Math 236: Calculus II Syllabus Fall 2020

MWF 4:00-4:50pm online and Tues 2:45-4:00pm online

4 credits

To find out whether or not class will be synchronous (online or outdoors) or asynchronous on any given day check the course calendar on Canvas.

Instructor: Dr. Rebecca Field
E-mail: fieldre@jmu.edu
Phone: 540-746-1231

Canvas: https://canvas.jmu.edu/courses/1745902
Web: http://educ.jmu.edu/~fieldre/236.html

Table of contents

• Course Overview/Goals of the Course, Prerequisites, and Learning Objectives
• Nature of Online/Hybrid Course
• Textbooks and Course Materials
• Assignments, Grading, and Academic Integrity
• Instruction Method/Class Format, Instructor Responsibilities, Student Responsibilities with Attendance Expectations, Instructor Evaluation, and Technology & Support
• Important Dates for Adding/Dropping Courses Policy and University Policies
• Temporary Online Solutions
• Inclusivity Commitment

Learning Objectives, Goals of the Course and Prerequisites

Learning Objectives After participating in the class activities, the student will be able to: think and reason mathematically, and express themselves in manner understandable to specialists and non-specialists alike. In particular, students should be able to read and understand a mathematical argument (whether an explanation or a formal proof) and while not necessarily able to prove mathematical facts themselves, should be conversant in the ideas behind proofs and derivations. Even more specifically, students will be able to successfully recall necessary material from Calculus I, compute definite and indefinite integrals using a variety of techniques, compute arc length and surface area. Students will also know and understand the concept of a sequence and the definition of sequence convergence, apply various tests for series convergence, compute and estimate what select series converge to, and deal with power series. Students will be able to compute the area between curves, the volume of a simple solid, the volume or a rotational solid using washers or shells, compute arc length, and center of mass.

Course Overview/Goals of the Course Calculus II consists of a bunch of random, but important topics that don’t fit Calculus I and aren’t appropriate for Multi-Variable Calculus. More concretely, Calculus II is a continuation of Calculus I in which we further develop the idea of definite integrals (through applications and more methods of integration). We also introduce sequences and series which function as a tool to further unpack the idea of a limit which was introduced early in Calculus I. There are two general reasons that you may be taking this course. The first is as a requirement for a math or science major and the second is as a gen-ed requirement. If you are a math or science major, the goals for this course are very explicit. As a scientist, you will need to be able to think, reason, and communicate using very precise language and terminology,
and mathematics is part of that terminology. In addition, your science professors will assume that you know the specific content (e.g. techniques of integration) of this course.

If you are taking this course as part of your cluster 3 gen-ed requirements, the goals are intellectual. The specific content (integration, applications of integration, and sequences/series) is really just an excuse to teach you to think and reason mathematically. It’s quite a good excuse because the ideas of calculus are important both currently and historically. For gen-ed students, understanding why things work the way they do is much more crucial to the Learning Objectives than how things work.

**Prerequisites** A grade of C- or better in Math 232 or Math 235 or a qualifying AP score are necessary to take this course. If you do not have any of the three, then you will need to drop the course.

**Nature of Online/Hybrid Course**

Although this class will take place primarily online, you will need to make sure you are available during all class times as significant portions of class activities will take place during class time and if you miss them, they will be difficult/impossible to make up. In addition, we will be meeting in person whenever it is safe (e.g. outside on nice days). Class outside will consist of either lecture sitting on grass or a wall with a rolling chalkboard or group work (working - in sidewalk chalk - on problems/projects in small socially distanced groups). On days that this will be impossible (including probably the whole second half of the semester) we will be doing a combination of synchronous and asynchronous activities online. **All of the outdoor classes will be recorded for those who can not attend!** That being said, you should come if you can: math outdoors is fun, and learning in a community is the best and easiest way to do it. What type of activity we will be doing where on any given day (online synchronous, online asynchronous, outdoors at a particular location) will be on the course Canvas calendar by an hour before class starts, but the default will be online synchronous classes. Please let me know ASAP if this is not enough lead time for you.

