

MA110 Fall 2016 - Algebra and Trigonometry for Calculus

Course and instructor demographics

MA 110 is taught by several instructors in several sections. For office hours, meeting times, and contact information, please see the tables below.

Instructors

It is very important to keep up with your class and to inform your instructor as early as possible of any problems or concerns. Many instructors have hundreds of students, and so there may be delays or special requirements needed to handle what may appear to be simple problems. On the other hand our instructors are experienced and ready to help you solve problems that arise during the semester. In all cases, the more time the instructor has to consider your case, the more likely you are to have a good result.

Instructors hold drop-in office hours at the times and places listed below. You can stop by to ask questions about the course material or structure. Most instructors also are available in the [Mathskeller](#) where you can ask them (or any other instructor present) for help in the course.

Instructor	Email	Office Location	Office Phone	Office Hours	Mathskeller hours
Jacob Adams	jacob.adams1@uky.edu	POT 702	859 257 6804	TR 10-11 am	T 2-3 pm
Melanie Brooks	melanie.brooks@uky.edu	POT 957	TBA	TR 12:30-1:45 pm	
Russell Brown	russell.brown@uky.edu	POT 723	859 257 3740	WF 10-10:50	M 10-10:50
Kaelin Cook-Powell	kaelin.cook-powell@uky.edu	POT 722	859 257 6807	TR 8:45-9:45 am	T 3-4 pm
Katherine Cooper	k.cooper@uky.edu	POT 702	859 257 6804	TR 1-2 pm	M 2-3 pm
Joseph Cummings	joseph.cummings@uky.edu	POT 806	859 257 6817	RF 2-3 pm	T 4-5 pm
Sara Ellis-Hebble	sara.ellis@uky.edu	POT 951	859 257 6821	MF 2-2:50 pm	W 2-2:50 pm
Roger Guffey	roger.guffey@uky.edu	TBA	TBA	by appointment	TR 1-2
Devin Willmott	devin.willmott@uky.edu	POT 906	859 257 7217	MW 2-3 pm	R 3-4 pm
Julianne Vega	julianne.vega@uky.edu	POT 722	859 257 6807	TR 10-11:30 am	R 10-11 am

Sections

Active, engaged class participation is required in all sections. Make sure you know when and where your class meets and make sure to bring appropriate materials to class (a way to view the textbook, a place to take notes, any calculator you want to practice using). Your active, engaged class participation is a major component of your final grade.

The rooms for your first three exams are also listed:

Section	Instructor	Room	Time	Exam room	Final room
001-004,015,016	Russell Brown	ASB 321	MWF 9:00 am–9:50 am		
001	Julianne Vega	CB 335	TR 8:00 am–8:50 am	CB 106	CB 106
002	Jacob Adams	CB 337	TR 8:00 am–8:50 am	CB 106	CB 106
003	Julianne Vega	CB 335	TR 9:00 am–9:50 am	CB 106	CB 106
004	Jacob Adams	CB 337	TR 9:00 am–9:50 am	CB 106	CB 106
015	Roger Guffey	CB 334	TR 2:00 pm–2:50 pm	CB 106	CB 106
016	Roger Guffey	CB 231	TR 3:30 pm–4:20 pm	CB 106	CB 106
005-009,017	Sara Ellis-Hebble	KAS 213	MWF 11:00 am–11:50 am		
005	Kaelin Cook-Powell	CB 335	TR 10:00 am–10:50 am	CB 118	CB 118
006	Katherine Cooper	CB 337	TR 10:00 am–10:50 am	CB 118	CB 118
007	Kaelin Cook-Powell	CB 335	TR 11:00 am–11:50 am	CB 118	CB 118
008	Katherine Cooper	CB 337	TR 11:00 am–11:50 am	CB 118	CB 118

