MTH 103: Algebraic Reasoning

Catalog Description: Graphing data, functions, rate of change, linear equations, systems of linear equations, linear inequalities, linear functions, absolute value functions, quadratic functions, exponential functions

Credits: 4

Terms offered: F, W, S

Enforced Prerequisites: MTH 065 with C- or better, or ALEKS math placement test: 30%, or math placement test: 11, or instructor permission.

Meetings: Two 110-minute class sessions combine cooperative learning and instruction

Course Content:
1. Graphing data
2. Functions
3. Rate of change
4. Linear equations
5. Systems of linear equations
6. Linear inequalities
7. Linear functions
8. Absolute value functions
9. Quadratic functions
10. Exponential functions

MTH 103 Measurable Student Learning Outcomes: A successful student in MTH 103 will be able to:

- Correctly manipulate symbols in expressions and equations.
- Create and interpret graphs from data and symbols.
- Create and interpret tables from data and graphs.
- Recognize when a situation may be modeled by a function and be capable of creating that model (in graphs, symbols and tables).
- Know the definition of a real-valued function.
- Write and speak with understanding about the concept of rate of change and slope.
- Recognize functions and equations that are linear and recognize when they are not linear when they are expressed in symbols, graphs and tables.
- Recognize constant, piecewise, quadratic, cubic, exponential functions when presented as graphs.
- Recognize and interpret domain and range of a function given in graphs, symbols and tables.

Evaluation of Student Performance: Your grade and measurement of your progress on the course outcomes will be based on weekly online homework, daily clicker problems and other in-class activities, weekly written quizzes, along with a written midterm and final exam. (Approximate percentages given.)

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Online Homework</td>
<td>15%</td>
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<tr>
<td>Clicker Problems/In-class Activities</td>
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<tr>
<td>Quizzes</td>
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<td>Midterm</td>
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<td>Final Exam</td>
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Learning Resources: The required text is *Algebra and Trigonometry with Algebraic Reasoning Activities Manual*, by Gary K. Rockswold (2010, Custom Edition for Oregon State University) with MyMathLab access code or other similar text selected by department. TurningPoint Clicker, scientific or graphing calculator.

Selected portions of the text will be covered as follows.

Chapter 1: 1.2, 1.3, 1.4
Chapter 2: 2.1, 2.2, 2.3, 2.4, 2.5
Chapter 3: 3.1, 3.2
Chapter 5: 5.3
Chapter 9: 9.1

Students With Disabilities: Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Academic Honesty and Student Conduct: Students are expected to be familiar with the Homework and Exam policies stated in this syllabus, as well as Oregon State University's Student Conduct Code. [http://oregonstate.edu/studentconduct/code/index.php](http://oregonstate.edu/studentconduct/code/index.php).