

# MATH 1210-001 Calculus I, Summer 2020

**Instructor:** Marin Petković  
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**Class Meetings:** M-F at 7:30 am - 8:30 am  
**Office Hours:** TBD

**\*\*\*Please always use the email listed above to contact me instead of Canvas messaging.\*\*\***

**Disclaimer:** The instructor retains the right to modify aspects of this syllabus throughout the course of the semester; students will, of course, be well notified of any adjustments.

## About the course:

- **Text:** *Calculus with Differential Equations*, by Varberg, Purcell, and Rigdon (9th edition). For information on purchasing the textbook, go to <http://www.math.utah.edu/schedule/bookInfo/>
- **Course information:** Math 1210 Calculus I is a 4 credit course.
- **Prerequisite Information:** “C” or better in (((MATH 1050 AND 1060) OR MATH 1080 OR (MATH 1060 AND Accuplacer CLM score of 80+)) OR AP Calc AB score of 3+ OR Accuplacer CLM score of 90+ OR ACT Math score of 28+ OR SAT Math score of 630+.
- **Course Description:** Functions and their graphs, differentiation of polynomial, rational and trigonometric functions. Velocity and acceleration. Geometric applications of the derivative, minimization and maximization problems, the indefinite integral, and an introduction to differential equations. The definite integral and the Fundamental Theorem of Calculus.

## Course organization:

- **Lectures:** Lectures will be given online, synchronously, in a virtual classroom. Every lecture will be recorded and uploaded to Canvas. However, attending and actively participating in the lectures is strongly encouraged, since there may be issues and/or delays with getting the recording online. To attend the lectures, you will need to download and install the Zoom client here: <https://zoom.us/download>. The link for each lecture will be posted in Canvas. You are expected to have a web camera and a microphone available for this class, as well as a reliable and fast internet connection.
- **Homework Assignments:** Homework will be due more or less weekly and will utilize the Webwork environment. Roughly four textbook sections are due most Fridays. The homework will typically cover material covered up to and including the preceding Monday. You can access the homework assignments through Canvas. The lowest homework score will be dropped. Late homework is, in general, not accepted.
- **Quizzes:** Every Wednesday (except for Wednesdays before an exam), a short online quiz will be given. It will be available in Canvas quizzes, from Wednesday 8:30 am, until Thursday 9 pm. The lowest quiz score will be dropped.
- **Midterms:** Three 60-minute midterm exams will be given on select Fridays, during regular class time. You will have the whole class period to complete the exam. Dates of the midterm exams will be **Friday Jun. 5th, Friday Jun. 26th, and Friday Jul. 17th, at 7:30 am - 8:30 am.**
- **Final Exam:** A two-hour comprehensive exam will be given. Our final exam is scheduled for **Friday July 31st from 7:30-9:30am.**
- **Canvas:** Canvas will be used for posting course announcements, homework assignments, grades, files and any relevant supplementary material. You are also welcome to make use of the Canvas discussion board to discuss course problems or topics. You can access the Canvas page through CIS or by logging

in at [utah.instructure.com](http://utah.instructure.com). Students should check the Canvas page daily for course information and resources. Email notifications and correspondence will be sent to the student's UMail address ([u-number]@utah.edu); this email account must be checked regularly.

**Exam proctoring:** The exams will be taken at home, in Canvas. We will use the ProctorU online proctoring service. It is free to use for students. I will provide more detailed instructions on how to set it up, few weeks before the midterm. **You will need a web camera and a good internet connection in order to be able to take the test.**

There will be no make up exams. Students with university excused absences (band, debate, student government, intercollegiate athletics) should make alternate arrangements with me as soon as possible if the absence interferes with any course components.

**Grading:** The following are the grade components and the percentage each contributes to a student's final grade:

- **Homework Assignments (15%)**
- **Quizzes (15%)**
- **Midterm Exams (45%, 15% each)**
- **Final Exam (25%)**

**Grading scale:** Final course letter grades will be determined as follows:

A 93 – 100%	B 83 – 86.99%	C 73 – 76.99%	D 63 – 66.99%
A- 90 – 92.99%	B- 80 – 82.99%	C- 70 – 72.99%	D- 60 – 62.99%
B+ 87 – 89.99%	C+ 77 – 79.99%	D+ 67 – 69.99%	E 0 – 59.99%

### Additional Resources

- **Online Tutoring Center:** There is free online tutoring provided by the Virtual Math Center. You can find the schedule and more information here: <https://utah.instructure.com/courses/613503/>.
- **Departmental Videos:** The math department has a full set of lecture videos which you are welcome to use to supplement our course material. These can be found at <http://www.math.utah.edu/lectures/>

**Calculators:** Calculators will not be allowed on exams. They may be used on homework, but you should still write out the details of your computation. It is in your best interest not to become too dependent on your calculator since they will not be allowed on exams.

**Expected Learning Outcomes:** Upon successful completion of this course, a student should be able to:

1. Take limits of algebraic and trigonometric expressions of the form  $0/0$  (that simplify), non-zero number over 0, including limits that go to (positive or negative) infinity, limits that don't exist and limits that are finite.
2. Use and understand the limit definitions of derivative for polynomial, rational and some trigonometric functions; understand the definition of continuity and consequences.
3. Differentiate all polynomial, rational, radical, and trigonometric functions and compositions of those functions; perform implicit differentiation and compute higher order derivatives.

4. Use differentiation to find critical points and inflection points, the signs of the first and second derivatives, and domain and limit information to determine vertical and horizontal asymptotes. Then use all of that information to sketch the graph of  $y = f(x)$ .
5. Apply differentiation to optimization, related rates, linear approximation, and problems involving differentials.
6. Compute indefinite integrals and find antiderivatives, including finding constants of integration given initial conditions.
7. Compute definite integrals using the definition for simple polynomial functions. Compute definite integrals using the power rule, basic u-substitution, and the Fundamental Theorems of Calculus.
8. Apply the definite integral to compute area between two curves, volumes of solids of revolutions, arc length, surface area for surfaces of revolution, and work problems.

**Student Responsibilities:** All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from and class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. <http://regulations.utah.edu/academics/6-400.php>

**ADA Statement:** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

**Addressing Sexual Misconduct:** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veterans status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

**Student Names and Personal Pronouns:** Class rosters are provided to the instructor with the students legal name as well as Preferred first name (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your UIDcard, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email [bpeacock@sa.utah.edu](mailto:bpeacock@sa.utah.edu) to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

**Wellness Statement:** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a students ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at [www.wellness.utah.edu](http://www.wellness.utah.edu) or 801-581-7776.

**Safety Statement:**The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

**Course Roadmap Week-by-Week:** Below is an outline of the sections and topic covered in this course.

**Week 1** Introduction, Chapters 1.1-1.3, 0.7:

**Week 2** Chapters 1.4-1.6, 2.1 **Note, Wednesday May 20 is the last day to drop**

**Week 3** Chapters 2.2-2.4

**Week 4** Chapters 2.5-2.6, review, Exam 1 (Jun. 5)

**Week 5** Chapters 2.7-2.9, 3.1

**Week 6** Chapters 3.2-3.6 **Note, Friday June 19 is the last day to withdraw**

**Week 7** Chapter 3.7, 3.8, review, Exam 2 (Jun. 26)

**Week 8** Chapters 3.9, 4.1-4.2

**Week 9** Chapters 4.3-4.6

**Week 10** Chapters 5.1, review, Exam 3 (Jul. 17)

**Week 11** Chapters 5.2-5.4

**Week 12** Chapter 5.5, review, Final Exam Friday, July 31 from 7:30 am-9:30 am.