

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

MATH 115-05: College Algebra (5 cr.)

MTWRF 11:08a – 12:00p in L-229

Fall 2009

INSTRUCTOR: Scott Barnett

CONTACT INFORMATION:

Internet: 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 MTWR; 7:30a – 4:30p F; 9:00a – 5:00p Sat; 1:00 – 6:00p Sun

CATALOG DESCRIPTION: Topics covered include coordinate geometry, functions and their graphs, algebraic and graphical solutions of equations and inequalities, graphs and zeros of polynomial functions, the Fundamental Theorem of Algebra, conic sections, linear modeling, systems of equations and inequalities, matrices and their operations, sequences and series, and the Binomial Theorem. Techniques of problem-solving and applications are included throughout the course along with an introduction to the usage of graphing calculators.

PREREQUISITE: A grade of C or better in MATH 110 or a satisfactory score on the placement test.

COURSE GOALS:

1. To develop the advanced algebraic skills needed in college-level science and mathematics courses.
2. To provide an introduction to functions.
3. To develop familiarity with some mathematical and physical applications of advanced algebra and analytic geometry.
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 college-level algebraic skills.

MAJOR CORE COURSE OBJECTIVES:

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

1. Solve polynomial, radical, and absolute value equations graphically and algebraically when appropriate.
2. Solve polynomial, rational, and absolute value inequalities graphically and algebraically when appropriate.
3. Graph basic functions and their transformations by hand.
4. Find the basic characteristics of the graph of a function, such as intercepts, domain, symmetry, and local maxima/minima (of quadratic functions), algebraically.
5. Use a graphing utility to graph functions, including finding an appropriate window, local maxima/minima, zeros, points of intersections, and intervals on which the graph increases, decreases, or is constant.
6. Solve 2×2 and 3×3 systems of linear equations both algebraically and using matrices.
7. Graph the basic conic sections and their transformations. Identify the significant features of these conics.
8. Find specified terms and finite sums of sequences and distinguish between arithmetic and geometric sequences.
9. Solve application problems by selecting an appropriate model, using this model, and interpreting the results algebraically or using a graphing utility.*

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

TEXTBOOK AND MATERIALS: **Required:** A Graphical Approach to College Algebra, 4th Ed., by Hornsby, Lial, Rockswold (ISBN 0321445236)

MyMathLab Student Access Kit

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

Optional: Student’s Solutions Manual by Krieger and Krieger

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

Chapter 1	Linear Functions, Equations, and Inequalities	1.1 – 1.5	
Chapter 2	Analysis of Graphs of Functions	2.1 – 2.3	
	TEST ONE		Thursday, September 17, 2009
Chapter 2	Analysis of Graphs of Functions	2.4 – 2.6	
Chapter 3	Polynomial Functions	3.1 – 3.4	
	TEST TWO		Thursday, October 8, 2009
Chapter 3	Polynomial Functions	3.5 – 3.8	
Chapter 4	Rational, Power, and Root Functions	4.1, 4.3 – 4.5	
	TEST THREE		Friday, October 30, 2009
Chapter 6	Analytic Geometry	6.1 – 6.3	
Chapter 7	Systems of Equations and Inequalities; Matrices	7.1 and 7.2	
	TEST FOUR		Thursday, November 19, 2009
Chapter 7	Systems of Equations and Inequalities; Matrices	7.3, 7.4, 7.7	
Chapter 8	Further Topics in Algebra	8.1 – 8.4	
	TEST FIVE		Friday, December 11, 2009
	COMPREHENSIVE FINAL EXAM		Friday, December 18, 2009 (9:50 – 11:35a)

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) 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.

Grading Procedures:	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.