COURSE DESCRIPTION: A survey course in mathematics for non-mathematics majors. Course covers an introduction to many topics including problem-solving, calculators and computers, consumer mathematics, sets and logic, number theory, algebra, geometry, probability, and statistics.

COURSE PREREQUISITE: Appropriate score on placement test or MAT 031 (alternative pathway). Students who have not successfully completed or placed out of MAT 032 have met the prerequisite for this class via the alternative pathway to credit level math courses (MAT 200 or MAT 204). As such, they are required to supplement their learning through the tutoring resources available through either the Academic Support Center or Student Support Services. MAT 200 will be taught at the level of college level liberal arts mathematics course.

INSTRUCTOR: Patricia Lambdin  e-mail: plambdin@chesapeake.edu
117 Kent Humanities Building  phone: 410-822-5400 ext. 2329
Chesapeake College
1000 College Circle  P.O. Box 8
Wye Mills, MD 21679

OFFICE HOURS: 11:30 – 12:45 pm on Mondays & Wednesdays (HUM 117) and Tuesdays & Thursdays from 1:00 – 2:15 pm (in CAMB), Also by appointment.

TEXT/SUPPLIES:

MyMathLab (MML) is an on-line homework program and is a REQUIRED purchase. An access code for this online program can be purchased either separately or packaged with the textbook at the bookstore. Use the Course ID found on Angel and the college’s zip code 21679 when registering. The MML Registration Tutorial can be found at:

http://pearsonmylabandmastering.com/students/tours/

A scientific calculator will be necessary for this course, such as a TI-30 or TI-30X. A graphing calculator (TI-83 or TI-84) is recommended, but not required. You are responsible for understanding how to use your calculator and for making sure that it works on test days.

COURSE STRUCTURE:
Lectures: The class will meet two times per week for lectures on:
Section 101: Mondays & Wednesdays from 10:00am – 11:15pm in HUM-112
Section 102: Mondays & Wednesdays from 1:00am – 2:15pm in MTC-106
Section 301: Tuesdays & Thursdays from 11:30am – 12:45pm at CAMB CENTER C-202

New topics will be discussed in lecture. Reading assignments are to be completed BEFORE the lecture for which they are given allowing us to move quickly from topic to topic. In completing a reading assignment, students are simply expected to have been exposed to the material – not gain a complete understanding of the material.
In addition to lectures, the average student should spend six hours outside of class each week (two hours for every hour spent in class). Students whose background in mathematics is below average or who normally work at a slower than average pace will need more time in order to keep up with the course materials.

MAT 200 WEBPAGE: go to http://www.chesapeake.edu and click on “Log on to Angel” in the menu at the bottom left side of the webpage. Or, go to: https://angel.chesapeake.edu/default.asp
All relevant information will be available via Angel. If you have questions about things like course policies or due dates, check the course webpage in Angel! If you do not have access to the MAT 200 webpage in Angel, please email me ASAP with your name and section number.

MyMathLab WEBPAGE: Go to http://pearsonmylabandmastering.com/ and:

- Section 200-101 meets M/W @ 10 a.m.
  - Use lambdin60015 as the course ID and 21679 as the zip code for MAT 200-101
- Section 200-102 meets M/W @ 1 p.m.
  - Use lambdin35052 as the course ID and 21679 as the zip code for MAT 200-102
- Section 200-301 meets T/TH @ 11:30 a.m in Cambridge
  - Use lambdin19316 as the course ID and 21679 as the zip code for MAT 200-301

- For initial registration, click the “Student” button under “Register” in the top right of the screen. Follow the directions given on Angel. Run the “Browser Check” in MML to make sure you have the appropriate plug-ins. The “Browser Check” is located on the bottom left hand side of the MML course page screen.
- For subsequent use, click on the “Sign in” button in the box at the top right of the webpage.

All homework assignments and several quizzes will be available via MML. If you have questions about due dates for homework assignments, check the calendar in MML. If you experience any technical difficulties with MML, please contact MML’s Technical Support at 1-800-677-6337.

Course Coverage and Grades: This course consists of all or parts of chapters 1 – 3, 5 – 8, & 10 – 12 of the assigned textbook. Some chapters and/or sections will be skipped because the material is beyond the scope of this course. Also, some of the material is considered review in nature. The Course Outline on page 6 lists the sections, which will be presented from each of the chapters, and the intended order of presentation. All grades will be posted in MML. The numerical final course grade will be computed as indicated in the following distribution and letter grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
</tr>
<tr>
<td>Tests</td>
<td>55%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
</tbody>
</table>

