Fundamentals of Mathematics II
Math 130B

Course Objectives

1. **Gaining factual knowledge including the mathematical notation and terminology used in this course.** Learn the vocabulary, symbolism, and basic definitions used in elementary algebra covering topics such as exponents, radicals, equations, inequalities, and polynomials.

2. **Learning fundamental mathematical principles, generalizations, and properties arising from the concepts covered in this course.** Become familiar with the basic operations on the real numbers and the techniques used in solving a variety of types of equations and systems of equations.

3. **Learning how to apply course material along with techniques and procedures covered in this course to solve problems.** Use the facts, formulas, and techniques learned in this course to solve application problems in a variety of topics to include business, number relations, geometric situations, and proportions.

4. **Providing students with the basic skills and knowledge necessary to pass the mathematics section of the THEA test and to be successful in college-level mathematics courses.** Acquire a level of proficiency in the fundamental concepts of equation solving, algebraic manipulation, graphing, and applications to promote success on the math section of the THEA test and in college-level math courses.

Course content

**Textbook:** *Developing Skills in Algebra*, Fifth Edition, by Nanney and Cable. The following chapters including particular sections listed are covered. (See textbook “Contents”)

1. **Fundamental Concepts.** The real number system; number axioms; arithmetic operations on rational numbers; order of operations; evaluating algebraic expressions; positive integers exponents and laws of exponents; use the distributive law; addition, subtraction, multiplication, and division of polynomials.

2. **Linear Equations, Inequalities and Absolute Values in One Variable.** Techniques in solving first degree and absolute value equations; order relations and notation; solving linear and absolute value inequalities; and literal equations.

3. **Word Problems.** Number relations, geometry, ratios, and business applications.

4. **Factoring Polynomials.** Common factors; factoring techniques on binomials and trinomials; difference of two squares; sum and difference of cubes; and factoring by grouping.

5. **Algebraic Fractions.** Simplification of fractions; multiplication, division, addition and subtraction of fractions; complex fractions; and fractional equations.

6. **Exponents and Radicals.** Laws of exponents; positive, negative and rational exponents; definitions, notation and standard form of radicals; addition, subtraction, multiplication and division of radicals; and rationalizing the denominator.

7. **Quadratic Equations in One Variable.** Solutions of quadratic equations by factoring, completing the square, and the quadratic formula.

8. **Linear Equations in Two and Three Variables.** Cartesian coordinate system; graphing linear equations in two variables; solving simultaneous equations by graphing substitution and elimination. Three linear equations in three variables with unique solutions only.
Math 130B.080(130B.110) Fundamentals of Math II  
Juan P. Montemayor  
Spring 2006

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Code of Conduct:
Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding the Academic Honor Code, which is available on the web at http://www.angelo.edu/forms/pdf/honorcode5.pdf.

Statement on Disability:
"Persons with disabilities which may warrant academic accommodations must contact the Student Life Office, Room 112 University Center, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made."

Other Classes:
Math 130B.080  TTh 9:30-10:45 MCS 214  
Math 130B.110  TTh 2:00-3:15 MCS 214  
Math 1302.020  MWF 9:00-9:50 MCS210  
Math 1321.020  MW 12:00-1:15 MCS 110

Office Hours

<table>
<thead>
<tr>
<th>Monday:</th>
<th>Wednesday:</th>
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<tbody>
<tr>
<td>8:45-9:00, 10:00-11:30, 1:15-2:15</td>
<td>8:45-9:00, 10:00-11:30, 1:15-2:15</td>
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<tr>
<td>Tuesday:</td>
<td>Thursday:</td>
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<td>8:45-9:30, 10:45-11:15, 1:30-2:00</td>
<td>8:45-9:30, 10:45-11:15</td>
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<tr>
<td>Friday:</td>
<td>Math Lab:</td>
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<tr>
<td>10:00-11:30</td>
<td>MCS211 Tues. 3:30-4:00, Thurs. 1:00-2:00</td>
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Math Lab:

<table>
<thead>
<tr>
<th>All classes</th>
<th>Developmental Classes</th>
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<tbody>
<tr>
<td>MCS 215  M-Th: 2:00 – 5:00, F: 2:00-4:00</td>
<td>MCS 211: M – F 1:00-4:00</td>
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<tr>
<td>MCS 211  M – Th 6:00 – 8:00 PM</td>
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Important Dates:

Look on the webpage for exam dates, drop date and holidays (Calendar)

Grading:

<table>
<thead>
<tr>
<th>A:  90 and above</th>
<th>B:  80 – 89</th>
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<tbody>
<tr>
<td>C:  70 – 79</td>
<td>D:  60 – 69</td>
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<td>F: below 60</td>
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Exams: You will have four short exams - 2-4 pages (20-45 minute tests) – drop the lowest of four
40 % of grade

Midterm: comprehensive up to the first half of the semester: 20 % of grade
Final Exam: comprehensive (all semester) 25 % of grade

Attendance: 5 % of grade

<table>
<thead>
<tr>
<th>Absences</th>
<th>Grade</th>
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<tbody>
<tr>
<td>0-2</td>
<td>95</td>
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<tr>
<td>3-4</td>
<td>85</td>
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<tr>
<td>5-6</td>
<td>75</td>
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<tr>
<td>7-10</td>
<td>65</td>
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<tr>
<td>More than 10</td>
<td>0</td>
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Homework: 5 % of grade

(Five-ten) problems to be turned in the NEXT Class day after it is assigned unless told otherwise.
Use the form posted on webpage to turn in the daily HW problems.
(answer sheet Word or PDF)
(maximum grade you will receive will be a 95)

Rest of HW: 5 % of grade

Other assigned problems not turned in with original problems
1) in a folder
2) followed proper instructions
(maximum grade you will receive is a 95)

Homework Policy on webpage.

Final Exam: Comprehensive – everybody must take exam – no exceptions

Quizzes: short quizzes – part of HW – should be turned in with HW (folder)

NOTES: Notes are extra – sometimes they are available – sometimes they are not. When they are available you should bring them to class.
There may be times that I will ask to see your notes (in addition to /or instead of) your HW

Bonus:
Being late to class will be considered as being absent
Encouragement – be in class and do the HW

1. If you miss 0 or 1 day (either excused or unexcused) and have turned in all HW I will add 1 point to your overall average and add four points to your final exam.

2. If you miss 2 or 3 days (excused or unexcused) and have turned in all HW add 1 point to your overall average and – add two points to your final exam.

NOTE: No Make-Ups of any kind. Graphing Calculators are discouraged and in most cases not allowed.

You may or may not have reviews (tests) or review sessions.