

## Contemporary Mathematics

**MATH115**

**Spring 2016**

In this course, students develop problem-solving skills while covering topics which include number sense and estimation, proportions, unit conversions, metric system, statistics and probability, percent's, the mathematics of finance, and mathematical modeling of contemporary problems. Additional topics are tailored to meet the needs of students in specific programs. Prerequisite: MATH002 Preparation for College Math II or MATH011 Introductory Algebra; waiver by placement testing results; or departmental approval.

COURSE OUTCOMES	OUTCOMES ACTIVITIES
Application problems will be chosen to reflect the career interests of the class population.	
At the end of this course, students will be able to	
Demonstrate an understanding of the concepts of numbers and estimation.	<ol style="list-style-type: none"> <li>1. Review the concept of place value. (QS)</li> <li>2. Develop estimation skills. (R, QS, CT)</li> <li>3. Apply estimation skills to problem solving. (R, QS, W, CT)</li> </ol>
Apply the concepts of ratio and proportion to solve applied problems.	<ol style="list-style-type: none"> <li>1. Find rates and unit rates. (R, QS, CT, TS)</li> <li>2. Solve proportions. (W, R, QS, CT, TS)</li> <li>3. Solving application problems using proportions. (W, R, QS, CT, TS)</li> </ol>
Use both the English and metric systems of measurements in order to use them appropriately.	<ol style="list-style-type: none"> <li>1. Make conversions within each system and between systems. (QS, CT, TS)</li> <li>2. Compute unit conversions as necessary for applied problems. (QS, CT, W, R, TS)</li> </ol>
Solve descriptive statistics problems in order to analyze and interpret data in real word situations.	<ol style="list-style-type: none"> <li>1. Read, interpret, and create bar graphs, pie graphs, and line graphs. (W, R, CT, QS)</li> <li>2. Calculate the mean, the median, the mode, the range and the standard deviation for a given set of data. (W, R, CT, QS, TS)</li> </ol>
Use the rules of basic probability in order to solve related problems.	<ol style="list-style-type: none"> <li>1. Apply the basic concepts of probability including the addition and multiplication rules. (CT, QS, R, TS)</li> <li>2. Solve problems involving the Fundamental Counting Principle, permutations, and combinations. (CT, QS, R, TS)</li> </ol>
Solve problems involving the basic percent equation in order to develop techniques to solve applied problems.	<ol style="list-style-type: none"> <li>1. Solve the basic three types of percent equations. (W, R, CT, QS, TS)</li> <li>2. Solve real life application problems, such as simple interest and sales tax, percent increase and decrease, sales discount and commission. (W, R, CT, QS, TS)</li> <li>3. Identify uses and abuses of percent's. (W, R, CT, QS, TS)</li> </ol>
Apply the concepts of consumer mathematics in order to solve problems involving the mathematics of finance.	<ol style="list-style-type: none"> <li>1. Solve application problems involving simple and compound interest. (CT, QS, R, TS, W)</li> <li>2. Solve problems involving annuities. (CT, QS, R, TS)</li> <li>(CT, QS, R</li> <li>3. Calculate loan payments. (CT, QS, R, TS, W)</li> </ol>
OPTIONAL:	<ol style="list-style-type: none"> <li>1. Find the mean and standard deviation of a normally distributed set of data. (CT, QS, R, TS)</li> </ol>

Use the properties of the normal distribution in order to solve related problems.	2. Solve problems involving the normal distribution: (CT, QS, R, TS) a. find z-scores, b. find probabilities, c. find the data value for a given probability.
Strengthen Core Competencies** in order to increase success in this and other courses and in the workplace.	Referenced above

\*\*Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); Technology Skills (TS); Oral Communications (OC); Quantitative Skills (QS); Reading (R); Writing (W).