COURSE INFORMATION

COURSE TITLE:
MAT107: Career Math

COURSE DESCRIPTION:
Covers material designed for career technical or general studies students who need to study particular mathematical topics. Topics may include measurement, algebra, geometry, trigonometry, graphs, and/or finance. These are presented at an introductory level and the emphasis is on applications.

CREDIT HOURS:
3

SUGGESTED PREREQUISITE KNOWLEDGE:
MAT050 or assessment test. Contact your home college to determine which placement test they are using and/or for additional information.

CCCOnline Course Policies
The CCCOnline Course Policies page contains information about the student's role in the classroom, grading policies, and rights and responsibilities.
COURSE MATERIALS

Your textbook is available online as an eText. You do not need to purchase any additional materials. For specific information on refund policies and the optional black and white textbook available for purchase please contact the CCCOnline bookstore.

MINIMUM COMPUTER REQUIREMENTS

To complete this course, you will need regular access to a computer from which you can get to the Internet and use email. In order to ensure that your course functions properly, you must run the System Check. This is a CRITICAL STEP, and taking the time to do it now will eliminate a tremendous amount of frustration for you later. To run the System Check, click Tools in the course NavBar and then click System Check.

REQUIRED ETEXT


DIGITAL MATERIALS ACCESS AND SETUP

This course uses MyLabsPlus which contains the eText in addition to interactive media content to help you remember what you learn.

- Visit the Pearson MyLabsPlus Course Start page for details on first access of the materials.

To make sure your computer is set up correctly to access the eText and other digital content, review the Pearson Technical Support page, also linked in the Technical Support Module.
COURSE COMPETENCIES AND OUTCOMES

STUDENT COMPETENCIES:

The competencies you will demonstrate in this course are as follows:

A. Demonstrate knowledge and use of ratios, proportions, and percents.
B. Demonstrate knowledge and use of units of measure.
C. Demonstrate knowledge and use of signed numbers.
D. Demonstrate knowledge and use of powers of ten and scientific notation.
E. Demonstrate knowledge and use of algebraic operations.
F. Demonstrate knowledge and use of algebraic equations and formulas.
G. Demonstrate knowledge and use of angles.
H. Demonstrate knowledge and use of triangles.
I. Demonstrate knowledge and use of circles and polygons.
J. Demonstrate knowledge and use of geometric solids.
K. Demonstrate knowledge and use of graphs.

The module outcomes that will permit you to demonstrate course competencies are:

MODULE 1

Outcomes Competencies
1. Show how to navigate in D2L and in MyLabsPlus (MML). 
2. Demonstrate how to use the equation editor in the discussion posts to write fractions (A)
3. Convert between mixed numbers and improper fractions (A)
4. Illustrate and use the rules for adding, subtracting, multiplying, and dividing fractions (A)
5. Communicate clearly using mathematical terminology and symbols related to fractions (A)

MODULE 2

Outcomes Competencies
1. Write the comparison of two numbers by means of a ratio (A)
2. Write a ratio as a fraction, a decimal numeral or a unit ratio (A)
3. Solve a proportion (A)
4. Recognize, set up, and solve direct and indirect proportion applications (A)
5. Convert fractions and decimal numbers to percent numbers and vice versa (A)
6. Solve rate/base/percentage problems (A)
### Module 3

**Outcomes**
1. Round numbers off correctly depending on the accuracy or precision required
2. Convert within and between U.S. and metric units
3. Use dimensional analysis in problem solving
4. Identify Significant Digits
5. Represent a situation using signed numbers.
6. Know and use the rules for adding, subtracting, multiplying, dividing, and orders of operations with signed numbers
7. Find the powers and roots of signed numbers
8. Convert to and from scientific notation
9. Multiply, divide, and find powers of number in scientific notation

**Competencies**
- (B)
- (B)
- (B)
- (B)
- (B)
- (C)
- (C)
- (D)
- (D)

### Module 4

**Outcomes**
1. Recognize 'like terms'
2. Add and subtract like terms
3. Multiply and divide monomials
4. Apply the distributive law
5. Translate word problems into equations
6. Solve and check the linear equations, including those containing grouping symbols and fractions
7. Evaluate and solve formulas
8. Sketch and read line, bar, circle, and coordinate plane graphs
9. Use graphs to interpret data