A: 90% or more
B: 80% up to but less than 90%
C: 70% up to but less than 80%
D: 60% up to but less than 70%
F: Less than 60%
CALCULATING YOUR GRADE: To calculate your grade in the class, use the following formula:

\[
\left( \frac{Hmk\ Pts}{total\ Hwk\ pts} \right) \cdot 10\% + \left( \frac{Quiz\ Pts}{total\ Quiz\ pts} \right) \cdot 10\% + \left( \frac{Test\ Pts}{total\ Test\ pts} \right) \cdot 55\% + \left( \frac{Final\ Exam\ Pts}{total\ Final\ Exam\ pts} \right) \cdot 20\% = \text{Final grade} \%
\]

GRADING:

Homework Assignments: Homework problems are given during the semester and are assigned through an online program called MyMathLab (MML). This program allows students to receive immediate feedback upon completing a problem. It also provides students with step-by-step assistance on how to solve problems. Homework assignments are worth 10% of the final course grade. A homework assignment will be given for every section of the book covered during the course of the semester. Due dates for each section are listed on the calendar in MML. Students must copy and work each computational homework assignment on notebook paper using proper problem solving techniques. Homework assignments need to be kept in your notebook for use in studying for tests and the cumulative final exam.

Quizzes: A number of quizzes will be given during the semester. Some quizzes will be administered on MML. Quizzes are to be worked independently by the student and are given for the purpose of testing students’ understanding of concepts covered during lecture. Quizzes are worth 10% of the final course grade.

Project: There will be a project completed by each student. This project will consist of an investigation of topics and persons that are not normally covered during the class. This project will count as a test grade and will replace the lowest test grade. More information will be given in class.

Tests: There will be 4 to 7 tests given during the course of the semester. Tests are worth 55% of the final course grade. Test dates will be announced during class at least one week in advance. NO test grade(s) will be dropped!

There are NO make-up tests! If you know ahead of time that you will be unable to be in class on a test day, you will need to email me at least one week in advance to set up a time to take the test early. Early tests can be taken no more than two weekdays before the test is administered in class. At the end of the semester, I will use a student’s grade on the final exam as a replacement grade for his/her missed test grade. If a student misses more than 1 test, a grade of zero will be recorded.

Final Exam: There will be a final exam given during the last week of the semester. This final exam is worth 20% of the final course grade. It is a required exam and IS cumulative.

Computer down time is NOT a valid reason for tardiness on assignments. Computers and computer programs do sometimes experience down time, so plan ahead. Procrastinate at your own risk!

MyMathLab Assignments: Be aware, you will not succeed in this class if you procrastinate with or do not complete the MML assignments. The various types of MML assignments are worth a total of 20% of the course grade. Failure to do MML assignments will mean that the best you can do in this class is an
80%, which is extremely unlikely as the MML assignments help prepare you for quizzes, tests, and the final exam.

Extra Credit: There will be NO opportunities for extra credit.

No late assignments will be accepted.

ACADEMIC HONESTY: Students are responsible for completing all quizzes, tests and the final exam without assistance (either voluntary or involuntary) from other students. No communication among students during quizzes, tests or the final exam is allowed. Any form of academic dishonesty will be given the most severe penalty possible. As described in the Student Code of Conduct, “If based on substantial evidence, a student is deemed guilty of academic dishonesty, the College may initiate disciplinary action as follows:
1. The student may be required to repeat the assignment or the examination.
2. The student may be given a failing grade for the assignment or the examination.
3. The student may be given a failing grade for the course.
4. The student may be suspended or dismissed from the college.

ATTENDANCE: Students are required to attend each class meeting. If you are unable to attend class, it is your responsibility to get the notes from another student and check the announcements on Angel. Email or talk to me immediately regarding any work missed. Students who attend class sporadically often do not do well because of the nature of the course. It is in the best interest of each student to be present at every class session. Most students need guidance in understanding the procedures involved in developing a new mathematical process. If you find yourself unable to keep up with the class, see me during office hours or make an appointment to see me outside of class time.

CLASSROOM ETIQUETTE: I expect all of my students to behave in an adult, respectful and polite manner towards both the instructor and their fellow classmates. As such, students are expected to respect each other’s rights to fully participate in the discussion of the day. The classroom tends to be fairly crowded, and discussions among students can be quite distracting to other students. To that end, it is expected that students will not engage in behaviors that distract the instructor and/or fellow classmates such as talking to each other, talking on cell phones, text messaging, leaving class for non-emergency needs, etc. If you need to ask your neighbor for clarification, please do so in a whisper. Or you can ask me, as questions asked for the benefit of the entire class are welcomed and encouraged. College policy prohibits young children from accompanying parents to class. I will give one warning to individuals that are disrupting the class. Individuals that continue to be disruptive will be asked to leave the classroom.

