MAT 295: Calculus I
M012 — Fall 2018

Instructor Information

Name: Caleb McWhorter
Office: Carnegie 400D
Email: cgmcwhor@syr.edu
Office Hours: M 1:00pm–2:00pm, T 2:00pm–3:00pm
Course Supervisor: Dr. Amy Macrina

Class Information

Dates: August 27 – December 7
Time: MWF 9:30 – 10:25; T 8:00 – 9:20
Classroom: Management 304 (Lecture), Bowne 104 (Lab)

Course Description

Analytic geometry, limits, derivatives, maxima-minima, related rates, graphs, differentials, exponential and logarithmic functions, mean-value theorem, L'Hôpital's rule, integration. For science majors. MAT 295 may not be taken for credit after successful completion of MAT 286.

Course Objectives

After this course, you should be able to. . .

- Explain and define the limit of a function at a point, continuity at a point, and differentiability at a point as well as interpret the meaning of these concepts, especially in applications.

- Explain the use of L'Hôpital's Rule and apply it to appropriate limit problems.

- State and show uses of the Mean Value Theorem.

- Compute the derivatives of polynomials, rational functions, composite algebraic functions, & trigonometric functions, natural logarithmic and exponential functions.

- Differentiate implicitly and use this in applied contexts.

- Apply the techniques of differential calculus to the problem of curve sketching.

- Apply differentiating techniques to find velocity & acceleration to solve related rate & max/min problems.

- Define the anti-derivative of a function & define the Riemann integral.

- Interpret the relationship between antidifferentiation & differentiation.

- State and apply the Fundamental Theorem of Calculus.

- State the important properties of the integral.

- Solve problems involving antiderivatives and areas.

- State and use the Mean Value Theorem for Integrals.

Furthermore, you should

- Improve your ability to engage in mathematical thinking, reasoning, communication, and problem solving.

- Develop a matured perspective on how to approach mathematical problems and concepts.

- Be able to state ways Calculus applies in Mathematics and in real world problems.

- Learn how interpret formulas in special cases.

- Learn to properly utilize technology to explore, supplement, or answer mathematical questions.

Textbook & WebAssign

The textbook is Stewart, James, *Essential Calculus: Early Transcendentals*, 2nd Edition; Cengage Learning. You also need a WebAssign access code for submitting online homework. The ISBN for the bundle (book and WebAssign) is 9781133425946. All students are required to have a WebAssign access code for online homework assignments. This code includes access to the online electronic version of the textbook. Some students will also want a physical copy of the textbook. You may choose between the following options:

- Purchase a WebAssign access code either at the Syracuse University (SU) bookstore or online at http://webassign.net/. If you purchase this code at the SU bookstore, it is valid for future semester in the Calculus sequence. If you purchase it online and plan to take MAT296/397, you should purchase the multiterm (lifetime edition) version.

- Purchase a new textbook bundled with a WebAssign access code at the SU bookstore. This access code includes access to the online e-book version of the textbook and is valid for future semesters in the Calculus sequence.

- Purchase a new textbook bundled with a WebAssign access code from the publisher's website at https://www.cengage.com/. You can also purchase just the WebAssign access code at the publisher's website.

The WebAssign access code for this course is **syr 8034 4123**.

Phone, Calculator, and Device Policies

MAT 295 students are expected to complete the calculus sequence without the use of a calculator. Calculators will not be permitted on quizzes or exams, unless explicitly instructed. Any unauthorized use of such devices are considered a violation of the Academic Integrity Code. During the course, http://www.wolframalpha.com/ and Mathematica will be used to demonstrate concepts give students an opportunity to be able to check work. Following the Mathematics Department guidelines, all electronic devices should be turned off and put away during class. Use of such devices can result in dismissal from class.

Course Format

The course format is 2–3 lectures per week (depending on your section) and one recitation per week. However, recitation may be used for lecture if needed. Typically, new material is introduced in lecture, while recitation is used as a problem session. You are *required* to attend the recitation. Exams will be given either during recitation or in class, to be determined by the instructor. Exam dates will be announced in lecture.

Class Attendance and Participation

It is essential to your success in this course that you attend each lecture and participate in the discussions. Therefore, you are expected to attend each lecture and to show up on time. Should you need to miss a class for any reason, you are to contact the instructor in a timely manner. Reasons for missing lecture must be documentable and presented, if requested. You are responsible for any material covered during the lecture as well as any work assigned during the lecture. *Do not* expect the instructor to provide notes from any class that you might miss. More than three unexcused absences from lectures could result in receiving an F in the course. Furthermore, excessive lateness will also count as an absence. If you are dismissed from lecture due to problems during the lecture, e.g. disruptive behavior or unauthorized cell phone use, then this dismissal will be recorded as an absence.