**Textbooks and Course Materials**

**Textbook** Stewart Calculus (early transcendentals) 8th edition, 2014, at the JMU bookstore or available online. Also, access to the online system at Cengage, in particular, the WebAssign homework system.

**Course Materials** A web cam will be needed as well as a computer with a good internet connection. We will also be using videos and handouts for both synchronous and asynchronous classroom activities. All of these videos and handouts will be available on the course Canvas page at https://canvas.jmu.edu/courses/1745902.

**Assignments, Grading, and Academic Integrity**

**Assignments** All assignments will be on the course calendar on Canvas under their due date. They will become available when assigned. Some major categories of assignment will be Pre-class Reading or Videos, Daily Quizzes, Daily Homeworks, Classroom Activities, our Discussion Board, Exams, and Audits.

**Pre-class Reading or Videos, and Daily Quizzes** You are expected to do a pre-class assignment and take the online quiz on this assignment before the start of class, and attend class (online or in person) prepared to answer questions. Reading a math book is not like reading a novel; you may have to read some passages multiple times, take notes, and work carefully through examples. The daily quizzes add up over time and are a part of your final grade, so be prepared.

**Daily Homework** Part of your asynchronous work for this class will be homework, assigned after a class when the topic is covered, and due before the class after next. That is, you will have one class and office hours in which to ask questions about the homework which will be due before the class after that. I strongly suggest you do not save it until the last minute, that last minute is when you might need to do your pre-class assignment! This homework will be assigned through the Cengage site and is called WebAssign. You in particular may need to do more than just this
minimal number of problems to truly learn a topic, so you will need to use your own judgement on how many problems to do. If you already know how to do the homework problem, do not waste your time with it, the portion of your grade that is that homework problem makes it only worth it if it helps you learn. This same argument goes for cheating on your homework (aka looking up the answers online). **Homework is only worth doing if it helps you learn the material.** The most important thing you can do to get a good grade in this course isn’t on the list of things that numerically determines your grade: it is doing math problems. Lots of them. Every day.

**Classroom Activities** These will vary by topic, but will always be worth points that you will miss if you don’t attend an online synchronous class. All of your written homework and class notes are to be written in a bound notebook (see Notebook Guidelines) and you will be allowed to use this notebook when you answer questions and do problems for the class, as well as for some portion of time on many of your exams and the final. (That is, some exams will have an open notebook period - usually 15 minutes. NB: this does not make the exam easy!! You will still need to study, there is just less rote memorization!!)

**Discussion Board** We will be using Piazza as a class discussion board. This tool allows students to ask and answer questions both with your name attached and anonymously. You can even ask anonymous questions on Piazza during a synchronous class! This allows students to ask ”stupid” questions and to propose answers without any risk of looking foolish, either to me, or to their classmates! Piazza accepts both type written and hand written scanned inputs and we will have many lively discussions on it. At some point, credit may be attached to participating in Piazza discussions (in this case, you can’t be completely anonymous as I will need to know who to give the points to, but you can be unknown to your classmates).

**Exams** All of your exams will take place online. As stated above, most of your exams will have an open notebook portion where you will be allowed to use your class notebook. The rest of the exam will be closed book, closed notebook, and closed internet.

**Audits** You will have periodic random audits of your work in the form of a one-on-one discussion with me. Every student will have at least one during the semester.

**Grading** There will be three in class tests worth 100 points each, three in class quizzes worth 50-75 points each and one cumulative final exam worth 200 points. There will be online daily quizzes worth 1 point each (approximately 40 of them) and there may be larger quizzes worth 2-5 points each. The daily homework will be worth less than or equal to 10% of your grade (full credit for homework is at least 90% correct). A substantial portion of your grade (100 points) will be determined by class participation. You will be given points for giving definitions and theorems from the reading/videos as well as presenting examples and doing problems. You can also earn participation points by being prepared for class on problems day.

Your final grade will be determined using statistical methods, the class average, and historical class averages. I do not use a predetermined scale. I reserve the right to decide borderline grades based on participation, effort and improvement. You must get at least 50% of the final exam correct in order to pass the course.

