

MA 109: College Algebra, Section 002
College of Arts & Sciences (A&S)
Department of Mathematics (MA)
Spring 2012

Please read this syllabus carefully. It contains essential information about the course organization, grading, tests, etc. If you need any additional explanation, please don't hesitate to ask your instructor.

Instructor Information:

Instructor: Elizabeth Weaver

Office: Patterson Office Tower 802

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Office Hours: Tuesday, 1:30 pm-2:30 pm, Mathskeller, CB 63

Wednesday, 1:30 pm-2:30 pm, POT 802

Thursday, 1:30 pm-2:30 pm, POT 802

Other times available by appointment

Course Web Page: <http://www.ms.uky.edu/~ma109/>

Homework Web Page: <http://www.webassign.net/>

Class Time and Location: TR, 9:30 am - 10:45am, CB 339

Required Course Materials:

Textbook: *College Algebra*, by Thomas W. Hungerford and Douglas J. Shaw. We use a customized version of the original book, which is specifically published for the University of Kentucky and can be purchased at any UK bookstore. Note: This is the name of the custom edition at the UK bookstores. If you buy the book elsewhere, you need to look for *Contemporary Precalculus* (5th Edition) by Hungerford and Shaw. There is also an ebook available for purchase through the homework website, www.webassign.net.

Access Code for WebAssign: If you purchase your textbook new at any UK bookstore, this will come bundled with the book. Otherwise you will need to purchase the access code from the homework website www.webassign.net.

Lecture Notes: We will be using notes written for you as a complement/guide to the textbook in order to assist you throughout the course. We will also be using practice problems at the end of every set of notes that have been designed to get you practicing during lecture. These are available on our homework website, www.webassign.net, under the "Resources" tab.

Calculator: For part of the course you will need a graphing calculator. In class, I will be using a TI-84. I am most familiar with the TI-84 calculator, so I may not be able to help you with the specifics of other calculators. Nevertheless, most graphing calculators have the same basic functions, and you should be able to learn about your calculator by reading the manual.

Using the calculator during a test for any reason other than performing the required calculations (for example, to recall a previously stored formula) will be considered cheating. You may use any calculator that is allowed by ACT including graphing calculators that ACT allows. (See <http://www.actstudent.org/faq/answers/calculator.html>.) Note that **you will not be allowed to use the calculator on a cell phone**, or any other communication device. Furthermore, you may not use any calculator that has a computer algebra system (CAS) or a QWERTY keyboard. In particular, you may **not** use the TI-Nspire CAS, any TI-89, any TI-92, the HP 48GII, any HP 40G, any HP 49G, any HP 50G, the Casio Algebra fx 2.0, the Casio ClassPad 300, the Casio ClassPad 330, or any Casio CFX-9970G.

Overview of the Course: Selected topics in algebra. Develops manipulative algebraic skills and mathematical reasoning required for further study in mathematics. Includes brief review of basic algebra, quadratic formula, systems of linear equations, introduction to functions and graphing. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 111, 112, 123, 162, 201 and 202. Credit not available on the basis of special examination. Prereq: Two years of high school algebra and a Math ACT score of 21 or above or a Math SAT score of 510 or above; or MA 108R; or a grade of C or better in MA 111; or appropriate score on the math placement test.

Course Content: In this course we will cover the great majority of the topics from Chapters 1 through 5 and Chapter 11 of the text by Hungerford and Shaw. The sections in the text correspond to the lecture notes for MA 109. The course schedule can be found in the Course Schedule link on the main course web page. The topics include Solving Equations and Inequalities, Systems of Equations, Application Problems, the Cartesian Coordinate System, Functions, Function Notation, Graphs of Functions, Rates of Change, Difference Quotients, Polynomial Functions, Rational Functions, Exponential Functions, and Logarithmic Functions.

Course Goals: Your main goal is to learn the material well enough so that you can use the tools of College Algebra in an applied context, such as Business or the Social Sciences. It is also essential that you learn well the techniques discussed in this course if you plan on taking (and want to succeed in) the subsequent course, MA123 (Elementary Calculus and its Applications).

It is virtually impossible to learn Mathematics by only listening to an instructor. To understand what this means, consider the impossibility of learning to play basketball by listening to someone describe how to play it. You will not learn the material in this course by listening to the lectures, and thinking to yourself - "Yes, I understand that." You must work the problems and make mistakes before you will begin to learn. The instructor's task is that of an assistant to help you learn as much of the material as you desire. In this course it will not be sufficient to memorize an algorithm for doing specific types of problems. You will be expected to understand the material well enough so that you are able to do problems similar to, but not identical to, the ones we work in class and the ones you are assigned for homework.

Student Learning Outcomes: Students who successfully complete this course will be able to:

- Recognize that the equation of a line can take many forms. In particular, there are times when point-slope form is more appropriate than slope intercept form and vice-versa.
- Describe the connection between the slope of a line and a rate of change.
- Solve equations algebraically.
- Convert a verbal problem description into a symbolic problem description.
- Understand the Cartesian Coordinate system.
- Recognize the relationship between the solutions of an equation and the graph of an equation.
- Recognize the graphs of functions including linear, quadratic, polynomial, rational, step, exponential, and logarithmic.
- Utilize a variety of problem solving techniques to solve multi-step problems.

