ITT Technical Institute

IT209T

3D Modeling

Onsite Course

SYLLABUS

Credit hours: 4

Contact/Instructional hours: 60 (36 Theory Hours, 24 Lab Hours)

Prerequisite(s) and/or Corequisite(s):

Prerequisites: TB143T Introduction to Personal Computers, TB145T Introduction to Computing

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.

Where Does This Course Belong?

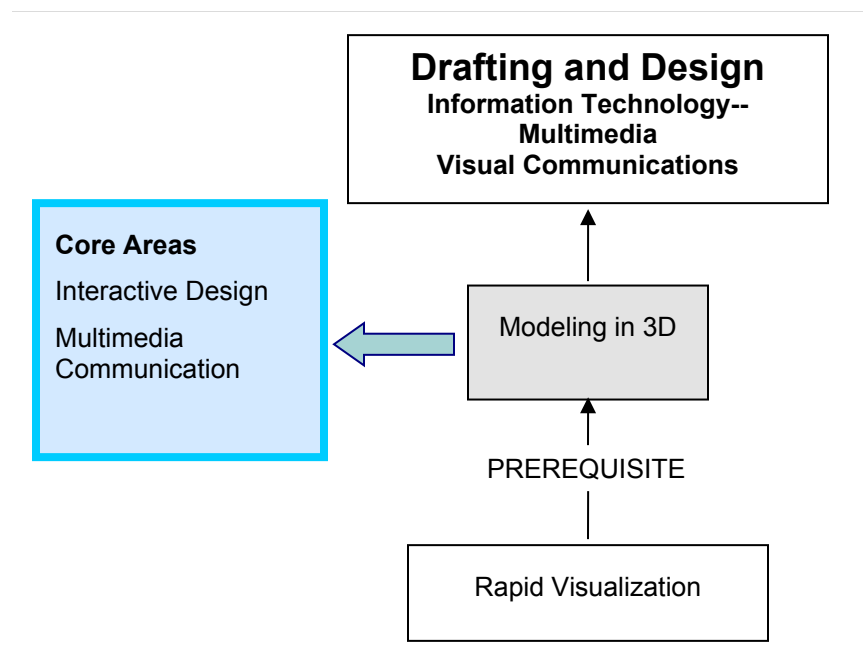How does this course relate to the program? Take a look!

Modeling in 3D is a course required to earn an associate's degree in ITT Tech's Information Technology—Multimedia and Visual Communications programs.

Graduates of the Multimedia program may begin their careers in a variety of entry-level positions in various fields such as multimedia developer, multimedia specialist, graphic technician, and 3D modeler.

Graduates who have difficulty distinguishing colors may not be able to perform the essential functions of various positions involving various positions involving multimedia or design.

The Visual Communications program can help graduates prepare to perform tasks associated with designing and creating interactive multimedia communications and print communications. Graduates of this program may pursue careers in a variety of entry-level positions involving the design and production of digital media, print media, and a variety of applications used in corporate and public communications.

The following course sequence provides an overview of how Modeling in 3D fits into the program.

Drafting and Design
Information Technology--
Multimedia
Visual Communications

Core Areas

Interactive Design

Multimedia
Communication

Modeling in 3D

PREREQUISITE

Rapid Visualization

Note: Refer to the catalog for the state-specific course information.

Syllabus: 3D Modeling

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. Getting started with 3ds Max
2. Polygon and NURBS modeling techniques
3. Spline and Mesh modeling techniques
4. 3ds Max materials, textures, and maps
5. 3ds Max lights and camera
6. Demo reel/portfolio project

Course Objectives

1. Demonstrate basic understanding and familiarity with features of the Autodesk 3ds Max 2012 interface.
2. Explain viewport navigation controls, selection techniques, and standard primitives.
3. Explain the process of rendering.
4. Demonstrate the procedure to create and use extended primitives, default objects, and patch grids.
5. Use various tools and techniques available in Autodesk 3ds Max to create and manipulate splines.
6. Demonstrate the method of creating mesh models.
7. Demonstrate basic skills in creating and manipulating polygon and patch models.
8. Demonstrate NURBS modeling techniques.
9. Apply modifiers to Autodesk 3ds Max objects.
10. Explain the procedure to create and apply materials and textures to objects.
11. Apply lights and camera to Autodesk 3ds Max scene.
12. Develop a complete rendered scene in Autodesk 3ds Max 2012 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. Demonstrate 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, Labs: 2.1 refers to the first Lab activity in Unit 2.

