

University of Calgary

Faculty of Environmental Design

Course Title: Computer Modeling of the Environment

Course No: EVDS 602, (Fall 2013)

Instructors: Dr. Richard M. Levy

Time: Fall Block Week, October 15-18, 9:00-17:00

Location: EVDS Computer Lab

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.

Goals:

In this course you will have an opportunity to develop an understanding of computer modeling techniques used in architecture, planning, urban design and virtual reality. During the term 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. Student reviews will be an important part of the course.

Objectives:

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 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 | Oct. 15, Morning | Introduction to computer modeling SketchUP |
| 1 | Oct. 15 Afternoon | SketchUP Lab/ Photoshop |
| 2 | Oct 16, Morning | SketchUP Student Presentation/ Introduction to AutoCAD/Rivet |
| 2 | Oct. 16, Afternoon | Rivet |
| 3 | Oct. 17, Morning | 3ds Max |
| 3 | Oct. 17, Afternoon | 3ds Max |
| 4 | Oct. 18 , Morning | 3ds Max/ Premier |
| 4 | Oct. 18, Afternoon | Premier/ Student 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 Editing
 - + Story Boarding
 - + Video compression
 - + Video editing
 - + Titling and captions
 - + Special effects

Means of Evaluation:

During the term you all students will be required to complete five assignments.

Assignment 1: Urban Massing Modeling (SketchUp/ Photoshop) 25%

- Objectives:
 - Urban Massing Modeling for Planning Studies
- Due Dates:
 - Oct. 22

Assignment: 3: Modeling and Rendering with 3ds Max 50%

- Objectives:
 - Architectural Modeling
 - Modeling
 - Texture Mapping and creating maps
 - Terrain Modeling
 - Computer Rendering and Animation
- Due Dates:
 - Preliminary work - Oct. 18
 - Final work – November 22

Assignment 4: Video Editing (Premier/ Photoshop) 25%

- Objectives:
 - Storyboarding
 - Video Editing
- Due Dates:
 - Preliminary work - Oct. 18
 - Final work – November 22

Total 100%

Grading Policy

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. For a link to on-line courses see:

<http://www.ucalgary.ca/it/ols>