Grading:

The course grade will be based on three midterm exams, a final exam, a homework score, a written assignment score, and an instructor score. Each midterm is worth 90 points, the cumulative final is worth 90 points, homework is worth 90 points, each written assignment is worth 5 points, and the instructor score is worth 30 points. In other words, each midterm is worth 18% of your final grade, the final exam is worth 18% of your final grade, homework is worth 18% of your final grade, the written assignments are worth 4% of your final grade, and the instructor score is worth 6% of your final grade. Thus you can earn a total of 500 points for the course. Your final grade for the course will be based on the total points you have earned as follows:

- A: 450-500
- B: 400-449
- C: 350-399
- D: 300-349
- E: 0-299

Exams: As we already mentioned, each exam is worth 90 points. You must bring a photo ID to each exam. You may use a graphing calculator during the exams, but NO calculator with a Computer Algebra System (CAS) or a QWERTY keyboard is permitted. Absolutely no cell phone use during an exam is allowed. Cell phones must be turned completely off during exams. The final exam will be comprehensive. Dates and times for the exams are as follows:

- Exam 1: 08 February 2012 (Wednesday)- 7:30 PM - 9:30PM

- Exam 2: 07 March 2012 (Wednesday)- 7:30 PM - 9:30PM
- Exam 3: 11 April 2012 (Wednesday)- 7:30 PM - 9:30PM
- Exam 4: 01 May 2012 (Tuesday)- 6:00 PM - 8:00 PM

The location of your exam will be posted on the “Exam Locations” link of the main MA 109 web page. You need to check this web page and complete the information below.

- Location of Exam 1: _____
- Location of Exam 2: _____
- Location of Exam 3: _____
- Location of Final Exam: _____

Time Conflicts for Exams: If you have a time conflict with the regularly scheduled exam due to a University Excused absences, you will be permitted to take an alternate exam. Students who need an alternate exam should click on the Alternate Exam Form Link on the main MA 109 web page. They need to print this form, complete it, and return it to their instructor. **Whenever possible, students who need an alternate exam should return the Alternate Exam Form to their instructor at least two weeks prior to the regularly scheduled exam.**

Homework: The online homework system, WebAssign, is found at the link <https://www.webassign.net>. On your first visit to the homework site click “I have a class key.” You will be prompted to enter the class key for this section. Check the webpage for your class key. Note: Our institution code is **uky**. **YOU DO NOT NEED TO PURCHASE ANYTHING TO GET STARTED IN WEBASSIGN. YOU HAVE A TWO WEEK TRIAL PERIOD.**

- My class key: _____

You will then be prompted to select a login username, password, and email. Fill in the email address that you actually use. You do not have to use your uky.edu email address.

Each student has an individual, personal version of the web-based homework assignments to work and submit. You may attempt a problem up to 100 times. Only your final (and hopefully correct!) answer will be recorded for your homework grade. Additional attempts at a problem need not be made in the same online session, so you can reattempt the problem after getting help from your instructor or the Mathskeller. If you submit the correct answer to a problem before the due date, you receive full credit for the problem. **MAKE SURE YOU PRESS “SUBMIT” AND NOT JUST “SAVE” IF YOU WANT TO SUBMIT AN ANSWER.** If the answer you submit is not correct, the first thing to check is the syntax you used to submit the answer. A typo will obviously result in an incorrect answer. If you check this carefully, and your answer is still incorrect, go back and rework the problem. If

after a couple of attempts, you do not get a correct answer, then try to get help from your instructor, an instructor in the Mathskeller or a friend. Although answers to the problems have been checked, it is still possible that a few errors remain in the system.

The homework due dates are listed in the course schedule. Homework assignments are always due at 11:59 pm. Please note that if you are having trouble with the website, you should contact WebAssign for help.

There will be many homework sets throughout the semester. You can see the homework assignment due dates on the class schedule. Note that two of these assignments are due during Dead Week.

Homework extensions are extremely rare. You must have a university excused absence even to apply for an extension. (See the Attendance section of this syllabus for information about excused absences.) Certain excused absences do not necessitate extensions. If you miss class because of a university sponsored trip, it is almost always possible to complete your homework assignments before you leave for the trip. No extensions will be granted for planned trips unless the assignment was not posted at least 24 hours before you left for your trip. If this is the case, please submit a request for an extension. There are two ways to submit a request for an extension. If you are requesting an extension for an online assignment, you must request an extension through WebAssign. If you are requesting an extension for a written assignment, you must talk to your instructor. If you miss class because of a serious illness or family emergency, please notify your instructor of your absence by email as soon as possible. It is almost always possible for students to do this before class. (If you do not have access to a computer, ask a friend to email your instructor.) As soon as you return to school, submit an Extension Request Form to your instructor. (Failing to do so immediately may result in the instructor denying your request.)

