Math 108: INTERMEDIATE ALGEBRA
MTThF 11:00 – 11:50 a.m.
4 Credits – Fall 2007

Instructor: Cindy Dickson, M.S.   Office: Shields 207A
Phone: 732-6544
Office Hours: MTWThF 10:00 – 10:50 a.m. or by appointment
1-800-680-0274 x6544                       or by appointment
e-mail: cdickson@csi.edu
Math Lab Shields 207: W 3:00 – 4:00 p.m.

1. Course Description: This course is designed to prepare the student for college algebra. It covers first-degree equations and inequalities, linear functions, systems of linear equations, polynomials, factorization, rational expressions, negative and rational exponents, radicals, quadratic equations, graphing functions, logarithms, and application problems.

2. Prerequisite: MATH 025/010 with C grade or higher, or Math Placement Test.

3. Required Textbook and Supplies:
b. Calculator: Non-graphing, non-programmable calculators (i.e. scientific calculators) are recommended.
c. Supplies: 3-ring binder with dividers, paper, pencil, stapler.

4. Course Objectives:
Students who complete Math 108, Intermediate Algebra, will have a strong understanding of the topics listed in the course description and in the detailed list of course outcomes. This course will prepare students for Math 130, Math 143, Math 147 and other courses which have an Intermediate Algebra pre-requisite.

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 Outcomes:
Students will demonstrate a working knowledge of the following processes and concepts:
a. Rational numbers (addition, subtraction, multiplication, and division)
b. Variable expressions (simplify, translate, evaluate)
c. Operations on sets of numbers (union, intersection)
d. Set-builder notation and interval notation
e. First degree equations in one variable (solve, translate from application problems such as percent problems, mixture problems, business related problems, uniform motion problems, investment problems)
f. First degree inequalities (solve and graph simple, compound)
g. Linear functions (evaluate, graph, find slope)
h. Find length and midpoint of a segment
i. Write the equations for lines (including parallel lines and perpendicular lines)
j. Solve systems of linear equations (use graphs, substitution method, addition method)
k. Polynomials (add, subtract, multiply, divide using long division and synthetic division, evaluate, factor)
l. Solve polynomial equations by factoring
m. Simplify exponential expressions having integer and variable exponents

This syllabus may contain errors. I reserve the right to correct omissions and errors.
n. **Scientific notation**

o. **Expressions with rational exponents** (simplify, change to radical form)

p. **Radical expressions** (simplify, add, subtract, multiply, divide)

q. **Complex numbers** (simplify, add, subtract, multiply, divide)

r. **Solve equations containing radicals**

s. **Functions** (domain, range, graph, use vertical line test, add, subtract, multiply, divide, find inverse, do composition of functions)

t. **Rational expressions** (find the domain, simplify, multiply, divide, add, subtract, simplify complex fractions)

u. **Solve rational equations** (including application problems like work problems, uniform motion problems, proportions, variations, and literal equations)

v. **Solve quadratic equations** (use factoring, completing the square, and quadratic formula)

w. **Solve equations that are quadratic in form**

x. **Solve quadratic and rational inequalities**

y. **Parabolas** (find axis of symmetry, vertex, x-intercepts, graph)

z. **Exponential functions** (evaluate, graph)

aa. **Logarithms** (log notation, properties of logarithms, evaluate logs with and without a calculator, solve log equations, graph log functions using ordered pairs)

7. **On-line Course Evaluations:** Students are strongly encouraged to complete evaluations at the end of the course. Evaluations are very important to assist the teaching staff to continually improve the course. Evaluations are available online at: http://evaluation.csi.edu. Evaluations open up two weeks prior to the end of the course. The last day to complete an evaluation is the last day of the course. During the time the evaluations are open, students can complete the course evaluations at their convenience from any computer with Internet access, including in the open lab in the Library and in the SUB. When students log in they should see the evaluations for the courses in which they are enrolled. Evaluations are anonymous. Filling out the evaluation should only take a few minutes. Your honest feedback is greatly appreciated!

8. **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. 208.732.6260 (voice) or 208.734.9929 (TTY).

