

MAC 1114 TRIGONOMETRY SPRING 2012

Instructor: Professor Diaz

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Meeting Time and Place: MWF 11:00AM - 11:50AM, DM 190

Office Hours: MW 2:30PM – 3:30PM DM416 by appointment only

COURSE DESCRIPTION

The course covers the following subjects: trigonometric functions, identities, conditional equations, polar coordinates, vectors, polar graphs, complex numbers, DeMoivre's Theorem, and conic sections.

Prerequisite: College Algebra or equivalent.

Textbook: Algebra and Trigonometry (9th edition) by Michael Sullivan.

Student Solutions Manual is available on line (w3.fiu.edu/math)

GRADING POLICY

There will be 4 midterm tests and a comprehensive final exam. Homework will be assigned online through MathXL.

The midterm tests are all worth 60% of the grade and the final exam alone is worth 25% of the grade. The remaining 15% contribution comes from online homework, but you will still have to do offline homework from the textbook to be adequately prepared for the tests. It is strongly advised that you complete the assigned homework on a regular basis, since the only way to learn the material is through adequate practice. The best way to ensure that you know how to do something is to actually do it, as thoroughly and as frequently as possible. The questions selected for the exams will be very similar to those of the homework.

Exams are closed book, no formula sheets or graphing calculators are allowed.

All in-class tests will be of the “free response” type, meaning no multiple choice, no matching, and only an occasional set of true-false questions. Although correct answers are certainly necessary to receive full credit, most of the credit awarded for each test question will be for the manner in which you illustrate your thoughts. A correct answer with little or no supporting work is virtually worthless, while an incorrect answer with clear and sensible supporting work (even with some sort of minor error) may receive almost full credit. Keep this in mind as you complete your homework assignments. The more thoroughly and carefully you work out the homework problems, the better you will do on your exams.

THERE WILL BE NO MAKE-UP TESTS. For any test that you do not take in class at the scheduled time, your score will be recorded as a zero. At the end of the semester, the single lowest score among the midterm tests will be replaced by the score that you earn on the final exam (provided it is better than the lowest midterm result, of course).

The real purpose behind the policy of replacing a bad score is to allow you to compensate for missing an exam. If you miss an exam, then the zero becomes the lowest score and will be replaced by the final exam score. If you don't miss any exams, then this feature becomes a bonus.

The grade scale is as follows:

A: 94, A-: 90, B+: 87, B: 83, B-: 80, C+: 75, C: 70, C-: 67, D+: 64, D: 60, D-: 57

There is a substantial amount of formulas to be memorized, derivations (proofs) of identities, and calculations of exact values of trigonometric functions without the use of a calculator. A scientific calculator will be needed in solving applications problems.

Students are expected to attend all classes and to be on time. If you miss a class, you are responsible for any information given in that class and any work assigned on that day.

Avoid coming late or leaving early as such behavior is disruptive, rude and impolite.

You are expected to keep up with the lectures and homework.

Using cellular phones or laptops is not allowed during class.

Take advantage of the free tutoring services (math help) provided by FIU:
w3.fiu.edu/math/

Topics to be covered - Suggested Exercises:

Chapter 7. Trigonometric Functions

- 7.1 Angles and their measure (Exclude obj. 5: linear speed of object in circular motion) (11-90)
- 7.2 Right triangle trigonometry (11-60)
- 7.3 Computing the values of trigonometric functions of acute angles (5-28, 47-56)
- 7.4 Trigonometric functions of any angle (11-114)
- 7.5 Unit circle approach: Properties of trigonometric functions (9-87)
- 7.6 Graph of the Sine and Cosine functions (9-86)
- 7.7 Graphs of the Tangent, Cotangent, Secant and Cosecant functions (7-42)
- 7.8 Phase shift (Exclude obj. 2: finding sinusoidal function from data) (3-18)

Test 1

Chapter 8. Analytic Geometry

- 8.1 The Inverse Sine, Cosine, and Tangent functions (1-68)
- 8.2 The inverse trigonometric functions (continued) (1-66)
- 8.3 Trigonometric Equations (Excl. obj. 5: solving equations with graphing utility) (11-44, 57-79)
- 8.4 Trigonometric Identities (9-71)
- 8.5 Sum and Difference formulas (11-89)
- 8.6 Double-angle and Half-angle formulas (7-40)
- 8.7 Product-to-sum and Sum-to-product formulas (Formulas don't have to be memorized) (1-24)

Test 2

Chapter 9. Applications of Trigonometric functions

- 9.1 Applications involving right triangles (9-26)
- 9.2 The Law of Sines (9-47)
- 9.3 The Law of Cosines (9-45)

Chapter 10. Polar Coordinates; Complex Numbers; Vectors

- 10.1 Polar coordinates (1-82)
- 10.2 Polar equations and graphs (1-76)
- Quick review of complex numbers: Chapter 1, Section 3 (1-72)
- 10.3 The complex plane; DeMoivre's Theorem (5-60)
- 10.4 Vectors (1-62)

Test 3

Chapter 11. Analytic Geometry

- 11.2 The Parabola (1-74)
- 11.3 The Ellipse (1-76)
- 11.4 The Hyperbola (7-60)

Test 4

Final Exam (comprehensive, covering chapters 7 – 10)