Course Syllabus

Math 117 - Trigonometry

Spring Semester 2002
Sect 02: 5:30 - 6:45 pm, TR, S137
Instructor: James Jones
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Text:

Prerequisite:
The prerequisites are 1) successful completion of Math 098, Intermediate Algebra or sufficient score on a placement exam, 2) Math 095 or one year of high school geometry, and 3) Eligibility for English 101.

Course Description:
Mathematics 117, Trigonometry, helps students develop skills sufficiently to write and use the definition of trigonometric functions; sketch the graph of the trigonometric functions; prove identities; solve trigonometric equations; learn and then apply the law of the sines and cosines; learn how to write a complex number in trigonometric form and find all the roots of a complex number; learn polar coordinates system and the graphs of some simple equations in polar; learn about conic sections (rectangular & polar), vector (applications & operations), and the exponential and logarithmic functions with applications and modeling. A calculator is required.

- Applicable toward graduation where program structure permits:
  - Certificate or Degree - All Certificates and All Degrees
  - Group Requirement - Mathematics (A.A.S. only)
  - Area of Concentration - Mathematics

Illinois Articulation Initiative (IAI)
The mathematics component of general education focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate. Every college graduate should be able to apply simple mathematical methods to the solution of real-world problems. A quantitatively literate college graduate should be able to:

- interpret mathematical models such as formulas, graphs, tables, and schematics, and draw inferences from them;
- represent mathematical information symbolically, visually, numerically, and verbally;
- use arithmetic, algebraic, geometric, and statistical methods to solve problems;
- estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives, and select optimal results; and
- recognize the limitations of mathematical and statistical models.

Courses accepted in fulfilling the general education mathematics requirement emphasize the development of the student's capability to do mathematical reasoning and problem solving in settings the college graduate may encounter in the future. General education mathematics courses should not lead simply to an appreciation of the
place of mathematics in society, nor should they be merely mechanical or computational in character.
To accomplish this purpose, students should have at least one course at the lower-division level that emphasizes the foundations of quantitative literacy and, preferably, a second course that solidifies and deepens this foundation to enable the student to internalize these habits of thought. 

*Math 117, Trigonometry, does NOT satisfy the Illinois Articulation Initiative Definition of a General Education Mathematics Course.*

**Course Objectives:**
The student is expected to: 1) use the definition of the six trigonometric functions in equations, 2) sketch the graph of the six trigonometric functions, 3) prove trigonometric identities, 4) solve trigonometric equations, 5) learn and then apply the law of sines and cosines, 6) learn how to write a complex number in trigonometric form, 7) find all the roots of a complex number, 8) learn how to use the polar coordinate system, 9) be able to graph some equations in polar coordinates, 10) learn about and graph conic sections in both rectangular and polar forms, 11) use vector operations to solve applications, and 12) learn about exponential and logarithmic functions with applications and modeling.

**Type of Instruction:**
Lecture, discussion, problem solving, and group work will be used. Students are expected to read the material before coming to class and should come to class with a prepared list of questions.

**Attendance Policy:**
Regular attendance is essential for satisfactory completion of this course. If you have excessive absences, you cannot develop to your fullest potential in the course. Students who, because of excessive absences, cannot complete the course successfully, will be administratively dropped from the class at midterm. If a student stops attending after midterm, it is the student’s responsibility to withdraw to avoid an “F”.
The student is responsible for all assignments, changes in assignments, or other verbal information given in the class, whether in attendance or not. If a student must miss class, a call to the instructor (RCC’s phone system has an answering system) is to be made, or an email message sent. When a test is going to be missed, the student should contact the instructor ahead of time if at all possible. Under certain circumstances, arrangements can be made to take the test without penalty before the scheduled time. If circumstances arise where arrangements cannot be made ahead of time, the instructor should be notified and a brief explanation of why given by either voice or email. This notification must occur before the next class period begins. At the instructor’s discretion, the student may receive a zero, make up the exam with (or without) penalty, or substitute the final exam score for the missed exam.
Grading Policy:
There will be several examinations and a comprehensive final examination. Announced and unannounced quizzes may be given. Laboratory and homework exercises may be used in grading. Collected assignments and missed exams will lose 10% of the grade for each class period late. A grade may be taken on your notebook. Note: Homework is essential to the study of mathematics. Letter grades will be assigned to final adjusted scores as follows: A=90-100%; B=80-89%; C=70-79%; D=60-69%; F=0-59%. Consideration will be given to such qualities as attendance, class participation, attentiveness, attitude in class, and cooperation to produce the maximum learning situation for everyone. Any student who stops attending without dropping will receive a grade of F.

Notebooks:
A notebook should be kept which contains every problem worked in class as well as any comments that are appropriate. In general, it should contain everything written on the chalkboard. Be sure to bring your notebook if you come to the instructor or a tutor for help. I strongly urge you to get a three-ring binder to keep your papers in.

Topics to be covered:
Graphs, functions, and models; the trigonometric functions; trigonometric identities, inverse functions, and equations; applications of trigonometry; analytic geometry; and exponential and logarithmic functions.

Calculators:
A TI-82 or TI-83 graphing calculator is required in this course. Calculators may be used to do homework. Calculators may be used on exams and/or quizzes in class unless otherwise announced. If you are purchasing a calculator, consider getting the TI-83 instead of the TI-82. If you are planning on going on to Math 121, consider getting the TI-92 or TI-89 calculator.

Additional Supplies:
The student should have a red pen, ruler, graph paper, stapler, and paper punch. The student is expected to bring calculators and supplies as needed to class. There will be a paper punch and stapler available in the classroom.

Additional Help:
Office hours will be announced. Anytime I am in my office, feel free to stop and get help. The student is encouraged to seek additional help when the material is not comprehended. Mathematics is a cumulative subject; therefore, getting behind is a very difficult situation for the student. If your class(es) leave you puzzled, the Student Learning Center is a service that Richland Community College offers you free of charge.