

Syllabus

ARCH 230

ADVANCED 3DS MAX FOR ARCHITECTURE AND ENGINEERING

I. Course Description

Architecture 230 teaches advanced features of the 3DS Max software program. Topics include: advanced architectural and engineering projects, importing of drawing geometry from AutoCAD and other computer-aided-design (CAD) programs, and advanced lighting and texturing techniques. Current industry standard digital animation software (3DS Max) will be used.

This class meets every other week as a traditional on-campus class for 6 hours and 25 minutes and as an online class every other week for 6 hours. This class is enhanced with online components.

Units – 3.0

Lecture Hours– 2.0

Total Studio Hours – 4.0

(Faculty Studio Hours – 2.0 + Student Studio Hours – 2.0 = 2.0 Total Studio Hours)

II. Prerequisites

Prerequisite: ARCH 229 or equivalent.

III. Exit Standards/Student Learning Outcomes

Upon successful completion of the required coursework, the student will be able to:

1. use advanced features of the 3DS Max Interface such as Global Illumination and Mental ray to perform various architectural and engineering design visualization tasks;
2. understand advanced concepts of photo-realistic rendering, texturing, lighting, and animation as it applies to the visualization and presentation of Architectural and or Engineering designs;
3. utilize the concepts of network rendering, pre-processing of CAD files, post production tools and using the 3DS Max software for Architecture and Engineering visualization projects.

IV. Attendance/Absence/Tardiness Policy

Attendance and punctuality is critical to your success with this class. Each lesson presents key concepts upon which subsequent lessons are built. Unexcused absence from 2 classes can constitute a reduction of letter grades.

Lecturing will begin promptly 15 minutes after beginning of class.

V. Grading Method

A final project is due at the end of the last class, which is intended to demonstrate an understanding of these concepts:

1. 3D navigation
2. Basic modeling with primitives
3. Texturing
4. Lighting
5. Camera placement and animation
6. Rendering

The final grade totals 400 points. Final Grade is an evaluation of the above concepts, as well as attendance, punctuality and in-class performance. Letter grade equivalents are:

A	=	400 – 360
B	=	359 – 320
C	=	319 – 280
D	=	279 – 240
F	=	239 – 0

VI. Exam Makeup Policy

No exam or quiz will be made up, unless the absence is pre-approved or due to an emergency.

VII. Academic Honesty Policy

Glendale College adheres to an Academic Honesty policy, which can be found in the Student Handbook's section on Academic Honesty.

VIII. Students With Disabilities

All students with disabilities requiring accommodations are responsible for making arrangements in a timely manner through the Center for Students with Disabilities.

IX. Course Materials

Required: 1GB USB flash drive (can be found in GCC bookstore)

X. Class Requirements and Instructor Expectations

There is no homework assigned for this course—attendance and punctuality is critical to success.

The goal is to learn advanced 3DS Max. The best way to learn 3D is in a collaborative environment. Exercises will be open book, and students are expected to help each other.

XI. Office Hours and Telephone Number

My office is AT223. Office hours are Saturdays from 8:25-9:00 a.m. and 11:45 a.m.-12:30 p.m. Additional office hours are available by appointment. You may contact me via E-mail at: **tpapiens@glendale.edu**.

XII. Schedule of Assignments and Course Outline

3DS Max will be taught through the completion of several in-class exercises, each conveying basic concepts, such as lighting, texturing, modeling, etc. Additionally, all of the concepts outlined below will be combined in a Final Project, due at the completion of the course. There is no homework, but non-credit lab time is encouraged (location TBD).

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| A. Preparing AutoCAD files for import into 3DS Max | 6 Hours |
| 1. Plines | |
| 2. UCS coordinates | |
| 3. Navigating 3D Models in AutoCad | |
| 4. Aligning views and creating reference geometry | |
| 5. Layer Management | |
| C. Importing Geometry | 2 Hours |
| 1. Setup work environment | |
| 2. Unit setup | |
| 3. Importing models | |
| 4. Naming and organizing geometry | |
| D. Modeling Advanced | 5 Hours |
| 1. Lofts | |
| 2. Booleans | |
| 3. Terrains | |
| 4. Vegetation | |
| 5. Window, door and stair systems | |
| E. Modeling Modifiers | 8 Hours |
| 1. Extrude | |
| 2. Edit Poly | |
| 3. Hair and Fur | |
| 4. Cloth and Garment Maker | |
| 5. Lathe | |
| F. Materials | 8 Hours |
| 1. Advanced Materials | |
| 2. Materials Editor | |
| 3. Creating Advanced Materials | |

4. Material Library	
5. Procedural Materials	
6. Glass, translucent and reflective surfaces	
G. Mapping	6 Hours
1. Bitmaps	
2. Other mapping types	
3. UVW maps	
4. Unwrap UVW modifier	
5. Working with maps	
6. Map channels	
H. Lighting Advanced	8 Hours
1. Advanced Global Illumination	
2. mental ray light types and uses	
3. Advanced light parameters	
4. mental ray Shadows	
I.Exterior Lighting Advanced	6 Hours
1. mental ray Sun	
2. mental ray Physical Sky	
J. Global Illumination	6 Hours
1. Advanced global illumination settings	
2. Shaders	
3. Radiosity	
4. Caustics	
K. Camera Advanced	3 Hours
1. Camera advanced parameters	
2. Advanced Lenses	
3. Depth of field and motion blur	
L. Camera Animation Advanced	3 Hours
1. Advanced Camera tracking	
2. Re-scaling time	
3. Keyframes	
4. Advanced Controllers	
5. Advanced Constraints	
6. Curve editor and other tools to enhance realism	
M. Rendering	10 Hours
1. Mental ray	
2. Rendering settings	
3. Network rendering	
O. Post Production	3 Hours
1. Advanced Post production	
2. Particle Effects	
3. Lens effects	
4. Filters and post-production tools	
5. Camera Matching	