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MFG 211- CAD Design for CNC Manufacturing 1- Chris Dodson- Part B- Winter 2025

*** Part B: Your Results DIRECTIONS** 1. Report the outcome achievement data gathered via the assignments, tests, etc. you identified for each outcome (question 3) of your Part A. (Only include data for students who completed the course. Do not include students who withdrew or earned an incomplete) Data for all 3 outcomes should be reported below.

For outcome 1, 88% of students were able to identify and utilize GD&T symbolism according to ASME standards for use in blueprint creation, and quality inspection peer review process with a 90% or higher with the remaining 12% achieving this outcome at greater than 80%.

For outcome 2, All students we able to achieve this outcome at greater than 70%, with greater than 50% of students achieving 80% or higher.

For outcome 3, 70% of students were able to achieve this outcome at greater than 80% with remaining students achieving a 75% or higher.

*** Outcome #1**

Utilize extrusion, fillets and chamfers to generate drawings.

*** % of students who successfully achieved the outcome (C or above)**

100

*** Outcome #2**

Understand machining tolerances as they apply to 3d models for manufacturing using machining equipment.

*** % of students who successfully achieved the outcome (C or above)**

100

*** Outcome #3**

Create a product from a solid 3d model.

*** % of students who successfully achieved the outcome (C or above)**

100

*** ANALYSIS 3. What contributed to student success and/or lack of success?**

I feel that through rigorous repetition of these skills, students gain understanding beyond the context. Through diversification of the application of these skills, students learn that they have the ability to change perspective depending on the situation and utilize different approaches to obtain the desired result.

*** 4. Helping students to realistically self-assess and reflect on their understanding and progress encourages students to take responsibility for their own learning. Please compare your students' perception of their end-of-term understanding/mastery of the three outcomes (found in student evaluations) to your assessment (above) of student achievement of the three outcomes.**

Both perception and my assessment for all three outcomes are very close in alignment.

*** 5. Did student achievement of outcomes meet your expectations for successfully teaching to each outcome (question 4 from Part A)**

Yes

*** 6. Based on your analysis in the questions above, what course adjustments are warranted (curricular, pedagogical, student instruction, etc.)?**

Currently, the outcomes are being satisfied. This term was very difficult to be successful due to budget constraints limiting the diversification and scaffolding of complexity. Students were placed in a position where the initial complexity of projects were far greater reducing the ability to scaffold workflow in a more linear progressive manner.

7. What resources would be required to implement your recommended course adjustments (materials, training, equipment, etc.)? What Budget implications result?

Having a budget that accurately reflects lab fees would greatly increase the ability to appropriately scaffold projects. This term's projects, due to budget, were largely too complex in early stages, minimizing the amount of diversification.

*** 8. Describe the results of any adjustments you made from the last assessment of this course (if applicable) and their effectiveness in student achievement of outcomes.**

Every year, adjustments are made due to equipment changes, budget challenges, and project availability. This year's adjustments, while they appear to have been effective, have placed students into an interesting place where the span of time from effort to outcome is so great that they easily become overwhelmed or discouraged. My pivot as an instructor to establish milestones that give an opportunity for reflection, while effective, were still too few and far between for my liking. Having the ability to give more frequent and useful feedback is a must in the ability to get the level of understanding across to our students.

9. Describe how you explain information about course outcomes and their relevance to your students.

Each course outcome is described as it applies to each project. Due to the nature of these projects, each project has multiple layers that apply to multiple outcomes, creating rigor and repetitive use of the skills, as well as diverse applications for those skills.

10. Please describe any changes/additions to instruction, curriculum or assessment that you made to support students in better achieving the CGCC Institutional Learning Outcomes: ILO #1: Communication. The areas that faculty are focusing on are: "Content Development" and/or Control of Syntax and Mechanics" and ILO #2: Critical Thinking/Problem Solving. The areas that faculty are focusing on are: "Evidence" (Critical Thinking) and/or "Identify Strategies" (Problem Solving). ILO #4: Cultural Awareness. The area that faculty is focusing on is: "Openness" (Encouraging our students to "Initiate and develop interactions with culturally different others") ILO #5: Community and Environmental Responsibility. ILO #3 - Quantitative Literacy - "Application/Analysis" and/or "Assumptions"

This year has been full of changes. The largest supportive change has been focusing individual attributes of each project to all 5 ILO's in order to promote a broader understanding of how our world is shaped and defined. This has achieved my goal of generating students' ability to change perspective and allow for alternating viewpoints toward a common goal.