

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

Course Prefix and Number: DRF 239

Credits: 3

Course Title: Computer-Aided Modeling and Rendering II

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 II of II. Prerequisite: DRF 238. Lecture 2 hours. Laboratory 2 hours. Total 4 hours per week.

General Course Purpose: Serves as an intermediate-level class in the use and development of computer-aided modeling and animation, expanding beyond the fundamentals of 3D modeling, material-mapping, lighting/shading, and rendering established in DRF 238. Can serve as an elective in the Contemporary Technology for Design specialization of the Architectural and Engineering Technology AAS.

Course Prerequisites and Co-requisites:

Prerequisite: DRF 238

Student Learning Outcomes:

Upon completing the course, the student will be able to

- a. Develop complex three-dimensional models using both primitive-based shapes and polygon editing techniques;
- b. Create advanced materials from digital images and graphic design applications, i.e., Photoshop, Indesign, etc.;
- c. Execute advanced rendering techniques, such as radiosity, to achieve high-fidelity imagery; and
- d. Utilize render-farm technology to produce animations in short time spans via networking.

Major Topics to Be Included:

- a. NURB modeling
- b. Use of advanced modifiers
- c. Raytraced rendering
- d. File integration with conventional CAD applications

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