MA 113 - Calculus I (Fall 2015)

Rooms for Final Exam:

Tuesday, December 15, 2015 6:00 - 8:00 pm

Sections	Lecturer	Room	Building
001-002	Brown	CB 102	[White Hall Classroom Building](#)
004-005	Brown	CB 110	[White Hall Classroom Building](#)
003,006	Brown	CB 114	[White Hall Classroom Building](#)
010-011	Shen	MEH	[Memorial Hall](#)
007-009, 012	Shen	CP 153	[Chemistry-Physics Building](#)
013-015	Ehrenborg	BS 116	[Hunt Morgan Biological Sciences Building](#)
016-018	Ehrenborg	CP 320	[Chemistry-Physics Building](#)
019-024	Leep	MEH	[Memorial Hall](#)
025-030	Hislop	BS 107	[Hunt Morgan Biological Sciences Building](#)

Brief Description:

A course in one-variable calculus, including topics from analytic geometry. Derivatives and integrals of elementary functions (including the trigonometric functions) with applications. Students may not receive credit for MA 113 and MA 137.

Learning Outcomes:

In Calculus I, we will learn about derivatives, integrals, and the fundamental theorem of calculus, which gives the relation between derivatives and integrals. We begin by introducing the notion of a limit. Limits are essential to defining derivatives and integrals. By the end of the semester you should know precise definitions of continuity, the derivative, and the integral, and understand the fundamental theorem of calculus which relates the latter two. You should be able to illustrate the methods and ideas of calculus by applying them to solve several physical and geometric problems.

We will cover most of Chapters 1 to 5 and one section of Chapter 6 of *Calculus: Early Transcendentals, Second Edition* by Jon Rogawski (Single-variable, UK paperback ISBN-10 1-4641-3302-6, full book UK paperback, ISBN-10 1-4641-3301-8). These books are also available bundled with access to an online version of the textbook. Students are not required to have the custom-published edition, they may use the standard edition. Please see the course calendar for a detailed listing of the sections we will cover.

Exposure to the precision needed in Calculus will foster critical thinking and rational reasoning. In order to help you learn to formulate and communicate mathematical ideas, there will be six written assignments; for the schedule see the course calendar. Your solutions to these assignments are expected to be carefully drafted documents that are written up in complete sentences. You should lay out and explain all the arguments you used to arrive at your solution. It is strongly recommended that you prepare your documents in a word processor, such as Microsoft Word, LaTeX or the like and then export your document to a PDF file to submit.

Textbook and Handouts:

- **Textbook:** *Calculus: Early Transcendentals*, 2nd edition, by Jon Rogawski, ISBN 978-1-4641-3302-2 (paper published for UK), 978-1-4292-0838-3 (hard back).
  A custom paperback version published for UK is available from the bookstores. Students may also use the standard version. Students may choose a single-variable version that will be used for MA 113 and MA 114 or a full version that will be used for MA 113, MA 114, and MA 213. In addition, an optional bundle that includes electronic access is available for both the single variable and full version.
- Common syllabus: this web-page or PDF
- Recitation worksheet: The worksheets are available for download and more information may be found below.
- Calendar: PDF
- Written homework assignments, see below
- **Instructor syllabus:** Your instructor may prepare an additional syllabus giving information specific to your section.

Grading:

You can earn up to 500 total points in the course based on the following activities.

3 Exams (100 points each)	300 points
Final Exam	100 points
Lecture attendance, homework and written assignments	100 points
Total	**500 points**

The 100 non-exam points will be assigned as follows:

Web Homework:	100
Written Assignments:	60 (10 each)
Lecture attendance:	40
Total divided by 2:	**100**

Please see your lecturer's syllabus for details on the lecture attendance grade.

Your grade will be based on the number of points you earned according to the following scheme:

Total Course Points (out of 500)	At least 450	At least 400	At least 350	At least 300	Less than 300
Final Course Grade	A	B	C	D	E

We may adjust (or curve) the grade lines down (but not up!). Decisions about changing the grade lines will be made by the faculty after considering the difficulty of the exams and the performance of students on the exams. Typical means for exams in previous years have been in the 70's. In computing these means, we do not include scores of students who score 30 or below.

