



COURSE OUTLINE

DIGITAL MEDIA ARTS

DMA 220
Course Number

3D Modeling II
Course Title

3
Credits

1 lecture / 4 studio hours
Lecture/Studio Hours

COURSE DESCRIPTION

Advanced 3D modeling and materials. Offered as an elective in the Digital Media Arts program, this course covers advanced concepts of 3D modeling and virtual scene creation for those who wish to explore 3D modeling and illustration in depth. Topics to be covered include environment creation, 3D paint, modeling for games, character models, modeling with nurbs/patches, compositing. Fall offering.

Text (s): **Reference Division Booklist**

Prerequisites: **DMA120 (3D Modeling I) with a minimum C grade or division permission**

Co-requisites:

Last revised: Fall 2006

Course coordinator: Yevgeniy Fiks, e-mail: fiksy@mccc.edu, tel. x 3543

I. RATIONALE

3D modeling, texture mapping, and scene layout are specializations within the field of computer graphics. These skills are used in interactive applications, in illustration, and in the film/video/animation field. This course allows students to learn advanced concepts in these areas as well as the specialized task of designing for interactive games.

II. GOALS AND OBJECTIVES

- A. *For the successful completion of the course, the student is expected to:*
- B. Demonstrate the ability to visualize an idea and express it graphically.
- C. Demonstrate an understanding of principles of design and color and the ability to apply them effectively to assignments.
- D. Demonstrate knowledge and understanding of concepts and terms learned in 3D Modeling I and new concepts and terms introduced in 3D Modeling II. Demonstrate the ability to apply them effectively to assignments.
- E. Demonstrate the ability to write clearly and meaningfully about issues in computer graphics.
- F. Use the computer effectively and fluently as an art tool.
- G. Demonstrate competence in file management.
- H. Attend all lectures and labs and participate in all critiques, including the final critique.
- I. Professionalism:
 - 1. Come to class on time bringing all necessary materials and supplies.
 - 2. Spend sufficient time on concept generation and execution to create work worthy of inclusion in a portfolio.
 - 3. Submit all assignments on time, accurately done, and properly mounted.
 - 4. Present artwork in a professional manner.

III. INSTRUCTIONAL MODES

- A. One lecture hour and four instructor-led studio hours per week for 15 weeks.
- B. Studio assignments with specifications and limitations set by the instructor
- C. Demonstrations, discussions and critiques of student work.
- D. Assigned reading
- E. Films, videos, slides, illustrations, examples from the World Wide Web.
- F. Field trips and visiting guest professionals, as possible.

IV. INSTRUCTIONAL MATERIALS

- A. Textbook(s)
- B. Computers and software in the labs.
- C. Films, videos, slides, the World Wide Web.
- D. Professional publications.
- E. Library materials.
- F. Materials prepared by the instructor.

V. ATTENDANCE, EVALUATION AND GRADING

Attendance

Each student is expected to attend all classes.

If you must miss a class, it is your responsibility to catch up with the class by requesting classmates to review the material and assignment with you. Please do not expect the instructor to repeat the demonstrations and lectures that you have missed. However, be sure to ask for any handouts or assignment specifications and due dates that you may have missed.

Evaluation

You must put time, thought, effort, and care into your assignments to complete them successfully. It will be apparent if you have dashed off your work.

If you find that you are stuck and not progressing, speak to your instructor and get assistance right away.

Evaluation of your progress and grades is determined by the instructor based on the following considerations:

Average of grades on Projects 1-6 60% (See evaluation criteria below):

Final Critique	20%
Professionalism*	20%

****Refers to the degree of seriousness and commitment the student brings to his/her work in the course. It includes regular attendance at all lectures and studio classes, completing assignments on time, and contributing constructively to the overall demeanor and learning atmosphere of the class.***

Each project will be evaluated using the following criteria:

A. The appropriateness and creativity of the concept/idea:

1. Does it meet the needs of the client?
2. Does it reflect creative thinking or is it just a rehashing of old ideas, clichés, and well-worn effects from popular culture?

Ideas take research, time, thought, and effort to develop into fruitful graphic images.

