

Instructor: Yekaterina Epshteyn

Course description for Math 1320: This course is the second part of the Engineering Calculus series and will cover intermediate knowledge of Calculus used for engineering applications. The course is structured into four lecture hours per week, and one lab hour per week.

Calculus is a set of tools to analyze the behavior of functions, useful in modeling physical processes important in engineering applications. At the end of the course, students will understand the following: how to compute areas and volumes using integrals, arc length, curvature, average values of functions, basic differential equation models and methods, direction fields, Euler's Method, separable differential equations, sequences, series, power series, Taylor and Maclaurin series, convergence tests, three dimensional coordinates and functions, vector functions, space curves, derivatives and integrals of vector functions, multivariable functions, limits and continuity in higher dimensions, partial derivatives, tangent planes, Lagrange Multipliers, and applications. More information on specific learning outcomes of the course is found below.

Some Strategies for Success:

- Attend class and lab regularly. Quizzes will also be given on selected Fridays during lecture. The homework will be collected each Friday (except holidays) during lecture.
- Read the relevant text book sections *before* you attend class. Ask questions and become involved during class and lab sessions.
- Plan to do homework daily. You are encouraged to use computers to help learn and enhance the course material, as well as to solve and check homework problems. But keep in mind that your goal is to *understand* the material and that you will not have a computer with you during exams.
- Know how grades are computed at the start of the semester and plan your effort accordingly.
- Form study groups with other students. However, the assignments you turn in *must represent your own work*.
- Come to the office hours of the instructor and the teaching assistant.

Mathematics Tutoring Center: Free tutorial is available in room 155 of the T. Benny Rushing Mathematics Center (adjacent to the LCB and JWB). Hours are 8am-8pm Monday-Thursday and 8am-6pm on Friday. For more information consult the website.

<http://www.math.utah.edu/ugrad/mathcenter.html>

Students with disabilities:

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 Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services.

Details about the content of each assignment type are as follows:

- Homework (25%): Roughly three textbook sections are due every Friday at the end of class, based on lecture sections covering through the preceding Wednesday. The assignments may be updated dynamically through the course, so be sure to check class webpage often to see the specific problems due each week. About two-three problems per section will be randomly selected for grading. *Three of a student's lowest homework scores will be dropped. Only hardcopy assignments will be accepted in person-no digital copies-and no late homework will be accepted.*
- Quizzes (5%): At the end of selected Friday class, a short 1-2 problem quiz will be given, taking roughly 10 minutes to do. The quiz will cover relevant topics covered in the week's lectures. One of a student's lowest quiz score will be dropped.

- Midterm exams (2×15%): Two 50-minute midterm exams will be given on selected Thursdays during lab sessions. A practice exam will be posted a week prior to the midterm that will cover the same material. Review of the practice exam will occur both in lecture and in the lab section.
- Final exam (25%): A two-hour comprehensive exam will be given at the end of the semester. As with the midterms, a practice final will be posted a week prior. Review of the practice exam will occur both in lecture and in the lab section.
- Lab (15%): Every Thursday a Teaching Assistant (TA) -directed lab section will be held. In Lab, the TA will hand out problem worksheets and will facilitate student-led group work. The worksheet problems will provide guided practice with both basic calculus methods, as well as highlighting the use of calculus in physical and engineering applications. These worksheets are designed to reinforce and extend material covered in lectures to help develop problem solving skills. Credit will be given for both lab attendance (5%) and worksheet grades (10%). Students should expect that worksheets will take additional time outside of lab to finish completely. The TA will be available for additional office hours the College of Engineering tutoring lab in WEB 1622.
- Letter grades are determined as follows: If X is your percentage grade, then $\{X \geq 93\% \Rightarrow A, X \geq 90\% \Rightarrow A-, X \geq 87\% \Rightarrow B+, X \geq 83\% \Rightarrow B, X \geq 80\% \Rightarrow B-, X \geq 77\% \Rightarrow C+, X \geq 73\% \Rightarrow C, X \geq 70\% \Rightarrow C-, X \geq 67\% \Rightarrow D+, X \geq 63\% \Rightarrow D, X \geq 60\% \Rightarrow D-, X < 60\% \Rightarrow E\}$.
I reserve the right to modify these in special cases and to decide if the curve is needed.
- **Honor Code:** You are expected to abide by the University of Utah Honor Code.