Recitation Worksheets:

In recitation, you will practice the material of the lectures using worksheets. You will work in groups and sometimes individually. For the schedule of the worksheets see the course calendar. The worksheets are available to be downloaded here

Beginning with worksheet 2, you will be responsible for having the recitation worksheets with you for recitation classes. If you fail to do so, then it may be counted as an unexcused absence. You may print the worksheet and bring it to recitation class or your TA might provide other options.

Homework and Recitation Quizzes:

A) Mandatory homework, counting toward the grade:

We will use web homework at the address on the system [WeBWorK](#) at http://courses1.webwork.maa.org/webwork2/uky-ma113/. Students who are registered Tuesday afternoon, 25 August, will be able to log in from the first day of class. We will add students to the homework system until the last day to add. See the document titled [Introduction to WeBWorK](#) for more information including instructions on how to log in. The document [Entering Answers in WeBWorK](#) gives more information about how to enter mathematics to answer questions in WeBWorK. Please contact your lecturer or teaching assistant if you have difficulty logging in or need to change sections.

The due date for each of these homework assignments is given on the corresponding web page as well as in the [course calendar](#). Note that the WeBWorK sets are due early in the morning after the due date listed in the calendar. Thus the due dates at the web site will be the day after the date listed in the calendar.

Occasionally, we may delay homework due dates. The due date at the WeBWorK server will be the most up-to-date information.

Late web homework will not be accepted. Shortly after the homework is due, solutions to many of the web homework problems will be made available through the WeBWorK server. We cannot allow some students to continue working on the problems after the solutions are available or delay providing solutions to students who have completed the homework on time. If you have an unusual situation that prevents you from completing web homework, please contact your instructor. However, in general students will be expected to complete web homework even if they are traveling.

Suggestions for working web homework:

- Print out the web homework and write out complete solutions of problems before attempting to submit answers. These solutions will be helpful in studying for exams and to bring to discussions with others.
- Form a study group and meet regularly to discuss web homework and the material covered in lectures.
- Make sure you understand your solution to each homework problem. Discuss your approach with members of your study group, your instructor, or peer tutors at the Mathskeller or the Study.
- Do not guess. If you submit an answer and are marked wrong, look through your solution for computational and conceptual errors.
- For each web-based homework problem in the first 5 assignments you may resubmit your answer as often as you want before the deadline (3:25 am of the day after the due date). Starting with assignment A2.1-2.2, you may submit answers up to 15 times for each problem before the deadline. This will give you several attempts to correct errors, but discourage students from guessing.
- Near the bottom of many pages at WeBWorK, you will find a link to email your instructor. Please work to formulate clear questions in your email. We will work to answer emailed questions by the next work day. Instructors will not be able to answers questions sent the evening of a due date.

B) Optional homework, not counting for the grade:

Optional homework assignments from the textbook are listed in the course calendar. This homework will not be graded. It is *strongly* recommended that you do these problems as they prepare you for the exams.

C) Recitation quizzes:

Quizzes will be given on most Thursday's during recitations; for the schedule see the course calendar. Unless there is language to the contrary in your instructor's class syllabus the quizzes will not be graded and do not count toward the grade. The purpose of the quizzes is to give you practice in an exam setting where you have to work on a problem independently, without books, and within a limited amount of time.

Quizzes and Solutions: (Solution links will be active after quiz day)

Quiz 1	Solutions	Quiz 2	Solutions	Quiz 3	Solutions	Quiz 4	Solutions	Quiz 5	Solutions

[Quiz 6](#) | [Solutions](#)	[Quiz 7](#) | [Solutions](#)	[Quiz 8](#) | [Solutions](#)	Quiz 9 | Solutions	Quiz 10 | Solutions

Written Assignments:

Six written assignments are to be turned in during lecture; for the due dates see the [course calendar](#). The assignments will be made available approximately one week before the due date from links in the table below. The solutions will be made available after the due date. Note that individual instructors may have different requirements relative to the written assignments. Any differences will be spelled out in your instructor's syllabus.

Assignment 1:	[Questions](#)	[Solutions](#)
Assignment 2	[Questions](#)	[Solutions](#)
Assignment 3:	[Questions](#)	[Solutions](#)
Assignment 4:	[Questions](#)	[Solutions](#)
Assignment 5:	[Questions](#)	[Solutions](#)
Assignment 6:	[Questions](#)	[Solutions](#)

These assignments are intended to help you learn to communicate mathematics and to present clear, well-written solutions to problems. Your solutions will be graded by humans for mathematical correctness and for clarity of exposition. Students who wish to receive full credit should write in complete, grammatically correct sentences. You should give clear reasoning and present the steps of your solution in logical order. You will want to include figures and graphs as needed to explain your reasoning.