B. The quality of the design:

1. Have you used principles of design and color to emphasize the main idea and illustrate the creative concept?

C. The technical quality of the project:

1. Have you completed the assignment accurately?
2. Is the artwork "Portfolio quality"?
3. Does it demonstrate an understanding and mastery of the tools and concepts?
4. Does it meet the specifications of the project?
5. Did you hand it in on time according to your instructor's instructions?
6. Have you presented it in a professional manner?

Academic Integrity Statement

Students are expected to comply with the college-wide requirements for academic integrity. Mercer County Community College is committed to Academic Integrity—the honest, fair, and continuing pursuit of knowledge, free from fraud or deception. This implies that students are expected to be responsible for their own work. Presenting another individual’s work as one’s own and receiving excessive help from another individual will qualify as a violation of Academic Integrity. The entire policy on Academic Integrity is located in the Student handbook and is found on the college website (http://www.mccc.edu/admissions_policies_integrity.shtml).

Grading

Values of quality, aesthetics, taste, etc., are based upon the instructor’s judgment of the work produced, the effort employed, and the total result achieved. To receive full credit, all assignments are due on time. A late assignment will be accepted one class period after due date with a reduced letter grade. After one missed class period, late assignments will receive the grade of “F”.

The grade of “A” will be earned by students who demonstrate mastery of the skills and essential elements of the material presented, as well as demonstrating excellence in aesthetics and originality in completing course objectives with at least 90% accuracy.

The grade of “B” will be earned by students who demonstrate more than adequate mastery of the essential elements of the material presented and acceptable knowledge of the course content. Achievement will be demonstrated when all of the course objectives are fulfilled with at least 80% accuracy.

The grade of “C” will be earned by students who demonstrate adequate mastery of the essential elements of the material presented. Achievement will be demonstrated when all of the course objectives are fulfilled with at least 70% accuracy.

The grade of “D” is undesirable, but indicates a minimum passing of the course requirements. All of the course objectives must be fulfilled with at least 60% accuracy.

The grade of “F” will be earned by students who do not demonstrate achievement.

VI. SUPPLIES

YOUR INSTRUCTOR WILL SPECIFY:

- A. Removable storage media
- B. Sketch pad 9”x12”, 11”x14”, 14”x17”, 12”x18” or 18”x24”
- C. Sketch tools/media: pencils, colored pencils, pens, markers (or other)

VII. TOPICAL OUTLINE

Projects:

- A. Lighting.
- B. Natural environment primarily using materials.
- C. NURBS Character.
- D. Low Polygon Count Character.
- E. Game Scenes, In Engine and Cinematic/Box Art.
- F. Final Project – in area of student’s professional interest.

COURSE OUTLINE

WEEK 1:

Instruction/Assignments:

- Review of most advanced concepts from DMA120, 3D Modeling I
- **PROJECT 1 ASSIGNED**

WEEK 2:

Adding realism and detail:

- How modeling, textures and lighting combine to add detail and interest.

WEEKS 3&4:

Advanced Materials:

- Creating bitmap textures
- Advanced procedural textures
- Utility Nodes and Shader Networks
- **PROJECT 2 ASSIGNED**

WEEKS 5&6:

Advanced NURBS modeling:

- Building patches
- Stitching and attaching patches
- Projecting Curves, Trims and Blends
- How to build NURBS surfaces for animation
- **PROJECT 3 ASSIGNED**

WEEKS 7 & 8:

Low Polygon Count Modeling:

- Using Polygons Wisely
- How to build polygonal objects for animation
- Shockwave 3D export for CD-ROM and the Web
- **PROJECT 4 ASSIGNED**

WEEKS 9&10:

Deformations & Animation tools for Modeling:

- Lattices
- Clusters
- Bones
- Anim Snapshot
- **PROJECT 5 ASSIGNED**

WEEKS 11&12: **Rendering & Post:**

- Compositing
- Render Passes

WEEKS 13&14: **MEL Intro, Capturing, Saving, Modifying Commands:**

- **PROJECT 6 ASSIGNED**

WEEK 15:

WORK ON PROJECT 6

WEEK 16:

FINAL CRITIQUE