

**Course Title: Computer Modeling of the Environment**

**Course No:** EVDS 602

**Instructors:** Dr. Richard M. Levy, [rmlevy@ucalgary.ca](mailto:rmlevy@ucalgary.ca)

**Session:** Fall 2014

**Time:** Fall Block Week, October 14-17, 9:00-17:00

**Location:** EVDS Computer Lab

**Office Hours and Location:** PF 4182, TBA

## **Introduction**

### **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.

### **Objectives:**

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.

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:**

<b>Day</b>	<b>Morning/Afternoon</b>	<b>Topic</b>
1	Oct. 15, Morning	Introduction to computer modeling SketchUP
1	Oct. 15 Afternoon	SketchUP Lab
2	Oct 16, Morning	SketchUP Student Presentation/ Photoshop
2	Oct. 16, Afternoon	AutoCAD/Rivet
3	Oct. 17, Morning	3D Studio Max
3	Oct. 17, Afternoon	3D Studio Max
4	Oct. 18 , Morning	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 all students will be required to complete five assignments.

**Assignment 1: Urban Massing Modeling (SketchUp/ Photoshop) 30%**

Objectives:

Urban Massing Modeling for Community Planning Studies

Due Dates:

Oct. 24

**Assignment: 3: Modeling and Rendering 40%**

Objectives:

Architectural Modeling

Modeling

Texture Mapping and creating maps

Terrain Modeling

Computer Rendering and Animation

Due Dates:

Final work – November 28

**Assignment 4: Video Editing ( Premier/ Photoshop ) 30%**

Objectives:

Storyboarding

Video Editing

Due Dates:

Final work – November 28

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**Total 100%**

## Grading Scale

<b>Grade</b>	<b>Grade Point Value</b>	<b>4-Point Range</b>	<b>Percent</b>	<b>Description</b>
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	

### Notes:

- A student who receives a "C+" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

### Readings:

There will be no required text for this course. However, there will be a required readings list on reserve on D2L. 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>