

# Arch. 380 Introduction to Computers in Architecture

The University of Washington  
College of Architecture & Urban Planning



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(3 credit hours)  
Winter 2006  
Tuesday – Thursday, 3:30 – 4:50 @ Gould 007

## Description

This course introduces students to Design Computing. Weekly lectures and laboratory sessions focus on theoretical aspects and practical applications of image processing, drafting, modeling, and rendering. The course begins with an overview of the role of computing in architectural design. This introduction is followed by discussions and hands-on experience with selected topics on the utilization of computation for representation and communication. The course concludes with a critical review of digital fabrication, computational analysis, and various emerging fields in Design Computing.

## Objectives

1. Provide an overview of the principles, theories, methods that underlie the applications of Design Computing;
2. Create awareness and familiarity with the current issues and practices in Design Computing;
3. Develop abilities to represent architectural designs using a variety of digital tools.

## Content

The content of the course is presented through a series of lectures, demonstrations and laboratory sessions.

<i>Week</i>	<i>Date</i>	<i>Topic</i>
1	Jan 3, 5	Introduction to Design Computing
2	Jan 10, 12	Lecture & lab: Web Authoring
3	Jan 17, 19	Lecture & lab: Image Processing
4	Jan 24, 26	Lecture: 2D Drawing Lab: AutoCAD (plan & elevations)
5	Jan 31, Feb 2	Lecture: Databases, Building Information Modeling, Collaboration Lab: AutoCAD (plan & elevations)
6	Feb 7, 9	Lecture: 3D Modeling Lab: AutoCAD 3D modeling
7	Feb 14, 16	Lab: AutoCAD 3D modeling Lecture: Rendering
8	Feb 21, 23	Lecture: Animation, Virtual Reality Lab: Autodesk Viz – Rendering
9	Feb 28, Mar 2	Lecture: Digital Fabrication Lab: Autodesk Viz – Rendering
10	Mar 7, 9	Lecture: Computational Analysis Lecture: Emerging Fields in Design Computing

### Student Responsibilities:

1. Attendance is expected for the lectures and laboratory sessions.
2. E-mails sent to the class mail group ([arch380a\\_wi06@u.washington.edu](mailto:arch380a_wi06@u.washington.edu)) are required reading. Course materials made available on the class web pages should also be considered required reading. You can access the course home page at <http://courses.washington.edu/a380w06/>, which is under an ongoing construction.
3. Always make a back-up copy of your work. This is common sense and it is a course requirement.

4. Six projects will be assigned during the quarter, some of which will require a large time commitment on your part. Many unexpected problems arise with computers. Start working on your assignments early and ask for help when you need it. Don't wait until it is too late! The best way to get hold of the instructor is after class hours or via e-mail ([inanici@u.washington.edu](mailto:inanici@u.washington.edu)).
5. Each assignment has a due date. Your assignment should be turned in at the beginning of the lecture on the due date to be considered on time. Assignments up to 72 hours late will automatically lose 25% of the possible points. Programs that are more than 72 hours late will be accepted (students must turn in all exercises to get a passing grade), but the grading will be reduced by 50%. You may take one 'free late' this term. A 'free late' means that you can turn in an assignment up to 72 hours late after the original due time with no grading penalty. Project 6 cannot be turned late since it is due very close to the end of the term.

	<i>Due Date</i>	<i>Topic</i>	<i>Grading</i>
Project 1	Jan 17	Webpage	5%
2	Jan 24	Image Processing	10%
3	Feb 7	2D Drawing	20%
4	Feb 21	3D Modeling	20%
5	Mar 7	Rendering	20%
6	Mar 16	Final Project	35%
			Total* = 110%

\* 10% is extra credit.

No textbook is required for this class. The following are recommended:

Kalay YE. *Architecture's New Media: Principles, Theories, and Method's of Computer-Aided Design*. Cambridge: The MIT Press, 2004.

Mitchell WJ and McCullough M. *Digital Design Media*. New York: Wiley, 1994.