Course Outcomes Guide (COG)

Directions: Please complete this form to document your progress toward improving student learning. For each item, indicate your progress and your anticipated next steps. Thank you!

Course Title: **MAT 098 Pre-Algebra** **Date: June 2015**

Course Team: **Carrie Hawbecker, Lead Instructor**

Expected Learning Outcomes

STUDENT LEARNING OUTCOMES FOR MAT 098, Pre-Algebra

Upon successful completion of this course students will be able to:

1. Perform computational skills with integers, fractions, decimals, ratios, and rates.
2. Have an understanding of mean, median, and mode.
3. Solve linear equations.
4. Show an understanding of conversions involving percent and applications.
5. Communicate and understand mathematical statements, ideas and results with the correct use of mathematical definitions, terminology and symbolism.

Assessment (How do or will students demonstrate achievement of each outcome? Please attach a copy of your assessment electronically.)

All the student's homework and quizzes are created via MyMathLab. The questions are chosen to build the student's skills to achieve the Learning Outcomes. Each of the homework assignments and quizzes are graded via MyMathLab so each student are learning the same concepts and achieving the same set of skills. The tests are also generated via MyMathLab by the lead instructor to make sure all of the outcomes are being met for the student to be successful in the next course.

MyMathLab is computer based. The final exam assessment cannot be attached since this COG document is posted on HCC's website. If it was, the students would have access to it.

Validation (What methods have you used or will you use to validate your assessment?)

We use MyMathLab so all students are completing the same homework, quizzes, and tests. There is a comprehensive final exam with 2 essay questions. This is used to analyze the Student Learning Outcomes. All instructors use the same rubric to grade the tests. See attachment for the rubric.

Results (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

Using the new curriculum, the success rate for fall 2014 was 58.2%. In spring 2015, it was 50.8%. This was a gain from the previous year. The success rate was 56.9% for 2014-2015 compared to 52.1% in 2013-2014. This data was generated by instructors entering all information of the student's grades in the course, the SLOA questions from the final exam, and the final exam scores into Excel. It was then imported into the program Mathy. Each SLOA objective was analyzed by the Mathy program. A few changes in the objectives for fall 2015 will be made and there will also be changes in analyzing the final exam. Changes in the curriculum will be made for fall 2016.

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

In fall 2014, we changed to a new textbook which aligns with the College Algebra text.
The SLOA objectives were changed to specifically meet pre-algebra skills versus all courses. The current objective 5 was objective 4 from the previous developmental course. It was kept to insure students were still using communication skills. Previous outcomes:

1. Use computational techniques and algebraic skills essential for success in an academic, personal, or workplace setting (Computational and Algebraic Skills).
2. Use visualization, spatial reasoning, as well as geometric properties and strategies to model and solve problems (Geometric Skills).
3. Collect, organize, and display data as well as use appropriate statistical methods to analyze data and make inferences and predictions (Statistical Skills).
4. Communicate and understand mathematical statements, ideas and results, both verbally and in writing, with the correct use of mathematical definitions, terminology and symbolism (Communication Skills).
5. Work collaboratively with peers and instructors to acquire mathematical understanding and to formulate and solve problems and present solutions (Collaborative Skills).

See page 1 for the new student learning outcomes.

Budget Justification (What resources are necessary to improve student learning?)

No requests at this time.

Grading Rubric for Developmental Mathematics

This general scale is to be used for all Tests and Final Exams in MAT 098, MAT 099, and MAT 100.

Percentage of Point Value	**Description**	
	Computational Questions	***Essay Questions***
100%	The student has the problem worked out completely, showing all the proper steps, and has the correct answer.	Answer must meet the criterion listed to the left AND must also be in complete sentences and use correct mathematical terminology and symbolism
90%	The student has worked out the problem using the correct mathematical procedure, but has made one minor mathematical (arithmetical) mistake giving the incorrect answer (unless the problem is testing one of these concepts, as oft is the case in MAT 098).	The criterion to the left is to be used.
75%	The student has used the correct mathematical procedure, but has several minor arithmetical errors or has one more major mathematical error in the problem.	The theme of the answer is correct, but has a minor error in mathematical terminology or symbolism OR the answer is not grammatically correct.
50%	The student has started the problem using the correct mathematical procedure, but has several mathematical errors and weak justification for the work.	The theme of the answer is correct but there is major mistake in mathematical terminology or symbolism.
25%	The student response demonstrates understanding of at least one major concept, however, it is mostly incorrect. Justifications may be missing or may lack clear mathematical reasoning. Only the correct answer is given without any supporting work.	The criterion to the left is to be used.
0	The student response in incorrect and lacks reasonable justification. The student did not respond to this problem.	The criterion to the left is to be used.

Revised
14/FA

MAT-098 AY 2014-2015

	Total	A	B	C	D	F	WF	W/I/AU	Success	Completer Success
2014-2015 Summary	383	18.3% (n=70)	23.2% (n=89)	15.4% (n=59)	0.0% (n=0)	36.0% (n=138)	15.1% (n=58)	7.0% (n=27)	56.9% (n=218)	73.2%

MAT-098 SLOA Report

	Course Results					*Common Assessments*				
Term	# of Students	Success	Walk-Away F	With-drawal	Mean GPA	PreTest Avg	PostTest Avg	Avg Change	Course	GenEd
12/SP	n = 236	50.8% n = 120	16.5% n = 39	9.3% n = 22	1.69	N/A out of 10	N/A out of 10	N/A	---	N/A
12/SU	n = 75	66.7% n = 50	20.0% n = 15	2.7% n = 2	2.21	2.18 out of 10	5.75 out of 10	3.39	---	N/A
12/FA	n = 152	50.0% n = 76	28.3% n = 43	10.5% n = 16	1.65	2.25 out of 10	5.94 out of 10	3.59	---	N/A
13/SP	n = 155	56.8% n = 88	32.3% n = 50	3.9% n = 6	1.83	2.59 out of 10	6.34 out of 10	3.55	---	N/A
13/SU	n = 76	53.9% n = 41	0.0% n = 0	6.6% n = 5	1.79	2.68 out of 10	5.88 out of 10	3.22	---	N/A
13/FA	n = 200	57.0% n = 114	18.5% n = 37	7.0% n = 14	1.77	2.16 out of 10	5.91 out of 10	3.49	3.63 out of 6	N/A
14/SP	n = 161	46.0% n = 74	35.4% n = 57	6.2% n = 10	1.50	2.42 out of 10	5.78 out of 10	3.17	3.86 out of 6	N/A
14/SU	n = 66	63.6% n = 42	21.2% n = 14	3.0% n = 2	1.97	2.63 out of 10	6.01 out of 10	3.18	3.60 out of 6	N/A
14/FA	n = 193	58.5% n = 113	21.8% n = 42	8.8% n = 17	1.96	N/A	N/A	N/A	14.96 out of 20	N/A
15/SP	n = 124	50.8% n = 63	0.0% n = 0	5.6% n = 7	1.66	N/A	N/A	N/A	--- out of 20	N/A
15/SU										