

Math 317: Advanced Calculus, Spring 2024

Instructor: Dr. Philip Kopel (philip.kopel@colostate.edu)

Suggested, Optional Reference: Basic Analysis: Introduction to Real Analysis by Jiri Lebl (available for free online).

Lectures: Lectures are MWF 2:00-2:50 in Eddy, 200.

About the Course This class will pick up where the Calculus sequence leaves off, and will cover topics such as derivatives, integrals, sequences and series in greater detail, and may also touch on additional elements of real and functional analysis. Mathematical rigor, precise proofs and clear technical communication will be stressed.

Homework: Homework will be assigned on an approximately weekly basis, and will not only reinforce but will build on material presented in class. Active engagement with the homework is a vital part of the class experience. Homework will be graded for completion, accuracy for clear, precise communication (so you can lose points for a solution which is needlessly difficult to follow or overly elaborate, even if the solution is technically mathematically correct). A random subset of problems will be graded for a given assignment.

While you are allowed and encouraged to collaborate with others, solutions must be your own and reflect your own understanding. Solutions obtained through other sources, including solutions obtained online, are not allowed, and you must be able to adequately explain and account for any solution you submit.

Exams: Four midterm exams will be given during the semester, and are tentatively scheduled for February 9, March 8, April 12, and during the last week of class. However, we may adjust the date of an exam (for example, to make space for additional review) in certain circumstances.

The *only* excuses for missing an exam which will be accepted are either serious personal emergencies (such as a medical emergencies) or university-approved absences. Please inform your instructor of a legitimate absence from an exam promptly – excessive tardiness can be deemed grounds to not provide a make-up, even in the event of a genuine excuse. If you have a medical situation, you will need to obtain medical documentation from a doctor which explicitly attests to you being unable to take the exam (a note that only documents a visit does *not* count).

Attendance and Pacing: Attendance is not mandatory, but is very strongly recommended. Material covered in class may not line up exactly with the presentation in the suggested textbook, so the best way to know what you are required to know for the exams is to attend class each day and to work all assigned problems. The course is not designed to accommodate excessive absence, and even in the event of an excused absence it will be your responsibility to make up the material you missed (for example, by getting the notes from a classmate).

Grading: Your grade will be determined by your performance on the exams (88 %) and your grade on the homework assignments (12 %). Please take prompt responsibility to make sure that all of your grades make sense to you and are recorded correctly on Canvas, excessively late requests to alter or correct a score will not be considered.

Grade Distribution

Precise letter grade cut-offs will be determined at the end of the semester, but (up to possible pluses and minuses) are expected to be no stricter than:

A: 90-100%
B: 80-89%
C: 70-79%
D: 64-69%

Accommodations: If you require Student Disability Center Accommodations for exams, you must make arrangements with the Student Disability Center and provide formal documentation to the course coordinator and your instructor at least one week in advance of every exam.

Life Circumstances: If you are experiencing a serious, unexpected life circumstance that is affecting your ability to participate in the course fully, the best thing to do would be to confer with the CSU Student Case Management, which deals with these situations in a safe, confidential and professional manner. The URL is:

<https://studentcasemanagement.colostate.edu/>

Academic Honesty Policy: The University Policy on Academic Integrity is enforced in this course and the academic honesty penalties for this class are quite serious, to the extent that it is usually not possible to pass the course after even one infraction. Penalties are predicated on a 'less than zero' philosophy, which states that it is much better to not hand in an assignment at all than it is to hand one in in violation of the honesty code. Please be advised that these situations are appraised on a preponderance of evidence basis.

All work submitted must be reflective of your own understanding, so you must be able to adequately explain and justify all of the work which you turn in. Using a solution which was either obtained online or otherwise authored in the main by another person is strictly prohibited, including use of online mathematical utilities. Submitting work that is excessively and unreasonably similar to that of another student is also prohibited, and if such a situation occurs, identical academic honesty penalties will be incurred by all students in question (including situations where multiple students obtain a common set of solutions from a third party).

Please note that simply having access to forbidden materials – such as notes, a calculator, a smart phone, etc – during an exam constitutes a breach of academic honesty, whether or not you are observed actually using them. Likewise, making misrepresentations to your instructor about any issue related to the operation of the course, providing fraudulent or misleading documentation, or otherwise creating a situation in which it is not possible to reliably assess whether or not your actions conformed to course and university honesty code is also considered a violation of that same code.