CELL PHONES: Cell phones must be placed on the desk in front and to the side of each student such that the display is face down on the desk. ALL cell phones must be put on SILENT mode for the duration of the class. Students found to be texting in class or otherwise abusing their cell phones during class will be asked to leave.

COURSE ATTEMPT LIMIT: Effective Spring 2008, students may only attempt a course a maximum of three times. Both Audits (L) and Withdrawals (W) count as an attempt at a course.
TRANSFERABILITY OF THIS COURSE: Students should check with their receiving institution as to the transferability of this course as well as what letter grades will transfer successfully.

SUPPORT SERVICES AVAILABLE:
Student Services:
- Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact Ms. Judy Gordon in Student Services (ext. 5805). Ms. Gordon can discuss the possibility of an accommodation plan with you to insure full participation and achievement of your educational goals.
- For help with or information about advising, registration, career planning, financial aid, or the many other aspects of your life as a student at Chesapeake College, consult the Student Success and Enrollment Services office at http://www.chesapeake.edu/studentsuccess/default.asp

- **Academic Support Center**: The Academic Support Center offers free math tutoring in room 105 of the Learning Resources Center. Find out more at http://www.chesapeake.edu/asc/index.asp

- **Project Mainstay Student Support Services Program**: This is a federally funded TRIO program which offers free scheduled tutoring up to 2 hours per week to qualifying students in room 105 of the Learning Resources Center. To qualify, students must either be a first generation college student, be economically disadvantaged, have a physical disability, or have a learning disability.

ACADEMIC INSTRUCTION EMERGENCY MANAGEMENT PLAN:
In the event that Chesapeake College needs to close for an extended period of time due to a flu pandemic, severe weather event, or other emergency situation, consideration will be given to the timing and duration of the closure as follows:

1. Closure during the semester for up to one week – there will be an opportunity to make up work missed without significant alteration to the semester calendar.
2. Closure extending beyond one week (or in situations where classes are cancelled on the same days/evenings over multiple weeks) – the College may extend the length of the semester. Depending on the timing of the closure, scheduled breaks, end of semester dates, and/or the processing of final grades might be impacted.

Students can acquire information about closures on the College website or by calling 410-822-5400 or 410-228-4360. Chesapeake College courses held at off campus sites will follow the protocol of the host facility.

COMMUNICATION WITH OTHER CLASSMATES: Experience has shown that when students form study groups and spend time discussing course topics with other students, their understanding of many of the difficult concepts greatly increases, and exam scores improve as a consequence. Therefore, students are encouraged to work on homework and study for exams with other students. Please take the time to get to know the students around you and to ask if they would like to exchange email addresses and/or phone numbers. This is optional, of course, but will help a great deal if you must be absent from class for some reason, and need to get notes and/or handouts from a classmate.

Chesapeake College Course Outcomes
Course Number and Title: MAT 200, Fundamentals of Mathematics

Chesapeake College General Education Competencies

The course material in this class should contribute to the development of many of the College’s general education objectives. This course should increase a student’s skills and knowledge to:

1. Communicate in oral and written English
   - Write clearly, correctly, logically, and ethically
   - Express their own ideas coherently, as well as work collaboratively with others in a responsible manner.

2. Read with comprehension
   - Summarize key concepts, make inferences, and draw conclusions.
   - Use appropriate reading strategies to analyze and understand different types of texts.

3. Think critically; reason abstractly
   - Identify, assess, and interpret relevant information.
   - Apply critical thinking skills to the solution of complex problems.

4. Apply technology to learning
   - Use current technology to communicate effectively with others in writing, presentations, and electronic communications.

5. Understand and interpret numerical data using quantitative method and literacy
   - Recognize mathematical problems in a variety of contexts, including their individual academic program, and apply mathematical skills in order to solve them.
   - Demonstrate the mathematical reasoning skills required in problem-solving and decision-making situations.
   - Interpret results and draw conclusions.
   - Interpret mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them.
   - Communicate mathematical information symbolically, visually, numerically, and verbally.
   - Demonstrate knowledge and interpretation of mathematical relationships, facts, concepts, and theories and show how they apply to their academic, professional, and personal lives.
   - Evaluate mathematical information and concepts.

MAT 200 Common Core Learning Outcomes:
At the completion of this course, the student will be able to:

1. Apply the mathematical skills required in performing operations and problem-solving related to number theory, linear equations and inequalities, percent applications, geometric formulas, counting methods, probability, and statistical formulas.

2. Analyze mathematical models such as formulas, equations, functions, sets, graphs, and tables and draw inferences from them.

3. Communicate mathematical information conceptually, symbolically, visually by graphing functions, using set and logic notation, and numerically using appropriate terminology.

4. Evaluate and/or interpret mathematical information, relationships, facts, concepts, and theories related to solving and graphing equations, set theory, logic, and geometric and statistical procedures.

