

Subject Matter Expert Review
TAACCCT Grant – Round 2
Findings & Report

Program: Emporium Model Curriculum for Mathematics

Program Courses: MAT 140 Essentials of College Algebra

Faculty Developer(s)/Instructional Designer(s): Faculty and Staff of Delaware Technical Community College

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Subject Matter Expert Credentials: See resume

Dates of Review: July 2016

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Overall:

In my review of the MAT140 College Algebra course, it is apparent that the student learners and instructors should know what to do and expect with the provided guidance, clarity, and easy to follow formats. It was easy as an outsider to follow the course outline and directions to work through the course.

Sometimes it is helpful for student learners to have an idea of how the given tools will be able to help them, which in turn could encourage them to make better use of what is provided and further help achieve their goals of success. A simple explanation in the syllabus or in the Getting Started section might be a good idea to show how each of the tools can be used to aid in the learning process.

Thank you for the opportunity to review this course. It was evident all the hard work put into it to create such course. I enjoyed reviewing it and learning from your efforts in developing the course. I believe it is a strong template to use for future iterations of the course. It is not only easy to follow, but learner center.

I have made comments and suggestions for each section in the following charts. Please let me know if you have any questions, or can be of any further assistance.

1. PROGRAM AND COURSE OVERVIEW AND OBJECTIVES

The overall design and purpose of the program and each course is made clear to the student. Core Course Performance Objectives (CCPO's) build upon knowledge and skills through the sequence of the program and align to the Program

	Graduate Competencies (PGC's).
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<i>Specific Review Standard</i>	Accomplished	Satisfactory	Not satisfactory
1.1 The program graduate competencies are clearly stated.			X
1.2 The goals and purpose of each course are clearly stated.	X		
1.3 Prerequisites and/or any required competencies are clearly stated.	X		
1.4 Learning objectives for each course describe outcomes that are measurable.	X		
1.5 Learning objectives are appropriately designed for the level of each of the courses.	X		
1.6 Instruction, activities, and assignments in courses are scaffolded from course to course, and throughout the program.	X		

Comments:

1.1 In the syllabus it states that the CCC (Core Curriculum Competencies) and the PGC (Program Graduate Competencies) are at the end of the syllabus. Here the CCC are clearly listed. It does also state that these are “Competencies every graduate will develop.” I am just not sure if these are also part of the PCGs.

1.2– 1.5 The goals, purpose, objectives measurable outcomes, and required competencies are clearly stated between the syllabus, the weekly schedules for each class offering, the student contract, the topic handouts, MyLabsPlus, and the instructor information.

1.6 With the teacher created notes that list a step by step process of the topic at hand, MyLabsPlus having videos, practice reviews for each quiz and test, the text book explanations,

and having instructors themselves, this class has a variety of instructional techniques used that should be able to move students progressively toward stronger understanding and ultimately greater independence in the learning process. If possible, I think it would be nice to have the topic listed next to each section in the “Homework” tab for students to easily access any topic they would like to find. For instance, the homework allows a student to click on section 1.4, 1.5, 2.1 etc. however, it doesn’t list next to them, Order of Operations, Exponents, Linear Equations, etc.

I was very impressed with the basis of the instructor written notes for students. The step by step process and charts used with diagrams and explanations are a quick, easy reference for students to easily refer to with main concepts that were written in a way that College Algebra students should clearly understand. I would also recommend creating these type of notes for the rational expressions section and the radicals section as well. Students often need extra help on remembering the difference between the steps in multiplying and dividing vs adding and subtracting when it comes to rational expressions AND radicals.

2. RELEVANCY	Program Graduate Competencies (PGC's) and Core Course Performance Objectives (CCPO's) are relevant to students, industry, and employers.
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<i>Specific Review Standard</i>	Accomplished	Satisfactory	Not satisfactory
2.1 Program Graduate Competencies (PGC's) represent industry's expectation of the overarching knowledge, skills, and abilities an associate-degree level student should have.		x	
2.2 Program competencies (PGC's) and core course competencies (CCPO's) are relevant to industry and employers.	x		

2.3 Instruction, activities, and assignments in individual courses are relevant and engaging to students .	x		
<p>Comments:</p> <p>2.1 -2.2 The PGC's, as noted earlier, need to be listed and labeled clearly to ensure they are all covered. The Core Course Competencies seem to be in place to allow students to not only work on their mathematics, but also use technology, promote communications effectively, work with any other peer, and problem solve, which is needed in any and every career.</p> <p>2.3 All notes, syllabi, weekly outlines, MyLabsPlus videos, homework, reviews, and assessments are relevant an engaging to students by using different delivery methods. I would recommend adding group activity options for instructors to use in order to ensure CCPO's are all being fully accomplished.</p>			

3. RESOURCES AND MATERIALS	Instructional materials being delivered achieve stated course objectives and learning outcomes <i>(note: not all program/course materials are deliverable under CC BY licensing)</i> .
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<i>Specific Review Standard</i>	Accomplished	Satisfactory	Not satisfactory
3.1 The instructional materials contribute to the achievement of the stated course learning objectives.	x		
3.2 The purpose of instructional materials is clearly explained.	x		
3.3 The instructional materials present a variety of perspectives and approaches on the course content.	x		
3.4 The instructional materials are appropriately designed for the level of the course.	x		

Comments:

3.1 The instructional materials contribute to the achievement of the course learning objectives. They are written in terms that a College Algebra student should clearly understand and see the correlation with the activities they are completing. The MyLabsPlus is clearly organized and outlined as mentioned previously.