**Academic Integrity** I encourage you to work together in groups on homework assignments outside of class, but any work you hand in must be written up independently in your own words. THE HONOR CODE ([https://www.jmu.edu/honorcode/code.shtml](https://www.jmu.edu/honorcode/code.shtml)) Students shall observe complete honesty in all academic matters. Violations of the Honor Code include, but are not limited to, taking or attempting to take any of the following actions: Using unauthorized materials or receiving unauthorized assistance during an examination or in connection with any work done for academic credit. Unauthorized materials may include but are not limited to notes, textbooks, previous examinations, exhibits, experiments, papers or other supplementary items. Giving false or misleading information regarding an academic matter. Copying information from another student during an examination. Rendering unauthorized assistance to another student by knowingly permitting him/her to see or copy all or a portion of an examination or any work to be submitted for academic credit. Obtaining prior knowledge of examination materials (including by using copies of previously given examinations obtained from files maintained by various groups and organizations) in an unautho-
rized manner. Selling or giving unauthorized copies of any portion of an examination to another student. Using a commercially prepared paper or research project or submitting for academic credit any work completed by someone else. Falsifying or attempting to falsify class attendance records for oneself, or for someone else, or having another falsify attendance records on your behalf. Falsifying material relating to course registration or grades, either for oneself or for someone else. Falsifying reasons why a student did not attend a required class or take a scheduled examination. Taking an examination in the place of another student. Making unauthorized changes in any reported grade or on an official academic report form. Falsifying scientific or other data submitted for academic credit. Collaborating in an unauthorized manner with one or more other students on an examination or any work submitted for academic credit.

I take the honor code very seriously, and so should you. Any instances of suspected cheating or academic dishonesty will be referred to the JMU Honor Board for investigation.

**Instruction Method, Instructor Responsibilities, Student Responsibilities with Attendance Expectations, Instructor Evaluation, and Technology & Support**

**Instruction Method/Class Format** There will be three kinds of instruction for this class: Outdoor Synchronous Instruction, Online Synchronous Instruction, and Online Asynchronous instruction.

**Outdoor Synchronous Instruction** As stated above, we will try to have in person outdoor classes as often as possible (aka as the weather allows). I will not have outdoor class in the rain or at times that it is too cold if you are not moving around (unless I come up with some activity that involves moving around). Outdoor classes will be announced through the class Canvas page with a location on the Bluestone side of campus by an hour before class starts. The format for outdoor classes will be either active lecture (calling on students during a lecture at a movable chalkboard) or group activity. If you have one, please bring an internet capable device that doesn’t rely on WiFi as we may be using online whiteboards as part of a group activity. You will be required to wear a mask during outdoor classes. You will want to bring your notebook and take notes during outdoor classes.

**Online Synchronous Instruction** This will vary by class. We spend class working on activities, both in groups and on your own for which you will get credit. Some of the options will be: working in groups on an online whiteboard, talking about the essential content for topics that were introduced in your pre-class reading/video, practicing using techniques from the reading/videos, and connecting the topic to mathematics as a whole.

**Online Asynchronous Instruction** This will consist of pre-class activities (already discussed), substitutes for class activities (e.g. a canvas module, an individual worksheet for a specific topic, or a Piazza discussion), homework (discussed above), and projects. Each of our major learning objectives comes with a class project that you will work on in groups.

**Instructor Responsibilities**

**Communication** The best way to get hold of me quickly is by sending a text message. The phone number at the top of this syllabus is my personal cell phone number which I have been giving to students for 11 years. Please do not ruin it for everyone by calling or texting at unreasonable times (before noon, after 10pm) or texting in non-urgent situations (email is better if it is not urgent). I check my email approximately once a day every weekday, so do not expect an immediate response with email. I do usually know where my phone is, so I will generally text back quickly. I will also check Piazza once a day. This way I can make sure misinformation (aka wrong solutions) isn’t being spread.

**Feedback** I ordinarily give detailed feedback on exams and will try to do that within a week of you taking it. I will stick to this schedule, but for your online exams, as part of a mastery based grading scheme, we will be reanalyzing each of your exams in a subsequent assignment.

