

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: DRF 238

Credits: 3

Course Title: Computer-Aided Modeling and Rendering I

Course Description: Focuses on training students in the contemporary techniques of 3D modeling, rendering, and animation on the personal computer. Introduces the principles of visualization, sometimes known as photo-realism, which enable the student to create presentation drawings for both architectural and industrial product design. Uses computer animation to produce walk-throughs that will bring the third dimension to architectural designs. Part I of II. Prerequisite: DRF 232. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General Course Purpose: The course introduces the student to the concepts and procedures related to advanced 3D graphics. It is required for the Contemporary Technology for Design specialization of the Architectural & Civil Engineering Technology AAS curriculum. Also required for the Computer-Aided Design Specialist CSC track. Can be a technical elective for the Building Construction Management track of the Architectural and Engineering Technology AAS curriculum.

Course Prerequisites and Co-requisites:

Prerequisite: DRF 232

Student Learning Outcomes:

Upon completing the course, the student will be able to

- a. Create 3D designs and realistic CAD presentations;
- b. Apply rules and methods of "scene" composition;
- c. Create computer animations; and
- d. Merge photo images with 3D CAD models.

Major Topics to Be Included:

- a. Principles of 3D modeling and wireframe creation
- b. Material/texture applications
- c. Lighting/shadow control and composition
- d. Animations

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