3.2 The instructional material is clearly explained. I would suggest that possibly a simple explanation of how all the tools in this course (from notes, to reviews, to MyLabsPlus, to BlackBoard, etc.) will help students be successful. It might be a good idea to encourage students to make better use of what's provided in efforts to promote success.

3.3 The instructional materials present a variety of perspectives and approaches on the course content. I was impressed in general with the instructor written notes. They apply a lot of step by step instructions which is needed for students at this level. Also, the use of online technology with videos, reviews, provide a large variety of approaches as well. I would suggest creating some group activities to have accessible to all instructors teaching the course as well to create more of a variety, and may help get students more involved and interested.

3.4 The instructional materials are appropriately designed for the level of the course with their wording, concepts and presentations. The weekly schedule path that is was created for each course set up, and the online portion of the course is an easy to navigate path throughout the course. Students should have no problems knowing what is expected of them for the course and what they are supposed to be accomplishing.

Below are a few changes I would suggest on these to enhance them even further:

1. In the “Factoring Techniques” notes, the following note on discriminants is given. I have highlighted in yellow where it refers to example 4 and 5 above. There isn’t a #4 and #5 above in the notes page that refers to this. Possibly these examples could be added.

NOTE on DISCRIMINANT:

The quantity under the square root sign: $(b^2 - 4ac)$ is called the DISCRIMINANT.

If $(b^2 - 4ac)$ is greater than zero there are 2 solutions (see example in item 5 above)

If $(b^2 - 4ac)$ is equal to zero there is ONE solution. (see example in item 4 above)

If $(b^2 - 4ac)$ is LESS than zero there are NO real solutions. (Since there cannot be a square root of a negative number).

2. In the “Functions” notes page, at the top of the second page it discusses the following:

A function has a rule, and a domain, and a range.

Rule: The equation. Examples: $f(x) = 2x - 3$; $g(x) = \frac{2x+8}{3-x}$

Domain: What x can be (and make sense) Example: All real numbers except 3

Range: What y can be (and make sense) Example: All non-negative real numbers

To find any restrictions on the domain, look for an “x” expression in the denominator, or an “x” expression under a square root sign.

A denominator is not allowed to be zero, and an expression under a square root sign is not allowed to be negative.

I would have the domain and range examples specifically go with one of the function rules listed, so it isn’t confusing. The given domain example really does go with the $g(x)$ function, but the range does not. I would suggest using the example domain and range for each of the given functions.

3. In the “Functions” note page, in table 2, they use the following situation below. I would suggest not using a solid (colored in) circle for the composite functions. This should be an opened circle instead.

FUNCTION OF A FUNCTION:

$$F \bullet G(x) = F(G(x)) = (4x+1) - 5 = 4x - 4$$

$$F \bullet G(x) =$$

$$G(F(x)) = 4(x - 5) + 1 = 4x - 20 + 1 = 4x - 19$$

4. In the “Notes on Graphs of Linear Equations,” I was glad to see diagrams and graphs to go along with the examples. I would suggest using coordinate grids that have intervals marked on them. It may not be clear as to what the labeled numbers are referring to on the graphs.

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4. ASSESSMENT AND MEASUREMENT	Assessment strategies use established ways to measure effective learning, evaluate student progress by reference to stated learning objectives, and are designed to be integral to the learning process.
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<i>Specific Review Standard</i>	Accomplished	Satisfactory	Not satisfactory
4.1 The course evaluation criteria/course grading policy is stated clearly on each syllabus.	x		
4.2 Course-level assessments (those that can be delivered) measure the stated learning objectives and are consistent with course activities and resources.	x		
4.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation and are tied to the course grading policy.	x		
4.4 The assessment instruments (that can be delivered) are sequenced, varied, and appropriate to the content being assessed.	x		

Comments:

4.1 The course evaluation criteria/course grading policy is stated clearly on the syllabus. A few possible suggestions are as follows below:

On the syllabus, under "Course Procedures," I may suggest adding that all work is to be shown on paper for the tests and final exam. Another point to consider under this section, is adding the fact that homework must be completed above or at a 75% level before the quiz for that section may be taken. On the syllabus under "Additional Materials," it states that graphing calculators will not be allowed on quizzes and tests. I may also add that cell phone calculators are not allowed.

4.2 The course-level assessments do measure the stated learning objectives and are consistent with course activities and resources. The course competencies are sequenced appropriately and the assessment instruments compliment that in a consistent pattern throughout the course.

4.3 The specific and descriptive criteria are provided for the evaluation of students work and are tied to the grading policy for the course. Everything is laid out and organized in a way with both the percent of the total grade and the percent needed to pass. It is extra encouraging for students to want to do their work ahead of time and to be successful by giving them a few extra points if their tests are taken and passed by the suggested dates.

4.4 The assessment instrument online is sequenced, varied and appropriate to the content being assessed. There are reviews online for each quiz and test. There are also extra optional reviews for each assessment if the student doesn't earn the points needed to get the 75% they need.