Unit	Activities
1—Autodesk 3ds Max 2012 and Standard Primitives	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 1, "Introduction to Autodesk 3ds Max 2012" 　o Chapter 2, "Standard Primitives" • Labs: 1.1 • Assignments: 1.1
2—Extended Primitives, Default Objects, and Patch Grids	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 3, "Extended Primitives" 　o Chapter 4, "Default Objects and Patch Grids" • Labs: 2.1 • Quizzes: 2.1
3—Splines and Extended Splines	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 5, "Splines and Extended Splines" • Labs: 3.1 (Portfolio) • Assignments: 3.1
4—Modifying Splines	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 7, "Modifying Splines" • Labs: 4.1 • Quizzes: 4.1
5—Mesh Modeling	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 6, "Modifying 3D Mesh Objects," pp. 6-1 to 6-16 • Labs: 5.1 • Assignments: 5.1
6—Polygon and Patch Modeling	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 6, "Modifying 3D Mesh Objects," pp. 6-16 to 6-37 • Labs: 6.1 (Portfolio) • Quizzes: 6.1
7—NURBS Modeling	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* 　o Chapter 16, "NURBS Modeling" • Labs: 7.1 • Assignments: 7.1
8—Modifiers	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:*

Unit	Activities
	o Chapter 10, "Modifiers" • Labs: 8.1 • Quizzes: 8.1
9—Applying Materials and Maps	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* o Chapter 8, "Materials and Maps" • Project (Start) • Labs: 9.1 • Assignments: 9.1
10—Lights and Camera	• Read from *Autodesk 3ds Max 2012: A Comprehensive Guide:* o Chapter 11, "Lights and Cameras" • Labs: 10.1
11—Course Review and Final Exam	• Project (Submit-Portfolio) • Course review • Final Exam

Instructional Methods

Modeling in 3D 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 Modeling in 3D is fundamental to success in all your 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, laboratory assignments, and home assignments to ensure full comprehension of the subject matter. The two projects require 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

• Tickoo, S., Purdue University and CADCIM Technologies. (2012). *AutoDesk 3DS Max 2012: A comprehensive guide* (Custom ed.). Boston, MA: Pearson Custom.

References

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

Books

You may click "Books" from the Main Menu or use the "Library Catalog" on the home page to find the following books.

ITT Tech Virtual Library > Main Menu > Books> Books24x7
- Connell, Ellery. *3D for Graphic Designers.* Alameda, CA: Sybex, 2011.
- Daniele, Todd. *Poly-Modeling with 3ds Max: Thinking Outside of the Box*. Burlington, MA: Focal Press 2009.
- Ghinea*,* Gheorghita, and Sherry Y. Chen, eds. *Digital Multimedia Perception and Design*. Hershey, PA: Idea Group Publishing, 2006.
- Randi, L., Derakhshani, and Dariush Derakhshani. *Introducing Autodesk 3ds Max 2011: Autodesk Official Training Guide*. Alameda, CA: Sybex 2010.
- Murdock, Kelly L. *3ds Max 2011 Bible*. Indianapolis: John Wiley & Sons, 2010.

Periodicals

You may click "Periodicals" or use the "E-Journal Look-up" function on the home page to find the following periodicals.

ITT Tech Virtual Library > Main Menu > Periodicals > ProQuest >
- Computer Graphics World
- Game Developer
- Computer Graphics and Software
- Graphics and Design
- Animation and Motion Pictures
- Animation and Television Programs
- Multimedia and Applications

Other References

The following resources may be found **outside** of the ITT Tech Virtual Library.
- 3D Total: The CG Artist's Homepage with fresh CG Industry news
  http://www.3dtotal.com
  Galleries, tutorials, forums, and textures for CG artists
- CG Channel : News, Videos, Training, and Community for Entertainment Artists
  http://www.cgchannel.com
  Daily News, Tutorials, Galleries, Community Forums, and Forums for individual and corporate demo reels
- Society of Digital Artists
  http://www.cgsociety.org
  Membership site for the CGSociety, includes member area, portfolios, workshops, cg competitions, discussion forums, and job board
- CGArena: Animation and Graphics community for 3D Artists
  http://www.cgarena.com
  CGNews, galleries, free models and textures, free monthly e-zine, tutorials, demoreels, and job boards for CG artists
- Digital Arts: Inspiration for digital creatives
  http://www.digitalartsonline.co.uk
  Comprehensive coverage of the art of graphic design, 3D, animation, video, effects, web and interactive design, in print and online
- Autodesk: Education Community for students
  http://students.autodesk.com
  Licensed software for Students and Faculties from Autodesk
- Autodesk Students: Facebook page

https://www.facebook.com/Autodeskedcommunity?sk=app_180884248665675
Over 35 products available for free right from the Facebook
- Autodesk: YouTube channel
http://www.youtube.com/user/Autodesk
YouTube channel of Autodesk
- Autodesk: Area Support Forums
http://area.autodesk.com/
News, software trials, tutorials, discussions, blogs, showcases, job board from Autodesk
- Max Underground: 3ds Max related resources
http://area.autodesk.com/
CG news, reviews, articles, tutorials, plugin, and scripts for CG artists using 3ds Max.
- ScriptSpot: 3ds Max Scripts
http://www.scriptspot.com/
A community for downloading and sharing the max scripts
- Online Tutorials: A collection of CG tutorials on the web
Pixel 2 Life: http://www.pixel2life.com
CG Tutorials: http://www.cgtutorials.com
Tutorial Sphere: http://www.tutorialsphere.com
Tuts Buzz: http://www.tutsbuzz.com

All links to web references 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	15%
Assignments	10%
Labs	30%
Project	30%
Final Exam	15%
Total	100%

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)