Math 123: Math in Modern Society
MWF 8 a.m. – 8:50 a.m. or 10:00 a.m. – 10:50 a.m.
3 Credits – Spring 2008

Instructor: Cindy Dickson, M.S.   Office: Shields 207A
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1-800-680-0274 x6544
e-mail: cdickson@csi.edu
Office Hrs: MWF 9:00 a.m. – 9:50 a.m.,
Th 1:00 p.m. – 1:50 p.m. or by appointment
Math Lab Tutoring SH 207: Tuesday 3:00 – 3:50 p.m.

1. 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.

2. Prerequisite: MATH 025/010 with a grade of “C” or better or Math Placement Test

3. Required Textbook and Supplies:
   b. Calculator: Scientific calculators are recommended.
   c. Supplies: 3-ring binder with dividers, paper, pencil, stapler.

4. 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. 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.

5. Outcomes Assessment:
   Students: Daily assignments, chapter tests, and a comprehensive final exam will be used to assess how well
   students achieve the expected course outcomes. Exams as well as student evaluations will be analyzed to help
   improve curriculum and instruction for the course. Also, regular informal feedback will be solicited in an effort to
   improve the class as it progresses.

   Department: As part of departmental analysis of outcomes in this course and its place in the Mathematics
   program, student completion of the pre-requisite, success in the current course, success in subsequent
   courses and student satisfaction will be reviewed by the instructor and the department chair. A report
   containing this information will be submitted by department faculty to determine what, if any, changes can be
   made to improve the course in terms of content, focus, and instruction.

6. Course Evaluations: Students will be asked to fill out an online course evaluation near the end of the
   semester. Students have responsibility for completing this as part of their course work before they take
   the final exam. I take your evaluations seriously as I try to improve my teaching and the course overall.
   The website to access evaluations is: http://evaluation.csi.edu.

7. Policies and Procedures:
   a. Attendance: Attendance is essential to student success. If you miss a class, you are
   responsible for material discussed in class as well as any additional assignments and
   announcements made during class time. Starting this semester, your instructor cannot drop
   you from the course. If you stop attending the class, it is your responsibility to withdraw yourself
   from the course either online or by filling out a drop slip in the matrix. If you stop attending the
   course and do not withdraw, you will receive an F in the course.

   b. Homework: Assignments will be given daily and will be collected at the next class period. Be
   sure to read each section before attempting the homework. Late homework will not be accepted
   under any circumstances. It will be given no credit if turned in after the due date and time. It will
be given no credit if no work is shown. You may turn homework in early. Your combined homework average can be used to replace your lowest exam score.

c. Exams: Five exams and a comprehensive final will be given. Exams will be taken in the Campus Testing Center (GRM 230). The final will be taken in the classroom with the instructor present. Make-up exams will NOT BE GRANTED unless you have a medical excuse validated by a doctor or the consent of the instructor at least one week prior to the exam. Make-up final exams will NOT BE GRANTED UNDER ANY CIRCUMSTANCES.

d. Academic Integrity: If a student is caught cheating on an exam or copying another student’s assignment, a student will be subject to a failing grade (0 credit).

g. Classroom Behavior: You as a student are expected to maintain good conduct during class, treating fellow students with respect and demonstrating a cooperative attitude toward the instructor. Inappropriate behavior will not be tolerated. After one warning, further breaches in acceptable conduct will result in your being dropped from the course, and the matter will be referred to student services for college discipline. If there is a situation creating a problem for you in this class, please let me know so that I can confer with any students who are involved. Information regarding student Behavior Policies can be found on p. 16 and 17 of the C.S.I. catalog. See also the Code of Conduct in the Student Handbook.

h. Other Policies: All cell phones and pagers must be turned off or to a vibrate mode during class. No children are allowed in class.