**Competencies**
- (E)
- (E)
- (E)
- (E)
- (F)
- (F)
- (F)
- (K)
- (K)

### Module 5

**Outcomes**
1. Recognize, draw, and/or define angles that are acute, obtuse, right, straight, vertical, complementary, supplementary, alternate interior, alternate exterior, and corresponding
2. Change degree-minutes to degree-tenths and vice versa
3. Solve angle problems including adding and subtracting the measure of angles
4. Solve a right triangle using the Pythagorean Theorem
5. Solve similar triangle problems
6. Identify and find the perimeter and area of triangles, squares, rectangles, parallelograms, trapezoids, regular polygons, hexagons, and octagons
7. Convert between degree measure and radian measure
8. Identify and calculate the radius, diameter, circumference, area, arc length, and sector of a circle
9. Identify and find the surface area and volume of prisms, cylinders, pyramids, cones, and spheres

**Competencies**
- (G)
- (G)
- (G)
- (H)
- (H)
- (I)
- (I)
- (I)
- (I)
- (J)
# Module 6

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Competencies</th>
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</thead>
<tbody>
<tr>
<td>1. No new learning objectives.</td>
<td>(A-J)</td>
</tr>
<tr>
<td>2. Applying what has already been learned.</td>
<td>(A-J)</td>
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</table>
GRADING AND EVALUATION

METHODS:

Evaluation includes a combination of discussion participation, assignments, and other evaluations. Rubrics are provided for assignments and discussions.

GRADING POLICIES:

Mark all Module due dates on your calendar for this class. You may submit assignments AHEAD of schedule. Late assignments will not be accepted without prior approval.

SUMMARY OF GRADING

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Introduction Discussion</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Scavenger Hunt Quiz in MML</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Problem Solver Discussions (5 @ 12 points each)</td>
<td>60</td>
<td>6</td>
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<tr>
<td>Exploration Discussions (4 @ 40 points each)</td>
<td>160</td>
<td>15</td>
</tr>
<tr>
<td>MML Homework Assignments (9 @ 10 points each)</td>
<td>90</td>
<td>8</td>
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<tr>
<td>MML Quizzes (4 @ 20 points each)</td>
<td>80</td>
<td>7</td>
</tr>
<tr>
<td>MML Module Exams (5 @ 100 points each)</td>
<td>500</td>
<td>47</td>
</tr>
<tr>
<td>MML Final Exam</td>
<td>100</td>
<td>9</td>
</tr>
<tr>
<td>Group Project</td>
<td>60</td>
<td>6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1075</td>
<td>100%</td>
</tr>
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</table>

Grading Scale

A = 90 to 100%    B = 80 to 89%    C = 70 to 79%    D = 60 to 69%    F = 59% and below

PROBLEM SOLVING DISCUSSIONS

You should reserve a problem from the list of problems provided, and are not permitted to duplicate a problem another student has chosen. Your main posts should contain a full statement of the problem, and a full solution with explanations. Your solution should be clear and grammatically correct. You are responsible for checking back with your discussion post to answer any questions from classmates or your instructor. Please see the Problem Solver Discussion instructions for each module and the Problem Solver Rubric for further details. (See the Course Rubrics link in the Syllabus for instructions on how to view and print the course rubrics.)
EXPLORATION DISCUSSIONS

You will have one main post that investigates an application based on the material covered in the Module Exploration. Your post should state your questions and/or goals clearly, analyze the topic with well thought out explanations, and draw reasonable conclusions. You will also post at least two substantive reply posts to discuss and expand on other students' ideas. Please see the Exploration Discussion instructions for each module and the Exploration Discussion Rubric. (See the Course Rubrics link in the Syllabus for instructions on how to view and print the course rubrics.)

MML HOMEWORK ASSIGNMENTS

Your MML Homework Assignment scores are first computed in MyMathLab and later recorded in your D2L Gradebook.

