Catalog Description: MA 135-01 Algebra Trigonometry (Spring 2010)
Integrated course of College Algebra and Plane Trigonometry. Credit may not be received for MA 133 or MA 134 and MA 135. Prerequisites: MA 095 with a grade of 'C' or higher, or ACT Math subscore of 18-20 with MA 095 placement score of 14 or higher, or ACT Math subscore of 21 or higher. (5)
Office Location and Hours: Johnson Hall 307 – T 10:00am-11:00am TR 3:55pm-4:55pm and whenever I’m around (I want you to always feel free to stop by and see if I’m in. If I’m not, see if the Mathematics Learning Center can help with your question. If none of these times or situations work for you, you can make an appointment that is an appropriate time for the both of us.)
Contact Information: office phone: (573) 651-5065 e-mail: aschwartz@semo.edu
my homepage: http://cstl-csm.semo.edu/aschwartz
Classroom Location and Hours: JH 101 – MTWRF 9:00am-9:50am
Class Webpage: http://cstl-csm.semo.edu/aschwartz/ma135sp10
Course Objectives: This course is for students who will take calculus courses in the future. The primary purposes of the course are to develop problem solving capabilities requiring a logical structure and to provide the essential algebraic background for work in other fields or courses. Students will be given problems in many disciplines that use algebra in their solutions, thus giving insights into the importance of mathematical skills in almost all aspects of society. The students also learn the basic knowledge of trigonometric functions and their relationships, and the applications of trigonometry. Upon completion of the course, you should be able to (among others):
- Graph basic mathematical concepts such as points, line segments, and intervals in both one and two dimensions.
- Understand, manipulate, and graph basic quadratic functions.
- Understand, manipulate, and graph basic polynomial and rational functions.
- Understand, manipulate, and graph basic exponential and logarithmic functions.
- Understand, manipulate, and graph basic trigonometric functions.
- Understand what a conic is and how they relate to the various associated graphs.
- Understand basic sequences and how to indentify them in various ways.

Expectations of Students:
1. Attend class
2. Participate in classroom activities
3. Provide and use a graphing calculator
4. Do homework
5. Pass quizzes and tests

Tentative Schedule:
(1) Intro, Syllabus
(2) 1.3 Quadratic Equations # 4, 6, 15, 21, 35, 43, 51, 61, 83, 96
(3) 1.4 Complex Numbers # 12, 20, 21, 29, 32, 44, 53, 59, 61, 67
(4) 2.1 The Coordinate Plane # 11, 12, 17, 21, 23, 27, 32, 38, 43, 54
(5) 2.2 Graphs of Equations in Two Variables # 5, 7, 13, 17, 49, 51, 53, 57, 59, 67
(6) 2.3 Graphing Calculators: Solving Equations and Inequalities Graphically # 5, 13, 21, 29, 33, 39, 47, 51, 58, 59
(7) 2.4 Lines # 4, 12, 20, 28, 30, 34, 44, 57, 61, 66

Date: Spring 2010.
(45) 7.3 Trigonometric Graphs: Graphs of Transformations of Sine and Cosine # 2, 10, 18, 24, 30, 36, 42, 46, 70, 76
(46) 7.4 More Trigonometric Graphs: Graphs Involving Tangent and Cotangent Functions # 2, 8, 12, 14, 16, 18, 24, 32, 36, 55
(47) 7.4 More Trigonometric Graphs: Graphs Involving the Cosecant and Secant Functions # 2, 8, 12, 14, 16, 18, 24, 32, 36, 55
(48) REVIEW over Chapters 6 & 7
(49) TEST over Chapter 6 & 7
(50) 8.1 Trigonometric Identities # 2, 8, 10, 16, 18, 23, 36, 50, 60, 86
(51) 8.2 Addition and Subtraction Formulas # 2, 4, 6, 14, 16, 24, 32, 34, 36, 42
(52) 8.3 Double-Angle, Half-Angle, and Product-Sum Formulas # 2, 10, 18, 28, 36, 38, 46, 54, 60, 68
(53) 8.4 Inverse Trigonometric Functions: The Inverse Sine Function, The Inverse Cosine Function # 2, 10, 14, 24, 26, 34, 42, 44, 54
(54) 8.4 Inverse Trigonometric Functions: The Inverse Tangent Function, The Inverse Secant, Cosecant and Cotangent Functions # 2, 10, 14, 24, 26, 32, 34, 42, 44, 54
(55) 8.5 Trigonometric Equations: Solving Trigonometric Equations, Solving Trigonometric Equations by Factoring # 4, 6, 16, 18, 20, 24, 26, 32, 36, 60
(56) 8.5 Trigonometric Equations: Equations with Trigonometric Functions of Multiple Angles, Using Inverse Trigonometric Functions to Solve Trigonometric Equations # 4, 6, 16, 18, 20, 24, 26, 32, 36, 60
(57) 9.1 Polar Coordinates # 2, 4, 8, 10, 14, 16, 22, 24, 26, 28, E.C. 34, E.C. 36, E.C. 42, E.C. 48, 50
(58) 9.3 DeMoivre’s Theorem # 2, 6, 12, 14, 16, 20, 26, 34, 42, 50, E.C. 52, E.C. 54
(59) 9.4 Vectors: Geometric Description of Vectors, Vectors in the Coordinate Plane # 2, 8, 18, 20, 24, 28, 30, 34, 36, 44
(60) 9.4 Vectors: Vectors in the Coordinate Plane, Using Vectors to Model Velocity and Force # 2, 8, 18, 20, 24, 28, 30, 34, 36, 44
(61) REVIEW over Chapters 8 & 9
(62) TEST over Chapter 8 & 9
(63) 10.1 Parabolas # 2, 4, 8, 10, 14, 16, 22, 24, 26, 28, E.C. 34, E.C. 36, E.C. 42, E.C. 48, 50
(64) 11.1 Ellipses # 2, 4, 8, 12, 18, 20, 26, 30, 34, 42, E.C. 50
(65) 11.3 Hyperbolas # 2, 4, 8, 16, 18, 20, 24, 28, 32, 44
(66) 11.4 Shifted Conics # 4, 8, 12, 14, 16, 22, 24, 26, 28, 38
(67) 12.1 Sequences and Summation Notation # 2, 10, 16, 24, 32, 34, 36, 40, 44, 56, E.C. 62, E.C. 72
(68) 12.6 The Binomial Theorem # 2, 4, 10, 12, 14, 16, 22, 26, 28, 32
(69) REVIEW over Chapters 10-12
(70) TEST over Chapters 10-12
(71) REVIEW for Final

