CADD Program

Computer Aided Drafting & Design Assessment Plan

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Program Student Learning Outcomes

1. ***Understanding the Mechanical Design Environment***:
   Students develop proficiency in all aspects of drafting mechanical designs in both 2D and 3D parametric modeling, as well as drafted legal documentation.

2. ***Drafted Digital Documentation***:
   Students will come to understanding and executing both 2D and 3D drawing environments, as well as drafting standards.

3. ***Understanding what Designing for Manufacturability means and how to apply it:***
   The Computer Aided Drafting and Design program stresses material and manufacturing implications throughout the design, modeling, and drafting process.

4. ***Adhering to ANSI 14.0 & ISO Standards:***
   ANSI (American National Standards Institute) promotes the use of U.S. standards internationally, advocates U.S. policy and technical positions in international and regional standards organizations, and encourages the adoption of international standards as national standards where they meet the needs of the user community.
   https://www.ansi.org/about_ansi/introduction/introduction
   ISO (International Organization for Standardization) has published 22205 International Standards and related documents, covering almost every industry, from technology, to food safety, to agriculture and healthcare. ISO International Standards impact everyone, everywhere.
   https://www.iso.org/drafting-standards.html

5. ***Additive and Subtractive Prototyping and Manufacturing:***
   The Computer Aided Drafting and Design program engages the student in the new technologies of 3D printing and 3D scanning.

Curriculum Map

I-Introduced/R-Reinforced/P-Practiced/D-Demonstrated

Prefix/#	Name	1	2	3	4	5
CAD 101	Computer Aided Drafting I	I/P/D	I/P/D		I/P/D	
CAD 102	Computer Aided Drafting II	R/P/D	R/P/D	I/P/D	R/P/D	I/P/D
CAD 240	AutoDesk Inventor	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 255	SolidWorks	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 217	Rhino	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 246	AutoDesk Fusion 360	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 244	Advanced Inventor	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 259	Advanced SolidWorks	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 262	3D Printing	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 264	3D Scanning to 3D Modeling	R/P/D	R/P/D	R/P/D	R/P/D	R/P/D
CAD 280	Internship	D	D	D	D	D
CAD 289	Capstone	D	D	D	D	D

Assessment Schedule

In the summer of each year, between the end of the Spring semester and beginning of the Fall semester and over a four-week period between, the program will conduct its annual assessment of its PSLO(s) for the academic year. The assessment will be scored by a jury of instructors representing the particular curriculum areas that we intend to evaluate.

Assessment Timeline

The proposed Assessment schedule will alternate over a four-year period as follows:

Year 1: ***Combined Outcome Assessment:***
Practice Readiness as a starting point to gauge overall effectiveness and adherence to ANSI & ISO mandates.
Year 2: ***Understanding the Mechanical Design Environment***:
Year 3: ***Drafted Digital Documentation*:**
Year 4: ***Additive and Subtractive Prototyping and Manufacturing***
Year 5: ***Combined Outcome Assessment*** (repeating the cycle)

Benchmarks-Year 1

CAD 102 Computer Aided Drafting & Design:

- Does the Work demonstrate basic use of 2D drafting skills and tools crucial to the daily practice of mechanical design?
- Does the Work reflect appropriate standards of professionalism and adherence to the proper drafting standards expected by employers?
- Does the Work represent job-ready competencies in understanding and representing the mechanical design in 3rd angle orthographic projection, sections, and axonometric projections?
- Does the Work reflect an understanding of a drawing set as it defines the materials and sub-assemblies needed to define the design to support manufacturing?

CAD 240 AutoDesk Inventor

- Does the Work demonstrate basic use of 3D drafting skills and tools crucial the daily practice of mechanical design?
- Does the Work reflect appropriate standards of professionalism and adherence to the proper drafting standards expected by employers?
- Does the Work represent job-ready competencies in understanding and representing the mechanical design in 3rd angle orthographic projection, sections, and axonometric projections?
- Does the Work reflect an understanding of a drawing set as it defines the materials and sub-assemblies needed to define the design to support manufacturing?

Use of Results

During the annual assessment meeting, the department chair will meet with the CADD program instructors to review the assessment results from the prior year.

Assessment will be used as the basis for critiquing current approaches to the materials and, if necessary, for increasing adherence to industry standards.

The assessment results and any planned actions will be shared with the Dean of CTE, and our Advisory Board.

Continuous Improvement of the Assessment Process

During the annual assessment meeting, there will be discussion of the current tools in use. Determination will be made as to whether the teaching tools warrant any revision. Also, the chair and adjunct instructors will determine whether to continue with the current assessment timeline or to make any changes.