Math 143  
College Algebra  
3 Credits  
Fall 2011

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Email: rsadler@csi.edu

Office Location: GRM 209  
Office Hours: 11 a.m. MWF / 10 a.m. TR  
Office Phone: (208) 732-6571

Course Description:
This course includes fundamental concepts of Algebra; equations and inequalities; functions and graphs; polynomial, rational, exponential and logarithmic functions; systems of equations and inequalities; conics; the Binomial Theorem.

Pre-requisites: MATH 108 with a grade of 'C' or better or CSI placement test score.

Required Textbooks and Supplies:
- *College Algebra*, Seventh Edition by Aufmann, Barker, & Nation
- Graphing or Scientific calculator. A graphing calculator is strongly recommended. TI-89, TI-Nspire, and Casio-FX 115 ES will not be allowed.

Course Objectives:

1. **Linear equations** (solve all types, simple to complex, model data and solve application problems)
2. **Formulas** (solve problems using formulas, isolate a specified variable)
3. **Quadratic equations** (solve by factoring, by taking square roots, by completing the square, using the quadratic formula, solve application problems)
4. **Solve other types of equations** (polynomial, radical, absolute value, equations that are quadratic in form, equations with rational exponents)
5. **Inequalities with one variable** (graph and solve linear, compound, absolute value, quadratic and rational inequalities)
6. **Lines** (find slope, graph, write equation, model data, use idea of parallel and perpendicular)
7. **Circles** (equation, center, radius, graph, convert equation to standard form)
8. **Functions** (definition, domain, range, zeros, use vertical line test, evaluate, intervals for increasing and decreasing, odd, even, symmetry, model data)
9. **Graph and analyze common functions** (quadratic, cubic, square root, absolute value, reciprocal, piece-wise, greatest integer)
10. **Transformations and combinations of functions** (vertical shifts, horizontal shifts, reflections, vertical stretching and shrinking, add, subtract, multiply, divide, composition, inverse)
11. **Quadratic functions** (graph, standard form, vertex, intercepts, model data, solve application problems)
12. **Polynomial functions** (end behavior, leading coefficient test, graph, Remainder Theorem, Factor Theorem, find all zeros)
13. **Rational functions** (vertical asymptotes, horizontal asymptotes, slant asymptotes, intercepts, graph, solve application problems)
14. **Variations** (direct, inverse, joint, combined)
15. **Conic sections** (analyze and graph ellipses, hyperbolas and parabolas, find vertices, foci, axis of symmetry, directrix, eccentricity, and asymptotes as applicable, model data and solve application problems)
16. **Exponential functions and equations** (evaluate, graph, transform, solve equations, model data and solve application problems)
17. **Logarithmic functions and equations** (log notation, properties of logs, evaluate, graph, solve log equations, change bases, model data and solve application problems)
18. **Systems of equations** (linear equations in two variables, linear equations in three variables, nonlinear equations in two variables, application problems)
19. **Systems of inequalities** (linear, nonlinear, linear programming)
20. **Binomial theorem** (expand binomial raised to a power, find one specified term)

**Policies and Procedures:**

1. Attendance is required. The instructor will drop a student from the course after the first week if the student has not attended class. A “Question of the Day” will be asked at the beginning of each class. The student’s written response to the question will count as the attendance for the day. The written responses will also count toward the student’s homework total.
2. There will be three hours of lecture each week.
3. Tests are taken in the classroom. If an emergency arises and the student cannot attend an exam, it is the student’s responsibility to contact the instructor. The lowest regular exam score may be replaced by the final exam percentage.
4. **The student must get 60% or better on the comprehensive final to receive a grade of C or higher in the course.**
5. If the student is caught cheating on a test, a grade of “0” will be given on that test. A pattern of cheating may be grounds for dismissal from the course.
6. No cell phones.
7. **Disability Statement:**
   
   Any student with a documented disability may be eligible for reasonable accommodations. To determine eligibility and secure services, students should contact Student 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, or e-mail Scott Scholes, sscholes@csi.edu.

**Outcomes Assessment:**

Students will be asked to fill out an online course evaluation near the end of the semester. All students will be required to complete a final that will measure the student’s knowledge of the material that was covered throughout the course. A statistical analysis of each individual test question will be completed along with a comprehensive study of the course evaluations to further improve the course.

