Digital Media & Design Computing Courses: 2012-13

The Design Computing curriculum is quite dynamic: The following information will almost certainly change!

Digital Media

These courses offer opportunities to learn about current software tools for computer drawing, CAD, 3D modeling, rendering, and web-site construction.

380: Computers In Architecture  
Prerequisites: None

Lectures, demonstrations and exercises introduce students to major computing concepts, and applications used in architecture. Topics: Macintosh, Windows, & internet ‘survival skills’; applications: word processing, 2D graphics, 3D graphics, and spreadsheets.

481: 3D Modeling and Rendering  
Prerequisites: Arch 380 or permission

Lectures and weekly exercises develop an understanding of and ability to apply the underlying principles of 3D graphics and rendering software. Topics include modeling, lighting, shading, smoothing, texturing, rendering and, animation.

478: 2D CAD + Working Drawings  
Prerequisites: Arch 380 or permission

Lectures and exercises develop understanding of working drawings (WD) and the use of 2D CAD to create them. Topics WD organization, conventions, content, limitations, plus CAD primitives, attributes, layering, symbols, data exchange, plotting.

581: Advanced Rendering  
Prerequisites: Arch 481 or permission

Focuses on the technical features of advanced architectural visualization tools and the qualitative features of rendered images.

498K: Intro to Digital Dsgn & Fab  
Prerequisites: permission

Fundamentals of digital fabrication technologies and the related software, with special attention to requirements and opportunities for craft and design expression.

498U: Digital Design for Fabrication...  
Prerequisites: permission

This course pays particular attention to digital design systems, the development of parameterized models and their subsequent fabrication or construction.

498T: Revit  
Prerequisites: permission

Overview of Revit software operations and application in building design and development.

Design Computing Technology

These courses delve into concepts and technologies related to the application of computing to design, construction, and architecture. Students learn practical skills and are challenged to apply them to real situations.

482: Web Weaving  
Prerequisites: Arch 380 or permission


485: Digital Craft Workshop  
Prerequisites: permission

A course exploring digital fabrication technology and technique and the design opportunities created by the exercise of design craft in the context of digital fabrication.

486: Computational Geometry  
Prerequisites: permission

Introduction to concepts of computer programming with an emphasis on creative interactive graphics and design. Weekly exercises with term project. Significant lab time required.

498?: Responsive Environments  
Prerequisites: permission

Explores responsive environments at multiple scales: hands-on exploration of digital sensing, control, & actuation technologies (Arduino) plus discussion and readings in the area.

582: Computational Lighting Design  
Prerequisites: permission

Explores the theoretical aspects of computer applications in lighting design and analysis; and the practical knowledge of lighting simulation and visualization tools.

533: Simulation-Based Design  
Prerequisites: permission

Focuses on computational simulation tools and techniques to evaluate the performance of design alternatives in order to help architects make informed decisions.

Design Computing Seminars

In these classes students are explore Design Computing concepts and theories through reading, listening, writing and discussion.

587: Design Computing Theory  
Prerequisites: none

Investigates fundamentals of Design Computing through reading and discussion of important primary writings. Students also prepare & present a personal research paper.

588: Research Practice  
Prerequisites: none

Provides the opportunity for a guided preliminary exploration and refinement of an MS research topic, prior to thesis proposal. Weekly seminar meetings focus on student work with regular presentations and discussions.

597: Research Practicum  
Prerequisites: permission

A "collaborative research studio" for MS students, in which a design computing topic is explored and developed into a research paper.

10/26/12