

Course Outline
MATH-070
Intermediate Algebra

3 Semester Hours

Howard Community College

Course Description

The emphasis of this course is on using algebraic and graphical techniques to model and solve real world application problems. The use of a graphing calculator is required. Topics will include linear, quadratic, exponential, and logarithmic functions, rational exponent equations (both linear and quadratic), radical equations, linear and nonlinear systems, use of the discriminant, and inverse functions. Familiarity with rational expressions and equations is assumed.

Statement on General Education and Liberal Learning

A liberal education prepares students to lead ethical, productive, and creative lives and to understand how the pursuit of lifelong learning and critical thinking fosters good citizenship. General education courses form the core of a liberal education within the higher education curriculum and provide a coherent intellectual experience for all students by introducing the fundamental concepts and methods of inquiry in the areas of mathematics, the physical and natural sciences, the social sciences, the arts and the humanities, and composition. This course is part of the general education core experience at Howard Community College.

Please print out this course description and read it before proceeding with the course.

Credits 3 credits (4 hours weekly)

Prerequisites MATH 065 or MATH 067 or appropriate score on math placement test.

Instructor Dr. Gabriel Ayine

Office Hickory Ridge Building Room 350

Phone (410) 772-4483

Email gayine@howardcc.edu

Overall Course Objectives

Upon successful completion of this course, the student will be able to:

- Use problem solving strategies to explore patterns numerically, graphically, and algebraically.
- Write the equation of a linear function from a graph or a verbal problem.
- Model applications with linear inequalities.
- Solve absolute value equations and inequalities.
- Model applications with exponential functions.
- Solve radical equations and equations with rational exponents algebraically and

graphically.

- Use the discriminant to determine the number and type of roots for a quadratic function.
- Use the concept of inverse function to explore logarithmic functions.

Major Topics

- Functions and Modeling
 - Tables, Graphs and Equations
 - Introduction to Functions
- Linear Functions
 - Slope
 - Graphs of Linear Functions
 - Equations of Linear Functions
 - Systems of Linear Equations
- Linear Functions Extended
 - Linear Inequalities
 - Compound Inequalities
 - Absolute Value Functions-Graphically
 - Absolute Value Functions-Analytically
- Exponents
 - Reciprocal of Integer Exponents
 - Solving Power Equations
 - Rational Exponents
- Exponential Functions
 - Exponential Functions from a Numerical Perspective
 - Graphing Exponential Functions
- Quadratic Functions
 - Graphs of Quadratic Functions
 - Solving Quadratic Equations
 - Factors, Solutions and the Discriminant
 - Nonlinear Systems and Inequalities
- Functions
 - Function and Notation
 - Inverse Functions
- Logarithmic Functions and Equations
 - Logarithmic Functions
 - Exponential and Logarithmic Equations

Course Format

- This class is not self-paced. A tentative schedule with deadlines will be provided by the instructor at the beginning of the semester. Students are required to follow the schedule and take unit exams by the deadlines. Any student who does not take a test by the deadline for the test automatically receives a zero score for that test.
- This class does not have required on-campus meetings except for the face-to-face on-campus orientation. The course instructor is available to meet students one-on-one during office hours or by appointment.

- The course material is sequential. You must study lessons in the order in which they are given. Refer to the Lesson Schedule. The Lesson Schedule will list due dates for unit portfolios, three unit tests, and a final comprehensive exam.
- There is a specific timeline for the completion of each unit assignment in this class. A portfolio of all assignments given in a unit must accompany the unit test. A portfolio for a unit consists of the following:
 - All homework assignments for the unit
 - Graphing Activities given in the unit
 - Unit Review Problems
- Missing assignments will be given zero points. Missed assignments of a unit are **not** accepted after the unit test is taken.
- Some of the types of learning activities or assignments that the student will be required to complete are:
 - Each week refer to the Lesson Schedule to find out which lessons to complete. To complete your weekly lesson, click on the Course Content and Related Materials icon, click on the backpack that contains the Unit with lessons for that week. Weekly lessons make references to the textbook. (If you want to print a lesson, use the PDF version. To save paper when you print the PDF, click on Properties and print 4 pages per sheet.) Study sections of the lesson alongside the textbook.
- There will be three unit tests and a final comprehensive exam (Covers all four units). Exams/Tests will not be open book and will be taken on-campus, in the TestCenter.

