Math 201-02: Calculus I Fall 2016

August 30, 2016

Course Information

Instructor:

Dr. Kenan Ince

Office:

Gore 209

Email:

kince@westminstercollege.edu

Office Hours:

2-3:30pm MW, 2-3pm TTh. You can come to office hours whether or not you have any particular questions; I'm always glad to chat about class, math, study skills, time management, and whatever else is on your mind. I am always willing to go over any class topic again during office hours, as well. You may also make an appointment with me at least 24 hours in advance, subject to availability, and you're free to drop by whenever my office door is open.

Class Meeting Time:

TTh 12-1:50pm

Classroom:

Converse B18

Suggested calculator:

TI-83 or better

Text

Carroll College Active Calculus and Mathematical Modeling, freely available at `http://www.carroll.edu/academics/majors/math/textbooks.cc` or from the Files section of the class Canvas page. This online resource also includes YouTube videos associated with each section of the book, as well as activities associated with each chapter. The activities are also available on Canvas under the name Activities and Clickers; you are required to download both the book and activities and bring them to class every day on your laptop.

I plan to cover roughly sections 0.1-5.3 and 7.1-7.2 of the text, time permitting.

Learning Outcomes

In this course, I want you to fail, and fail spectacularly. This course is not about how quickly you get the "right answer", and there is often not a single "right way" to do the problems you will be assigned. Instead, I hope you will come to understand that mathematics is a creative act, and problems are solved using a mixture of logic and intuition to make creative leaps. We learn by making mistakes, dusting ourselves off, and trying again, and that is what mathematics research actually looks like.

The goals of this course are for all students to achieve the following learning outcomes:

1. Understand the role of the limit in the definitions of derivative, integral, and continuous function and be able to evaluate limits of functions.

2. Be able to use differential and integral calculus to solve novel modeling problems related to change and accumulation.

3. Understand how the extrema of a function are connected to its derivatives.

By the end of this course, my goal is that all of you will be able to solve all of the following types of problems and more:

- Optimization and related rates problems

- Modeling change and accumulation

- Computing derivatives and antiderivatives of elementary functions

- Evaluating definite integrals using the Fundamental Theorem of Calculus

- Evaluating limits of functions

Attendance

Being present in class is very important, as the most difficult parts of calculus (integrating and applying definitions and theorems) will take place there. As a result, attendance is required. You are, nevertheless, allowed two unexcused absences throughout the term. All judgments about excused and unexcused absences will be at my discretion, but if you wish to receive an excused absence, you must receive approval from me before the missed class period. The only exceptions to this rule are medical emergencies affecting yourself or your family. In all cases, I may or may not ask for supporting documentation for excused absences.

Technology and Electronic Devices

I believe it is near-impossible to take math notes on a laptop unless it is a tablet equipped with a pen (which is allowed). Therefore, I recommend bringing a pencil and paper to class every day with which to take notes. Taking notes is a requirement of this course.

Our book is available as a free .pdf download, as are the Activities and Clickers questions. For that reason, I require all students to bring their laptops to class every day with the *Carroll College Active Calculus* book and Activities and Clickers questions loaded on it every day. The download links for both can be found on Canvas under the "Files" section.

We will use Canvas for course announcements, posting the daily schedule, and some homework assignments. It is your responsibility to check Canvas daily.

Graphing calculators and computer software can be helpful for visualizing functions and simplifying computations. We will make use of both, at varying times. It is fine to use technology on your homework for arithmetic (NOT just asking your calculator to compute derivatives or integrals for you), but be aware that tests will generally have at least a portion where calculators are not allowed, so you do need to be able to perform basic calculations by hand.

Taking Notes

Recent research has found that taking notes word-for-word on what is done in class leads only to surface-level learning, which disappears when new information is introduced. If you've ever completely forgotten what you've "learned" in a course mere months after taking it, you've experienced this firsthand. However, taking notes in a manner that allows you to process the information you take in allows you to learn the material in lasting ways, even if you never go back to âĂİJreviewâĂİ those notes in the future (although, of course, you should). I highly recommend *parapahrasing* in your notes what is said in class, how a problem is solved, etc.

For these reasons, taking notes is a requirement of this course.

Assessment

There will be several methods of assessment used in this course. Every day, you will bring a completed exercise from the text to class, and you will discuss and workshop your solution with your group in-class, as well as completing other exercises in your groups. I will then take up the assignment after class. You are encouraged to collaborate with other students in the class to understand the readings and to do the in- and out-of-class activities, but your write-up must be your own individual work. Unless explicitly specified in the assignment, you may not use computer programs or symbolic calculators to find your answers.

In between class periods, you will be expected to read ahead in the book, complete the corresponding Preview Activity(ies) in WebWork, and complete a homework assignment from the previous book section(s) as indicated on the linked (tentative) course schedule. Because the in-class content of the course will be largely focused on solving problems based on your out-of-class reading, you are all expected and required to do the readings.