Course Outline:

<table>
<thead>
<tr>
<th>Chapters</th>
<th>Topics</th>
<th>Textbook Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Problem Solving and Critical Thinking</td>
<td>1.1, 1.3</td>
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Chapter Objectives and Homework Assignments:

After completing each chapter, you should be able to accomplish the indicated objectives. You will also need to complete the homework assignments and quizzes for that chapter on MyMathLab.

Chapter 1 – Problem Solving and Critical Thinking:
1. Understand and use inductive reasoning.
2. Understand and use deductive reasoning.
3. Solve problems using the organization of the four-step problem solving process.

Chapter 2 – Set Theory:
1. Use three methods to represent sets.
2. Use the symbols ∈ and .
3. Determine a set’s cardinal number.
4. Recognize equivalent sets.
5. Recognize equal sets.
6. Determine the number of subsets of a set.
7. Understand the meaning of a universal set.
8. Understand the basic ideas of a Venn diagram.
9. Use Venn diagrams to visualize relationships between two sets.
10. Determine sets involving set operations from a Venn diagram.
11. Understand the meaning of and and or.
12. Use the formula for \( n(A \cup B) \).
13. Perform set operations with three sets.
14. Use Venn diagrams with three sets.

Chapter 3 – Logic:
1. Form the negation of a statement.
2. Express quantified statements in two ways.
3. Express compound statements in symbolic form.
5. Construct truth tables for conditional.
6. Construct truth tables for biconditional statements.
7. Use truth tables to show that statements are equivalent.
8. Write the contrapositive for a conditional statement.
9. Write the converse and inverse of a conditional statement.
Chapter 5 – Number Theory and the Real Number System:
1. Determine divisibility.
2. Write the prime factorization of a composite number.
3. Find the greatest common divisor of two numbers.
4. Solve problems using the greatest common divisor.
5. Find the least common multiple of two numbers.
6. Solve problems using the least common multiple.

Chapter 6 – Algebra: Equations and Inequalities:
1. Evaluate algebraic expressions.
2. Use mathematical models.
3. Simplify algebraic expressions.
4. Solve linear equations.
5. Solve problems using proportions.
6. Identify equations with no solution or infinitely many solutions.
7. Solve a formula for a variable.
8. Graph subsets of real numbers on a number line.
10. Solve applied problems.

Chapter 7 – Algebra: Graphs, Functions, and Linear Systems:
1. Plot points in the rectangular coordinate system.
2. Graph equations in the rectangular coordinate system.
3. Use function notation.
4. Graph functions.
5. Calculate slope.
6. Use the slope and y-intercept to graph a line.
7. Graph horizontal or vertical lines.
8. Use slope and y-intercept to model data.
9. Solve linear systems by graphing, substitution, and/or addition.
10. Solve problems using systems of linear equations.
11. Graph a linear inequality in two variables.
12. Use mathematical models involving linear inequalities.
13. Write an objective function describing a quantity that must be maximized or minimized.
14. Use linear programming to solve problems.

Chapter 8 – Consumer Mathematics and Financial Management:
1. Express a fraction as a percent.
2. Express a decimal as a percent.
3. Express a percent as a decimal.
4. Solve applied problems involving sales tax and discounts.
5. Compute income tax.
6. Determine percent increase or decrease.
7. Calculate simple interest.
8. Use the simple interest formula on discounted loans.
Chapter 10 – Geometry:
1. Understand points, lines, and planes as the basis of geometry.
2. Solve problems involving angles formed by parallel lines and transversals.
3. Solve problems involving similar triangles.
4. Solve problems using the Pythagorean Theorem.
5. Solve problems involving a polygon’s perimeter.
6. Find the sum of the measures of a polygon’s angles.
7. Use area formulas to compute the areas of plane regions and solve applied problems.
8. Use formulas for a circle’s circumference and area.
9. Use volume formulas to compute the volumes of three-dimensional figures and solve applied problems.
10. Compute the surface area of a three-dimensional figure.

Chapter 11 – Counting Methods and Probability Theory:
1. Use the Fundamental Counting Principle to count permutations.
2. Evaluate factorial expressions.
3. Use the permutations formula.
4. Distinguish between permutation and combination problems.
5. Solve problems involving combinations using the combination formula.
6. Compute theoretical probability.
7. Compute empirical probability.
8. Find the probability of one event or a second event occurring.

Chapter 12 – Statistics:
1. Organize and present data.
2. Determine the mean, median, mode, midrange, range and standard deviation for a data set.
3. Recognize characteristics of normal distributions.
4. Find the scores at a specified standard deviation from the mean.
5. Use the 68-95-99.7 Rule.
6. Convert a data item to a z-score.
7. Understand percentiles and quartiles.