

**HENRY FORD COMMUNITY COLLEGE  
MATHEMATICS DIVISION COURSE SYLLABUS**

**MATH 175-01: Pre-Calculus (5 cr.)**

**MTWRF 9:08 – 10:00a in L-229**

**Fall 2009**

**INSTRUCTOR: Scott Barnett**

**CONTACT INFORMATION:**

**Internet:** [sebarnett@hfcc.edu](mailto:sebarnett@hfcc.edu) / <http://adm.hfcc.edu/~sebarnett>  
**Telephone:** (313) 845-6496 [VOICE]; (313) 317-4089 [FAX]  
**Office:** A-224 (in the Learning Technology Center)  
**Office Hours:** A schedule is photocopied onto the back of the syllabus.

**Learning Lab computer access:** 8:00a – 8:40p MTWR; 8:00a – 4:30p F; 9:40a – 1:40p Sat

**Media Center computer access:** 7:30a – 9:00p MTWRF; 7:30a – 4:30p F; 9:00a – 5:00p Sat; 1:00 – 6:00p Sun

**CATALOG DESCRIPTION:** Topics covered include algebraic, graphical, and numerical representations of functions, including composition and inverses of functions. The primary focus is the study of rational functions, exponential and logarithmic functions, and trigonometric functions of real numbers and angles. Also included are analytic trigonometry, solutions of triangles, polar coordinates, and vectors. Techniques of problem-solving and applications are included throughout the course requiring the frequent usage of graphing calculators.

**PREREQUISITE:** A grade of C or better in MATH 115 or a satisfactory score on the placement test.

**COURSE GOALS:**

1. To develop an understanding of functions (represented algebraically, graphically, and numerically) necessary for the study of higher-level science and mathematics.
2. To develop an understanding of rational functions, exponential and logarithmic functions, and trigonometric functions of real numbers and angles.
3. To develop familiarity with some mathematical and physical applications of advanced algebra and trigonometry.
4. To incorporate graphing calculators whenever appropriate to illustrate concepts and solve problems.
5. To develop in students the problem-solving skills needed to interpret, analyze, and solve applied problems requiring pre-calculus-level skills in advanced algebra and trigonometry.

**MAJOR CORE COURSE OBJECTIVES:**

**Upon successful completion of this course students should be able to:**

1. Graph rational functions by hand after algebraically or numerically finding their asymptotes and/or holes, if any, and verify results using a graphing utility.
2. Determine whether a function has an inverse function and, if possible, find it.
3. Define and graph the basic exponential and logarithmic functions and their transformations by hand.
4. Solve exponential and logarithmic equations algebraically and/or graphically using the logarithmic laws where appropriate.
5. Find the exact values of the trigonometric functions using the unit-circle, point-in-the-plane, and right-triangle definitions of the trigonometric functions.
6. Use the basic trigonometric identities to prove other identities and to find exact values of the other trigonometric functions given the exact value of one function.
7. Graph basic trigonometric functions and transformations of the sine and cosine function by hand.
8. Solve trigonometric equations both algebraically and graphically.
9. Solve right and oblique triangles.
10. Evaluate inverse sine, inverse cosine, and inverse tangent function values exactly when possible and, if not possible, approximate them using a graphing utility.
11. Solve applications involving exponential, logarithmic, and trigonometric functions algebraically or using a graphing utility.\*

\*=fulfills HFCC General Education Outcome for critical thinking and problem-solving

**TEXTBOOK AND MATERIALS:**      **Required:**      Precalculus (Enhanced with Graphing Utilities), 5<sup>th</sup> Ed., by Sullivan and Sullivan III (ISBN 0-536-78222-9)

MyMathLab Student Access Kit

TI-83 or TI-83/84 Plus Graphing Calculator

**Optional:**      Student Solutions Manual (ISBN 0-132-35622-8)

**\*\*TENTATIVE\*\* INSTRUCTIONAL PLAN:**

Chapter 2	Functions and Their Graphs	2.1, 2.3, 2.4, and 2.6
Chapter 4	Polynomial and Rational Functions	4.2 and 4.3
Chapter 5	Exponential and Logarithmic Functions	5.1 and 5.2
	<b>TEST ONE</b>	<b>Friday, September 18, 2009</b>
Chapter 5	Exponential and Logarithmic Functions	5.3 – 5.9
	<b>TEST TWO</b>	<b>Monday, October 12, 2009</b>
Chapter 6	Trigonometric Functions	6.1 – 6.6
	<b>TEST THREE</b>	<b>Friday, October 30, 2009</b>
Chapter 7	Analytic Trigonometry	7.1 – 7.5, 7.7, and 7.8
	<b>TEST FOUR</b>	<b>Tuesday, November 24, 2009</b>
Chapter 8	Applications of Trigonometric Functions	8.1 – 8.4
Chapter 9	Polar Coordinates; Vectors	9.1 and 9.4
	<b>TEST FIVE</b>	<b>Friday, December 11, 2009</b>
	<b>COMPREHENSIVE FINAL EXAM</b>	<b>Friday, December 18, 2009 (7:55 – 9:40a)</b>

Class will not meet Monday, September 7 (Labor Day); Thursday and Friday, November 12 and 13 (I'll be away at a conference); and Thursday and Friday, November 26 and 27 (Thanksgiving Break).

