

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

General Syllabus

BSAT 3014 - Modeling Processes

Credit Hour: 4

Lecture Hours: 3

Laboratory Hours: 4

Prerequisite: Junior standing or CGT 2684 Digital Design Level II or CGT 2834 Machine Drawing and Design or CGT 2654 Architectural CAD Applications

Effective Catalog: 2018-2019

I. Course Information

A. Catalog Description

Concepts, commands, and techniques used in creating models with 3D printing and computer numerical control (CNC) equipment. Various materials will be used including ABS plastics, Styrofoam, wood and aluminum.

B. Additional Information – N/A

II. Student Learning Outcomes

A. Subject Matter

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

1. Convert computer aided drafting (CAD) drawing files into a format utilized by 3D printing and CNC equipment.
2. Utilize 3D printing and CNC software to produce models.
3. Develop schedules for producing models.
4. Analyze the processes utilized in this type of modeling to make accurate cost estimates for the cost to produce models.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Quantitative Reasoning: Students will apply math and science knowledge when reading and analyzing models. Applied animation projects will require quantitative reasoning.

III. Major Course Topics

- A. Modeling processes involved in the use of 3D printers and CNC machining
 - B. Cost estimating and scheduling
 - C. Development of machine parts with animations for illustration purposes
 - D. Motion and animation attached to CNC movements
- .