8. Grading Practices:
a. Testing Center: All chapter exams will be taken in the Testing Center. It is located in GRM 230 and is open from 8:00 am – 9:30 p.m. Mon.-Thurs. and from 8:00 a.m. – 5:00 p.m. on Fridays. A picture ID is required to take any test in the Testing Center. You cannot start a test in the Testing Center if closing time is less than one hour away.

b. Evaluation:
   5 Exams: 500 points  90 -100% = A
   Project: 50 points   80-89% = B
   Final Exam: 150 points  70-79% = C
   Total Possible: 700 points  60-69% = D
   Below 60% = F

9. 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. Contact Candida Mumford, director, at 208.732.6260 (voice) or 208.734.9299 (TTY), or e-mail cmumford@csi.edu.

10. Student e-mail: E-mail is the primary source of written communication with all CSI students. Students automatically get a CSI e-mail account when they register for courses. Messages from instructors and various offices will be sent to the students’ CSI accounts (not their personal e-mail). It is the student’s responsibility to check their CSI e-mail accounts regularly.

11. Do not put off getting help! If you wait until you are totally lost, you might find it impossible to get back on track.

12. Keys to success in this class: Show up every day and pay attention; ask questions; practice by doing assignments and forming study groups; don’t quit!
13. Where to get help:
- Ask questions in class or stop by to see me – I’m here to help you!
- One-on-one instructor and peer tutoring are available at...
  - Math Lab (SHL 207)
  - Instruction Lab (GRM 202)
- Instructional DVDs are available for check out at Library (GRM 131) and Outreach Centers.
- Study groups are a great resource and I encourage you to form them to do assignments, study for tests, etc.
- Student Solutions Manuals for our textbook are packaged with new textbooks. These are not required, but some students find them useful.

14. Tentative topical outline:

<table>
<thead>
<tr>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 14</td>
<td>Syllabus, 1.1 Inductive &amp; Deductive Reasoning</td>
<td>Feb. 20</td>
<td>5.7 Arithmetic &amp; Geometric Sequences</td>
<td>Apr. 2</td>
<td>9.1 The Metric System</td>
</tr>
<tr>
<td>Jan. 16</td>
<td>1.3 Problem Solving</td>
<td>Feb. 22</td>
<td>Review</td>
<td>Apr. 4</td>
<td>9.2 Measuring Area &amp; Volume</td>
</tr>
<tr>
<td>Jan. 18</td>
<td>2.1 Basic Set Concepts</td>
<td>Feb. 25</td>
<td>6.4 Ratio, Proportion &amp; Variation</td>
<td>Apr. 7</td>
<td>9.3 Measuring Weight &amp; Temperature</td>
</tr>
<tr>
<td>Jan. 21</td>
<td>Martin Luther King Jr. Day – no class</td>
<td>Feb. 27</td>
<td>6.6 Quadratic Equations</td>
<td>Apr. 9</td>
<td>11.1 Fundamental Counting Principle</td>
</tr>
<tr>
<td>Jan. 23</td>
<td>2.2 Subsets</td>
<td>Feb. 29</td>
<td>7.1 Graphing &amp; Functions</td>
<td>Apr. 11</td>
<td>11.2 Permutations</td>
</tr>
<tr>
<td>Jan. 25</td>
<td>2.3 Venn Diagrams &amp; Set Operations</td>
<td>Mar. 3</td>
<td>7.2 Linear Function Graphs</td>
<td>Apr. 14</td>
<td>11.3 Combinations</td>
</tr>
<tr>
<td>Jan. 28</td>
<td>4.1 Early Positional Systems</td>
<td>Mar. 5</td>
<td>7.3 Systems of Linear Equations</td>
<td>Apr. 16</td>
<td>11.4 Fundamentals of Probability</td>
</tr>
<tr>
<td>Jan. 30</td>
<td>4.2 Number Bases in Positional Systems</td>
<td>Mar. 7</td>
<td>7.6 Nonlinear Models</td>
<td>Apr. 18</td>
<td>Project Day</td>
</tr>
<tr>
<td>Feb. 1</td>
<td>Review</td>
<td>Mar. 10</td>
<td>Review</td>
<td>Apr. 21</td>
<td>Review</td>
</tr>
<tr>
<td>Feb. 4</td>
<td>5.1 Number Theory</td>
<td>Mar. 12</td>
<td>8.1 Percent, Sales Tax, &amp; Income Tax</td>
<td>Apr. 23</td>
<td>12.1 Sampling, Frequency Distributions, &amp; Graphs</td>
</tr>
<tr>
<td>Feb. 6</td>
<td>5.2 The Integers; Order of Operation</td>
<td>Mar. 14</td>
<td>8.2 Simple Interest</td>
<td>Apr. 25</td>
<td>12.2 Measures of Central Tendency</td>
</tr>
<tr>
<td>Feb. 8</td>
<td>5.3 Rational Numbers</td>
<td>Mar. 17-21</td>
<td>Spring Break – No Class</td>
<td>Apr. 28</td>
<td>12.3 Measures of Dispersion</td>
</tr>
<tr>
<td>Feb. 11</td>
<td>5.4 Irrational Numbers</td>
<td>Mar. 24</td>
<td>8.3 Compound Interest</td>
<td>Apr. 30</td>
<td>Review</td>
</tr>
<tr>
<td>Feb. 13</td>
<td>5.5. Real Numbers</td>
<td>Mar. 26</td>
<td>8.5 Installment Buying</td>
<td>May 2</td>
<td>Review</td>
</tr>
<tr>
<td>Feb. 15</td>
<td>5.6 Exponents &amp; Scientific Notation</td>
<td>Mar. 28</td>
<td>8.6 Amortization &amp; the Cost of Home Ownership</td>
<td>May 5-8</td>
<td>Final Exam Week</td>
</tr>
<tr>
<td>Feb. 18</td>
<td>President’s Day- No Class</td>
<td>Mar. 31</td>
<td>Review</td>
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15. Exam Dates:
Exam 1: Sections 1.1, 1.3, 2.1 – 2.3, 4.1, 4.2 open: Feb. 1, 4, 5
Exam 2: Sections 5.1 – 5.7 open: Feb. 22, 25, 26
Exam 3: Sections 6.4, 6.6, 7.1-7.3, 7.6 open: Mar. 10-12
Exam 4: Sections 8.1 -8.3, 8.5, 8.6 open: Mar. 31, Apr. 1, 2
Exam 5: Sections 9.1 - 9.3, 11.1 – 11.4 open: Apr. 21-23