Assignments are due at the beginning of your lecture on the due date listed in the course calendar. Late assignments will be accepted, but may lose 20% credit for each day or part of a day that the assignment is late. Please speak with your lecturer if a serious illness or family emergency prevents you from completing an assignment. Students with scheduled absences (travel or authorized university excuse) may turn in the assignment early or have another student bring the assignment to class.

Exams:

There will be three uniform midterm exams and one final exam. Each midterm exam is 120 minutes (2 hours) and the final exam is 120 minutes (2 hours). **Please bring your student identification card with you to the exams!**

Exam	Date	Time
I	Tuesday, September 22, 2015	5:00 - 7:00 pm
II	Tuesday, October 20, 2015	5:00 - 7:00 pm
III	Tuesday, November 17, 2015	5:00 - 7:00 pm
Final Exam	Tuesday, December 15, 2015	6:00 - 8:00 pm

The midterm exams are scheduled in the following rooms. The rooms for the final will be posted after the third midterm and some of the rooms will be different from the rooms for the midterms.

Sections	Lecturer	Room	Building
001-002	Brown	CB 102	White Hall Classroom Building
004-005	Brown	CB 110	White Hall Classroom Building
003,006	Brown	CB 114	White Hall Classroom Building
010-011	Shen	CB 122	White Hall Classroom Building
007-009, 012	Shen	KAS 213	Kastle Hall
013-015	Ehrenborg	BS 116	Hunt Morgan Biological Sciences Building
016-018	Ehrenborg	CP 320	Chemistry-Physics Building
019-024	Leep	MEH	Memorial Hall
025-030	Hislop	BS 107	Hunt Morgan Biological Sciences Building

If you must miss an exam due to a conflict as defined in the University Senate Rules, you may request an alternate exam. The alternate exam for exams 1, 2, 3 will be given from 7:30-9:30 pm after the regular exam in CB 114. Students must request an alternate exam from their lecturer in writing at least two weeks in advance of the scheduled date of the exam.

Calculators:

You may use calculators on the homework and exams. You may not use any machine (carbon-based life form or silicon-based) that has symbolic manipulation capabilities of any sort on any exam. This precludes the use of TI-89, TI-Nspire CAS, HP 48, TI 92, Voyage 200, Casio Classpad or laptop computer. Also, you *may not* use your mobile phone, iPhone or Blackberry on any exam even if you forget your regular calculator. If it runs Android, GEOS, iOS, Linux, MacOS, PalmOS, Ubuntu, Unix, Windows, or similar operating systems, you cannot use it on the exams. Bald answers will receive little or no credit. A bald answer is one that is simply the output of a calculator routine or a single numerical or symbolic expression that has no supporting work.

Old Exams:

A selection of exams given in MA 113 over the past several years is available in [MA 113 exam archive](#). The exams from this semester will be available at the exam archive approximately one week after the administration of each exam.

Review Sessions:

Before each exam there will be a supplementary review session.

Review	Date	Time	Room
Review 1	Monday, September 21, 2015	5:30-7:00 pm	FB 200
Review 2	Monday, October 19, 2015	5:30-7:00 pm	FB 200
Review 3	Monday, November 16, 2015	5:30-7:00 pm	FB 200
Review 4	Monday, December 14, 2015	4:00-5:30 pm	KAS 213

Instructors

The list below gives the instructors and their email addresses. Course meeting times are available from [myuk.uky.edu](#).

