

Syllabus
Three Rivers Community College
MAT 186 – Pre-Calculus
Fall 2009
Course Registration Number (CRN) – 30421 Sec. T01
Tuesday, Thursday 9:00-10:40 am, Room D219

Instructor:

Roxanne N. Tisch
Office: C248
Office Hours: Monday 1:00 – 2:00 pm
Tuesday 10:45 – 11:45 am
Wednesday 1:00 – 2:00 pm
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Course Description:

This course prepares students for the study of Calculus I. The topics include polynomial and rational functions and their graphs, operations on radical expressions, matrices, exponential and logarithmic functions, trigonometric functions and their graphs, trigonometric identities, trigonometric applications, and determinants.

Required Materials:

- ◆ The required text is PreCalculus 5th Ed., Stewart, Redlin, & Watson, Brooks/Cole Cengage Learning, 2007
- ◆ TI-83 or 84 graphing calculator

Attendance:

Attendance in classes is strongly recommended. *I will teach a class only once*; you are responsible for getting the class notes, homework, and any other assignments from another student and completing that work by the next week after any missed class. Also, short unannounced quizzes may be given and they cannot be made up.

Attendance at exams is mandatory. You will be informed of the dates of tests at least one week in advance. Make-up exams may be given *with my prior consent*. If you must miss an exam, please speak with me before the date of the exam so that arrangements can be made.

Grading Policy:

Your grade will be based on the following items.

- ◆ Math Autobiography – Worth 40 points.
- ◆ Mad Minutes – Mad minutes are short answer questions or exercises at the end of class. We will not necessarily have one everyday. Mad

minutes are graded based on participation not the correctness of the answer. The final mad minute grade will be worth 20 points.

- ◆ Quizzes and additional assignments – Throughout the semester you may have quizzes in class. You may also receive assignments in class that I will ask you to hand in. These assignments will account for 50 points.
- ◆ Projects – Two projects will be assigned throughout the semester. Each project will be worth 50 points.
- ◆ Four in-class tests – Each in class test will be worth 100 points.
- ◆ Final Exam – The comprehensive final exam is worth 150 points.
- ◆ Final Reflection – Worth 40 points.

The final grade will be determined by adding the grades on the autobiography, tests, exam and reflection, and the averages for homework, mad minutes and quizzes, and dividing by eight. Letter grade equivalents are listed below:

Grade	Grade Points	Quality Points
A	93-100	4.0
A-	90-92	3.7
B+	87-89	3.3
B	83-86	3.0
B-	80-82	2.7
C+	77-79	2.3
C	73-76	2.0
C-	70-72	1.7
D+	67-69	1.3
D	63-66	1.0
D-	60-62	0.7
F	Below 60	0.0

The prerequisite for moving on to the next course (Calculus 1) is a D- or better in this course.

Homework:

Homework will be assigned. Although I will not be collecting or checking the homework, **please do the homework in order to learn the material.**

College Withdrawal Policy:

You may withdraw from this class any time up to and including December 9 and you will receive a W grade on your transcript. However, you must complete a withdrawal form in the Registrar's Office at the time of withdrawal; *if you merely stop attending classes you will be assigned a grade of F.* Any eligibility for refund of tuition is based on the date that the registrar receives the withdrawal.

Disabilities Statement:

If you have a disability that may require classroom or test-taking modifications, please see me as soon as possible so arrangements can be made. If you have not already done so, please contact the Learning Specialist, Chris Scarborough, at 892-5751.

Academic Integrity:

Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others; and act at all times with honor. A full copy of the college's academic integrity policy is in the school's catalog and in the student handbook.

Resources:

TASC (the combined Tutoring Center and Writing Center) is located in room. C-117.

TASC provides free **one-to-one or group tutoring** in math as well as in many other subject areas. TASC also has **textbooks** (both old and current), **videotapes**, and many **handouts** available for student use. Also, TASC's portion of the school's website has many links to other **online resources**; go to the TASC homepage at http://www.trcc.commnet.edu/ed_resources/tasc/index.htm and follow the link to "Online Resources."

One of your greatest resources is each other. I encourage you to get to know your classmates and **exchange contact information**.

Cell Phone Use:

Please turn off the ringer on all cell phones/pagers before the start of each class. If you have a situation where you absolutely must be able to take a call, please notify me before class.

Course Outline:

We will cover the following sections of the text:

Chapter 1 Fundamentals

- 1.5 Equations
- 1.7 Inequalities
- 1.9 Graphing Calculators

Chapter 2 Functions

- 2.1 What is a Function?
- 2.2 Graphs of Functions

- 2.3 Increasing and Decreasing Functions; Average Rate of Change
- 2.4 Transformations of Functions
- 2.5 Quadratic Functions; Maxima and Minima
- 2.6 Modeling with Functions
- 2.7 Combining Functions
- 2.8 One-to-One Functions and Their Inverses

Chapter 3 Polynomial and Rational Functions

- 3.1 Polynomial Functions and their Graphs
- 3.2 Dividing Polynomials
- 3.3 Real Zeros of Polynomials
- 3.4 Complex Numbers
- 3.5 Complex Zeros and the Fundamental Theorem of Algebra
- 3.6 Rational Functions

Chapter 4 Exponential and Logarithmic Functions

- 4.1 Exponential Functions
- 4.2 Logarithmic Functions
- 4.3 Laws of Logarithms
- 4.4 Exponential and Logarithmic Equations
- 4.5 Modeling with Exponential and Logarithmic Functions

Chapter 5 Trigonometric Functions of Real Numbers

- 5.2 Trigonometric Functions of Real Numbers
- 5.3 Trigonometric Graphs
- 5.4 More Trigonometric Graphs

Chapter 6 Trigonometric Functions of Angles

- 6.1 Angle Measure
- 6.2 Trigonometry of Right Triangles
- 6.3 Trigonometric Functions of Angles
- 6.4 The Law of Sines
- 6.5 The Law of Cosines

Chapter 7 Analytic Trigonometry

- 7.1 Trigonometric Identities
- 7.2 Addition and Subtraction Formulas
- 7.3 Double-angle, Half-angle, and Sum-Product Formulas
- 7.4 Inverse Trigonometric Functions
- 7.5 Trigonometric Equations

Chapter 9 Systems of Equations and Inequalities

- 9.3 Systems of Linear Equations in Several Variables
- 9.4 Systems of Linear Equations: Matrices
- 9.5 The Algebra of Matrices
- 9.6 Inverses of Matrices and Matrix Equations

- 9.7 Determinants and Cramer's Rule
- 9.8 Partial Fractions