There will also be weekly quizzes at the beginning of every Thursday class session, one midterm exam, required midterm corrections, a final exam, and an ungraded pretest

assignment.

The midterm exam will be in class on **Thursday, September 28**, and the final exam will be in class on **Thursday, December 15**. Both exams will consist of a mix of different types of questions, including True/False, multiple choice, and short answer/definitions, but will be heavily weighted toward traditional "solve and show your work" type computations. You may use a four-function or scientific (non-programmable) calculator on the midterm and quizzes, but you must provide it yourself - I will not have any extras to loan out. You may not use a graphing calculator or a tablet or smartphone calculator app. After the midterm exam, there will be a required "exam corrections" assignment in which you will correct your mistakes and turn them in for an increase in your midterm grade. Moreover, parts of your final exam may replace your midterm grade if your grade on the final is higher. Of course, this will happen at my discretion.

Course Schedule

A *tentative* course schedule is available at `https://goo.gl/0M9qCg`.

Grading

This course will be graded on how well you achieve the Learning Goals set out above. We will employ a specifications grading system which lays out specific standards for earning various grades at the beginning of the semester. For more information on specifications grading in mathematics courses, I highly recommend reading the blog post at this URL: `http://rtalbert.org/blog/2015/Specs-grading-report-part-1`. Below, I quote a few key features of specs grading from the article.

- In specs grading, evaluation of work revolves around a detailed list of criteria or âĂİJspecsâĂİ for what constitutes acceptable quality work in the course. The instructor constructs the list based on his or her professional judgment regarding what is acceptable quality.

- In specs grading, points are not typically used to assess student work. Instead, student work is graded on a âĂİJpass/failâĂİ or (as we'll use in this course) a "pass/progressing/fail" rubric according to whether the work meets specifications, does not meet specifications but is making progress (allowing students to re-submit the assignment), or does not meet specifications and is not progressing.

- In specs grading, there is no partial credit given to student work because there are no points.

- In specs grading, the philosophy is that instead of partial credit, the instructor gives clear, extensive, and helpful feedback. Students will have a way of revising and submitting work that doesnâĂŹt meet the specs, based on this feedback.

- In specs grading, studentsâĂŹ final grades are determined by the number and difficulty of assignments for which they have demonstrated work that meets the specifications, rather than using point accumulations which then map to a letter grade.

In this course, I will use a modified specifications grading system which works as follows. There are three types of assignments in this course. First of all, you will be graded on your submission of a (perhaps tentative) solution to one problem from each section of the book before we discuss that section in class. This will be counted under "participation" below; as you can see, it's impossible to get an A in the class and fail to turn in more than two of these.

Second, the *weekly quizzes* will measure your understanding of definitions, simple calculations, and other "basic" learning objectives. These will be given on Friday of every week. Third, your performance on more "advanced" learning objectives will be measured by your performance on in-class group problems and unpledged homework assignments. Finally, there is a subset of "advanced" learning objectives which are most important for true understanding of the course material. The full list of advanced learning objectives is something that I would expect an "A" level student to master. But these really important, or "core", learning objectives are something that I want all students, or at least "C" students or higher, to master. Hence, I will measure these core objectives both through untimed homework and in-class assignments and through timed assessments.

With that said, grades will be assigned as follows:

To Earn	Absences or inadequate participations	Pass this many quizzes	Pass this many homework assignments	Midterm	Projects	Final
A	≤ 2	10/11	21/23	Pass	Pass	Pass
B	≤ 3	9/11	19/23	Pass	Pass	Pass
C	≤ 4	8/11	16/23	Pass	Pass	Pass
D	≤ 5	7/11	14/23	-	-	Pass

In addition, students in this course have the opportunity to volunteer their time in Westminster's East High Tutoring Program. This involves volunteering at least three times to work at an after-school-tutoring lab at the local East High School, where you would help high school students struggling with mathematics. The high school students receiving this tutoring are usually in Algebra I and are afraid of mathematics. What the Program is looking for in volunteers is a willingness to help remove this fear from a scary subject. **Students who tutor at least three times in the East High Tutoring Program are eligible to drop one quiz or two homework assignments from the specification grades listed above.**

As students of the course, I would like you to identify, in advance, the learning objectives you expect to meet this semester (and therefore the grade you plan to earn). **Please submit your goals/plan via the corresponding assignment in Canvas no later than Friday, August 26, at noon.** In this message, be sure to specify the work you plan to complete, as well as the grade you will earn if you are successful.

Group Work

Research shows that group work is a highly effective way to spend class time. Benefits include:

- Everyone has more opportunity to participate.

- Students can learn from each other in ways they canâĂŹt from a textbook or instructor.

- The best way to learn something is to try to explain it to someone else.

- Talking about problems with your colleagues makes you more comfortable with the language of mathematics.

- Math is more fun this way!

Ground Rules for Groups

You will get the most out of your group work if you stick to these rules.