Syracuse University's Attendance Policy including Verification of Medical Condition: Attendance in classes is expected in all courses at Syracuse University. It is a federal requirement that students who do not attend or cease to attend a class to be reported at the time of determination by the faculty that the student never attended or stopped attending the class. Faculty should use Early-Semester Progress Reports and Mid-Semester Progress Reports in Orange SUccess to alert the Registrar and Financial Aid Office. For more information visit: http://registrar.syr.edu/facultystaff/non-attendance/. Excuses for class absences for medical reasons will be given only if such absences are advised by a health care provider at the Health Center, based on clinical findings and prescribed treatment recommendations. Excused notes will not be given solely to confirm a visit to the Health Center. For complete details on excuse notes, visit: http://health.syr.edu/faqs/index.html.

Grading

The course grade is determined by the following components:

Exam 1   20%
Exam 2   20%
Exam 3   20%
Final Exam   25%
Quizzes   5%
Homework   10%

Grade Scale

The grade scale is the standard Mathematics Department grading scale and is as follows:

A	93 – 100	C+	77 – 79
A–	90 – 92	C	73 – 76
B+	87 – 89	C–	70 – 72
B	83 – 86	D	65 – 69
B–	80 – 82	F	0 – 64

Exams

You are expected to be present, seated, and ready to take the exam before the exam is to be given. There are three exams and a final exam. The exams are *tentatively* scheduled for September 18th, October 16th, and November 13th. If there is a change to this schedule, it will be announced in class. You are not permitted to use any outside materials, resources, or electronic devices (including but not limited to calculators, mobile phones, smartwatches, etc.) on the exams. Any violation of this policy is a violation of the university's Academic Integrity Policy.

There will be no make-up exams, even in the case of an emergency. A missed exam counts as a zero unless a valid excuse from a physician or the Dean's Office is presented to your instructor an accepted. With an acceptable written excuse, a missed exam score will be replaced with the percentage earned on the corresponding subsection of the final exam.

The final exam is comprehensive and will be given during a two-hour block on Wednesday December 12, 2018 between 8:00am–2:30pm. The exact time and location will be announced later in the semester. The final exam is worth 25% of your grade. The date is already set by the university, so please do not make other plans on the date of the final exam such as appointments, early vacation departures, family outings, etc. Such changes are not negotiable. If a student has a conflict with another final exam, the student must contact his/her instructor at least two weeks in advance in order to have it resolved.

Homework

The only way to learn Mathematics is to do Mathematics! It is essential for students to complete all of the homework assignments. Many of the homework assignments will be completed using WebAssign. However, there may be some problems that will be written and submitted (often assigned from the textbook). Completing all the homework problems is the best way to practice and prepare for quizzes and exams. If you need more time on a WebAssign assignment, you must submit a request on the website *and email the instructor* explaining the request. The same is true of any written work. There is no guarantee that you will receive an extension on any assignment so plan your schedule carefully.

You are encouraged to work with others on homeworks. Mathematics is a social activity! However, do not simply use others to do your work but rather use others to help work through and engage in the concepts. If you work with others on written homeworks, indicate on your assignment with whom you worked. *Plagiarism is unacceptable* and will result in a zero grade for all persons involved and will result in serious academic repercussions.

Quizzes

Often, there will be a quiz every class. These quizzes will be very short, and are a test of whether you are keeping up with the material. If you are late, be sure you take the quiz before leaving the class. *No make-up quizzes will be given.*

Mathematics Help

Be proactive about your success in the course! If you need help, there are many resources available to help you. Your first primary contact for help is the instructor. If you are struggling, attend office hours or send an email. Do not wait to bring issues, course related or otherwise, to the attention of the instructor. If you cannot attend office hours, send an email to the instructor to try to make other arrangements. You may also find help at the Calculus Help Center: http://math.syr.edu/undergraduate/math-help.html. Furthermore, the Center for Learning and Student Success (CLASS) also offers *free* group tutoring sessions for MAT295. They are located on the Lower Level of Bird Library, see http://class.syr.edu/ or call 315.443.2005.

Students with Disabilities

Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal as your instructor is to create a learning environments that are useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite you to meet with me to discuss additional strategies beyond accommodations that may be helpful to your success. If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS) located at 804 University Avenue, third floor or go to the ODS website at http://disabilityservices.syr.edu/ and click current students tab to register on-line. You may also call 315.443.4498 to speak to someone regarding specific access needs. ODS is responsible for coordinating disability-related accommodations and will issue 'Accommodation Letters' to students as appropriate. Since accommodations may require early planning and are not provided retroactively, please contact ODS as soon as possible.