009	Devin Willmott	CB 335	TR 12:00 noon–12:50 pm	CB 118	CB 118
017	Joseph Cummings	CB 234	TR 9:30 am–10:20 am	CB 118	CB 118
010-014	Sara Ellis-Hebble	CB 106	MWF 1:00 pm–1:50 pm		
010	Roger Guffey	CB 337	TR 12:00 noon–12:50 pm	CB 110	CB 110
011	Devin Willmott	CB 335	TR 1:00 pm–1:50 pm	CB 110	CB 110
012	Joseph Cummings	CB 337	TR 1:00 pm–1:50 pm	CB 110	CB 110
013	Melanie Brooks	CB 335	TR 2:00 pm–2:50 pm	CB 102	CB 102
014	Melanie Brooks	CB 335	TR 3:00 pm–3:50 pm	CB 102	CB 102

Course description

The [2016-17 Bulletin](#) describes the course as

his is a course specifically designed for students intending to enroll in a calculus sequence. Topics will include trigonometric functions, exponentials and logarithms, graphs, polar coordinates and conic sections. Students may not receive credit for MA 110 and either of MA 109 and MA 112. This course is not available for credit to students who have received credit in any higher numbered mathematics course except for MA 111, MA 123, MA 162, MA 201 or MA 202. Credit is not available by special examination. Math placement exam recommended. Lecture, three hours, recitation two hours per week. Prereq: Two years of high school algebra and a Math ACT score of 23 or above, or two years of high school algebra and a Math SAT score of 540 or above, or appropriate score on math placement exam, or a C in MA 109, or consent of department.

Grading

Your final grade is a letter grade A, B, C, D, or E. It is computed from several components (as indicated in the table). Each exam is taken in the evening, and has a very strict absence and cheating policy (be careful not to get a zero on the exam).

Homework is completed online and requires purchasing access to WebAssign, a web homework system with homework developed by the publisher of our textbook.

The **lecture instructor score** will be based on attendance and in-class participation as measured through REEF polling. Students will be allowed up to five absences without documentation. If a student has six or more excused absences, the student must present documentation for all absences to their lecture instructor.

The **recitation instructor score** will be based on attendance, participation in recitation, and the seven quizzes listed in the course calendar. The quizzes are an important time to practice writing out explanations for your answers in preparation for exams. Students will be allowed to drop two quiz scores. However, if a student misses a quiz due to an unexcused absence, they will not be able to make up the quiz. There will also be a daily participation and attendance score. Students who attend class, but are late, leave early, or do not participate in recitation may receive 0 for their daily score. Students will be allowed three unexcused absences from recitation.

The *web homework score* will be based on the assignments submitted through WebAssign.

There will be four exams as listed in the [course calendar](#) and each exam will be worth 100 points. The exams are scheduled at night and you should make every effort to take the exam at the scheduled time. Curves may be set for each exam based on instructor's assessment of the difficulty of the exam and student performance on the exam. Any curve will be implemented by lowering the total number of points needed to earn each letter grade.

Once the semester is over, including the final exam, your total points can be compared against the grading cutoffs table to find the matching letter grade. A typical grade distribution is 17% of students assigned an A, 27% B, 22% C, 11% D, 12% E, and an additional 12% withdrawing. Grade distributions may change from semester to semester, but this provides a rough indicator of the difficulty students as a whole have with the course. Please note that there is a [limit on the number of times that a student may repeat this course](#), thus students are encouraged to make every effort to complete the course, rather than withdraw and try again in a later semester.

Grading components		
Points	%	Assessment
100	18%	Exam 1
100	18%	Exam 2

100	18%	Exam 3
100	18%	Final Exam
50	9%	Online Homework
50	9%	Lecture Instructor Score
50	9%	Recitation Instructor Score
550	100%	Total

Grading cutoffs		
Minimum points	Minimum Percent	Grade
495	90.0%	A
440	80.0%	B
385	70.0%	C
330	60.0%	D
0	0.0%	E

Student learning outcomes and course goals

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. Choose the appropriate form of the line for a problem.
- 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.
- 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.

