

MATH 1310 Syllabus

Engineering Calculus 1 Fall2021

Class Meeting	MTWF 08:35AM - 09:25AM, JTB130
Lab Meeting	Section 013 - Th 07:30AM - 08:20AM, JTB120 Section 014 - Th 08:35AM - 09:25AM, LCB225
Instructor	RK Yoon office : JWB 107 email : rkyoon@math.utah.edu office hours : TBA
Teaching Assistant	Name email : office hours :
Text book	Calculus: Concepts and Contexts, By James Stewart, 4th edition. (ISBN: 13-9780495557425)
Course Information	MATH 1310 Engineer Calculus 1 is a 4 credit course.
Expected Learning Outcomes	Upon successful completion of this course, the student should be able to : <ol style="list-style-type: none"> 1. Understand how to transform functions into other functions through x- and y-translations and rescaling, re-parameterizations, and function composition. 2. Know properties of special classes of functions including logarithms, exponential functions, polynomials, and rational function and find their inverse function if exists. 3. Master the concepts of limits, know when limits exists, utilize limit laws, how the property of continuity of a function at c relates to its limiting value, how asymptotic behavior can be described by limits, and how limiting values can be specified even when the f is not defined. 4. Use limit to compute the derivative of polynomial, rational and some trigonometric functions; understand the concept of continuity. 5. Understand the concept of the chain rule to differentiate composition functions, and implicit functions. Compute the higher order derivative. 6. Utilize derivative to solve related rates problem, linear approximation, velocity/acceleration problems, and higher order derivative. 7. Use differentiation to find critical points, domain, asymptotic behaviors and use all informations to sketch the graph of a curve $y = f(x)$. 8. Understand the concept of indefinite integral as the antiderivative and define the integral as the limit of sum of some quantity. 9. Compute indefinite/definite integral using the power rules, substitution rules, integration-by-parts, and the Fundamental theorem of Calculus. 10. Apply the definite integral to compute areas, volumes and evaluate improper integrals
Course Website	Canvas will be used for posting course announcements, homework, grades, files and any relevant supplementary materials.
Calculator	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.
Additional Resources	Tutoring center & Computer Lab: There is free tutoring in the T. Benny Rushing Mathematics Student Center (room 155, the lower level between JWB and LCB), as well as a computer lab. For more information see http://www.math.utah.edu/undergrad/mathcenter.php
Gradescope	You will use the Gradescope to turn in your homework. If you believe your assignment has been misguided, you have to request re-grade via gradescope within a week of the assignment being graded . Any appealing through canvas message or email will not be accepted. However, I can still give you personalized feedback for you to learn from.

<p>Grading Structure</p>	<p>Grades for each student will be calculated using the following formula:</p> $\text{Labs}(15\%) + \text{Quizzes}(15\%) + \text{Homework}(15\%) + 2 \text{ Midterms}(2 \times 15 = 30\%) + \text{Final} (25\%) = 100\%$ <ul style="list-style-type: none"> • Labs: On each Thursday, you have to attend the lab you registered for. The lab will be directed by TA, and you will work in small group on the problems that are given to you at the beginning of the lab. The problems will be more challenging than the examples we covered in the class. <u>Each students should complete their own worksheet and submit it at the end of the labs.</u> The grade will be based on the quality of the lab reports. <i>The two lowest scores will be dropped.</i> • Quizzes: The quizzes will be given on every Wednesday and Friday through the Canvas except the exam days. It allows you to use the textbook/notes and discuss with other students, but you are required to complete your quiz on Canvas. The problems are based on the materials covered since the last exams or previous quiz. Since it is online-based quizzes, I will not accept late submission after given due. I plan about 25 quizzes in total during this semester, however, <i>the Lowest five scores will be dropped.</i> • Homework: Each set of problems will be assigned on every Friday and due one week later, Friday 6pm via gradescope. The homework will typically cover material covered up to and including the preceding Friday. For every assignment, you are expected to upload a single PDF with the correct page orientation. You can type your homework (using any software you like), or scan the physical copy (using either the scanner or scan applications). If you use electronic pads, that works too. <i>The lowest two homework scores will be dropped.</i> • Midterms: Two 50-minute exams will be given on select days (Sep,24th and Nov,5th) during regular class time. Neither midterm can be dropped. The practice exam will be posted a week prior. • Final: A two-hour comprehensive exam will be given. Following the university schedule, our final exam is on Dec,17th, 8:00-10:00AM. The practice exam will be posted a week prior.
<p>Exam Policy</p>	<ol style="list-style-type: none"> 1. Exams(midterm and final) will be closed book and closed notes. 2. Calculators, laptops, and any other electronic devices will not be allowed. 3. Students with university excused absences (band, debate, student government, inter-collegiate athletics) should make alternate arrangements with me as soon as possible if the absence interferes with any course components. 4. Any misconduct(cheating or any suspicious behaviors) will be seriously handled. I will give you a zero for that grade, even will report your behavior to the department.
<p>Assignment Policy</p>	<ol style="list-style-type: none"> 1. I will NOT give any makeup labs and quizzes unless accompanied by a doctor's note or other verification of extenuating circumstances. Each assignment has the dropping rules, so you can use that chances. 2. Homework will be submitted on Canvas. For fairness, the late penalty will be provided on the late submission. Here is the amount of penalty per late homework. <ul style="list-style-type: none"> - a day late : -25% penalty - two days late : -50% penalty - later : will not accepted 3. If you have any question/complains on the grading, bring it to me as soon as possible. I am always happy to look through your question together!
<p>Letter Grades</p>	<p>Semester letter grades will be converted from the numerical semester scores N as follows:</p> <p>93≤N≤100 : A 90≤N<93 : A- 88≤N<90 : B+ 83≤N<88 : B 80≤N<83 : B-</p> <p>78≤N<80 : C+ 73≤N<78 : C 70≤N<73 : C- 68≤N<70 : D+ 63≤N<68 : D</p> <p>60≤N<63 : D- N<60 : E</p>

