

**University of Arkansas - Fort Smith**  
**5210 Grand Avenue**  
**P. O. Box 3649**  
**Fort Smith, AR 72913-3649**  
**479-788-7000**

## **General Syllabus**

### **BSAT 4023 Manufacturing and Robotics Applications**

Credit Hours: 3

Lecture Hours: 2

Laboratory Hours: 2

Prerequisites: junior standing in BSAT program or consent of department head.

Effective Catalog: 2018-2019

#### **I. Course Information**

##### **A. Catalog Description**

3D software programs will be used to create and animate videos associated with mechanical objects and manufacturing/robotics process or training films. Advanced modeling techniques used for building surface objects and environments will be explored.

##### **B. Additional Information**

This course is a requirement for general animation majors. It may also be taken by students in other majors as an elective credit.

#### **II. Student Learning Outcomes**

##### **A. Subject Matter**

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

1. Define 3D software programs and determine which programs should be used for which application.
2. Apply skills necessary to create virtual surface objects and environments for placement.
3. Practice modeling skills to create accurate and detailed models of presented objects.
4. Identify animation challenges that can arise from creating a training film.
5. Examine the role of different software packages required to create a complete animation.
6. Create a short animation of a manufacturing or robotics process.

**B. University Learning Outcomes**

This course enhances student abilities in the following areas:

**Communication Skills (written and oral)**

Students will effectively communicate through oral presentations describing and demonstrating animation projects.

**Analytical Skills**

**Quantitative Reasoning:** Students will create applied animations using various software packages. Students will use computers to produce drawings and/or animations and/or other formats to communicate ideas and other information. Students will interpret models and data in order to create animate videos.

**Ethical Decision Making**

Students will apply ethical frameworks to resolve a variety of ethical dilemmas.

**III. Major Course Topics**

- A. 3D software programs
- B. Creating virtual surface objects and environments
- C. Create accurate and detailed models of presented objects
- D. Using animation as a training tool
- E. Creating complete accurate 3D animations of an Engineering or Robotics task