**Student Responsibilities with Attendance Expectations**

**Attendance** Attending class sessions on time is well below minimum responsibility for getting credit for passing this class. You are expected to take responsibility for active participation, asking questions, and contributing your thoughts related to the course content. You must attend all synchronous
online classes and as many outdoor classes as possible and be ready and willing to participate in the class activities. I do not give make-up assignments, so any synchronous class activity that you miss will be recorded as a zero unless you have a legitimate excuse! If you do miss class, it is your responsibility to get notes and announcements from a classmate and read them before the next class. If you have a problem with an exam date, please notify me beforehand. If an emergency causes you to miss an exam or quiz, you should contact me and explain your situation. My sympathy with your plight will be determined by how quickly you contact me.

**Rules of Conduct**

Signing up for a class usually comes with some implicit rules of conduct that are often subtly reinforced. Since most of the subtext is lost in an online context, I will instead make the rules explicit. 1. Use informal but professional language just like you would if you were chatting face-to-face. 2. There will be no making fun of anyone in this class. Disruptive behavior is any behavior that interferes with the learning environment for our synchronous classes. This includes, but is not limited to making it more difficult for other students to concentrate, introducing topics not pertinent to the lesson, and not responding when called upon. Students whose behavior is deemed disruptive will be asked to leave the synchronous class for that day and won’t receive credit for that days assignment. If disruptive behavior continues, students will be removed from the class via the registrar’s office.

**Technology and Support**

Online courses require that you have a computer with consistent and reliable Internet access, especially during class time. You will be required to access the class Canvas site in order to access the Course Calendar which will tell you what we are doing each day. A headset with microphone is desirable for synchronous sessions conducted in Zoom through Canvas. Be sure to have DUO access to the JMU computing system, including Canvas and MyMadison. JMU email accounts are used by me to communicate important things about this course. Students should check their student email at least once a day and use it (or a text if time is tight) for official communication.

DUO authentication requires your cellphone or token to access Canvas. Since this class is online, it is more technology intensive than a usual college math class. Everyone must have a reasonable plan to attend all online synchronous classes using Zoom through Canvas. However, due to their online nature, and the way of all plans, I also expect things to go wrong. JMU has IT resources willing to help you with this. Solutions to computer-related problems at JMU Computing HelpDesk: [http://www.jmu.edu/computing/helpdesk/](http://www.jmu.edu/computing/helpdesk/)

**Cell Phones/Calculators**

During class, cell phones should be kept silent and hidden unless sanctioned by a class activity (e.g. online poll or content based widget). The only apps I suggest you load on your phones for this class are Desmos which is an online graphing calculator and the Canvas Student app. You will not be allowed to use phones or calculators on any exams or quizzes. This means you will need to be able to graph without a graphing calculator! Access to a graphing calculator or use of a computer graphing utility is helpful, especially for checking your answers, but dependence is not recommended.

**The Science/Math Learning Center**

in the Student Success Center is open 10–8 MTuWTh, 10–2 F, and 5–8 pm Sat. The SMLC should be your first line of defense when working out homework problems. Many students just choose to do their homework in the SMLC all the time, so that help is always available when they need it. You can request a video conference from the SMLC so that you don’t need to go there in person.

**Important Dates for Adding/Dropping Courses, and University Policies**

**Important Dates for Adding/Dropping**

- September 4 is the add drop deadline to not receive a W for the course and to add a course yourself on mymadison
- September 14 is the late add deadline (adding a course with departmental permission)
- September 15 is the University withdrawal deadline
- October 28 is the course adjustment deadline if you want to get a W for the course

**University Policies**
**Accessibility and Inclusion** JMU abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, which mandate reasonable accommodations be provided for students with documented disabilities. If you have not already done so, you will need to register with the Office of Disability Services, the designated office on campus to provide services for students with disabilities. The office is located in the Student Success Center, room 1202, and you may call (540) 568-6705 for more information.

If you have a documented disability that requires an accommodation or an academic adjustment, please let me know within the first week of class.

