

**COURSE OUTLINE**  
**CADD-107**  
**Three-dimensional Modeling and Animation**  
**3 Credits**

**HOWARD COMMUNITY COLLEGE**

**Description**

This course is to introduce the student to the concepts of 2D/3D computer animation. The student will develop and apply traditional animation techniques using computer software. The applications of computer animation will include engineering, visualization, advertising, and multimedia. (2 hours lecture, 2 hours lab) NOTE: Also listed as MASS-107.

**Overall Course Objectives**

Upon completion of this course, the student will be able to:

1. Plan and develop storyboards.
2. Organize an animation project.
3. Identify and utilize the traditional concepts of animation.
4. Utilize basic modeling techniques.
5. Apply the basic theory of Human Vision.
6. Apply the basic theory of Color.
7. Apply the basic theory of lighting.
8. Apply the basic theory of Motion.
9. Identify the various types of computer animation software.
10. Identify the various file formats used in computer animation development.
11. Identify the hardware/software requirements.

**Major Topics**

- I. Introduction to Animation
  - A. Types of Animation 2D/3D
  - B. Applications of Animation (overview)
  
- II. Hardware and Software Requirements
  - A. Computers Used in Animation
  - B. Types of Rendering Software
  - C. Types of Animation Software
  - D. Types of Authoring Software
  - E. Windows and Dos Applications

- III. Planning and Developing Animation
  - A. Using a Storyboard
  - B. Traditional Storyboard Applications
  - C. Using Storyboard Application Software
  
- IV. Concepts and Theories
  - A. Understanding Human Vision
  - B. Understanding Color Theory
  - C. Understanding Lighting Theory
  - D. Understanding Motion Theory
  
- V. Modeling Techniques
  - A. Modeling Decisions
  - B. Model Development
  
- VI. Animation Applications
  - A. Multimedia
  - B. Advertising
  - C. Engineering Visualization

### **Course Requirements**

Grading/exams: Grading procedures will be determined by the individual faculty member but will include lab exercises, homework, quizzes and unit tests.

Writing: CAD-specific writing assignments will be assigned to students by a faculty member.

### **Other Course Information**

This course could be used as an elective in computer-aided design, art, science, visual communication, and business programs.