**INSTRUCTIONAL POLICIES:**

**Homework:** Online assignments (at [www.coursecompass.com](http://www.coursecompass.com)) and perhaps hand-in (paper-based) assignments will be given throughout the semester. For hand-in assignments, points awarded, while largely determined by the content of the work, may also be affected by presentation (legibility, following directions, turning in paper without spiral edges remaining, etc.). **The instructor is not responsible for computer or other equipment failures that prevent a student from submitting an assignment on time.**

Suggested homework problems will be assigned during most class meetings. These should be done by the following class meeting, but they are not to be turned in, and they are not graded. Students who don't do the suggested homework, however, do not usually do well on the exams. On a typical day, no more than a few minutes will be spent going over homework questions in class. **Students whose questions are not answered in class should feel free to take advantage of office hours or to use the services of the Learning Lab.**

**Quizzes and Tests:** There will be fifteen quizzes (the best twelve of which will count) and five tests during the regular semester. In addition, there will be a cumulative final exam. Although in rare circumstances it may be possible to take a test (other than the final exam) early, there will, in general, be no make-up tests given. There will be no make-up quizzes. The final-exam score may be scaled to replace up to one missed or low test score provided that the student's homework average at the end of the semester is at least 80%.

**Attendance:** Attendance is taken daily. While no points are directly deducted if a student misses class, please note the above comments about late work.

<b>Grading Procedures:</b>	1.	Homework	10%
	2.	Quizzes	10%
	2.	Tests One through Five	12% each (60% total)
	3.	Cumulative Final Exam	20%

Let  $x$  be the overall percentage earned.

$90 \leq x$	A grade	$60 \leq x < 70$	D grade
$80 \leq x < 90$	B grade	$0 \leq x < 60$	E grade
$70 \leq x < 80$	C grade		

All material submitted for the course will be returned to the students except for the final exam.

**Drop Policy:**

**College Policy:** Students may officially drop a class and receive a *DR* grade anytime up until the end of the day Thursday, November 12, 2009. If a student stops attending without officially withdrawing, the instructor may record either an *E* or a *DR* grade.

**Instructor Policy:** After November 12, 2009, a student may receive a *DR* grade if he or she requests the grade from the instructor IN WRITING, IN PERSON, using the form provided by the instructor, anytime during office hours on or before Monday, December 14, 2009. Both the instructor and the student will retain signed copies of the form used. Note that drops are **NOT** accepted verbally, by e-mail, voice mail, etc.

**Academic Dishonesty:**

**College Board of Trustees Policy #8500** (adopted 3/17/97):

“...It shall be the policy of the College that determination of the fact of academic dishonesty by a student shall be a matter of individual judgment by the instructor. The instructor may administer a penalty up to, and including, failure in the particular course...”

**Instructor Policy:**

Academic dishonesty of any form will result in a penalty up to, and including, immediate failure in the course and the recording of a final grade of *E* in the course. The penalty levied for a particular occurrence of academic dishonesty is at the sole discretion of the instructor. **To help ensure the integrity of quiz and test scores, students are not allowed to leave the classroom during a quiz or test, and students are not allowed to share calculators during a quiz or test.**

**Classroom Decorum:**

Cell phones and other noise-making electronic devices are disruptive and should be put into “silent” mode or turned off during class. Talking with other students, even about mathematics, is disruptive to the class during lectures. Sleeping, doing work for other classes, eating more than a small snack, and leaving the room without a serious reason are examples of inappropriate classroom behaviors that detract from the learning environment.

**MATHEMATICS DIVISION POLICY ON CUT-OFF DATE FOR STUDENT DROP-DOWNS**

Registered students may only drop down (move up) to another full-semester math class within the first three weeks of the Fall and Winter semesters. In order to drop down (move up), a student must:

- 1) Obtain the written permission of his/her current instructor stating that the student was misplaced.
- 2) See the Mathematics Associate Dean for assistance in finding open sections.
- 3) Officially file an Add-Drop form at the Registration office.