Section	Role	Name	E-Mail	Web page
001 - 006	Lecturer	Russell Brown	[russell.brown@uky.edu](#)	[Web page](#)

001 - 002	TA	Eric Kaper	eric.kaper@uky.edu	[Web page](#)
003	TA	Darleen Perez-Lavin	darleen.perezlavin@uky.edu	
004 - 005	TA	Kevin Jones	kevinjonesjr@uky.edu	
006	Workshop leader	Wesley Hough	wesley.hough@uky.edu	[Web page](#)
007 - 012	Lecturer	Zhongwei Shen	zshen2@uky.edu	[Web page](#)
007 - 008	TA	Zhen Luo	zhen.luo@uky.edu	[Web page](#)
009	TA	Karthik Chandrasekhar	ak.c@uky.edu	
010 - 011	TA	Liam Solus	liam.solus@uky.edu	
012	Workshop leader	Marie Meyer	marie.meyer@uky.edu	[Web page](#)
013 - 018	Lecturer	Richard Ehrenborg	richard.ehrenborg@uky.edu	[Web page](#)
013 - 014	TA	Fulton Jackson	fulton.jackson@uky.edu	
015 - 016	TA	Joel Klipfel	joel.klipfel@uky.edu	
017	TA	Yaowei Zhang	yaowei.zhang@uky.edu	
018	Workshop leader	Dustin Hedmark	dustin.hedmark@uky.edu	
019 - 024	Lecturer	David Leep	leep@uky.edu	[Web page](#)
019 - 020	TA	Devin Willmott	devin.willmott@uky.edu	[Web page](#)
021	TA	Eric Morgan	eric.morgan@uky.edu	
022	TA	Yaowei Zhang	yaowei.zhang@uky.edu	
023	TA	Eric Morgan	eric.morgan@uky.edu	
024	Workshop leader	Lola Davidson	lola.davidson@uky.edu	[Web page](#)

025 - 030	Lecturer	Peter Hislop	peter.hislop@uky.edu	Web page
025	TA	Darleen Perez-Lavin	darleen.perezlavin@uky.edu	
026	TA	Karthik Chandrasekhar	ak.c@uky.edu	
027 - 028	TA	Kehelwala Maduranga	kdgmaduranga@uky.edu	
029 - 030	TA	Kalila Sawyer	kalila.sawyer@uky.edu	

MA 193:

In addition to the 4 hours of credit for MA 113, the department offers one additional hour of credit as MA 193 on a pass/fail basis. You will pass MA 193 if you have no more than 2 unexcused absences during MA 113 recitations and you pass MA 113. If you fail MA 113 or have 3 or more unexcused absences in recitation, you will fail MA 193.

Your section number for MA 193 must be the same as your section number for MA 113. If you drop or change sections of MA 113, please make sure to also drop or change sections of MA 193. It is your responsibility to do this if you change sections. If you do not change the section of MA 193 you may receive a failing grade for MA 193 because you are not on the proper class roll.

Study Advice and Getting Help:

Mathematics is not a spectator sport. To understand what this means, consider how well you might learn to play football by watching Cristiano Ronaldo. You will not learn the material in this course by listening to the lectures, and thinking to yourself - "Yes, I understand that". You must also read the book and work the problems to learn. The instructor's task is that of an assistant to help you learn as much of the material as you desire. This being said, form good study skills from the start!

- Come to class and take notes during lecture.
- Read each section of the text prior to the lecture where it will be covered.
- As you read the text, have pencil and paper handy. Work through the computations. Find examples to illustrate the theorems and results in the text. If the text tells you that every differentiable function is continuous, think of examples of differentiable functions and check if they are continuous. Think of examples of functions that are not continuous and determine if they are differentiable. Can you think of an example of a function that is continuous but not differentiable?
- Begin the homework immediately after material is covered in class. Mathematics is cumulative. In order to benefit from Wednesday's lecture, you must understand the material covered on Monday.
- Find classmates and form a study group. Spend time discussing problems.
- Do **not** fall behind. It is very difficult to catch up in a math class after falling behind.
- Begin preparing for exams well in advance. Read the text again to review all of the material to be covered on the exam. Be sure you are familiar with the main results and theorems and how they are used in homework.
- Work additional problems to prepare for the exam. Use old exams from previous semesters of MA 113 to take a practice test. Treat it like a test. Compare your solutions with those provided by the answer key.
- If you are having trouble, then seek help immediately.

If you are having trouble with a homework problem, you can send an e-mail through the online homework system to your teaching assistant and lecturer. Try to provide as much information as possible in your help request. Describe what you have attempted and give a guess as to what might be wrong. Have you found an answer that is being marked wrong, or are you unable to start solving the problem?

In addition to the online help, you should take one or more of the following steps.