**On-line course evaluation statement:**

*To help instructors continually improve courses, students are strongly encouraged to go online to [http://evaluation.csi.edu](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!*

**Grading Practices:**

1. Tests: The student will take four regular tests and a comprehensive final. Each regular test will be worth 100 points. The final test will be worth 200 points. The lowest regular exam score may be replaced by the final exam percentage.
2. Homework: Homework will be assigned every day, though it will be collected randomly. The student will also turn in daily written responses to a “Question of the Day.” The scores from these questions combined with homework scores will be scaled to make up 100 points of the final grade.
### Grading Scale:

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
<th>Tests</th>
<th>Final</th>
<th>Homework</th>
<th>Total Points Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100%</td>
<td>A</td>
<td>4 @ 100 = 400</td>
<td></td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>80-89%</td>
<td>B</td>
<td></td>
<td>200</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>70-79%</td>
<td>C</td>
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<tr>
<td>60-69%</td>
<td>D</td>
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<tr>
<td>Below 60%</td>
<td>F</td>
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### Help Opportunities

The student is strongly encouraged to ask questions during class. Due to the nature of a math course, the student must attend class regularly. The Twin Falls Campus Math Lab is in the Shields Building, Room 207. You may request additional tutoring through the Learning Center Coordinator in the Meyerhoeffer Building, Room 202.

*It is the student’s responsibility to drop the course.*

A student may drop a course or all courses prior to the end of late registration (first Friday of the term) without it being recorded on the student’s official transcript. A student initiated drop after the late registration period is considered a withdrawal, and results in the grade of W.

Students may drop courses online until the end of the late registration period. In order to withdraw from one or more courses following late registration, a completed registration form is required. Instructions on the form indicate when a signature of instructor and/or Financial Aid advisor is required. The completed form may be submitted to Admissions & Records or any off-campus center.

**NOTE:** Students may withdraw from courses until 75% of the course meetings have elapsed. No course may be withdrawn from after 75% of the course has elapsed.

### CSI 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: `<address>@eaglemail.csi.edu` where `<address>` is a name selected by the student as a part of activating his/her account. Students activate their accounts and check their CSI e-mail online at [http://eaglemail.csi.edu](http://eaglemail.csi.edu). Instructors and various offices send messages to these student 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.
Section   Homework

1.1  pg. 81: 3 – 57 multiples of 3
1.2  pg. 92: 3 – 60 multiples of 3
1.3  pg. 106: 3 – 102 multiples of 3
1.4  pg. 120: 3 – 84 multiples of 3
1.5  pg. 133: 3 – 72 multiples of 3
1.6  pg. 141: 3 – 39 multiples of 3; 29, 32, 35

Test 1 – Chapter 1

2.1  pg. 164: 3 – 81 multiples of 3; 1, 56, 64
2.2  pg. 180: 3, 6, 9, 11 – 16 all; 18, 21, 24, 26, 27, 31, 33, 36, 38, 39 – 69 multiples of 3; 73, 75 – 96 multiples of 3; 103, 106, 109, 115, 117
2.3  pg. 195: 3 – 69 multiples of 3; 73, 80, 85, 90, 93
2.4  pg. 209: 3 – 72 multiples of 3
2.5  pg. 223: 3 – 84 multiples of 3; 62
2.6  pg. 234: 3 – 78 multiples of 3

3.1  pg. 268: 3 – 72 multiples of 3, 73
3.2  pg. 282: 3 – 60 multiples of 3; 62, 63, 66, 72, 73, 76
3.3  pg. 295: 3 – 69 multiples of 3; 8, 71, 74, 78, 81, 84, omit 24, 27
3.4  pg. 305: 3 – 57 multiples of 3; 50
3.5  pg. 320: 3 – 69 multiples of 3; 74, 75, 78

Test 2 – Chapters 2 & 3

4.1  pg. 342: 3 – 72 multiples of 3; 59, 62
4.2  pg. 354: 3 – 66 multiples of 3; 11, 13, 14, 16, 59, 65
4.3  pg. 366: 3 – 96 multiples of 3; 67, 70, 73, 74, omit 66, 69, 72
4.4  pg. 377: 3 – 66 multiples of 3; 70, 75, 80, 82, 85
4.5  pg. 386: 3 – 84 multiples of 3
4.6  pg. 400: 3 – 51 multiples of 3; 53, 57

5.1  pg. 435: 3 – 48 multiples of 3; 1
5.2  pg. 448: 3 – 75 multiples of 3; 1
5.3  pg. 460: 3 – 72 multiples of 3; 1, 59, 64, (skip 60)

Test 3 – Chapters 3 & 4

6.1  pg. 480: 3 – 51 multiples of 3; 55, 58, 59
6.2  pg. 492: 3 – 45 multiples of 3
6.3  pg. 499: 3 – 54 multiples of 3
6.5  pg. 515: 3 – 54 multiples of 3
8.5  pg. 636: 3 – 54 multiples of 3

Test 4 – Chapters 6 & 8