



COURSE OUTLINE

DIGITAL MEDIA ARTS

DMA 225
Course Number

Computer Animation 1
Course Title

3
Credits

1 lecture/4 studio hours
Hours: lecture/laboratory/other (specify)

Catalog description:

Using 3-D animation software and video interface, students produce special effects and character animations from storyboard to output on videocassette. Windows-based personal computers and current professional software are used.

Prerequisites: DMA120 with a minimum
C grade or divisional permission

Co-requisites: DMA125 and CMN141
with a minimum C grade
or divisional permission

Required texts/other materials:

- Text: Learning Maya 6: Foundations W/DVD by Alias
- Removable storage media.

Last revised: Fall 2006

Course coordinator:

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

Information resources:

Digital files from the instructor's files.

Other learning resources:

Open Lab Hours

Course goals:

At the conclusion of the course, the student should:

- Understand basic animation, story telling and design principles as they relate to specific animation projects.
- Demonstrate knowledge of computer animation concepts such as pre-production, production, postproduction, keyframing, in-betweens, character vs. effects animation, etc.
- Be able to solve design problems, which contain change over time, 3D models, camera positions, lighting, and textures.
- Be able to use the tools and commands of Maya software effectively.
- Be capable of visualizing and animating brief story ideas.
- Make efficient use of the hardware and software, taking into consideration their strengths and their shortcomings, when planning and producing animations.

Course-specific General Education goals and objectives.

N/A

Units of study in detail.

Unit 1 "Bouncing Ball "

The student will be able to:

- Demonstrate ability to animate a simple computer-generated character using keyframing.
- Demonstrate understanding of such animation principles as anticipation, secondary motion, squash and stretch, and exaggeration.
- Demonstrate ability to provide a simple character with personality and emotion.
- Demonstrate ability to use cameras effectively to tell stories and maintain readability of motion.
- Demonstrate understanding of such animation concepts as key, frame, keyframe, frame rate, and in-betweens.
- Discuss his/her work during a critique and critically evaluate and justify his/her own artistic and vocational practice.

Unit 2 "Intro to Character Animation "

The student will be able to:

- Demonstrate ability to animate a more complex character utilizing virtual skeletons and kinematics controls.
- Demonstrate ability to provide a character with distinct and expressive personality and emotions.
- Demonstrate understanding of character rigging, including Inverse and Forward kinematics, joints, IK handles, and locators.
- Demonstrate ability to draw an effective concept sketch and storyboard.
- Demonstrate understanding of such animation principles as anticipation, secondary motion, squash and stretch, and exaggeration.
- Discuss his/her work during a critique and critically evaluate and justify his/her own artistic and vocational practice.

Unit 3 "Walk Cycle"

The student will be able to:

- Demonstrate ability to set up a complex biped character for animation by creating a skeleton, IK handles, and locators.
- Demonstrate ability to attach a character to the skeleton effectively and assign appropriate skin weights.
- Demonstrate ability to animate a complex biped character using Inverse kinematics techniques.
- Demonstrate ability to provide a character with distinct and expressive personality and emotions.
- Demonstrate understanding of such animation principles as anticipation, secondary motion, squash and stretch, and exaggeration.
- Discuss his/her work during a critique and critically evaluate and justify his/her own artistic and vocational practice.

Unit 4 "Special Effects"

The student will be able to:

- Demonstrate understanding of the difference between the character and effects/visualization animation styles.
- Demonstrate ability to use dynamic simulations, particle systems, and lighting effects.
- Demonstrate understanding of the benefits and disadvantages of dynamics animations.
- Demonstrate ability to use Adobe Premiere and Aftereffects for postproduction.
- Demonstrate understanding of such animation principles as anticipation and secondary motion.
- Discuss his/her work during a critique and critically evaluate and justify his/her own artistic and vocational practice.

Evaluation of student learning:

Instructional modes to be used are: Integrated lecture and laboratory, studio assignments with specifications and limitations set by the instructor, demonstrations by the instructor, and discussions and critiques of student work.

The student is responsible for his or her regular attendance, participation in classroom discussions and critiques of student work, and for including his or her work to be discussed and evaluated. Diligent work on assignments is essential.

Evaluation of progress and grades are determined by the instructor, based upon the following considerations: attendance, participation, and estimate of quality of class work and homework assignments (by instructor).

Values of quality, aesthetics, etc., are based upon the instructor's judgement 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 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 specific 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 specific 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.

Grade Breakdown	Percent Overall Grade
Class Attendance and Participation	20%
Project 1: Bouncing Ball	20%
Project 2: Intro to Character Animation	20%
Project 3: Walk Cycle	20%
Project 4: Special Effects	20%

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).