Required course materials

Textbook

The textbook *Contemporary Precalculus: A Graphing Approach*, 5e, by Thomas W. Hungerford and Douglas J. Shaw is required. An access code for WebAssign, the web homework used in this class, is additionally required. All students will receive a two-week free trial to use WebAssign, which includes an online version of the textbook, upon creating their WebAssign account. Students will create their WebAssign account using the link provided in the WebAssign Module in [Canvas](#). Students should make plans to purchase a WebAssign access code before Wednesday, September 7th when the free trial expires. This can be done in multiple different ways. Only one of the following options is required!

- A custom paperback University of Kentucky edition with the title *Pre-calculus* is available at the local area bookstores for \$100 with ISBN-13: 978-1-337-03405-0. This package is bundled with a WebAssign access code and includes an ebook. The text in this edition is identical to the book titled *Contemporary Precalculus: A Graphing Approach*, 5e by Hungerford and Shaw.
- You may purchase a WebAssign access code at the University of Kentucky Bookstore, which includes an ebook (but not printed) version of the textbook, for a price of \$85.
- You may purchase a WebAssign access code online directly from the publisher that includes an electronic edition of the textbook (ebook) for a price of \$94.
- You may purchase a WebAssign access code online that does NOT include the electronic textbook for \$47. This option is suggested only for those students who have obtained a hardcopy of the textbook through some other means.

Reef polling

Your [lecture instructor score](#) is based on active, in-class participation and attendance. This score will depend on your responses through the Reef polling system.

In all sections, you will need to use Reef Polling in lecture. Most students will use a smartphone/computer/tablet to participate in Reef Polling. If you are not able to bring such a device to class, please speak with your lecturer about obtaining a substitute. You will need to register your Reef Polling Account through [Canvas](#).

Creating Your REEF Polling Account

See the “Welcome to MA 110!” announcement in [Canvas](#), OR Go to <http://reef-education.com> or download the REEF Polling app for iPhone/iPad to sign up for a REEF Polling account. Please use your university email address and the last 8 digits of your Student ID (drop the initial 9, for most students, the result will start with a 1). If you need to change your email address, password, or student ID, edit your account profile. Do not create and use more than one REEF Polling account as you will only receive credit from a single account. When you create the account, you will automatically receive a free 14-day trial subscription. If you are uncertain as to whether you will continue in this class, you may use the trial subscription until your schedule is final. You will need to purchase a subscription once your schedule is finalized. You may purchase a subscription through your in-app purchase method, or buy an access code online or from the bookstore. Note that if you are using REEF Polling in several classes this semester you should only have one account and purchase one subscription.

Add This Course to Your REEF Polling Account

Search with the following information to find this course and add it to your REEF Polling account:

- Institution: University of Kentucky
- Course: MA 110, (making certain to choose the section appropriate to your individual lecture time)

If you change lecture time, you will need to add the REEF Polling Course for your new lecture time to your REEF Polling Account. Your scores will not be transferred to the new course.

Worksheets

Most of our time in recitation will be spent on the following worksheets.

Recitation date	Worksheet
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8 December 2016	Worksheet 29
6 December 2016	Worksheet 28
1 December 2016	Worksheet 27
29 November 2016	Worksheet 26
22 November 2016	Worksheet 25
17 November 2016	Worksheet 24
Packet 3	Worksheet 17-23.pdf
15 November 2016	Exam 3 Review
15 November 2016	Worksheet 23
10 November 2016	Worksheet 22
3 November 2016	Worksheet 21
1 November 2016	Worksheet 20
27 October 2016	Worksheet 19
25 October 2016	Worksheet 18
20 October 2016	Worksheet 17
Packet 2	Worksheet 09-16
18 October 2016	Exam 2 Review
18 October 2016	Worksheet 16
13 October 2016	Worksheet 15
11 October 2016	Worksheet 14
6 October 2016	Worksheet 13
4 October 2016	Worksheet 12
29 September 2016	Worksheet 11
27 September 2016	Worksheet 10
22 September 2016	Worksheet 09
Packet 1	Worksheet 01-08
20 September 2016	Exam 1 Review
20 September 2016	Worksheet 08
15 September 2016	Worksheet 07
13 September 2016	Worksheet 06
8 September 2016	Worksheet 05
6 September 2016	Worksheet 04
1 September 2016	Worksheet 03
30 August 2016	Worksheet 02

Calculator

For part of the course you will need a graphing calculator. A standard choice is the TI-84 (\$75 to \$125). 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 graphing calculator that is [allowed by ACT](#). 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.