Required Viewers, Plug-ins, or Players

- This class will require you to *open and read* Adobe Acrobat documents. If you don't have the free **Adobe Acrobat Reader**, then you will need to download and install it. (Visit [HCC's Common Plug-ins and Downloads](#) page for the current links to obtain this reader.)

Class Communications: What to Expect from Your Instructor

- All email/voice messages will be acknowledged that they were received within 48 hrs. **Use the email feature of WebCT for all email correspondence.**
- Alternative forms of contact, such as face-to-face meetings will be available by appointment.
- Faxes may be sent to the instructor at the following fax number: 410-772-4401. State MATH-070 Online Course on the fax.
- Unit tests and the final exam are not given to students to keep. However, students may arrange with the instructor to look over their unit tests. Graded portfolios will be available in the Math main office, room HR-300, for pick-up.

Grading Procedures

Grading:

There will be three unit exams, each worth 100 points.

One exam may be taken to improve a grade, with a possible maximum score of 85% on the second test. The second score will replace the first. This second chance feature may be used only once during the semester to improve a unit test grade. (Exception: A student who is caught cheating will receive a grade of 0 and be reported to the Vice President of Student Services. This 0 cannot be replaced.)

A comprehensive final, worth 200 points, will be given during Final Exam Week.

Point Breakdown:

3 Unit Tests	300 pts.	
Homework	50 pts	Homework includes Unit Review problems
Graphing Activities	50 pts.	5 graphing activities (10 points each)
Other Assessments	50 pts.	See below for breakdown of points
Final Exam	<u>200 pts.</u>	
Total	650 pts.	

Grading Scale:

585-650	A
520-584	B
455-519	C
423-454	D
422 or below	F

Please Note:

To continue onto the next math course, students must earn a “C” or better in MATH-070.

An "I" can be given in case of an emergency, if a student has successfully completed 75% of the course objectives as determined by the instructor after consulting the course coordinator.

Other Assessments Points

In addition to tests and graded graphing activities, each instructor must assign 50 points of other assessments. In this section, the 50 points will come from the following assignments:

4 Quizzes (5 points each)	20 points
Special problems for 20 Sections (2 points each)	40 points

Notice that there are 60 points that you can earn. However, the maximum number of points allowed toward your grade is 50.

Grading for Unit Reviews

The unit reviews must be submitted at the time of taking the unit test. **Detailed work is expected and problems with appropriate work missing will be considered left out.** No unit reviews accepted after the test has been taken. The following scale shows the number of problems left out, along with the score you will receive:

- 0-3 problems left out: 4 points;
- 4-8: 3 points;
- 9-13: 2 points;
- 14-18: 1.5 points;
- 19-23: 1 points;
- more than 24: 0 point.

Text and Materials

Required Text: *An Intermediate Course in Algebra: An Interactive Approach, 1st edition*, by Warr, Curtis and Slingerland, Harcourt Brace, Publishing.

Required Materials: Ruler, graph paper, a scientific programmable graphing calculator such as the TI-83 Plus (Do NOT buy a TI-81, TI-82, TI-85, TI-86. Absolutely no TI-89 or TI-92 calculators allowed in this course.) Colored pencils are optional.

Other Course Information

Credits awarded for the completion of this course do not fulfill degree requirements in any degree or certificate program and are not transferable to four-year colleges.

Academic honesty, as defined by the Student Handbook, is required of all students.

What to Do If You Need Help

About Your Course

If you have questions about your course (assignments, due dates, problems completing assignments, or navigate the WebCT course site, etc.), you should contact your online course Instructor by email or by phone. The HCC Help Desk can not answer questions about specific course content.

Help in WebCT

WebCT has a built-in **Help** that can be accessed from any page in your course. Look for the Help link at the top of each page.

Difficulty Logging on to WebCT

If you are having difficulty logging on to WebCT and you know it is not a result of problems with your Internet Service Provider or your browser, contact:

Help Desk: [General Information](#) or [this form](#) to request help.

Student Computer Support now staffs a help desk. Students and faculty may call 410-772-4444 between 8:00 a.m. and 11:00 p.m. Monday through Thursday and 8:00 a.m. and 10:00 p.m. Friday to report problems. After hours, students and faculty may leave a message at the same number. Student Computer Support staff will handle the problem or direct it to the correct person to handle.

When leaving a message, be sure to leave your name, the course you are enrolled in, your course instructor's name, your phone number, your e-mail address, and a description of the problem. Be sure to speak slowly so staff can easily take down your message.