Math 108: INTERMEDIATE ALGEBRA
TTh 11:00 a.m. – 12:40 p.m.
4 Credits – Spring 2009

Instructor: Cindy Dickson, M.S.
Office: Shields 207C
Phone: 732-6544
1-800-680-0274 x6544
Office Hrs: MWF 2:00 – 2:50 p.m., T,Th 10:00 a.m. – 10:50 a.m., or by appointment
Math Lab Tutoring SH 207: Friday 2:00 – 2:50 p.m.
e-mail: c dickson@csi.edu
Webpage: http://www.csi.edu/dir.asp?cdickson

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: Scientific calculator (Graphing calculators are acceptable, but not required.)
   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: To help instructors continually improve courses, students are strongly encouraged to go online to http://evaluation.csi.edu and complete anonymous evaluations which open two weeks before the end of the course and close the last day of class. When students enter the site, they find evaluations for their enrolled courses. Thank you for this valuable input!

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

9. Student e-mail: Student e-mail: Since email is the primary source of written communication with students, all registered CSI students get a college email account. Student e-mail addresses have the following format: username@students.csi.edu. Students can check their CSI e-mail online at http://students.csi.edu. Instructors and various offices send messages to these accounts. 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.

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.

   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: Seven 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. 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).

e. 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. 31 and 32 of the C.S.I. catalog. See also the Code of Conduct in the Student Handbook.

f. 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…
     - Math Lab (SHL 207)
     - 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:
   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:
      - 7 Exams: 700 points 90-100% = A
      - Homework: 100 points 80-89% = B
      - Final Exam: 150 points 70-79% = C
      - Total Possible: 950 points 60-69% = D
      - Below 60% = F

      Students must score at least 60% on the comprehensive final exam to receive a course grade of C or higher.

   c. 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.

      If you stop attending the course and do not withdraw, you will receive an F in the course.
**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.

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!

15. **Tentative topical outline:**

<table>
<thead>
<tr>
<th>Date</th>
<th>Section</th>
<th>Date</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 20</td>
<td>Syllabus, 1.1 Real Number System, 1.2 Operations with Real Numbers</td>
<td>Mar. 16-20</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Jan. 22</td>
<td>1.4 Algebraic Expressions, 1.5 Constructing Algebraic Expressions, 2.1 Linear Equations</td>
<td>Mar. 24</td>
<td>6.7 Applications &amp; Variation Chapter 6 Review</td>
</tr>
<tr>
<td>Jan. 29</td>
<td>2.3 continued 2.4 Linear Inequalities</td>
<td>Mar. 31</td>
<td>7.3 Add &amp; Sub. Rad. Exprs. 7.4 Multiplying and Dividing Radical Expressions</td>
</tr>
<tr>
<td>Feb. 3</td>
<td>Chapter 1 &amp; 2 Review 3.1 Rectangular Coordinate System</td>
<td>Apr. 2</td>
<td>7.5 Radical Equations &amp; Applications 7.6 Complex Numbers</td>
</tr>
<tr>
<td>Feb. 5</td>
<td>3.2 Graphs of Equations 3.3 Slope &amp; Graphs of Equations</td>
<td>Apr. 7</td>
<td>Chapter 7 Review 8.1 Solving Quadratic Equations</td>
</tr>
<tr>
<td>Feb. 10</td>
<td>3.4 Equations of Lines 3.5 Graphs of Linear Inequalities</td>
<td>Apr. 9</td>
<td>8.2 Completing the Square 8.3 Quadratic Formula</td>
</tr>
<tr>
<td>Feb. 12</td>
<td>3.6 Relations &amp; Functions 4.1 Systems of Equations</td>
<td>Apr. 14</td>
<td>8.4 Graphs of Quadratic Functions 8.6 Quadratic &amp; Rational Inequalities</td>
</tr>
<tr>
<td>Feb. 17</td>
<td>4.2 Linear Systems in Two Variables 4.3 Linear Systems in Three Variables</td>
<td>Apr. 16</td>
<td>Chapter 8 Review</td>
</tr>
<tr>
<td>Feb. 19</td>
<td>Chapter 3 &amp; 4 Review 5.1 Integer Exponents</td>
<td>Apr. 21</td>
<td>9.1 Exponential Functions 9.2 Composite &amp; Inverse Functions</td>
</tr>
<tr>
<td>Feb. 24</td>
<td>5.2 Add &amp; Subtract Polynomials 5.3 Multiplying Polynomials</td>
<td>Apr. 23</td>
<td>9.2 Continued 9.3 Logarithmic Functions</td>
</tr>
<tr>
<td>Feb. 26</td>
<td>5.4 Factoring by Grouping 5.5 Factoring Trinomials</td>
<td>Apr. 28</td>
<td>9.3 Continued 9.4 Properties of Logarithms</td>
</tr>
<tr>
<td>Mar. 3</td>
<td>5.6 Solving Polynomial Equations by Factoring Chapter 5 Review</td>
<td>Apr. 30</td>
<td>9.5 Solving Exp. &amp; Log. Equations Chapter 9 Review</td>
</tr>
<tr>
<td>Mar. 5</td>
<td>6.1 Rational Expres &amp; Functions 6.2 Mult. &amp; Div. Rational Expressions</td>
<td>May 5</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>Mar. 10</td>
<td>6.3 Add &amp; Subtract Rational Expressions 6.4 Complex Fractions</td>
<td>May 7</td>
<td>Final Exam Review</td>
</tr>
<tr>
<td>Mar. 12</td>
<td>6.5 Dividing Polynomials &amp; Synthetic Division 6.6 Solving Rational Expressions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This syllabus may contain errors. I reserve the right to correct omissions and errors.
16. Exam Dates:
Exam 1: Ch. 1 (sections 1-5) & Chapter 2 (sections 1-5): Feb. 3, 4, 5
Exam 2: Ch. 3 (sections 1-7) & Ch. 4 (sections 1 – 3) open: Feb. 19, 20, 23
Exam 3: Ch. 5 (sections 1-5) open: Mar. 3, 4, 5
Exam 4: Ch. 6 (sections 1-7) open: Mar. 24, 25, 26
Exam 5: Ch. 7 (sections 1-6) open: Apr. 7, 8, 9
Exam 6: Ch. 8 (sections 1-4, 6) open: Apr. 16, 17, 20
Exam 7: Ch. 9 (sections 1-5) open: Apr. 30, May 1, 4

FINAL EXAM:
11 a.m. class: Tuesday, May 12 from 10 a.m. – 12 p.m. in the classroom

How to Access Outlines for Notes & Chapter Exam Answer Keys
1. Go to http://www.csi.edu/dirdetail.asp?cdickson
2. Click to “View Personal Webpage”
3. Click on our class – Math 108 11 a.m.
4. Notes for each class lecture 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.

Homework Assignment Format
Math 108
Spring 2009

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.