- Talk to your instructors before or after class or send them an email. Let them know what problems you are having, if any. They will be happy to help!
- Go to the office hours of your instructors.
- You can also seek help in the Mathskeller that is located in room CB 063 in the basement of the classroom building. Many instructors and

teaching assistants from the Department of Mathematics will hold office hours in the Mathskeller. In addition, limited drop-in tutoring is available. You can seek help from any of the instructors or teaching assistants --- not just your own. The Mathskeller is open from 9 am to 5 pm Monday through Friday (except academic holidays) during the semester.

- Furthermore, you can seek help in [The Study](#) . Academic Enhancement provides drop-in peer tutoring by undergraduate students who have successfully navigated the courses for which they tutor. A regular schedule of all tutoring is available on [The Study's web site](#). You can also call 257-1356.

You can find more detailed suggestions of how to study for the course [here](#).

Policies

- *Attendance.* Attend lectures and recitations regularly. Be on time and remain until dismissed. Do not leave in the middle of class. Instructors have the right to take off attendance points for coming late or leaving early. If you cannot come to lecture or recitation and would like to request an excused absence, inform the instructor as early as possible and provide documentation.
- *Excused absences.* Students need to notify the instructor of absences prior to class when possible. Senate Rules 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for nonattendance" by the professor. Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Two weeks prior to the absence is reasonable, but should not be given any later. Information regarding major religious holidays may be obtained through the Ombud (859-257-3737, http://www.uky.edu/Ombud/ForStudents_ExcusedAbsences.php.

  Students are expected to withdraw from the class if more than 20% of the classes scheduled for the semester are missed (excused) per University policy. Per Senate Rule 5.2.4.2, students missing any graded work due to an excused absence are responsible: for informing the Instructor of Record about their excused absence within one week

following the period of the excused absence (except where prior notification is required); and for making up the missed work. The professor must give the student an opportunity to make up the work and/or the exams missed due to an excused absence, and shall do so, if feasible, during the semester in which the absence occurred.

- *Verification of absences.* Students may be asked to verify their absences in order for them to be considered excused. Senate Rule 5.2.4.2 states that faculty have the right to request "appropriate verification" when students claim an excused absence because of illness, or death in the family. Appropriate notification of absences due to University-related trips is required prior to the absence when feasible and in no case more than one week after the absence.
- Electronic devices such as mobile phones, laptops and tablets should be put away or used only as part of class activities during lectures and recitations. Instructors may prohibit their use during class. Students who are not participating in class may be marked absent. Mobile phones, laptops, and computers may not be used during exams.
- Classes meet as usual on the days after an exam. Attendance rules apply as usual.
- *Students with disabilities.* If you have a documented disability that requires academic accommodations, please see your instructor as soon as possible. In order to receive accommodations in this course, you must provide your instructor with a Letter of Accommodation from [the Disability Resource Center](). The Disability Resource Center 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/.
- In order to be fair to all students, dates for exams and homework assignments are firm. It is very important to take each exam on schedule. Missed work may be made up only due to illness with medical documentation or for other unusual (documented) circumstances. If you have a university excused absence or a university-scheduled class conflict with uniform examinations please contact your lecturer as soon as possible, **but at least 10 days before the exam**, so that an alternate exam can be arranged for you.
- *University Policy on Academic Integrity.* Per University policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and

plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the University may be imposed. Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the website Ombud A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited. Senate Rules 6.3.1 (see Senate Rules for the current set of Senate Rules) states that all academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission. When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording, or content from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work (including, but not limited to a published article, a book, a website, computer code, or a paper from a friend) without clear attribution. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work, which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content, and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas, which are so generally and freely circulated as to be a part of the public domain.

Students are encouraged to work together to understand a problem and to develop a solution. However, the solution you submit for credit must be your own work. In particular, you should prepare your solutions to the written assignments independently and you should submit your answers for web homework. Copying on exams and usage of books, notes, or communication devices during examinations is not allowed. Cheating or plagiarism is a serious offense, and it will not be tolerated. Students are responsible for knowing the University policy on academic dishonesty.

- *Mid-term Grades.* Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (http://www.uky.edu/registrar/calendar).
- All requests for corrections to grading should be addressed to your lecturer. Requests should be made shortly after you receive the paper back and must be made within one day of the paper being returned.
- Math is more than just manipulation. To earn top grade on exam problems and written assignments it is not enough to have the correct answer, but you must also show the correct reasoning.

This course is coordinated by David Leep. Comments or corrections related to this web page may be sent to leep@uky.edu.