

## Syllabus: Modeling in 3D

---

Instructor: \_\_\_\_\_

Office hours: \_\_\_\_\_

Class hours: \_\_\_\_\_

### Course Description

Students explore principles of 3-dimensioning and apply them in the creation of 3D computer representations using appropriate modeling software. Emphasis will be placed on creation of accurate models rendered with color, shading, texture mapping and lighting to simulate effects of materials, finishes and surface graphics

### Major Instructional Areas

1. The 3ds Max interface
2. 3ds Max modeling fundamentals
3. 3ds Max lighting and material techniques
4. 3ds Max cameras, cinematography, and composition
5. Demo reel/portfolio project

### Course Objectives

1. Demonstrate basic understanding and familiarity with features of the 3ds Max interface.
2. Demonstrate basic skills in manipulating 2D shapes.
3. Demonstrate basic skills in creating and manipulating 3D primitives and 3D objects.
4. Discuss the strengths and weaknesses of various modeling techniques.
5. Differentiate among cloned objects, copy, reference, and instance objects in the 3ds Max environment.
6. Demonstrate the ability to manipulate materials in the 3D 3ds Max environment.
7. Apply lighting in a 3ds Max scene.
8. Apply cinematography principles to cameras in the 3ds Max environment.
9. Render stills of a 3ds Max scene using the proper format and settings.
10. Develop a complete rendered scene in 3ds Max for the demo reel/portfolio.

### SCANS Objectives

SCANS is an acronym for Secretary's Commission on Achieving Necessary Skills. The committee, created by the National Secretary of Labor in the early 1990s, created a list of

skills and competencies that the committee feels are necessary for employees to function in a high-tech job market.

1. Interpret and creatively communicate written information in a 3D design, model, or rendering.
2. Successfully participate as a contributing member of a team.
3. Apply the specific technology of a software program to communication of design ideas.
4. Demonstrate problem-solving skills by choosing an appropriate solution to a problem.
5. Evaluate methods of constructing models with the appropriate software.
6. Demonstrates creative thinking and imaginative use of computer software.

## Course Outline

Note: All graded activities, except the Course Project, are listed below in the pattern of <Unit Number>.<Assignment Number>. For example, Lab 2.1 refers to the 1st lab activity in Unit 2.

Unit	Activities
1— The 3ds Max Interface and 2D Shapes	<ul style="list-style-type: none"> <li>• Content Covered:               <ul style="list-style-type: none"> <li><i>3ds Max Fundamentals</i> <ul style="list-style-type: none"> <li>○ Appendix, “Quick Tour: The Max Interface”</li> <li>○ Chapter 1, “Workflow”</li> <li>○ Chapter 2, “Fundamental Concepts”</li> <li>○ Chapter 3, “2D Shapes: Starting with the Foundation”</li> <li>○ Chapter 4, “Modifiers: Stack Them High”</li> </ul> </li> </ul> </li> <li>• Labs: 1.1</li> </ul>
2— 3D 3ds Max Modeling Fundamentals	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 5, “Lofting: Control is Everything”</li> <li>○ Chapter 6, “3D Primitives: Building Blocks”</li> </ul> </li> <li>• Labs: 2.1</li> <li>• Quizzes: 2.1</li> </ul>
3— Poly Modeling	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 7, “The Editable Poly: Box Modeling”</li> </ul> </li> <li>• Labs: 3.1</li> </ul>
4— Other 3D Objects and Rendering Basics	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 8, “More Modifiers: Orderly Progression”</li> <li>○ Chapter 18, “Rendering Basics”</li> </ul> </li> <li>• Labs: 4.1</li> </ul>

Unit	Activities
	<ul style="list-style-type: none"> <li>• Quizzes: 4.1</li> </ul>
5— Materials	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 11, “The Material Editor: Your Palette at a Glance”</li> <li>○ Chapter 12, “Maps: Patterns Before Your Eyes”</li> </ul> </li> <li>• Labs: 5.1</li> </ul>
6— Materials, Maps, and UVW Coordinates	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 13, “Mapping Coordinates: Getting the Right Fit”</li> </ul> </li> <li>• Labs: 6.1</li> <li>• Quizzes: 6.1</li> </ul>
7— Lights	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 10, “Lighting Methods: Follow the Masters”</li> </ul> </li> <li>• Labs: 7.1</li> </ul>
8— Cameras, Cinematography, and Composition	<ul style="list-style-type: none"> <li>• Read from <i>3ds Max Fundamentals</i>:               <ul style="list-style-type: none"> <li>○ Chapter 9, “Cameras: Placement and Movement”</li> </ul> </li> <li>• Labs: 8.1</li> <li>• Quizzes: 8.1</li> </ul>
9— Demo Reel/Portfolio Project	<ul style="list-style-type: none"> <li>• Read from <i>Game Character Design Complete</i>:               <ul style="list-style-type: none"> <li>○ Chapter 2, “Preparing to Model: Configuring 3ds Max and Referencing Sketch Art”</li> </ul> </li> </ul>
10— Demo Reel/Portfolio Project	<ul style="list-style-type: none"> <li>• Read from <i>Game Character Design Complete</i>:               <ul style="list-style-type: none"> <li>○ Chapter 3, “Box Modeling in 3ds Max 8”</li> </ul> </li> <li>• Final Project</li> </ul>
11— Course Review and Final Exam	<ul style="list-style-type: none"> <li>• Course Review</li> <li>• Final Exam</li> </ul>

## Instructional Methods

3D Modeling is designed to promote a variety of teaching strategies that support the outcomes described in the course objectives. Your instructor will use a variety of instructional methods to facilitate your learning inside as well as outside the classroom. Your instructor should make available to you lesson plans, course materials, notes, and resources before the theory portion of the class.

