theory.

