

Syllabus for MA 110  
Sections 001-008  
Precalculus  
Fall 2010

**Instructor:** Michael Shaw, Ph.D.

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Office Hours: MW 10:00-10:50am (POT 705).

TRF 10:00-10:50pm (Mathskeller)

Other times available by appointment.

**Teaching Assistant:** Aaron Saxton

Office: Patterson Office Tower

Phone: 257

Email: aaron.saxton@uky.edu

Office Hours: M 9:00-10:00am (Mathskeller).

TR 11:50-12:30pm and TR 1:20-2:00 (CP 345)

Other times available by appointment.

**Teaching Assistant:** Fernando Camacho

Office: Patterson Office Tower

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Email: fercamacho@uky.edu

Office Hours: T 2:00pm-3:00pm (Mathskeller)

WF 12:00pm-1:00pm (POT 702)

Other times available by appointment.

**Teaching Assistant:** Yaowei Zhang

Office: Patterson Office Tower

Phone: 257.

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Office Hours: T 2:00pm-3:00pm (Mathskeller)

WF 12:00pm-1:00pm (POT 702)

Other times available by appointment.

**Teaching Assistant:** Daniel Corral

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Office Hours: T 2:00pm-3:00pm (Mathskeller)

WF 12:00pm-1:00pm (POT 702)

Other times available by appointment.

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

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

**Class Time and Location:**

Lecture: (Sections 001-003,007) MWF, 9:00 pm - 9:50 am, Whitehall Classroom Building, CB 102

Lecture: (Sections 004-006,008) MWF, 1:00 pm - 1:50 am, Whitehall Classroom Building, CB 122

Recitation: (Section 001 Zhang) TR, 9:30 am - 10:20 am, Whitehall Classroom Building, CB 207

Recitation: (Section 002 Saxton) TR, 12:30 pm - 1:20 pm, Chemistry Physics Building, CP 345

Recitation: (Section 003 Saxton) TR, 11:00 pm - 11:50 pm, Chemistry Physics Building, CP 345

Recitation: (Section 004 Zhang) TR, 11:00 pm - 11:50 pm, Barker Hall, BH 306

Recitation: (Section 005 Camacho) TR, 3:00 pm - 4:20 pm, CB 241

Recitation: (Section 006 Camacho) TR, 2:00 pm - 2:50 pm, , FPAT 263

Recitation: (Section 007 Corral) TR, 12:30 pm - 1:20 pm, Building, CB 316

Recitation: (Section 008 Corral) TR, 3:30 pm - 4:20 pm, Building, CP 287

**Course Materials:** You need to purchase exactly one of the following packages.

1. A new copy of the UK version of the 5<sup>th</sup> edition of the book Contemporary Precalculus: A Graphing Approach by Thomas W. Hungerford and Douglas J. Shaw packaged with an access code for the WebAssign homework system. This can be purchased at the bookstore.
2. A used copy of the 5<sup>th</sup> edition of the book Contemporary Precalculus: A Graphing Approach by Thomas W. Hungerford and Douglas J. Shaw. You will also need to purchase an access code for the WebAssign homework system separately. You can purchase this access code at the bookstore or on WebAssign after you have logged in.
3. A new copy of the e-book version of 5<sup>th</sup> edition of Contemporary Precalculus: A Graphing Approach by Thomas W. Hungerford and Douglas J. Shaw packaged with an access code for the WebAssign homework system. This can be purchased at the bookstore or on WebAssign after you have logged in.

You will also need to purchase a graphing calculator for this course. The calculator must conform to the calculator rules for the ACT. These rules can be found at

<http://www.actstudent.org/faq/answers/calculator.html>.

Specifically, 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. We reserve the right to have non-calculator portions of homework, quizzes, or exams.

In class, I will be using a TI-83. If you already own a graphing calculator that conforms to the ACT calculator rules, you do not need to purchase a TI-83. I do not personally know how to use any calculator other than the TI-83, 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.

**Course Objective:** The goal of this course is to equip students with the problem solving techniques and discipline required to succeed in the Calculus sequence.

**Overview of the Course:** This course is designed to prepare students for the calculus sequence. We will discuss functions including linear, quadratic, polynomial, rational, exponential, logarithmic, and trigonometric functions. We will discuss the relationship between equations and graphs. We will investigate the graphs of functions and conic sections. We will also discuss parametric equations and polar coordinates.

**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.
- Use the graphical method to approximate solutions of an equation.
- Understand that the graphical method is only used to approximate the solutions of an equation.
- Understand the appropriate use of technology in solving mathematical problems.
- 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, logarithmic, and trigonometric functions.
- Know some fundamental trigonometric identities.
- Use fundamental trigonometric identities to prove other trigonometric identities.
- Recognize the equation of a conic section.

- Sketch the graph of an equation of a conic section.
- Understand the polar coordinate system.
- Sketch the graph of a polar equation.
- Utilize a variety of problem solving techniques to solve multistep problems.

Homework: You will have two types of homework in this course: online assignments and written assignments. You must check WebAssign every Monday, Wednesday, and Friday at 5:00 PM for new assignments. Assignments may also be given during lecture and recitation. These assignments will not appear online.

