Course Description: This survey course provides an opportunity to acquire an appreciation of the nature of mathematics and its relation to other aspects of our culture. The course is rigorous but not rigid and applies mathematics to real-world problems.

Pre-requisites: MATH 010/025 with a grade of “C” or better or COMPASS placement test score of 46 or higher on the algebra portion.


Equipment: A scientific calculator is required.

Course Objectives: Math 123, Math in Modern Society, is the capstone course in mathematics for those choosing not to continue their formal study of mathematics. This course is specifically geared toward helping diverse students with different career objectives. The student will have a strong understanding of the topics listed in the course content (below). Successful completion of Math 123 will provide students with solid conceptual understanding and problem solving abilities necessary for practical application of the mathematics found in everyday life.

Outcomes Assessment: Quizzes and homework will be used to assess mastery of course content. Midterm exams will be used to assess student achievement. Students will complete a comprehensive final that will measure student’s knowledge of the material that was covered throughout the semester. Student’s quizzes, homework, midterm exams and final exam will determine if the student has met the required grade of C or better, to fulfill their program requirement or progress to the next math course in their sequence. Extra credit will generally not be given.

Methods: Textbook study, lectures and explanations from instructor, class discussion and help from the instructor outside of class are all methods used. It is hoped that the students will also form study groups and work to help each other progress.

Grading: Final course grades will be based on:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>Quizzes</td>
<td>20%</td>
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<tr>
<td>Midterm Exams (2)</td>
<td>30%</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
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The grading scale will be:

- 90 – 100% A
- 80 – 89.9% B
- 70 – 79.9% C
- 60 – 69.9% D
- < 60% F

** In order to receive a grade of C or higher, the comprehensive final must be passed with a score of 60% or higher.
Homework: Homework will be assigned daily, though it will be collected randomly by rolling a die and choosing two numbers. If one of the numbers chosen comes up, the homework will be turned in. **It is the student’s responsibility to make sure the homework is done correctly.** Homework that is graded will be graded out of ten points. Six points will be given for completion of the assignment and four points will be given for randomly selected problems (usually two to four) that will be graded for correctness. Late homework will not be accepted (except in extenuating circumstances). If you know you will be missing a class, it would be wise to hand in the assignment due the day before you leave, just in case.

Quizzes: As further incentive to do your homework regularly, there will be eight quizzes of ten questions each that will come directly from assigned homework problems. The quizzes will be given in class. The lowest score will be dropped. Quiz dates are: Jan 30, Feb 11, Feb 25, Mar 13, Apr 1, Apr 10, Apr 29, and May 8.

Exams: There are two midterm exams. Both midterm exams will be taken in the testing center located on the second floor of the Meyerhoeffer building, and available in the center for two days. Students may take the exam at a convenient time for them during those two days. Late tests will not be given (except in extenuating circumstances). Test dates are: Mar 4, 5; Apr 20, 21.

Testing Center Hours: Monday-Thursday 8:00 a.m. – 9:30 p.m. & Friday 8:00 a.m. – 5:00 p.m.
*CSI ID required *You cannot begin a test after 8:30 p.m. M-TH or 4:00 p.m. F

The final exam will be comprehensive and will be given in the classroom on Wednesday, May 13, at noon.

Free Advice: You can expect me to be on time to class prepared to provide you with the tools to complete this course. I expect you to provide a learning environment for the others in the class. Disruptive behavior (cell phones, loud talking, hostility, etc.) will not be tolerated. This is a class where a lot of information is covered, and the material tends to build on itself. If you do not master the early material, it makes everything much more difficult later on. The best thing you can do to do well in the class is to religiously do your homework. Because of that, I will not do much of the homework in class. Between me and the Math Lab, there is someone who can assist you with your questions. Do not allow yourself to become hopelessly behind. Also, do not wait until April to find out what you need to do to get a “B” or a “C” or whatever. Be proactive! Act early and it will pay great dividends.

Behavioral Policy: Refer to school catalog (Pages 31-33).

Attendance Policy: Students who come to class regularly, are on time and prepared for class tend to do better in the course. I will not require attendance, but note that I do not accept late work in general. It is your responsibility to make arrangements with me when you miss class. In the case of an emergency or unforeseen illness, I will be much more able to work with you if I find out as soon as possible (e-mail is a great way to get me) what has happened to you. If less than 15% of the enrolled students come on a particular day, those attending will receive five (5) bonus points toward their semester grade.