Your homework grade is based on the percentage of correct problems out of the total number of possible points. On each homework assignment, there is one extra point possible. Hence even if you do not get all problems correct, you can still earn a grade of 90 on the homework score. To calculate your current homework score use the following formula:

$$90 \cdot \frac{\# \text{ of HW Questions Correctly Answered}}{\text{Total } \# \text{ of HW Questions} - \# \text{ of HW Assignments}}$$

It is possible to earn a few bonus points if you answer more than approximately 90% of the questions correctly.

Be sure to keep a record of your homework scores. Print a copy of your scores each time you work on an assignment.

Written Assignments: You will also have four written assignments in this class. Each written assignment is worth 5 points for a total of 20 points. These assignments, including their due dates, can be found at the "Written Assignments" link of the main MA 109 web page. Note that one of these assignments is due during dead week.

These assignments will be at the beginning of class on the date of each exam. You must show your work to receive credit for these assignments.

Instructor Score:

Your instructor score will be based on your attendance and participation in the course. Please consult the sections on Attendance and Classroom Behavior for a full description of what it means to attend and participate in class. Each class is worth one point. Failure to bring the lecture notes to class will result in a half point deduction for the day's attendance. Please read the Required Course Materials section on page 1 of the syllabus for information on how to find these notes. Your instructor score will be calculated by taking your number of earned attendance points divided by 29, the total number of classes in the semester. To calculate your current instructor score use the following formula:

$$30 \cdot \frac{\# \text{ of Attendance Points Earned}}{29}$$

Attendance, Participation, and Excused Absences: Students are expected to attend each lecture, to be active in class discussion and activities, and to complete the assignments given by your instructor. If you have a university excused absence, (see 5.2.4.2 in Section IV of Student Rights and Responsibilities), you need to inform your instructor as soon as possible. It is almost always possible to inform your instructor of a university excused absence prior to the class period that you will miss. You must inform your instructor of your excused absence prior to class unless an emergency prevents you from doing so. You must bring documentation to your instructor for all university excused absences. If you inform your instructor of an excused absence in a timely manner, your instructor will permit you to make-up the work that you have missed.

In the event that the university cancels school, you will be given a link in WebAssign to a video lecture that will replace the class period. You are responsible for the material in this video lecture.

If a student has excused absences in excess of one-fifth of the class contact hours, the instructor may require the student to petition for a "W" or, in rare cases, to take an "I" for the course. Students in this situation should see their instructor as soon as possible to discuss their options.

Classroom Behavior, Decorum, and Civility If you are late to class, if you leave class early, if you are disruptive, if you are sleeping, reading the newspaper, working on other homework, or for any other reason are not actively engaged in activities related to math class, you will not receive credit for participating in class that day.

The university, college and department has a commitment to respect the dignity of all and to value differences among members of our academic community. There exists the role of discussion and debate in academic discovery and the right of all to respectfully disagree from time-to-time. Students clearly have the right to take reasoned exception and to voice opinions contrary to those offered by the instructor and/or other students (S.R. 6.1.2). Equally, a faculty member has the right – and the responsibility – to ensure that all academic discourse occurs in a context characterized by respect and civility. Obviously, the accepted level of civility would not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin or other such

irrelevant factors. Students who are not respectful, not civil, or disruptive in any way may be asked to leave the class. Your instructor will provide you with more information about your instructor score.

Academic Honesty: All assignments, projects, and exercises completed by students for this class should be the product of the personal efforts of the individual(s) whose name(s) appear on the corresponding assignment. Cheating or plagiarism is a serious offense and it will not be tolerated. It will be thoroughly investigated, and it might lead to failure in the course or even to expulsion from the university. See Student Rights and Responsibilities in the University Senate Rules (Sections 6.3.1 and 6.3.2) for information on cheating, plagiarism, and penalties. A summary of recent changes to rules on cheating can be found at the Academic Ombud website. It's not worth it, so don't do it.

Services in The Mathskeller: The Mathskeller is located in CB 065 in the basement of the classroom building. Many instructors from the Department of Mathematics will hold office hours in the Mathskeller. In addition, limited drop-in tutoring is available. The Mathskeller is open from 9am to 5pm Monday through Friday (except academic holidays) during the semester. Additional information is available at www.mathskeller.org.

Personal Safety Reminder for Evening Sessions: Please be mindful of your personal safety in traveling to or from class after dark. It is recommended that students enrolled in evening sections do not walk to or from class alone. Anyone desiring an escort may arrange for one through the UK Campus Escort Program, SAFECATS. For information call 323-FREE or 323-3733. Students are also encouraged to choose the "Cat's Path" routes when traversing campus at night. These are sidewalks clearly marked with a blue and white paw print logo and are routes frequently used and accessible to major campus destinations. Though these paths are not designed to replace personal safety efforts, such as traveling in groups and remaining alert, there is increased police presence on these pathways.