MATH 093-Intermediate Algebra
Fall Semester 2012

Catalog Data: MATH 093 Intermediate Algebra (3-0) Credits 3. Fundamental algebraic operations; systems of linear equations; factoring polynomials and solving quadratic equations; rational expressions; roots and radicals. Prerequisites: MATH 091 or 2 units of high school algebra, 1 unit of high school geometry and ACT math score of 17-18.

Objective: Upon completion of this course the student should have good algebraic manipulative skills, good graphing techniques and be able to solve linear, quadratic, and systems of linear equations.

Outcomes: Upon completion of this course, the student will be able to:

1) Use the laws of exponents, and manipulate and simplify algebraic expressions containing fractional exponents, negative exponents, radicals, and fractions.
2) Factor trinomials, the difference of squares, and the sum and difference of cubes
3) Solve linear and quadratic equations.
4) Solve linear inequalities.
5) Solve systems of equations.
6) Solve word problems.
7) Find the slope of a line
8) Sketch graphs of linear functions.

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Office: Engineering Lab Building 101H
Office Hours: **(changed 9/24/12)** MWF 8:30 -10; TR 10-11 (math lab); MWF 2-3
Office Phone: 304-442-3297

Class Time: MWF 10:00 – 10:50 Engr. 512
Method: This is a lecture based course meeting 3 times a week. Although a course calendar etc. may be found at community.wvu.edu/~smb031

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Textbook: Bittinger and Beecher, *Introductory & Intermediate Algebra,* 4th ed., Pearson 2011

Chapters Covered:

Chapter 5, sections 1,2,3,5,6,7,8,9
Chapter 6, sections 1,2,3,4,5,6,7
Chapter 7, sections 1,2,3,4,5,
Chapter 8, sections 1,2,
Chapter 9, sections 1,2 (if time permits)
Chapter 10, sections 1,2,3,4,5,
Chapter 11, sections 1,2 (if time permits)

Topics:

1. Factoring Polynomials and Solving Quadratic Equations (12 days)
   a) Greatest common factor
   b) Factor by grouping
   c) Factor trinomials (esp. quadratics)
   d) Factor special cases (difference of squares and cubes etc.)
   e) Solve a quadratic equation by factoring
   f) Applications
2. Rational Expressions (8 days)
   a) Multiplication and division
   b) Addition and subtraction
   c) Complex rational expressions
   d) Solve equations having rational expressions
3. Functions (5 days)
   a) Domain and Range
   b) Linear functions; slope, graph
   c) Applications
4. Systems of Equations (2 day)
   a) Solve two equations 2 variables by substitution
5. Inequalities (2 days)
   a) Sets and interval notation
   b) Intersections, Unions and Compound Inequalities
6. Radical expressions, Equations and Functions (8 days)
   a) Radicals
   b) Rational exponents
   c) Simplifying radical expressions
   d) Addition and Subtraction of radical expressions
   e) Multiplication and Division of radical expressions
7. Quadratic Equations (4 days)
   a) Solve by completing the square
   b) Solve using the Quadratic Formula

Grading and Assessment:

Quizzes/Homework: There will be 8 quizzes for 20 points apiece. I will drop the lowest score leaving 140 points (about 21.5% of your grade). Homework will be checked for completeness for 20 points (about 3% of your grade).

Attendance: One point will be assigned for every day that you are in the room when attendance is taken AND you do not use your cell phone or other distracting device in class. This is a participation point and may be taken away at the instructor's discretion. The result will be scaled (if necessary) to 40 points. (about 6.1% of your grade)

Tests: Three in class hourly tests will be given, 100 points (about 15.4% of your grade) apiece.

Final Exam: A comprehensive final exam worth 150 points of the final grade will be given (about 23% of your grade).

Making up Exams: Only excused absences will enable a student to make up work. This means that you must have an excuse for the day of the missed work and every subsequent day until you have made up the work.

Course Grade: Grades are assigned according to the following scale:

Pass 70 - 100% (455 – 650 points)
F - below 70% (0 - 454 points)

Borderline grades are raised based on performance, and grade distribution of the whole class.

Calculator Usage: Graphing Calculators will be forbidden on most exams and quizzes.

Reference: None
Computer Usage: None
Laboratory Projects: None

Disclaimer: The professor reserves the right to make any necessary adjustments and/or modifications to this syllabus.

School Policies

Academic Integrity:
The integrity of the classes offered by any academic institution solidifies the foundation of its mission and cannot be sacrificed to expediency, ignorance, or blatant fraud. Therefore, I will enforce rigorous standards of academic integrity in all aspects and assignments of this course. For the detailed policy of West Virginia University regarding the definitions of acts considered to fall under academic dishonesty and possible ensuing sanctions, please see the Student Conduct Code http://studentlife.wvu.edu/office_of_student_conduct/student_conduct_code. Should you have any questions about possibly improper research citations or references, or any other activity that may be interpreted as an attempt at academic dishonesty, please see me *before* the assignment is due to discuss the matter.

Social Justice Statement:
"West Virginia University Tech is committed to social justice. I concur with that commitment and expect to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran's status, religion, sexual orientation, color or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with the Office of Disability Services (293-6700). "

Tentative Syllabus Fall 2012
Math 093 – T01

Monday	Wednesday	Friday
20 5.1	22 5.1/5.2	24 5.2
27 5.3	29 5.3/Quiz 1	31 5.3
3 	5 5.5	7 5.6/Quiz 2
10 5.7	12 Review	14 Exam I
17 5.8	19 5.9	21 5.9
24 6.1/Quiz 3	26 6.2	28 6.3
1 6.4/Quiz 4	3 6.4	5 6.5
8 Review	10 Exam II	12 6.6
15 6.7	17 6.7	19 7.1/Quiz 5
22 7.1/7.2	24 7.3	26 7.4/Quiz 6
29 7.5	31 8.1	Nov 2 8.2
5 Review	7 Exam III	9 9.1
12 9.2	14 10.1	16 10.2/Quiz 7
19 	21 	23 
26 10.2/10.3	28 10.4	30 10.5/Quiz 8
Dec 3 10.5	5 11.1	7 11.2

Prepared August 2012