1. Criticize only ideas, not people. And criticize constructively! Respect each other's thoughts.

2. Be a team player. Question and participate.

3. Be willing to make mistakes or have a different opinion. Don't belittle others who make a mistake.

4. We are each responsible for what we get from the group experience. And everyone is responsible for the success of the group!

5. Don't let others do all the work.

6. Don't do all the work for everyone else.

7. One person talks at a time.

8. Keep to the current topic.

9. Take notes, even if there is a scribe.

10. It is dishonest to pretend that you understand or agree when you don't.

Pronouns, Correct Names, and Inclusion

It is your right to be identified by your correct name and pronouns. I support people of all gender expressions and gender identities and welcome students to use whichever pronouns or names that best reflect who they are. In this spirit, I expect all students to also use the correct pronouns and names of classmates. Please inform me if my documentation reflects a name different than what you use and if you have any questions or concerns please contact me after class, by email, or during office hours.

Disability Support

Westminster College seeks to provide equal access in higher education to academically qualified students with physical, learning, and psychiatric disabilities. If you need disability-related accommodations in this class, have emergency medical information you wish to share with me, or need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class or in my office. Disability Services authorizes disability-related academic accommodations in cooperation with the students themselves and their instructors. Students who need academic accommodations or have questions about their eligibility should contact Karen Hicks, Disability Services Coordinator, in the START Center (801-832-2280) or email disabilityservices@westminstercollege.edu.

Academic Honesty

Academic honesty and integrity is expected at all times. Cheating will not be tolerated. Cheating includes plagiarism of any sort, as well as receiving or providing unauthorized assistance on any type of assignment. Minimum consequences for cheating will be a grade of zero on the assignment or exam, with possible consequences of an F in the course or expulsion from school. Please refer to the Academic Catalog or the Student Handbook for the CollegeâĂŹs statement on academic honesty.

Extra Help

The Math Tutor Center, in the library, provides free drop-in tutoring open to anyone, whether you have a one-time quick question or you need regular help. When office hours just arenâĂŹt enough, or your question arises when I am not available, or if you just prefer to get help from a fellow student, this can be a great resource!

The Start Center also provides free one-on-one tutoring for most math courses (and other courses), as long as they have students willing and able to tutor the courses. This is an important resources for those of you who feel they need more one-on-one time than the math tutor center can provide. You just need to go to the Start Center and request a tutor for the course.

Title IX and VI policies

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. Westminster is committed to providing a safe and non-discriminatory learning, living, and working environment to all members of the Westminster community and does not discriminate on the basis of sex. This includes on the basis of gender, gender identity, gender expression, or sexual orientation. The CollegeâĂŹs Title IX policy strictly prohibits sexual assault, sexual harassment, gender-based harassment, gender-based discrimination, sexual exploitation, interpersonal violence (dating violence, domestic violence, stalking), and retaliation for making a good faith report of prohibited conduct or participating in any proceeding under the policy. The policy and accompanying procedures are available at www.westminstercollege.edu/titleix and discuss prohibited conduct, resources, reporting, supportive measures, rights, investigations, and sanctions for violations of the policy. If you want to make a report of prohibited conduct, you may contact WestminsterâĂŹs

Title IX Coordinator, Jason Schwartz-Johnson, or report an incident online. Jason can be reached at 801-832-2262, jsj@westminstercollege.edu, or in Malouf 107. You can also reach out to Deputy Coordinators Scott Gust at extension 2449 or Julie Freestone at extension 2573. Please note that to the extent permitted by law, the College aims to protect the privacy of all parties involved in the investigation and resolution of reported violations of the Policy. However, the College has a duty to investigate and take actions in response to reports and cannot guarantee confidentiality or that an investigation will not be pursued. The Counseling Center is a confidential resource, and by law the counselors who work there cannot reveal confidential information to any third party unless there is an imminent threat of harm to self or others. As an instructor, I am a responsible employee and am required to report any information I obtain regarding conduct that may violate the policy to the Title IX Coordinator, so that students can receive supportive measures and referrals to resources, they are aware of their options, and the safety of the campus community can be ensured. If you begin to disclose an incident of prohibited conduct, I may interrupt you because I want to make sure that you have had the opportunity to discuss the incident with confidential resources on and off campus first. If you need supportive measures inside or outside the classroom because of an incident of prohibited conduct, please reach out to the Title IX Coordinator for assistance.

Title VI of the Civil Rights Act of 1964 prohibits discrimination based on race, color, or national origin in any program or activity receiving federal financial assistance. In addition to these, Westminster policy prohibits discrimination or harassment based on ethnicity, age, religion, veteran status, or genetic information in any of its programs or activities. If you encounter this type of discrimination or harassment, or feel that you have been retaliated against for reporting prohibited conduct or participating in any related proceeding, you can contact the Equal Opportunity Officer, Jason Schwartz-Johnson, at extension 2262. As an instructor, just as with Title IX, I am a responsible employee and am required to report any information I obtain regarding discrimination or harassment to the Equal Opportunity Officer for further review.

Syllabus Change Policy

This syllabus is only a guide for the course and is subject to change with advanced notice.