

G-PAC Student Learning Outcome	Assessment Plan	Assessment Findings	Interpretation of Findings	Action Plan
<p><b>1. Represent mathematical information symbolically, visually, numerically, and verbally</b></p> <p><b>Semester: Fall</b> <b>Year: 2016</b></p>	Measure A (must be direct) <i>Examples of Direct: scores on presentations, papers, or performances using a rubric; pre-post test scores or scores on specific exam questions.</i>			
	Exam: Students were required to draw the US government’s demand curve for US sugar based on its sugar policy in 2013	Total number of students assessed = 318  Rubric is attached  Distribution of scores (out of 2 points):  Score: # of Students (%) 0: 13 students (7.2%) 0.5: 1 students (0%) 1: 109 students (31.7%) 1.5: 14 students (4.8%) 2: 181 students (56.3%)	Overall, more than 60% of students successfully answered this question. I would have liked this number to be closer to 75%.  While students, in general, know how to structure and draw a demand graph, they are unable to make the connection between verbal information on government policy and how to draw a graph depicting that information.  I had hoped more students would be able to do this by the end of the semester.	This was a relatively challenging, analytical question. However, I would still have liked at least 75% of my students to be able to answer this question successfully. I think students need more practice on these sorts of questions. I will add more of these types of questions to homework assignments and in-class exercises. In fact, students have made this request on course evaluations.
	Measure B may be direct or indirect; indicate which it is: <u>Indirect</u> <i>Examples of Indirect: participation scores, student course evaluation questions referring to student learning (as opposed to questions about the instructor).</i>			
Course evaluation: Which of the following were significant aspects of the efforts you put in for the course?	Total number of students that provided feedback 304/318 (95.6%)  Memorizing (63%) Applying basic concepts (79.5%) Synthesizing (43%) Making Judgments (31.5%) Applying theories to new situations (62.5%) Solving Problems (84%) Thinking critically (35%)	This problem required synthesis, making judgments, application of theories to a new situation and thinking critically. These are aspects of course students did not select. Instead students are memorizing how to solve problems using basic concepts.	Students don’t understand the skills they need for different problems. I may label assignments to show which skills they are imparting to students so they aware at what level they know the material.	

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<p><b>2. Articulate precise mathematical definitions and propositions and draw inferences from them</b></p> <p><b>Semester: Fall</b> <b>Year: 2016</b></p>	Measure A (must be direct) <i>Examples of Direct: scores on presentations, papers, or performances using a rubric; pre-post test scores or scores on specific exam questions.</i>			
	Exam: Based on a price elasticity they had calculated, students were asked to define the level of price sensitivity among consumers and infer how the demand curve for this market would look.	Total number of students assessed = 318  Rubric is attached  Distribution of scores on part 2b (out of 2 points): Score: # of Students (%) 0: 53 students (16.7%) 2: 265 students (83.3%)  Distribution of scores on part 2b (out of 2 points): Score: # of Students (%) 0: 64 students (20.1%) 2: 254 students (79.8%)	Over 80% of students could define whether consumer demand was elastic, inelastic etc. based on an elasticity they had calculated.  Close to 80% of students knew how to draw the associated demand curve.	These were relatively straightforward questions. I am glad the majority of students were able to do well on them.  I don't think that the remaining students didn't know the material. My guess is that they thought they knew this material well and didn't bother to review it choosing to focus instead on newer/harder material when studying for the final exam.
	Measure B may be direct or indirect; indicate which it is: _____ <i>Examples of Indirect: participation scores, student course evaluation questions referring to student learning (as opposed to questions about the instructor).</i>			
Course evaluation: Which of the following were significant aspects of the efforts you put in for the course?	Total number of students that provided feedback 304/318 (95.6%)  Memorizing (63%) Applying basic concepts (79.5%) Synthesizing (43%) Making Judgments (31.5%) Applying theories to new situations (62.5%) Solving Problems (84%) Thinking critically (35%)	This problem required some memorization, application of basic concepts and synthesis. These are aspects of course many students selected.	I would prefer that students not memorize course material and solve problems through application and synthesis instead.  I may label assignments to show which skills they are imparting to students so they aware at what level they know the material.	

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<b>3. Use algebraic, geometric, or statistical calculations to solve problems</b>  <b>Semester: Fall</b> <b>Year: 2016</b>	Measure A (must be direct) <i>Examples of Direct: scores on presentations, papers, or performances using a rubric; pre-post test scores or scores on specific exam questions.</i>			
	Final exam: Students were required to explain and interpret the effect of a tariff in a market graph.	Total number of students assessed = 318  Distribution of scores (out of 10 points):  Score: # of Students (%) <6: 121 students (38.1%) 6-7.5: 112 students (35.2%) 8-10: 85 students (26.7%)	Close to 65% of students could calculate a price elasticity using the midpoint formula.  A large number of students (26%) did not remember the formula at all or did not remember it correctly, and a small percentage calculated the elasticity incorrectly.	This was a very straightforward question and one that had been practiced many times. Students memorize formulas instead of intuitively understanding how formulas are generated from the theory and therefore being able to figure out how to write them. I will spend some time on this in class.
	Measure B may be direct or indirect; indicate which it is: Indirect <i>Examples of Indirect: participation scores, student course evaluation questions referring to student learning (as opposed to questions about the instructor).</i>			
Course evaluation: Which of the following were significant aspects of the efforts you put in for the course?	Total number of students that provided feedback 304/318 (95.6%)  Memorizing (63%) Applying basic concepts (79.5%) Synthesizing (43%) Making Judgments (31.5%) Applying theories to new situations (62.5%) Solving Problems (84%) Thinking critically (35%)	This problem required synthesis, making judgments, application of theories to a new situation and thinking critically. These are aspects of course students did not select. Instead students are memorizing how to solve problems using basic concepts.	I would prefer that students not memorize course material and solve problems through application and synthesis instead.  I may label assignments to show which skills they are imparting to students so they aware at what level they know the material.	