The course is composed of both theory and laboratory components. Your progress will be regularly assessed.

The material being taught in 3D Modeling is fundamental to success in all future multimedia-based courses within the Information Technology program as well as programs in the School of Drafting and Design. It is therefore imperative to come to each class session prepared by having read the assigned textbook chapters.

You must complete all quizzes and laboratory assignments to ensure full comprehension of the subject matter. One final project requires you to prepare a demo reel/portfolio, which is a major element in securing work in the multimedia field. A final exam will be given at the end of the course to assess your understanding of the content material.

## **Instructional Materials and References**

### **Student Textbook Package**

- Boardman, Ted, et al. *3ds Max Fundamentals*. Indianapolis: Pearson Custom Publishing, 2008.

### **Other Required Resources**

In addition to the student textbook package, the following is also required in this course:

- CD-ROM in the textbook package provides 3ds Max Help files and tutorials.
- Franson, David and Eric Thomas. *Game Character Design Complete: Using 3ds Max 8 and Adobe Photoshop CS2*. Boston: Course Technology Inc., 2006. (This book is available electronically in the ITT Tech Virtual Library; go to ITT Tech Virtual Library> Main Menu> Books> Ebrary.)

## **Equipment and Tools**

The theory portion of this course should be taught in a classroom. The classroom should have the following:

- A projection system
- Tables, chairs, and a whiteboard
- Instructor node with the following configuration:
  - Desktop computer with Windows XP SP2 or Windows Vista operating system
  - Pentium IV or higher processor
  - CD-ROM drive
  - LAN connection
  - 3ds Max software installed and configured

The laboratory portion of this course must be taught in a standard computer lab, and should have the following:

- Local area network (LAN)

- Desktop computer with Windows XP SP2 or Windows Vista operating system
- Pentium IV or higher processor
- CD-ROM drive
- 3ds Max software installed and configured

## References

Log on to the ITT Tech Virtual Library at <http://www.library.itt-tech.edu/> to access online books, journals, and other reference resources selected to support ITT Tech curricula.

### Books

You may click “Books” or use the “Search” function on the home page to find the following books.

ITT Tech Virtual Library> Main Menu> Books> Books24x7

- Ghinea, Gheorghita and Sherry Y. Chen, Eds. *Digital Multimedia Perception and Design*. Hershey, PA: Idea Group Publishing. 2006.
- Derakhshani, Dariush, Randi Munn, and Jon McFarland. *Introducing 3ds Max 9: 3D for Beginners*. Indianapolis: Wiley Publishing, Inc. 2007.
- Murdock, Kelly L. *3ds Max 9 Bible*. Indianapolis: Wiley Publishing, Inc. 2007.

### Periodicals

You may click “Periodicals” or use the “Search” function on the home page to find the following periodicals.

ITT Tech Virtual Library> Main Menu> Periodicals> Proquest>

- Animation World Magazine
- Computer Graphics World
- Game Developer

## Other References

The following resources may be found **outside** of the ITT Tech Virtual Library.

Web sites:

- 3D Total: The CG Artist’s Homepage  
<http://www.3dtotal.com>  
Galleries, tutorials, forums, and job board for CG artists
- CG Channel  
<http://www.cgchannel.com>

Forum for individual or corporate demo reels, discussion and job board for CG artists

- 3DM3 Computer Graphics Source  
<http://www.3dm3.com>  
Worldwide community of digital artists with tutorials, videos, galleries
- Society of Digital Artists  
<http://www.cgsociety.org>  
Membership site for the CGSociety, includes Wiki, newsletter
- Autodesk: Area Support Forums  
<http://area.autodesk.com/>  
News, software trials, tutorials, discussions from Autodesk

All links to web references outside of the ITT Tech Virtual Library are always subject to change without prior notice.

## Course Evaluation and Grading

### Evaluation Criteria Table

The final grades will be based on the following categories:

CATEGORY	WEIGHT
Quizzes	20%
Labs	35%
Final Project	30%
Final Exam	15%
<b>Total</b>	<b>100%</b>

Note: Students are responsible for abiding by the Plagiarism Policy.

### Grade Conversion Table

The final grades will be calculated from the percentages earned in the course, as follows:

A	90–100%	4.0
B+	85–89%	3.5
B	80–84%	3.0
C+	75–79%	2.5
C	70–74%	2.0
D+	65–69%	1.5
D	60–64%	1.0
F	<60%	0.0

*(End of Syllabus)*