

Math 154 Course Syllabus

Precalculus II (5 credits)

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Course Description: The course is intended for students majoring in mathematics, science, technology or economics. Precalculus II encompasses the theory, techniques and applications of trigonometric functions. The use of graphing calculators is expected during class, on homework, on quizzes, and on exams. Selected sections from chapters 6, 7, 8 and 9 of the text will be used to address the concepts, procedures, and skills listed as course outcomes below.

Course Rationale: This course gives students the ability to use graphical, numerical, and algebraic concepts and skills of trigonometric functions to solve a variety of mathematical and real-world problems. Upon completion, a student will be able to model real-world situations with a variety of trigonometric and circular functions in various contexts; interpret different aspects of trigonometric functions; understand the unique features of operations on trigonometric functions.

Calculator: A graphing calculator is required for this course. The TI-83+ will be used in class.

Text: Sullivan...9-th Edition

- Model real-world phenomena with a variety of trigonometric functions
- Define and use radian measure
- Understand and explain the connections between trigonometric and circular functions numerically, symbolically, graphically, and in models of real-world situations
- Recognize a variety of problem situations including real-world phenomena that can be modeled by the same type of periodic functions
- Analyze the effects of transformations on the graphs of trigonometric functions
- Understand the unique features of operations on trigonometric functions including inverting restricted forms
- Develop and use various trigonometric formulas, including:
 - the Pythagorean identities
 - formulas for the sine and cosine of a sum of angles and half angles
 - the Law of Sines and the Law of Cosines
- Interpret different aspects of trigonometric functions numerically, symbolically, graphically, and from real-world models:
 - Intercepts
 - Asymptotes
 - Period
 - Amplitude
 - Domain/Range
 - Increasing/Decreasing
 - End Behavior
- Modeling with functions

Problem-solving

- Working on extended problems

- Drawing on diverse knowledge and methods to solve problems
- Posing questions related to a problem
- Modeling real-world phenomena mathematically

Writing and Communication

- Reading and understanding complex problems
 - Summarizing the essential ideas of a problem
 - Describing methods used to approach a problem
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- Expressing solutions and solution paths in written and verbal form
 - Evaluating and improving the quality of written work

Assessment and Evaluation Guidelines: In this course the distinction between learning activities and assessment activities is blurred. I present a sequence of problems (combined with motivation, discussion of contexts, and connections with other areas of mathematics and life) designed to equip you with the concepts and processes of limits and differentiation. The assessment procedures are chosen to provide information about your progress in achieving the performances objectives and eventually your achievement of these objectives. Through completing the following course work you will demonstrate your ability to perform the above course objectives.

Daily Assignments: Daily assignments of problems to be worked on either individually or in small groups will be given daily. The feedback will come from the textbook, your peers, and the instructor.

Quizzes: Quizzes worth 10 points will be given. Students can then use these quizzes to determine the remedial work they need in preparing for the next exam. There will be no make-up of these quizzes for any reason. Lowest will be dropped. 5 quizzes

Examinations: 2 Examinations will be given: a mid-term and a final.

Grading:

<u>Your Grade</u>		<u>Grade Scale</u>	
		A	90-100
		B	80-89
Quizzes (4)	40 points	C	65-79
		D	55-64
Mid-term	30 points	F	Below 55

Final 30 points

Final Exam: TBA

How to succeed:

Take the responsibility for your own achievement of these performance objectives. Use the activities, assignments, assessments and people such as the instructor to insure that you understand the mathematical concepts and can demonstrate this understanding in the form of the performance objectives. Previous Math 172 students stress "Keep up! Study consistently, not just before tests. Get into a study group; it's the only thing that saved me."

Students who have special needs or disabilities that may affect their ability to access information and or material presented in this course are encouraged to contact the office of student assistance on campus 963-2171.