Course policies

There are a number of important policies that can have a dramatic effect on your understanding and final grade in this course. These policies are intended to be uniform and simple, but if you have not read over them, they may have unexpected consequences.

Important dates

See the [Academic Calendar](#), the [Common Hour Exam schedule](#), and the [Final Exam schedule](#) for Fall 2016.

Wednesday, August 24	First Day of Classes
Tuesday, August 30	Last Day to Add
Monday, September 5	Labor Day (no classes)
Wednesday, September 14	Last Day to Drop
Tuesday, September 20	Exam 1 (7:30pm – 9:30pm)
Tuesday, October 18	Exam 2 (7:30pm – 9:30pm)
Friday, October 21	Midterm grades
Friday, November 4	Last Day to Withdraw
Tuesday, November 8	Presidential Election Day (no classes)

Tuesday, November 15	Exam 3 (7:30pm – 9:30pm)
Wednesday, November 23 to Friday, November 25	Thanksgiving Break (no classes)
Friday, December 9	Last Day of Classes
Monday, December 12	Final Exam (6:00pm - 8:00pm)

Attendance

Active, engaged, in-class participation is mandatory and forms a major portion of your final grade. You should be ready to work when class begins (for example: seated, notes and pencil ready, attention to the front, quiet at 8:00 am if the class starts at 8:00 am). You should not pack up or leave until class is over (for example: you should still be working at 8:49am if the class ends at 8:50 am). If you have special circumstances, please contact your instructor before class begins so that they can excuse late arrivals or early departures. Unexcused late arrivals or early departures may result in significant reduction in participation grade for each day on which they occur.

An absence can only be excused if the instructor is notified in a timely manner. The choice to excuse the absence is with the instructor, though excuses will be granted (given timely notification) according to [University Senate Rule 5.2.4.2](#): namely (a) serious illness, (b) illness or death of a family member, (c) University related trips, (d) major religious holidays, (e) other reasons deemed reasonable by the instructor. In the case of (c) and (d) notification must be provided one week in advance. In all cases documentation may be requested to ensure the absence does meet policy. For (a) a University Health Services Tier 2 or Tier 3 excuse is required, or a similar note from a health care provider who will confirm that you are a patient and were seen on the indicated day. Documentation that cannot be verified may result in the absence not being excused.

Absences can affect each component of the grade, and the policies for how absences affect each grade differ:

Web homework is available many weeks in advance, so that students who have an absences of type (c) and (d) should be able to complete their assignments even while travelling. As answers become available shortly after the assignment is due, we cannot offer extensions to individual students. Students who are not able to complete homework due to illness or family emergencies should contact their lecture instructor regarding the missed homework.

Lecture instructor score Students who miss lecture are allowed five absences without an excuse. You may send email noting the absence, but this is not necessary. At the

sixth excused absence, students may request excused absences by submitting documentation to the lecture instructor for all of the missed classes. This documentation must be submitted within one week of the sixth excused absence. In particular, keep documentation for excused absences, especially regarding chronic conditions which are likely to cause multiple absences.

Recitation instructor score Students are allowed three absences without an excuse. Students who wish to request a fourth excused absence must submit documentation for all four absences within a week of the fourth absence. Students may not make up a quiz that they miss due to an unexcused absence. To request a makeup quiz, submit documentation to your recitation instructor within one week of the missed quiz.

Exams. Absences for exams are quite serious. An unexcused exam absence results in 0 for the exam grade, which lowers your final grade by at least a letter grade. Students who must miss an exam will need to arrange for an alternate exam with their lecture instructor and the procedure for doing this will vary by section. The most common reasons for requesting an alternate time is a conflict with a class or other university activity that is scheduled at the same time. If you miss an exam due to illness or family emergency, please notify your lecture instructor within 24 hours of the missed exam.

