

Program Outcomes Guide (POG)

Program Title: A.A.S Computer-Aided Design Concentration Mechanical Engineering Technology

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Expected Learning Outcomes:

1. Students will be able to DEMONSTRATE how to analyze relationships between design elements for parametric modeling.
2. Students will to EFFICIENTLY produce two and three-dimensional drawings using traditional visualization techniques
3. Students will EXHIBIT how to effectively work in teams and effectively communicate proper engineering practices as it relates to mechanical systems and designs.
4. Students will be able EFFECTIVELY apply for internships, entry level positions at engineering firms or manufacturing facilities.
5. Students will be able to SUCCESSFULLY design, build and create mechanical parts according to current industry standards.
6. Students will be able to UTILIZE software programs (CNC, CAD, MATLAB, etc.) to develop, run and troubleshoot various technical tasks.
7. Students will be able to SUCCESSFULLY transfer to an applied Engineering Technology / Manufacturing baccalaureate degree major.
8. Students will be ABLE to make appropriate selection of CAD functionality to use as tools in the design process.
9. Students will be ABLE to evaluate mechanical designs and select the proper process and materials for production.

Assessment (How do or will students demonstrate achievement of each outcome?)

1. Students are expected to complete homework problems, exams.
2. Students will be assessed on their ability to produce written solutions to homework problems and examinations. The solutions must demonstrate the ability to communicate their understanding of the problem and solution.
3. Students are expected to dimension a multi-view engineering drawing of a machined part, utilizing the appropriate functions within the Inventor software to construct a 3D solid model of the part.
4. Students will have the ability to design and build prototypes, as well as to analyze and interpret data during the testing of the prototype.

CAD 152 – 2 Projects
CAD 153 – 2 Projects
CAD 226 -
CAD 228 - 2 Project
CAD 230 -

Validation

The following criteria is used to validate CAD-MET program

1. Each course has a “PROJECT BASED LEARNING” format whereby concepts taught in class are utilized in executing design projects.
2. Feedback from our industry advisory committee members is incorporated into our curriculum: thus, modifying the course content.
3. Companies that employ our students via internship or full time employment render feedback to faculty members as to the content that is needed in curriculums, course projects, etc. This information helps in making students transition easily into the workforce.

Results

- The collection of data has shown students are above a 3.0 out a 4.0 scale.
- Students are receiving internships and are placed in CAD related jobs after graduation.

Follow-up

1. The standards outlined via American Society of Mechanical Engineers: **ASME** (an ABET affiliate) will be used a guide for necessary change to the program outcomes.
2. Feedback from advisory committee members and employers (internship, industry) are incorporated into the curriculum.
3. Students are encouraged to engage in internship opportunities in order to gain real world experience.
4. For students that are struggling, the following are available:
 - a. The Learning Student Center
 - b. Group discussions with instructor

Budget Justification

(What resources are necessary to improve student learning?)

Keep CAD related software up to date as well as the HAAS Machine.