9. **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.**

10. **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. CSI policy allows me to drop you if you miss eight (8) classes. If you arrive late to class or leave early from the class, it will be considered an absence. **I may drop you from the course after 8 absences, unless you contact me to discuss further arrangements.**

   b. **Homework:** Assignments will be given daily and will be collected at the next class meeting. 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 I have collected homework during the first part of class. If you have a planned absence, you may turn homework in early. Your lowest 5 homework scores will be dropped.
c. Exams: Eight 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. Your lowest test score can be dropped and replaced by your final exam score if it is to your benefit.

d. 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.

e. 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).

f. 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 conference with any students who are involved. Information regarding student Behavior Policies can be found on p. 15 and 16 of the C.S.I. catalog. See also the Code of Conduct in the Student Handbook.

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

11. 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…
     o Math Lab (SHL 207)
     o Instruction Lab (GRM 202)
   ▪ Instructional DVDs come with new textbook purchases and are also 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.

12. Grading Practices:
   Evaluation:
<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Exams:</td>
<td>800</td>
</tr>
<tr>
<td>Homework:</td>
<td>100</td>
</tr>
<tr>
<td>Final Exam:</td>
<td>200</td>
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<tr>
<td>Total Possible:</td>
<td>1100</td>
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<td></td>
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<tr>
<td>90 -100% = A</td>
<td></td>
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<tr>
<td>80 - 89% = B</td>
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<tr>
<td>70 - 79% = C</td>
<td></td>
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<tr>
<td>60 - 69% = D</td>
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<tr>
<td>Below 60% = F</td>
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13. Do not put off getting help! If you wait until you are totally lost, you might find it impossible to get back on track.

14. 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!

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15. Tentative topical outline:

<table>
<thead>
<tr>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 27</td>
<td>Syllabus, 1.1 Real Number System, 1.2 Operations with Real Numbers</td>
<td>Oct. 22</td>
<td>6.3 Add &amp; Subtract Rational Expressions</td>
</tr>
<tr>
<td>Aug. 28</td>
<td>1.3 Properties of Real Numbers, 1.4 Algebraic Expressions</td>
<td>Oct. 23</td>
<td>6.4 Complex Fractions</td>
</tr>
<tr>
<td>Aug. 30</td>
<td>1.5 Constructing Algebraic Expressions</td>
<td>Oct. 25</td>
<td>3.5 Dividing Polynomials &amp; Synthetic Division</td>
</tr>
<tr>
<td>Aug. 31</td>
<td>2.1 Linear Equations</td>
<td>Oct. 26</td>
<td>6.6 Solving Rational Expressions</td>
</tr>
<tr>
<td>Sept. 3</td>
<td>Labor Day</td>
<td>Oct. 29</td>
<td>6.7 Applications &amp; variation</td>
</tr>
<tr>
<td>Sept. 4</td>
<td>2.2 Linear Equations &amp; Problem Solving</td>
<td>Oct. 30</td>
<td>Chapter 6 Review</td>
</tr>
<tr>
<td>Sept. 6</td>
<td>2.3 Business &amp; Scientific Problems</td>
<td>Nov. 1</td>
<td>7.1 Radicals &amp; Rational Exponents</td>
</tr>
<tr>
<td>Sept. 7</td>
<td>2.3 continued</td>
<td>Nov. 2</td>
<td>7.2 Simp. Rad. Exprs</td>
</tr>
<tr>
<td>Sept. 10</td>
<td>2.4 Linear Inequalities</td>
<td>Nov. 5</td>
<td>7.3 Adding &amp; Subtracting Radical Expressions</td>
</tr>
<tr>
<td>Sept. 11</td>
<td>Chapter 1 &amp; 2 Review</td>
<td>Nov. 6</td>
<td>7.4 Multiplying and Dividing Radical Expressions</td>
</tr>
<tr>
<td>Sept. 13</td>
<td>3.1 Rectangular Coordinate System</td>
<td>Nov. 8</td>
<td>7.5 Radical Equations &amp; Applications</td>
</tr>
<tr>
<td>Sept. 14</td>
<td>3.2 Graphs of Equations</td>
<td>Nov. 9</td>
<td>7.6 Complex Numbers</td>
</tr>
<tr>
<td>Sept. 17</td>
<td>3.3 Slope &amp; Graphs of Equations</td>
<td>Nov. 12</td>
<td>Veteran's Day</td>
</tr>
<tr>
<td>Sept. 18</td>
<td>3.4 Equations of Lines</td>
<td>Nov. 13</td>
<td>Chapter 7 Review</td>
</tr>
<tr>
<td>Sept. 20</td>
<td>3.5 Graphs of Linear Inequalities</td>
<td>Nov. 15</td>
<td>8.1 Solving Quadratic Equations</td>
</tr>
<tr>
<td>Sept. 21</td>
<td>3.6 Relations &amp; Functions</td>
<td>Nov. 16</td>
<td>8.2 Completing the Square</td>
</tr>
<tr>
<td>Sept. 24</td>
<td>3.7 Graphs of Functions</td>
<td>Nov. 19</td>
<td>8.3 Quadratic Formula</td>
</tr>
<tr>
<td>Sept. 25</td>
<td>Chapter 3 Review</td>
<td>Nov. 20</td>
<td>8.4 Graphs of Quadratic Functions</td>
</tr>
<tr>
<td>Sept. 27</td>
<td>4.1 Systems of Equations</td>
<td>Nov. 22-23</td>
<td>Thanksgiving Break</td>
</tr>
<tr>
<td>Sept. 28</td>
<td>4.2 Linear Systems in Two Variables</td>
<td>Nov. 26</td>
<td>8.6 Quadratic &amp; Rational Inequalities</td>
</tr>
<tr>
<td>Oct. 1</td>
<td>4.3 Linear Systems in Three Variables</td>
<td>Nov. 27</td>
<td>Chapter 8 Review</td>
</tr>
<tr>
<td>Oct. 2</td>
<td>Chapter 4 Review</td>
<td>Nov. 29</td>
<td>9.1 Exponential Functions</td>
</tr>
<tr>
<td>Oct. 4</td>
<td>5.1 Integer Exponents</td>
<td>Nov. 30</td>
<td>9.2 Composite &amp; Inverse Functions</td>
</tr>
<tr>
<td>Oct. 5</td>
<td>5.2 Add &amp; Subtract Polynomials</td>
<td>Dec. 3</td>
<td>9.3 Logarithmic Functions</td>
</tr>
<tr>
<td>Oct. 8</td>
<td>Columbus Day</td>
<td>Dec. 4</td>
<td>9.3 Continued</td>
</tr>
<tr>
<td>Oct. 9</td>
<td>5.3 Multiplying Polynomials</td>
<td>Dec. 6</td>
<td>9.4 Properties of Logarithms</td>
</tr>
<tr>
<td>Oct. 11</td>
<td>5.4 Factoring by Grouping</td>
<td>Dec. 7</td>
<td>9.5 Solving Exp. &amp; Log. Equations</td>
</tr>
<tr>
<td>Oct. 12</td>
<td>5.5 Factoring Trinomials</td>
<td>Dec. 10</td>
<td>Chapter 9 Review</td>
</tr>
<tr>
<td>Oct. 15</td>
<td>5.6 Solving Polynomial Equations by Factoring</td>
<td>Dec. 11</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>Oct. 16</td>
<td>Chapter 5 Review</td>
<td>Dec. 13</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>Oct. 18</td>
<td>6.1 Rational Exprs &amp; Functions</td>
<td>Dec. 14</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>Oct. 19</td>
<td>7.2 Mult. &amp; Div. Rational Expressions</td>
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15. Exam Dates:
Chapter 1 & 2 Exam: Ch.1 (sections 1-5) & Chapter 2 (sections 1-5): Sept. 11-14
Chapter 3 Exam: Ch. 3 (sections 1-7) open: Sept. 25, 27-29
Chapter 4 Exam: Ch. 4 (section 1-3) open: Oct. 2-5
Chapter 5 Exam: Ch. 5 (sections 1-5) open: Oct. 16-20
Chapter 6 Exam: Ch. 6 (sections 1-7) open: Oct. 30, 31, Nov. 1, 2
Chapter 7 Exam: Ch. 7 (sections 1-6) open: Nov. 13-16
Chapter 8 Exam: Ch. 8 (sections 1-4, 6) open: Nov. 27-30
Chapter 9 Exam: Ch. 9 (sections 1-5) open: Dec. 10-12

FINAL EXAM:
11 a.m. class: Monday, Dec. 17, from 12 p.m. – 2 p.m. in the classroom

This syllabus may contain errors. I reserve the right to correct omissions and errors.
Homework Assignment Format  
Math 108  
Fall 2007
1. Use loose leaf paper
2. On the top right hand corner of the first page, include the following:
   • Name
   • Course title
   • Section in textbook
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 vertically (going down) instead of horizontally (going across).
8. Correct all odd number problems using the back of the book before turning the
   assignment in. 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 one section of homework assignment together, but do not staple
   more than one section together.
10. No late homework will be accepted.