FINAL EXAM:
8 a.m. class: Tuesday, May 6, from 8 a.m. – 10 a.m. in the classroom
10 a.m. class: Monday, May 5, from 10 a.m. – 12 p.m. in the classroom

16. Course Outcomes:
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) AND 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:
   a. Arithmetic and geometric sequences
   b. Probability
   c. Statistics (sampling, frequency distributions, graphs, central tendencies, dispersion)
Homework Assignment Format  
Math 123  
Spring 2008

1. Use loose leaf paper
2. On the top right hand corner of the first page, include the following:
   - Name
   - Course title
   - Date
   - Section
3. Do all homework in pencil. Work done in pen will not be graded.
4. Show all work necessary to complete the problem. A correct answer with little, no, or incorrect work will receive NO credit.
5. Circle your final answer when possible.
6. Write legibly. If I cannot decipher your work, it will not be graded.
7. Do your work horizontally (going down) instead of vertically (going across).
8. Correct all odd number problems using the back of the book. You may rework the problem until you get the correct answer, if possible. Write a “C” for correct by the problem number if it is correct, or a check mark √ if it is incorrect.
9. Staple all pages for each section’s homework assignment together.
10. No late homework will be accepted.

How to Access Outlines for Notes & Chapter Exam Answer Keys
1. Go to www.csi.edu
2. Click on “Directory” – one of the tabs listed across the top.
3. Find my name alphabetically by clicking on D and then scrolling to find “Cindy Dickson”
4. Click to “View Personal Webpage”
5. Click on our class – Math 123 8 a.m. or 10 a.m.
6. Notes for each section will be posted there, and answer keys for chapter exams will be posted after each exam. Click on any that you want to open and print from there.