Submission of assignments

Homework must be submitted online at WebAssign, in the appropriate course as accessed from [Canvas](#). WebAssign is a for-profit company that charges a fee to use their online homework. The student is responsible for paying this fee. See the [section on course materials](#) for information about purchasing an access code for WebAssign.

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 there are assignments that are due during Dead Week.

Exams must be taken at the specified times and locations, or an alternate exam must be approved by the lecture instructor. You are expected to take the exam without notes, textbooks, online access, or communication with your peers. You may use a [calculator](#) approved for use on the ACT.

Accommodations due to disability

If you have a documented disability that requires academic accommodations, please contact your lecture instructor as soon as possible by email or during scheduled office

hours. In order to receive accommodations in this course, you must provide a Letter of Accommodation from the Disability Resource Center (DRC). The DRC coordinates campus disability services available to students with disabilities. It is located on the corner of Rose Street and Huguelet Drive in the Multidisciplinary Science Building, Suite 407. You can reach them via phone at (859) 257-2754 and via email at drc@uky.edu. Their web address is <http://www.uky.edu/StudentAffairs/DisabilityResourceCenter/>. For students who need accommodations on exams due to disability, the lecture instructor must be notified a minimum of 7 days in advance of the exam.

Academic Honesty

All assignments, exams, quizzes, 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 will not be tolerated. Any potential cheating case will be thoroughly investigated, and could 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](#).

Answers submitted through REEF polling must be submitted by the person who receives credit for these answers and must be submitted while in our classroom. Submitting answers while on behalf of another student or while not in class will be treated as academic dishonesty.

Classroom Behavior, Decorum, and Civility

Students are expected to be actively participating during class. Students are also expected not to distract others. If you arrive late, leave early, are distracted by your phone, or are otherwise not actively engaged with the class you may not receive credit for participating that day. If you are disrupting class, you may be asked to leave.

Algebra and Trigonometry for Calculus is traditionally a very difficult class, and many of your classmates will be having a hard time adjusting both to the university and to the demands of the class. You are expected to treat your classmates with respect. It is reasonable to disagree, but you should express your disagreement respectfully. Harassment will not be tolerated.

Dead week

Homework score and instructor score continue as usual. Homework is due and the typical measures of in-class participation will be present. No papers or exams will be given during dead week.

Limited course repeats

University Senate rule 4.3.3 allows the department chair to prevent a student from registering in a course for a third time, unless a student has withdrawn for urgent, non-academic reasons. Beginning in Fall 2016, the Department of Mathematics will enforce this rule for students attempting a fourth registration in MA 109, 110, 113 and 137.

Prerequisite for MA 113 and MA 137

The primary reason for taking MA 110 is to prepare for one of our Calculus courses, MA 113 or MA 137. Please note that the prerequisite for these courses is a C in MA 110. Earning a D provides credit, but does not indicate sufficient preparation to continue to Calculus I or Calculus I with life science applications.

Course Schedule

Topics for lectures, due dates for web homework, exam dates, and other important dates are listed in the [course schedule](#). Update (28 November 2016): [Revised course calendar](#) with changes for the last week of the semester.

Study help

In addition to the [textbook](#) and your [instructor's office hours](#), you may find the following useful for studying:

Old exams

An archive of old exams from MA 110 is available at the address <http://www.math.uky.edu/~ma110/exams/>. The topics covered on each exam in MA 110 may change slightly from semester to semester. Thus, the exams which are linked to this page may cover different topics than the exams to be given this semester.

Services in The Mathskeller and The Study

The Mathskeller is located in CB 063 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 <http://www.math.uky.edu/~mathskeller/>.

[Transformative Learning](#) (formerly known as Academic Enhancement) offers a variety of services to undergraduate students. Free, drop-in peer tutoring is available for a number of mathematics courses including MA 110 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. These services are available in two locations: The Study on the third floor of [Kirwan-Blanding Dorm Complex Commons](#) and The Study North located in [Frances Jewell Hall](#).

Transformative Learning 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 [the Study](#) or call 257-1356.