Faith/Tradition Observances Policy

Syracuse University's religious observances policy, found at http://supolicies.syr.edu/emp_ben/religious_observance.htm, recognizes the diversity of faiths represented in the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students should have an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors no later than the end of the second week of classes for regular session classes and by the submission deadline for flexibility formatted classes. Student deadlines are posted in MySlice under Student Services/Enrollment/My Religious Observances/Add a Notification. I ask you to include this information, as well as your expectations for how and when academic requirements will be made up, in your syllabus. I also ask you to remind students during the first week of classes about the notification deadline. Instructors may access a list of their students who have submitted a notification in the MySlice Faculty Center. Note that the religious observances icon will not appear unless a student in that class has submitted a notification.

Counseling Services

If at any point during the semester, you feel overwhelmed with your class work, feel thoughts of depression/suicide, experience sexual assault/rape, experience problems with substance abuse or relationship abuse, or have any other struggles with physical/mental health, ***please seek help***! The Counseling Center Services at Syracuse University is a resource offering assistance with any issue you might have - both individually and through group sessions. There is ***never*** any shame in seeking help. If you or someone you know is struggling with any of these issues, speak out! The Counseling Center Services website can be found at http://counselingcenter.syr.edu/, is located at 200 Walnut Place, Syracuse NY 13244-4350, and can be contacted at 315.443.4715.

If you or someone you know is having issues with gender or sexual identity issues, the LGBT[QIA] Center is there to create a safe space for those with marginalized genders and sexualities or those who might be struggling with these issues. The LGBT[QIA] Center website can be found at http://lgbt.syr.edu/, is located at 750 Ostrom Avenue, Syracuse, NY 13244-4350, and can be contacted at 315.443.3983. Know that my office is a safe space and should you prefer any gender specific pronoun/name, please be sure to make me aware!

Academic Integrity

Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The university policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same written work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions

determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the university's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level. For more information and the complete policy, see http://class.syr.edu/academic-integrity/policy/.

Orange Alert

Orange Alert, Syracuse University's crisis notification system, uses text messages, phone, and email alerts to provide rapid notification and instructions to members of the University community in the event of a critical incident in progress. Critical incidents could include an individual who is considered armed and dangerous, a hazardous materials incident, an explosion, or any other event in which there is an immediate threat of physical harm or death to campus community members. We recognize that faculty may consider activated cell phones as an interruption to their class. However, the public safety department recommends that faculty members leave their own cell phones on vibrate in order to receive text messages about a potential emergency situation. It is also recommended that faculty designate several class members to leave their cell phones on vibrate in order to receive notifications in the event of a critical incident. Orange Alert contact information for students, faculty, and staff is drawn from the MySlice online information system; please keep your contact information current. In the event of an emergency, the phone emergency line from on-campus is 711; the phone emergency line from off-campus is 315.443.2224; the phone emergency line from cell phone providers ATT/Verizon/Nextel is #78. For complete details on emergency procedures, visit: http://emergencyguide.syr.edu/.

Use of Student Work

In compliance with the federal Family Educational Rights and Privacy Act, registration in this class is understood as permission for assignments prepared for this class to be used anonymously in the future for educational purposes.

Important Dates

- Financial Aid/Academic Drop Deadline: 09/17/2018

- Academic Withdrawal Deadline: 11/16/2018

- Final Exam: 12/12/2018

Tips for Success

- Be proactive about your success in the course.

- Do not procrastinate! Begin your assignments and studying early!

- Attend every class and recitation.

- Ask questions whether it is during class, recitation, office hours, at the math clinic or via email to your instructor.

- Form a study group! Working together will help you and others better understand the course material as you can work through different difficulties and offer each other clarifications on concepts.

- Do problems! Reading through your notes is not enough. Seek out new problems and work through them carefully. When you are done, check your answer. If you are wrong, examine carefully what misunderstanding occurred and how to avoid it in the future. If you were correct, examine if there was a faster way, check to see if your solution 'flowed' and was easy to read, and think over what concepts/computations were used and what 'type' of problem was the exercise.

Tentative Schedule

The following is a *tentative* schedule for the course.

Week of...	Sections	Week of...	Sections
08/27	1.3–1.4	10/15	3.7, Exam 2
09/03	1.5–1.6	10/22	4.1–4.3
09/10	2.1–2.3	10/29	4.3–4.5
09/17	Exam 1, 2.3–2.4	11/05	4.5–4.7, 5.1
09/24	2.4–2.6	11/12	5.2, Exam 3
10/01	2.6–2.8	11/26	5.3–5.4
10/08	3.3, 3.5	12/03	5.5