University of Calgary
Faculty of Environmental Design

Course Title: Computer Modeling of the Environment   **Fall 2011**
Course No: EVDS 602: H (2-2)
Time: Friday 9-11:50 AM
Instructor: Dr. Richard M. Levy
Location: SH 274

Course Calendar Description
Introduction to the use of computer modeling, animation and virtual reality in architecture and urban design. Professional CAD and rendering applications will be used to explore the aesthetic and technical aspects of design. Emphasis given to developing a sensitivity to the application appropriate to communicating three dimensional urban and natural form using computer generated images.

<u>**Goals:**</u>
In this course you will have an opportunity to develop an understanding of computer modeling techniques used in industrial design, architecture, planning, urban design and virtual reality. During the term lectures, guest lectures and lab sessions will introduce a variety of software applications used by design professionals. Since no single package has been designed to perform all of the functions needed by today's practitioners a goal of this course is to develop a familiarity with a wide range of products. Several assignments will be given during the term. Each assignment will help you master a specific application. A goal of these assignments will be to develop a sensitivity to the application appropriate to communicate a specific idea or set of relationships. Reviews and student led discussion will be an important part of the course.

<u>**Objectives:**</u>
The objectives of this course are:

- *Increase your awareness of the wide range of computer applications available for computer modeling and visualization.*

- *Develop a sensitivity to the choice of application appropriate to communicate a specific idea or set of relationships*

- *Develop skill in the use of computer applications used in practice to model architectural and urban space.*

- *Develop a sensitivity to the limitations of each package in modeling.*

- *Acquire a personal style in the creation of computer models and presentation graphics.*

Teaching Approach:
In addition to the studio assignments, and lectures there will be discussions on a wide range of topics including: the art and science of computer modeling, perception, visual impact assessment reports and video editing. Many of the lectures and class discussions will serve as an introduction to the study of the theory and practice of computer modeling. In the studio, individual assignments will be organized within the framework of an actual problem. Modeling skills will be used to develop a solution to a specific urban design problem.

Schedule:

Day	Morning/Afternoon	Topic
1	September 16	Introduction to computer modeling SketchUP
2	September 23	SketchUP
2	September 30	ArchiCAD
2	October 7	ArchiCAD
3	October 11-14	Photoshop/ Illustrator
4	October 21	3dsMax
5	October 28	3dsMax
7	November 4	3dsMax/Premier
8	November 11	Presentations in class
9	November 18	3dsMax
10	November 25	Introduction to Rivet
11	December 2	CIVIL 3D
12	December 9	CIVIL 3D
13	December 16	Final Presentations

In completing these assignments you will have the opportunity develop graphic presentation skills including:

•Site Models
+ Massing study models
+ Streetscape models
+ Terrain Models

•Architectural Modeling
+ Massing studies
+ Concept models
+ Interior Design
+ Introduction to BIM

•The Art of Presentation
+ Plan
+ Elevation and sections
+ Axonometric
+ Perspective
+ Rendering - Shadows, painting and sketch
+ Animation - Walk-throughs and Fly-overs

+ QTVR - Quicktime VR (360 degree models)
+ Introduction to Virtual Reality

•Video Arts
+ Video and photography as means of imaging
+ Video transfer from computer models
+ Video compression
+ Video editing - special effects and titling

•Data Capture and Analysis
+ Introduction to Laser Scanning
+ Conversion and Analysis of 3D data sets

Means of Evaluation:

During the term you all students will be required to complete five assignments (see handout).
Work on your current MDP research is encouraged in this class.

Assignment 1: Massing Modeling (SketchUp)   **15%**
Objectives:
Massing Modeling for Planning Studies

Assignment: 3: Architectural Design Project (ArchiCAD)   **25%**
Objectives:
Architectural Modeling
Computer Rendering and Animation
Site Planning and terrain modeling

Assignment: 4 Architectural Rendering (3D Studio, Premier CS)   **35%**
Objectives:
Architectural Modeling
Computer Rendering and Animation
Video Editing

Assignment 5: Site Planning   **25%**
Objectives:
Introduction to Site Planning
Translation of 3D data sets to terrain models
Cut and fill
Creating roads and building footprints
Subdivision layout

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Total   **100%**

It is a University requirement to address the following aspects of course evaluation in a course outline: whether or not a passing grade on any particular component of a course is essential if the student is to pass the course as a whole; whether or not there will be a final examination and if an examination is held, whether the use of aids such as open book, etc. are permitted; the weights to be assigned to the various components which are to be considered in determining the final grade (term papers, laboratory work, class participation, tests, final examinations, etc.). This weighting may not be changed during the session or at the time of grade reporting; when writing and the grading thereof is a factor in the evaluation of the student's work. (Note: EVDS courses do not have "Registrar Scheduled" final exams.)

Grading Scale

Letter Grade	4-Point Scale	4-Point Range	Percent	Description
A+	4.00	4.00	92.5-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	85-92.49	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	80-84.99	Very good performance
B+	3.30	3.15-3.49	76-79.99	Good performance
B	3.00	2.85-3.14	73-75.99	Satisfactory performance
B-	2.70	2.50-2.84	70-72.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	66-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	63-65.99	
C-	1.70	1.50-1.84	60-62.99	
D+	1.30	1.15-1.49	56-59.99	
D	1.00	0.50-1.14	50-55.99	
F	0.00	0-0.49	0-49.99	

Note: A student who receives a B- or lower in two or more courses will be required to withdraw regardless of their grade point average unless the program recommends

otherwise. Individual programs may require a higher minimum passing grade. A grade point value of 3.0 on the 4-Point Scale is the minimum acceptable average that a graduate student must maintain throughout the program as computed at the end of each registration anniversary year of the program. A student who receives a grade of F will normally be required to withdraw unless the program recommends otherwise.

Readings:
There will be no required text for this course. However, there will be a required readings list on reserve on Blackboard.   There will also be a list of suggested readings for those interested in learning more about the applications taught in this course.

Prerequisites:
Students should have a basic knowledge of computing applications for image editing (Photoshop, Painter or Illustrator) and multimedia presentations (Powerpoint). Familiarity with Windows WindowsXP, or Windows 7 is a prerequisite for this course.