James Madison University is committed to access, inclusion, and addressing diverse needs. If you have a documented disability and, as a result, need reasonable accommodations to participate in this class, complete course requirements, or benefit from the University’s programs or services, contact the Office of Disability Services (ODS) as soon as possible. To receive accommodations for disability in this course, please provide an Access Plan from ODS in a timely manner. The ODS works confidentially in partnership with students, faculty, and other University departments to ensure equal access through Universal Design and reasonable accommodations. You will find details about how to get started on the ODS website. ODS will work to address the needs of students with disabilities studying off campus. The office is located in the Student Success Center, Suite 1202. You may contact them by phone at 540-568-6705 or through email at disability-svcs@jmu.edu.

**Religious Observation Accommodations** Reasonable accommodation will be made for religious observances that conflict with class meetings or assignments during the semester. Students wishing such accommodation must inform the instructor during the first week of class.

**Inclement Weather** James Madison University is primarily a self-contained campus with a large number of residential students requiring a variety of support services, regardless of inclement weather conditions or emergency situations. For the safety and well-being of its students and employees, the university may close or limit its services based on inclement weather or other emergencies. Refer to the following sources for information on closings or delays: JMU Weather Line: (540) 433-5300, JMU radio station 1610AM, JMU’s home page, Area radio and television stations, JMU Office of Public Safety, who in turn is responsible for announcements on Emergency Notification System. When the university is closed due to inclement weather or other emergencies, all classes are cancelled.

**Mental Health Resources** As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. If you or someone you know is experiencing mental health challenges at James Madison University, please connect with the Counseling Center (CC) located within the Student Success Center on the 3rd floor. You can learn more about available CC services by visiting the website: [https://www.jmu.edu/counselingctr/](https://www.jmu.edu/counselingctr/) or calling the Center (540-568-6552). Their services are free and confidential. Other available support resources to consider on campus include, but are not limited to the: Office of the Dean of Students, Health Center, Learning Strategies Instruction, and Office of Disability Services.

**Other University Policies** Please refer to the JMU Syllabus Policy Statements page at: [http://www.jmu.edu/syllabus/](http://www.jmu.edu/syllabus/)

**Temporary Online Solutions** Due to the extra-ordinary nature of the epidemic, everyone will need to be able to access our course materials, including our online and outdoor synchronous materials at any time. All our meetings will be recorded, but these recordings are not, and should not be available to the public.

**Video Conferencing Recordings for MATH 236-04** The video conferencing audio and video class meetings will be recorded for the purposes of review and so that students who are ill can catch up after they recover. These should reside in the password protected JMU Canvas Learning Management System. Students may not redistribute these audio or video recordings or comments from the course to individuals who are not students in the course without my express permission and that of any students who are in the recording.

**Class Material Distribution** Any tests, assignments, or other material presented or distributed to you in this course are for your exclusive use only and not to be shared with anyone or published to any
entity (other than a student presently enrolled in this class), without my express written permission. Publishing, sharing, or distribution of said material without my written permission, including, but not limited to, distribution through any online site, will be a violation of my intellectual property in the materials (including lectures), and thus may be considered an Honor Code violation resulting in a failing grade for the course and/or such other action as may be deemed appropriate by the University.

**Inclusivity commitment**

Everyone is welcome in this class and everyone can do mathematics. YOU are personally welcome in this class, and YOU can do mathematics. I believe that learning environments should support and are improved by a diversity of thoughts, perspectives, experiences, and identities. I will treat each of you with respect and kindness, and I expect each of you to do the same for each other. I will respect your pronouns and names and I expect each of you to do the same for each other. Part of treating each other with respect includes not using microaggressions. The first step in addressing microaggressions is to know what they are. A list of microagression examples can be found at this link: [UC Santa Cruz Microaggressions Reference](#), which defines microagressions as the everyday verbal, nonverbal, and environmental slights, snubs, or insults, whether intentional or unintentional, that communicate hostile, derogatory, or negative messages to target persons based solely upon their marginalized group membership. As part of my commitment to being inclusive and providing an inclusive environment in my classroom, I welcome and ask that you bring any instances of non-inclusivity to my attention. If you would prefer to provide feedback anonymously, please use this link: [Say something to Dr. Field anonymously](#)