Course Assessment- Part B: Your Results & Analysis

COMPLETE #576

Please select your course and name from the drop-down menu. If your course or name are incorrect or missing, contact Sara Wade, the Instructional Services Administrative Assistant, 541-506-6037 or swade@cgcc.edu.

MTH 251- Calculus I- John Evans- Fall 2022

*** 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.**

Out of 7 students, only one received a grade below C (he got a D). The others did well in general, and did particularly well on the final. There projects were also particularly well done, though generally speaking the project in Math 251 isn't necessarily as demanding as some of the projects that follow from other classes. These comments apply to all of the outcomes. There were 2 high school students in the class, and sometimes they don't communicate their results as well as some of the others even though they clearly have reasonable writing skills. I think partly this is due to them taking Math 251 from me, rather than joining in a later term. They normally know quite well the mechanical aspects of the class, and perhaps even some theory; they are also not normally as adept at communicating mathematical ideas. I suspect because this isn't a priority in high school, and it seems unlikely that it is at all covered on the AP calculus exam.

*** Outcome #1**

Construct appropriate models using limits and derivatives.

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

85.7% (6/7)

*** Outcome #2**

Accurately compute results from models through the appropriate use of limits, derivatives, and technology.

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

85.7% (6/7)

*** Outcome #3**

Analyze and effectively communicate results within a mathematical context.

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

85.7% got a C or better. 100% completed the project.

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

Students in any class succeed or fail based on the amount of study they do outside of class. It is, of course, our job to point them in the right direction and help them as necessary, but I strongly feel we are most effect when we are able to get them to study outside of class. These students studied outside of class. Things I do to encourage this include giving the tools to deal with frustration (as opposed to attempting to prevent frustration in the first place), let them see me make mistakes (because I don't work problems ahead of time, and they are still rare), and generally try to share my love of math with them. Perhaps I do a decent job of explaining as well, but I think that is pretty far down the list of important instructor skills.

* 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.

According to the student survey, in almost every case they start at 1 or 2, and ended up at 4, with 3 as a rare exception and one person put 5 on one, which I think is probably not entirely true. It is heartening to know that on the outcome for communication none of them said they started at level 1, which shows me that our efforts in previous classes towards this outcome are having a positive effect. This is worth sharing with the rest of the department.

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

They did, and it was very nice to see that everyone turned in project one!

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

I don't see any evidence for a need to change, however, I am still not convinced we are not behind the times in the level of technology used. I asked a question to this effect, but based on what students said I doubt they really understood what I was asking. Fortunately, since it's not at all a private or confidential question, it can be openly discussed in class. I am attending ORMATYC in April, and I really (really) hope there is a presentation on current thinking and practice regarding use of technology in first year calculus.

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

Nothing yet, but if we end up needing to buy some current symbolic algebra software, it will be on the expensive side - something like $1500 for each license, perhaps more. We can probably train ourselves, but if not... then that would be another expense.

* 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.

I mentioned a debate with myself on how much time to let them work on a problem before I do it, keeping in mind that the amount of time given is almost always based on how much class time we have as opposed to how long it takes students to do a problem. Well, with the onset of covid and zoom classes the question seems to have become mute. They get more time than they used to, but the trade off is that they work fewer problems in class (the equivalent of seeing fewer examples). They probably work far fewer, but they are also getting into it deeper. Thus they are more likely to encounter issues while they are still in class.

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

I show the the outcomes and that is about it. I strongly believe that's eduease meant for us. Sure, they are the outcomes we expect students to meet, but I have yet to encounter - in 30 years of teaching - a student that cared about that. They only care to the extent that it will affect their final grade. That doesn't mean a student can pass my class without meeting these outcomes however.

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: "Curiosity" - Encouraging our students to "Ask deeper questions about other cultures and seek out answers to these questions" ILO #5: Community and Environmental Responsibility. The area that faculty are focusing on are: "Applying Knowledge to Contemporary Contexts" and "Understanding Global Systems" ILO#3 - Quantitative Literacy - "Application/Analysis" and/or "Assumptions"

I have been emphasizing the importance of assumptions more. They are used to their other classes where you must be aware of your own biases and any assumptions you have made so that you can try to eliminate or at least ignore them, because they are yours and probably get in the way of properly analysis. In math however it is the assumption that leads to the model (yes, in math we don't pick an equation for our model, we form assumptions and they lead to the model). It's a work in progress.