

MA 109: College Algebra, Section 014

College of Arts & Sciences (A&S)

Department of Mathematics (MA)

Spring 2011

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: Stuart Hamilton

Office: Patterson Office Tower 906

Phone: 257-7217

Email: stuarthamilton@uky.edu (preferred contact method)

Office Hours: Tuesday, 11:00 am-12:00 pm, Mathskeller, CB 63

Thursday, 11:00 am-12:00 pm, POT 906

Other times available by appointment

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

Homework Web Page: <http://www.mathclass.org/>

Class Time and Location: TR, 12:30 - 1:45, CB 335

Required Course Materials:

Textbook: *College Algebra* (4th Edition), by J. Stewart, L. Redlin and S. Watson. 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.

Lecture Notes: *MA 109 Lecture Notes*, by A. Corso. These notes (also called activity sheets) have been written as a complement/guide to the textbook in order to assist you throughout the course. They can be purchased at any UK bookstore.

Calculator: For part of the course you will need a scientific calculator. While graphing calculators are allowed, they are not necessary. More affordable calculators, like those in the TI-30X series or the TI-BAII series, will be sufficient. 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 6 of the text by Stewart, Redlin and Watson. The sections in the text correspond to activities in the Lecture Notes Companion for MA 109. The activities we plan to cover 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: The learning goals for each activity are listed at the top of the activity in the Lecture Notes Companion for MA 109. 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.
- Understand the concept of a function.
- Utilize function notation.
- 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, the written assignment score is worth 20 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 calculator during the exams. Check the calculator portion of this syllabus to determine which calculators are 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: 09 February 2011 (Wednesday)- 7:30 PM - 9:30PM
- Exam 2: 09 March 2011 (Wednesday)- 7:30 PM - 9:30PM
- Exam 3: 13 April 2011 (Wednesday)- 7:30 PM - 9:30PM
- Exam 4: 02 May 2011 (Monday)- 8:30 PM - 10:30PM

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: We have selected homework problems from our text to help guide you through the relevant material contained in each section that will be covered in the course. A complete list of assigned problems can be found on the “Homework Sets” link of the main MA 109 web page. You are responsible for knowing how to work all the problems in this list.

In general, you will not turn in the solutions to these problems. Instead, we have an online homework system. You will submit answers to the problems on the online homework system. The system will grade the problems and record the grades. Most of the problems from the online system are very similar to the great majority of the problems suggested in the above list.

The online homework system, WebClass, is found at the link <https://www.mathclass.org>. On your first visit to the homework site click “Login to WHS.” It is VERY IMPORTANT that you click “Login to WHS”. Clicking on anything else may cause problems. You can login to the online homework system using your UK Active Directory user name and password. This is the same user name and password that you use to access other systems including myuk.uky.edu and exchange.uky.edu. Thus, if your user name is skova01, you will enter ad\skova01 (MAKE SURE YOU USE \, not /) as the user name and then the password for your Active Directory account. Note that mathclass.org will require you to include the prefix ad while other sites on campus may not. The first time that you login you will need to complete the registration form that will appear. You will only need to complete it one

time. For more detailed instructions about WHS, read the information at the "Start Up (for UK)" link found at <http://www.mathclass.org/>.

After you login, select the web homework link. This will take you to your MA109 class where you do your homework. Each student has an individual, Personal Version of the web-based homework assignments to work and submit. **Make sure that you are doing the Personal Version of the homework assignment.** You will not receive any credit for doing the Common Version of the homework or any Specific Versions of the homework. You may attempt a problem as many times as you like. 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 someone in The Mathskeller. If you submit the correct answer to a problem before the due date, you receive full credit for the problem. 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. It is often better to move on and work other problems first, since it is quite easy to make the same error over and over. 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, a friend, or a tutor in The Study. 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 5:00 pm, but there is usually a grace period until 11:59 pm. If there is a computer problem prior to 5:00 pm on the due date, an extension will be granted to all students. If there is a computer problem after 5:00 pm on a due date, you will not receive credit for any problems that were not answered prior to 5:00 pm.

There will be many homework sets throughout the semester. You can see the web homework assignments and their due dates at www.mathclass.org. Note that two of these assignments are due during Dead Week. The Entrance Exam and Review Problem Sets do not count as homework assignments, but it is still a good idea to complete them.

Because the homework assignments are posted early and they are completed online, it is very rare that a student would be permitted to make up a homework assignment. If you are going to be gone because of a university excused absence, you should complete the homework assignment before you leave. If you have a documented family emergency or a documented illness that prevented you from having computer access, bring the documentation to your instructor during his or her office hours. They will discuss the options for a make-up assignment with you.

Your homework grade is based on the percentage of correct problems out of, approximately, 90% of the online problems. 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:

$$100 \times \frac{\# \text{ of HW Questions Correctly Answered}}{\text{Total \# of HW Questions}}$$

It is possible to earn a few bonus points if you answer more than 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. Each of these assignments will be due at the beginning of one of your lectures. The due dates for these assignments can be found on the "Written Assignments" link of the main MA 109 web page.

Instructor Score: The instructor points for this course will be distributed as follows:

Attendance and Pop Quizzes: Attendance will be taken every class either by method of simply writing down those in attendance or attendance will be counted based on performance on a short pop quiz on the material covered that day. A correct answer would count as 2 points and an incorrect answer as 1 point and no answer as 0 points. With each attendance counting as 1 point there will be a total of 30 points will be awarded for attendance. If a student misses more than 5 classes the instructor points will be reduced to zero.

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. 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 attendance 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 and The Study: 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.

Academic Enhancement, located in The Study (in the Kirwan-Blanding Dorm Complex – more precisely, on the third floor of the Commons) offers a variety of services to undergraduate students. Free, drop-in peer tutoring is available for MA 108R, 109, 123, and 113, in addition to other subjects such as chemistry, physics, biology, organic chemistry, anthropology, sociology, political science, history, statistics, Spanish, French, Italian, and more! Peer Tutors are experienced undergraduate UK students who have successfully completed these courses.

Academic Enhancement also offers free individual academic consultations. Schedule a free appointment with a learning specialist for strategies on how to become a more effective student. For more information on all the services available in The Study and for a complete tutoring schedule, visit www.uky.edu/UGS/Study. or call 257-1356.

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.