Drop Policy: It is the student’s responsibility to drop the course.

During the first two weeks of the term, a student may drop a course or completely withdraw without its being recorded on the student's official transcript. After the first two weeks a “W” will be recorded in any course the student drops.

A student desiring to drop a course during the first two weeks of the term may do so on-line. In order to drop or completely withdraw after the first two weeks, the student must complete and submit a drop or complete withdrawal form to the Admissions and Records Office.
NOTE: No course may be dropped or withdrawn from after 75% of the course or twelve weeks of the term has elapsed, whichever is earlier.

Help Sessions: The math lab will post hours of operation starting at the beginning of the second week of school. These sessions are in the CSI math lab (Shields 207L).

Course Evaluation: To help instructors continually improve courses, students are strongly encouraged to complete anonymous evaluations which open two weeks before the end of the course and close the last day of class. Evaluations are available online at: http://evaluation.csi.edu.

CSI E-mail: Students must check their CSI e-mail accounts regularly to avoid missing important messages and deadlines. At the beginning of each semester free training sessions are offered to students who need help in using their accounts.

Disabilities: Any student with a documented disability may be eligible for related accommodations. To determine eligibility and secure services, students should contact the coordinator of Disability Services at their first opportunity after registration for a class. Student Disability Services is located on the second floor of the Taylor Building on the Twin Falls Campus. 208.732.6250 (voice) or 208.734.9929 (TTY), or e-mail Candida Mumford, cmumford@csi.edu.

Course Content: Students will demonstrate a working knowledge of the following processes and concepts:

a. **Critical thinking** (inductive and deductive reasoning, estimation)

b. **Problem solving** (understand the problem, devise a plan, carry out the plan, check the answer)

c. **Number systems** (our Hindu-Arabic system, early positional systems, and converting to number bases other than ten)

d. **Number theory** (prime numbers, composite numbers, divisibility, greatest common divisor, least common multiple)

e. **Operations with integers** (order of operations, using number lines, absolute value, adding, subtracting, multiplying, dividing, using inequality symbols)

f. **Operations with rational numbers** (reducing fractions, changing fractions to decimals, changing decimals to fractions, adding and subtracting fractions)

g. **Operations with irrational numbers** (simplify, multiply, add, subtract, and rationalize expressions with square roots)

h. **Expressions with exponents** (use positive and negative exponents, write and use scientific notation)

i. **Real numbers** (classify, identify properties)

j. **Ratios, proportions, direct variations and inverse variations** (identify, solve)

k. **Quadratic equations** (solve by factoring and using quadratic formula)

l. **Graphs** of ordered pairs and equations

m. **Functions** (evaluate, graph, use vertical line test, analyze the graph of a function to gather information)

n. **Linear functions** (find intercepts, calculate slope, graph, interpret slope and intercepts in applied problems)

o. **Quadratic functions** (graph, find vertex and intercepts, solve application problems)

p. **Exponential functions** (graph, solve application problems)

q. **Systems of linear equations** (solve systems having two variables)

r. **Consumer mathematics and financial management** (percents, simple and compound interest, installment buying, mortgages and the cost of home ownership, investing in stocks, bonds and mutual funds)

s. **Measurement in metrics** (length, area, volume, weight, temperature)
t. **Set theory** (basic set concepts, Venn diagrams, subsets, intersection, union) **OR Counting methods** (determine the number of possible outcomes, count permutations, count combinations)

In addition, students will study part or all of the following additional concepts and processes, to be determined by each individual instructor:

a. **Logic** (statements, negations, quantified statements, compound statements, connectives, truth tables, conditional and bi-conditional statements, arguments)

b. **Computations in bases other than base ten**

c. **Early numeration systems** (Egyptian, Roman, Chinese, Greek)

d. **Arithmetic and geometric sequences**

e. **Linear inequalities** (one variable, two variable, linear programming)

f. **Geometry** (points, lines, planes, angles, triangles, polygons, perimeter, area, circumference, volume, right triangle trigonometry)

g. **Probability**

h. **Statistics** (sampling, frequency distributions, graphs, central tendencies, dispersion, normal distribution, scatter plots, correlation, regression lines)