MML QUIZZES

Your MML Quiz scores are first computed in MyMathLab and later recorded in your D2L Gradebook. Each quiz will have a question that requires you to show your work. The “Show Work” counts for 75% of the points for that question. So, if you get the correct answer but do not show your work, you will only earn 25% of the possible points on that question.

MML PRACTICE EXAMS

A MML Practice Exam is available before every Module Exam. These are not scored and are optional assignments. They are an opportunity to check your understanding prior to taking the exam.

MML MODULE EXAMS AND FINAL EXAM

Your MML Module Exams and Final Exam scores are first computed in MyMathLab and later recorded in your D2L Gradebook. Each exam will contain two questions that require you to show your work. The “Show Work” counts for 75% of the points for that question. So, if you get the correct answer but do not show your work, you will only earn 25% of the possible points on that question.

Your lowest MML Module Exam score will be replaced with your MML Final Exam score if your Final Exam score is higher. You will not see this reflected in your D2L Gradebook until after the Final Exam grades have been entered in the Gradebook.
GROUP PROJECT

The Group Project provides a real life scenario applying the material that is covered in this course. It also is an opportunity to work with others in the course to discuss the material in a very applicable situation. Please see the Group Project Discussion for instructions and the Group Project Rubric for how the grade will be determined. (See the Course Rubrics link in the Syllabus for instructions on how to view and print the course rubrics.)

OPTIONAL ACTIVITIES

The Study Plan in MML is optional, but we recommend that you use it when you are struggling with a topic. It will provide extra review on any topic. We have also provided Practice Exams for your benefit. These are not required, but may be helpful in preparing for your "real" Exams.

EXTRA CREDIT

There may be the possibility of extra credit, at the point value of no more than 2% of the total course points.

LATE WORK/MAKE-UP POLICY

No late work will be accepted. Plan ahead!
COURSE SCHEDULE

The Schedule is subject to change as needed.

This page summarizes all of the graded assignments, exams, and reading assignments for the course. If you want, you can print it out and post it somewhere handy.

All assignments are described in detail on the Module assignment pages. If you have questions check there and/or send me an e-mail.

This course is not self-paced and is not open-exit. All assignments, papers, quizzes, discussions, etc., are to be completed by no later than 11:59 pm MST/MDT of the due date.

NOTE: Important CCCOnline semester dates (e.g., drop/withdraw/term end) appear on the CCCOnline calendar.

MODULE 1

Reading/Assignments/Exams          Due Dates
Introduction Posts
Module 1 Exploration
Scavenger Hunt Quiz
Read/View Chapter 2 of eText
Module 1 Homework
Problem Solver Discussion
Module 1 Exam

MODULE 2

Reading/Assignments/Exams          Due Dates
Module 2 Exploration
Read/View Chapter 4 of eText
Module 2 Homework 1
Module 2 Quiz
Problem Solver Discussion
Exploration Discussion
Module 2 Homework 2
Module 2 Exam

MODULE 3

Reading/Assignments/Exams          Due Dates
Select Groups for Group Project – See the Group Project Instructions Discussion
Module 3 Exploration
Read/View Chapters 5,6, and section 7.8 of the eText
Module 3 Homework 1
Module 3 Quiz
Problem Solver Discussion
Exploration Discussion
Module 3 Homework 2
Module 3 Exam
MODULE 4
Reading/Assignments/Exams
Module 4 Exploration
Read/View Chapters 7 (except section 7.8) and section 12.1 of the eText
Module 4 Homework 1
Module 4 Quiz
Problem Solver Discussion
Exploration Discussion
Module 4 Homework 2
Module 4 Exam

MODULE 5
Reading/Assignments/Exams
Module 5 Exploration
Read/View Chapters 8, 9, and section 10.1 of the eText
Module 5 Homework 1
Module 5 Quiz
Problem Solver Discussion
Exploration Discussion
Module 5 Homework 2
Module 5 Exam

MODULE 6
Reading/Assignments/Exams
Group Project
Final Exam

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