All online assignments are to be submitted through the WebAssign homework system. Online 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. The course website contains some instructions about the WebAssign homework system.

All written assignments must be submitted to your teaching assistant at the beginning of recitation. If you are late to recitation or leave early, you will not receive credit for the written assignment.

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 paper assignment, you must submit an Extension Request Form to your instructor. Extension Request Forms are available on the course website. 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.

Homework is worth 100 points in your final grade. To calculate your homework score for your final grade, use the following formula:

$$\frac{\text{Total number of homework points earned}}{\text{Total number of homework points possible}} \times 100 \text{ points}$$

Quizzes: You will be given a quiz once or twice a week during recitation. Each quiz is worth 5 points. To calculate your quiz score for your final grade, use the following formula:

$$\frac{\text{Total number of quiz points earned}}{\text{Total number of quiz points possible}} \times 50 \text{ points}$$

**Attendance and Class Participation:** Attendance and class participation accounts for 25 points of your final grade. In order to earn the points, you must sign the attendance sheet that will be passed around at the beginning of each lecture and each recitation. You must also remain engaged with the class material throughout the lecture or recitation. Your class participation grade will be calculated as follows:

$$\frac{\text{Total number of participation points earned}}{\text{Total number of participation points possible}} \times 25 \text{ points}$$

I expect students to attend each lecture and each recitation. I expect students to be active in class discussion and activities.

I expect students to attend each lecture and each recitation. I expect students to be active in class discussion and activities. University excused absences are defined in 5.2.4.2 in Section IV of Student Rights and Responsibilities ([www.uky.edu/StudentAffairs/Code/part2.html](http://www.uky.edu/StudentAffairs/Code/part2.html)). If you have a university excused absence, you must notify your instructor of the excuse in writing no later than two weeks prior to the date of the absence. If you are absent because of an illness or a family emergency, the absence may be excused provided that you can give me written evidence of the illness or emergency and that you do so promptly. Furthermore, you should notify me about the illness or emergency by e-mail or phone as soon as possible. It is almost always possible to notify me immediately. If it truly is impossible for you to notify me, then ask a friend to do so. If you do not notify me of an illness or emergency in a timely manner, I reserve the right to deny your request for an excused absence.

If you are late to class, if you leave class early, if you are disruptive, if you are sleeping, reading the newspaper, surfing the internet, texting, 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.

**Midterm Exams:** We will have three midterm exams. These exams will be held in BS 107 and 109 from 7:30 PM - 9:30 PM on 20 September 2011, 18 October 2011, and 15 November 2011. Each midterm exam is worth 75 points.

**Final Exam:** We will have a comprehensive final exam. The final exam will be held from 8:30am-10:30pm in BS 107 and 108 on Wednesday, 14 December 2011. The final exam will be worth 100 points.

**Grading:**

Homework	20%	100 points
Quizzes	10%	50 points
Attendance	5%	25 points
Exam 1	15%	75 points
Exam 2	15%	75 points
Exam 3	15%	75 points
Exam 4	20%	100 points

Your grade will be based on the following point system:

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

**Cheating:** See UK's Student Rights and Responsibilities for a description of cheating, plagiarism, and the penalties for cheating and plagiarism. Cheating and Plagiarism will not be tolerated in this class.

In this class we will definitely see the advantage of technology, and I fully support the appropriate use of technology. Sometimes the line between appropriate use and inappropriate use can be a bit blurry, so I will try to provide some guidance in what follows. You may use calculators on exams, but **YOU MAY NOT PROGRAM INFORMATION INTO YOUR CALCULATOR THAT WILL HELP YOU WITH THE EXAM.** Moreover, the homework exists to improve your problem solving skills. Therefore, you may not search for solutions to homework problems online.

I believe that students can learn from each other, but there is also a time when each student must stand on his or her own two feet. You may work with other students to help you learn a concept, but it is important that you always step back and make sure that you can do all of your homework by yourself without the help of others, textbooks, or notes. These resources will not be available to you during the exams, so you should not rely on them when you submit your final answers for the homework. When you complete written assignments, you must always step away from any notes that you took while working with others and write the solution completely on your own.

**Disability Accommodations:** If you have documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 859 257 2754, email address [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

**Suggestions:** Constructive suggestions for this course are welcome at any time. I welcome suggestions that will improve the course both this semester and in semesters to come. If you have any concerns, please bring them to my attention first. Further recourse is available through the office of the Department Ombud and the Department Chair. Both the Ombud and the Chair can be reached from the main office in POT 715.

**Expectations:** I expect that you will not only attend class, but that you will participate in class. I expect that you will be respectful of yourself and others. Please turn off your cell phones when you enter class. Please do not work on other classes during class. Please do not surf the internet during class. Please do not read the newspaper during class, work on Sudoku, etc. during class. Please do not talk or whisper during lecture unless the instructor has given you the floor. In a large lecture it is difficult for other students to hear if there are several little conversations taking place at the same time. If you do not respect yourself,

other students, or the instructor during class, you may be asked to leave the class.