Course Outcomes Guide (COG)

Course Title: CAD 228 Solid Modeling/ Mechanical **Date:** December 20, 2018

Course Team: Dr. Olu Bamiduro

Expected Learning Outcomes

This course is a hands-on competency based course. Students use assembly-centric, parametric and solid modeling software to build parts, create assemblies and presentations. Students create three-dimensional models to generate 2D drawings.

The learning outcomes are as follows:

1. Students will be ***ABLE*** to create solid models using parametric based software for Machine/ mechanical based applications.
2. Students will know ***HOW*** to create assemblies using created parts (according to industry standards) and the content center necessary for modern engineering practice.
3. Students will ***EFFECTIVELY*** create working drawings, exploded drawings and parts lists of assemblies.
4. Students will ***DEMONSTRATE*** how to create animations of solid model assemblies used in effectively communicating mechanical designs.
5. Students will ***UTILIZE*** software to analyze material properties and perform stress analysis for design applications.
6. Students will ***LEARN*** to work in teams in order to **design**, **build** and **test** mechanical systems that can be used to fabricate a prototype.

Assessment

The assessment of the course will be administered to all sections of CAD 228 by the below methods:

1. Examinations
2. Homework Assignments
3. Student assigned Chapter-Section Presentations

Validation

The following criteria will be used to validate CAD 228:

1. The ability to apply a 3D path using the Intersection Curve and the Project to Surface commands.
2. The ability to create part and assembly models.
3. The ability to apply and use assemble constraints and joints.
4. The ability to modify a style in a drawing.
5. The ability to animate a presentation file for effective communication purposes.

6. The ability to use the modeling techniques, skills, and project files necessary for engineering practice.

Results Data may be seen in table below:

	FALL 2017	**SPRING 2018**	**FALL 2018**
# of Active Students	10	N/A	***Awaiting results***
# unofficially walked away from class	N/A		
% of success	95 %		
Final Exam Score (Average)	90.1%		
Mean Course Grade	1.5		
Areas of difficulty in course content	Interpreting stress analysis		

Follow-up (How have you used or how will you use the data to improve student learning?)

Students had a difficult time interpreting stress analysis of various assembly drawings. This is primarily due to the fact some students have not been exposed to EGT 231 where stress and strain of materials is addressed. As a remedy, an aggressive approach in understanding the fundamentals taught in EGT 231 has to be addressed.

Budget Justification (What resources are necessary to improve student learning?)
None at the moment