<p>Course Outline</p>	<p>Schedule and lab topics subject to changes.</p> <p>Week 1, 8/23-8/27 (1.3-1.5) Functions, Compositions, Exponential functions</p> <p>Week 2, 8/30-9/3 (1.6-2.1) Logarithms, Inverse Functions, Parametric Curves , Velocity</p> <p>Week 3, 9/6-9/10 (2.2-2.4) Limit, Limit laws, Continuity 9/6 (No class) Labor Day</p> <p>Week 4, 9/13-9/17 (2.5-2.7) Limit involving infinity, Derivative, Derivative as a functions</p> <p>Week 5, 9/20-9/24 (2.8-3.2) Relatiton between f and f', Derivatives of Polynomials, Exponentials, Products and Quotient of functions rules Midterm1(Sep, 24th. Friday)</p> <p>Week 6, 9/27-10/1 (3.3-3.5) Derivatives of Trig Functions, Chain Rule, Implicit Differentiation</p> <p>Week 7, 10/4-10.8 (3.6-3.9) Inverse Trig/Log Functions and their Derivatives, Linear Approximation, Differentials -----Fall Break (10/10-10/17)-----</p> <p>Week 8, 10/18-10/22 (4.1-4.2) Related Rates, Max and Min Values</p> <p>Week 9, 10/25-10/29 (4.3-4.5) Derivatives and Shapes of Curves, Graphing, L'Hopital's Rule</p> <p>Week 10, 11/1-11/5 (4.6-4.8) Optimization, Newton's Method, Antiderivatives. Midterm2(Nov, 5th. Friday)</p> <p>Week 11, 11/8-11/12 (5.1-5.3) Areas, Distances, Definite Integral, Evaluating Definite Integrals</p> <p>Week 12, 11/15-11/19 (5.4-5.6) Fundamental Theorem of Calculus, Substitution Rule, Integration by Parts.</p> <p>Week 13, 11/22-11/26 (5.7,5.10) Integration Techniques, Improper Integral. 11/25-11/28 (No class) Thanksgiving Break</p> <p>Week 14, 11/29-12/3 (5.10-6.1) Improper Integrals, Areas Between Curves, Volumes</p> <p>Week 15, 12/6-12/9 (6.2-6.3) Volumes, Shells, Review for final</p> <p>Week 16 Final Exam (Dec,17th. Friday. 08:00AM - 10:00AM)</p>
<p>COVID-19</p>	<ul style="list-style-type: none"> • Encourage students (undergraduate and graduate) to take advantage of university COVID-19 testing services: https://alert.utah.edu/covid-19-testing/. Voluntary asymptomatic testing will continue to be available weekly for all members of the campus community. To schedule a COVID-19 test, click here. • Include a reminder that students must self-report if they test positive for COVID-19 via this website: https://coronavirus.utah.edu/. • If you have been exposed, or are experiencing symptoms, self-report and follow university guidelines for exposure. • Follow the Exposure Management Guidelines for responding to and managing student reports of COVID-19 infection—including contact tracing and reporting exposure to college and department leaders.
<p>ADA Accommodations</p>	<ul style="list-style-type: none"> • Given the nature of this course, attendance is required and adjustments cannot be granted to allow non-attendance. However, if you need to seek an ADA accommodation to request an exception to this attendance policy due to a disability, please contact the Center for Disability and Access (CDA). CDA will work with us to determine what, if any, ADA accommodations are reasonable and appropriate.
<p>Student Responsibility</p>	<p>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</p>
<p>Disclaimer</p>	<p>This syllabus is not a binding legal contract. I reserve the right to make changes as I see fit at any time, but all adjustments will be announced.</p>