Grading Scale:

- A 90-100
- B 80-89.99
- C 70-79.99
- D 60-69.99
- F 0-59.99

Grading Scheme:

- Homework, Participation, Quizzes 5%
- Tests 1-5 15% apiece
- Comprehensive Final 20%

Tutoring: Tutoring sessions are also available to you in the Mathematics Learning Center (this is free). The hours are 8:00am-5:30pm M-R, and 8:00am-3:00pm on Friday. The MLC is in Johnson Hall room #112. The Center for Student Involvement also provides tutoring on the second floor of the University Center through the Learning Assistance Program. Furthermore, Jamie Birkman (the Administrative Assistant in the Mathematics Department) has a list of personal (paid) tutors that are available.

Disability Support Services: “Any student who believes that they may need an academic accommodation based on the impact of a disability should contact me to arrange an appointment to discuss their
individual needs. We instructors rely on Disability Support Services to verify the need for academic accommodations and developing accommodation strategies. Students that have not already registered with Disability Support Services as a student with a disability will be encouraged to do so."

**Classroom and Final Exam Policy:** The use of a scientific or graphing calculator is encouraged for use on the class and final examinations for this course; however, computers with graphic, word-processing, symbolic manipulation or programming capabilities will not be allowed for this exam (unless specifically allowed by Disability Support Services). If you cannot afford to purchase a calculator, these may be rented from Textbook Rental Services for a nominal fee. The use of books, notes, or other resource materials will not be permitted on the final examination. All cell phones prohibited during the final exam (THIS POLICY APPLIES TO THE EVERYDAY CLASSROOM AS WELL). You may NOT use the calculator on your cell phone for quizzes, tests, and the final exam. Furthermore, you are expected to be prepared for every quiz, test, or exam in this class. There will be no sharing of calculators, pencils, or erasers during any quiz, test, or the final exam. The final is at 8:00am Wednesday, May 12 in JH101 (the same room this class is in).

**Absences on Exam Days:** If the absence is known ahead of time and you find that you will be unable to take an exam at the regularly scheduled time, you need to let me know as soon as possible in advance of the regularly scheduled time for said exam (no exceptions) so that a make-up time can be arranged before the rest of the class is scheduled to take the exam. If it is an emergency absence (you are hospitalized or arrested, etc.), you must take it the first or second day you are physically able to be in my office or at Testing Services. Homework, quizzes, and class participation cannot be made up regardless of whether the absence is known ahead of time or it is of the emergency variety. Homework is always due the next class day after assigned unless otherwise noted. Homework can be turned in early however. Moreover, it is due by the time the class is over and not a minute later.

**General Student Behavior:** “Every student at Southeast is obligated at all times to assume responsibility for his/her actions, to respect constituted authority, to be truthful, and to respect the rights of others, as well as to respect private and public property. In their academic activities, students are expected to maintain high standards of honesty and integrity and abide by the University’s Policy on Academic Honesty. Alleged violations of the Code of Student Conduct are adjudicated in accordance with the established procedures of the judicial system.” Dishonorable actions, such as cheating will result in an immediate zero for the correlating classroom activity. Additional unethical actions will result in a referral to the Department Chair, Dean of the College of Science and Math, and/or the University Judicial Affairs Committee.

**Class Disruptions:** These are absolutely not tolerated. Your classmates (their parents, legal guardians, or their scholarship sources) pay entirely too much money on tuition to have their classroom experience subjugated by rude individuals. I understand that emergencies can and do arise, however blatant refusal to cooperate, unnecessary (as deemed by myself) cell phone usage (including texting), using Ipods or mp3 players, talking in class (about non-subject related matter), frequently leaving the room (during the middle of class or walking out early) are all prohibited. If you transgress this once, it will be a verbal warning. Second offenses are cause for removal from that day’s class. Offenses past that will start to directly affect the student’s grade (1 whole percentage point off of the final grade for each and every offense including the third offense and every offense thereafter).