

# MAT103 Syllabus

<b>Semester:</b>	Fall 2011
<b>Course title:</b>	Precalculus with Discrete Math
<b>Instructor:</b>	Professor Matt Klassen
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<b>Phone:</b>	Klassen: (425) 895-4423
<b>Office hours:</b>	MTW,Th 12:30-2:00 or by appointment
<b>Course Web Page:</b>	<a href="http://azrael.digipen.edu/MAT103">http://azrael.digipen.edu/MAT103</a>
<b>Time/Place:</b>	M,W 9:00-10:20, F 10:00-10:50, Michelangelo

## WEB PAGES AND MOODLE:

The Moodle page for MAT103 will have a link to the course web page. The web page is the central repository for all course documents, including homework assignments. Updates to homework will be posted on the web page, as well as scores for quizzes, homework, and exams.

## TEXTBOOK:

Precalculus, by Sullivan, Eighth Edition, Pearson Prentice Hall 2008, ISBN: 0-13-225668-6.

## BACKGROUND MATHEMATICS:

High School Algebra

## COURSE CONTENT:

Precalculus material covers functions, inverses, graphs, polynomial and rational functions, zeros, trigonometric ratios, identities, trigonometric functions, applied problem solving. Probability material covers basic set theory and counting techniques, finite probability function, combinations and permutations, binomial coefficients, and conditional probability.

## COURSE DESCRIPTION:

This course presents a review of college algebra and trigonometry, with an introduction to probability. The most basic part covers a review of functions and their graphs. This course emphasizes polynomial, rational, trigonometric, exponential and logarithmic functions as well as their inverses. Topics in trigonometry include analytic trigonometry and identities, the unit circle, and trigonometric functions of a real variable. Topics in probability include basic set theory and counting techniques, finite probability function, combinations and permutations, binomial coefficients, conditional probability, and introduction to combinatorial game theory. Students may only earn credit for one of MAT 103 or MAT 140.

## COURSE GOALS AND OBJECTIVES:

Students will learn to compute with the basic functions of precalculus and work their graphs. These functions and graphs will be used by students to solve practical problems in geometry with applications to software development and design. Students will become familiar with the trigonometry of triangles and unit circle and how these concepts are used in applied problem solving. Skills will be developed in basic counting techniques and their application to probability calculations with applications to games.

The above objectives will be measured through quizzes and exams and homework assignments.

## QUIZZES AND EXAMS:

Quizzes will be given periodically to test comprehension of lecture material. There are no make up quizzes, but the lowest two quiz scores will be dropped. The quizzes will last for approximately thirty minutes.

For multiple choice quizzes and exams, please follow these procedures: Work out the quiz problems and circle your answers on the question sheet. When you are finished, transfer the answers to the answer sheet. Go to a web browser and enter the answers online if instructed to do so. Under no circumstances are you allowed to discuss the quiz questions with any other student during the quiz or the data entry process. You should turn in the answer sheet at the front of the room, and keep the question sheet for reference. Your scores will be posted online by your student ID.

There will be a midterm exam given during regular class hours, and a final exam. There are *NO* make up exams unless you have a *compelling and well documented reason* for missing a test.

Calculators are allowed on quizzes and exams.

## GRADING:

Midterm Exam	20%
Homework	20%
Quizzes	30%
Final Exam	30%

Grades will be determined based on total course percentage. Percentage scores will determine letter grades according to the scale: (in the worst case)

A	93 – 100
A-	90 – 92.9
B+	87 – 89.9
B	83 – 86.9
B-	80 – 82.9
C+	77 – 79.9
C	73 – 76.9
C-	70 – 72.9
D	60 – 69.9
F	< 60

### **ATTENDANCE POLICY:**

In addition to the above grading policies, and the inherent consequences to the student's grade which would result from missed classes, students will be penalized for unexcused absences in the following way: Missing 10% of the classes unexcused will result in a 10% reduction in course percentage grade. (For example, a student with 72% would have a *C-* in the course. But if they missed 10% of the classes unexcused, they would receive 62% which is a *D* grade.) Missing more than 10% of the classes unexcused will accordingly result in a higher grading penalty.

### **ACADEMIC INTEGRITY:**

Academic dishonesty, or cheating, occurs when a student represents someone else's work as their own, or assists another student in doing so. This can happen on exams, quizzes, homework, or projects. Academic dishonesty also may occur when a student uses any prohibited reference or equipment in the completion of a task. For example, the use of a calculator, notes, books or the internet when it is prohibited. Plagiarism is a common form of academic dishonesty. This can take the form of copying and pasting excerpts from the web, and representing them as original work. The type and severity of any occurrence, as well as the legitimacy of any claim of academic dishonesty, will be judged by the instructor and the disciplinary committee. All students are asked to help in promoting a culture of academic integrity by discouraging cheating in all forms.

### **HOMEWORK ASSIGNMENTS:**

Homework will be assigned and posted on the web page (and Moodle page). You are responsible for checking the web page (and Moodle page) and noting the assignments and the due date. You may work on homework together, as well as consult the tutors and the instructor. However, the final work that you turn in or present must be your own work.

### **DISABLED STUDENT SERVICES:**

Students with physical, psychological or learning disabilities that affect their ability to perform major life activities associated with this class may be eligible for reasonable accommodations under the Americans with Disabilities Act. If you have a documented disability please contact the Disability Support Services office to arrange for accommodations for this class.

**TENTATIVE WEEKLY TOPICS:**

Week	Dates	Topics
1	Sep 7	Review of Algebra and Geometry, lines, midpoints and circles.
2	Sep 12, 14	Equations of Circles, systems of linear equations, conic sections
3	Sep 19, 21	Functions and their graphs, transformations.
4	Sep 26, 28	Polynomials and Rational functions.
5	Oct 3, 5	Angles, unit circle and trig functions
6	Oct 10, 12	Trig identities, inverse trig functions
7	Oct 17, 19	Midterm exam and review week
8	Oct 24, 26	Permutations and Combinations
9	Oct 31, Nov 2	Binomial coefficients and counting subsets
10	Nov 7, Nov 9	Probability set functions, basic probability theory
11	Nov 14, 16	Conditional Probability
12	Nov 21, Nov 23	Probabilities in Tic-Tac-Toe
13	Nov 28, Nov 30	Introduction to Combinatorial Games
14	Dec 5, 7	review
15	Dec 12-16	Final Exams