

Precalculus Syllabus

Course Information

Precalculus, 2011-2012: M-F 9:00am

Instructor Contact Information

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Contact hours: 8:00am-10:00pm, Monday through Saturday

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Algebra II, Geometry

Course Description

Precalculus is an extension of algebra and trigonometry with an emphasis on functions, sequences, and limits. It is the development of a basic skill set needed to properly learn calculus, and it also includes a few topics not easily addressed in earlier classes; namely, complex numbers, polar graphs, probability, and matrices.

Student Learning Objectives/Outcomes

The student will learn to associate graphs with equations for a library of parent functions; to sketch graphs manually as well as use a graphing utility; and to apply algebraic, numeric, and visual techniques to real-world problem solving.

Required Textbooks and Materials

- Precalculus – A Graphing Approach; 5th ed., Larson et. al.; Brooks/Cole
- A graphing calculator, TI-83 and up preferred; other models are permissible, but the student will be responsible for learning how to use it
- Quad rule graph paper (200 sheets)
- Straight edge
- 2 pencils with erasers

Suggested Course Materials

None

Assignments & Academic Calendar

The schedule below is tentative and will be adjusted based on unexpected difficulty with concepts and external changes to the schedule (i.e., field trips for other classes). About 10 class periods have been built in for each semester in order to accommodate these changes.

Week of	Topics / Sections in Text
8/15/2011	Introduction to course; Prerequisites Exam and review / Chapter P
8/22/2011	Graphs of equations, lines in the plane, functions / 1.1-1.3
8/29/2011	Functions, graphs of functions, graph transformations / 1.3-1.5
9/5/2011	Combinations of functions, inverse functions / 1.6-1.7
9/12/2011	Chapter 1 Exam, linear equations, graphical solutions / 2.1-2.2
9/19/2011	Complex numbers, quadratic equations / 2.3-2.4
9/26/2011	Solving equations, inequalities / 2.5-2.6
10/3/2011	Linear modeling, Chapter 2 Exam, Quadratic functions / 2.7,3.1
10/10/2011	Polynomial Functions, zeroes, Fundamental Theorem of Algebra / 3.2-3.4
10/17/2011	Rational Functions / 3.5
10/24/2011	Graphing rational functions, quadratic modeling / 3.6-3.7
10/31/2011	FIELD TRIP WEEK
11/7/2011	Chapter 3 Exam, exponential functions, logarithmic functions / 4.1-4.2
11/14/2011	Properties of logarithms, exponential and logarithmic equations, exponential and logarithmic models / 4.3-4.5
11/21/2011	Nonlinear models / 4.6
11/28/2011	Chapter 4 Exam, BUILT-IN EXTRA DAYS
12/5/2011	BUILT-IN EXTRA DAYS
12/12/2011	BUILT-IN EXTRA DAYS
1/2/2012	Angles, right triangle trigonometry / 5.1-5.2
1/9/2012	Trigonometric functions, trigonometric graphs / 5.3-5.5
1/16/2012	Trigonometric inverses, trigonometric models / 5.6-5.7
1/23/2012	Chapter 5 Exam, Trigonometric identities with proofs / 6.1-6.2
1/30/2012	Trigonometric equations, sum and difference formulas, double/half and product-to-sum formulas / 6.3-6.5
2/6/2012	Chapter 6 Exam, Law of Sines, Law of Cosines / 7.1-7.2
2/13/2012	Vectors in the plane, dot products / 7.3-7.4
2/20/2012	Cis function, Chapter 7 Exam, Systems of equations / 7.5,8.1
2/27/2012	Two variable linear systems, multivariable linear systems, matrices / 8.2-8.4
3/5/2012	Matrix operations, matrix inverses, determinants / 8.5-8.7
3/12/2012	Applications of matrices, Chapter 8 Exam, sequences and series / 8.8,9.1
3/19/2012	Arithmetic sequences and series, geometric sequences and series / 9.2-9.3
3/26/2012	Mathematical induction / 9.4
4/2/2012	SPRING BREAK
4/9/2012	Binomial theorem, counting principles, probability / 9.5-9.7
4/16/2012	Chapter 9 Exam, Circles and parabolas, ellipses / 10.1-10.2
4/23/2012	Hyperbolas, Parametric equations / 10.3-10.4
4/30/2012	Polar coordinates, polar graphs, polar equations of conics / 10.5-10.7
5/7/2012	Chapter 10 Exam, BUILT-IN EXTRA DAYS
5/14/2012	BUILT-IN EXTRA DAYS
5/21/2012	BUILT-IN EXTRA DAYS

Grading Policy

The student's grade will have 4 components:

- Exams – 40%
- Quizzes – 30% (lowest dropped); missed pop quizzes will not have to be made up
- Homework – 20% (lowest dropped)
- Class Participation – 10% (a single grade assigned at the end of the quarter)

The grading scale is the standard 10-point scale used school-wide.

Course & Instructor Policies

The student is responsible for turning in all graded work on time, except for missed pop quizzes. Late work will be taken without penalty with a written excuse, and with a 10% penalty per school day without an excuse. The student may work with the instructor to rework exam problems for half credit, and extra assignments for quiz grades, *at the instructor's discretion as the school schedule allows*.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the school's policy on plagiarism (see the student handbook for details).