

Repetitio est mater studiorum
(*Repetition Is the Mother of Learning*)
Latin wisdom

Interest increases as a result of success,
and success is the outcome of hard work
Professor Yaroslav Tagamlizki

Eastern Connecticut State University
MAT 420-01, Real Analysis I, Spring 2021

Instructor: Christian Yankov

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Time and Place: MF 10:00-10:50 am, and W 10:00-11:50 am, ONLINE on Webex (see more explanation below).

Text: *Analysis with an Introduction to Proof*, Fifth edition, Steven R. Lay.

Office hours: M 11:00-12:00 noon, and 2:00-3:00 pm, W 8:00-9:00 am, and 2:00-3:00 pm, F 11:00-12:00 noon. The Office hours will be held also virtually, on Webex.

Prerequisites: MAT 230, MAT 244, and MAT 315.

Course topics: A rigorous study of the real numbers system including the completeness axiom, sequences, limits, continuity, and uniform continuity. This course fulfills the University's requirement for an upper-division writing-intensive course.

Goals and Objectives: There are several important outcomes to achieve by the end of this course:

- Understanding of the structure of the field of real numbers and its particular properties, especially these following immediately from the Completeness axiom;
- Understanding the topology of real numbers, and the definition and properties of the various basic classes of sets: open, closed, and compact.
- Understanding the rigorous definition of convergence of sequences of real numbers and the resulting theorems, demonstrating a practical ability to apply these properties to specific examples;
- Understanding the rigorous definitions of limits and continuity of functions of one real variable and their equivalence, as well as the fundamental properties of continuous functions;
- Further developing the ability to understand and construct abstract mathematical proofs, applying theoretical knowledge to particular problems, with an emphasis on writing in accordance with the mathematical standards.

Class format: This will be an online class held in *synchronous mode*. This means that at the scheduled class times you will have to be logged into *Christian Yankov's Personal Webex Room*: <https://easternct.webex.com/meet/yankovc>

You may choose to download the Webex App, or join from your browser. The class meeting will consist of a lecture and include related problem solving, just like a regular on-ground class. You will hear my voice and see what is being written on your screen. You will also have a chance to ask questions. Occasionally, I will call on someone with a question, which he/she is supposed to answer. This will also serve to check for your presence behind the screen. I will make an effort by the end of each day to post the class notes in pdf format on Blackboard.

Attendance: It is expected that you be there on time for each and every class. If for some reason you should miss a class, then it is your responsibility to find out from a friend what has been covered and assigned and make it up.

Homework: After each class you will get a homework assignment. It will be collected and graded. I cannot stress enough the importance of doing the homework. In addition to being a substantial part of your grade, it is a critical factor in building and reinforcing your knowledge, as well as helping you identify your weak points. Homework should be written neatly on standard letter format paper on one side of the sheet only.

Portfolio: You must collect all your homework assignments in a binder, portfolio style. At the end of the semester you should have a complete set of these. This is a requirement to pass.

Quizzes: Quite often at the beginning of class time there will be a short quiz. This should keep you alert and following the material carefully, closely and timely.

Exams: There will be a midterm exam the date of which will be announced at least a week in advance.

Final Exam: There will be a cumulative final on **Wednesday, May 12, 2021, 11:00-1:00pm.**

Assignment Submission Rules: Each assignment will be allotted a time frame within which it will have to be completed and submitted to Blackboard as a **PDF** file. To produce a pdf file you may use various methods. If you own a scanner, then you can scan your work straight as a pdf file. Alternatively, you may take a picture of your work with a smart-phone. This will typically produce a jpg, or some other format picture file. There are apps both for Android and IOS, which convert picture formats into pdf. This requires some practice. You should make sure that the final outcome is complete, clear and readable. Then you must rename your file according to the following template: ***Lastname-Firstname-assignmentname.pdf***. For example, if I am to submit Quiz 3, it will be titled ***yankov-christian-quiz-3.pdf***. Finally, you should submit it to Blackboard. I will not accept other file formats, so please invest the time and effort to comply with these rules.

Evaluation: Your work in this course will be weighted roughly as follows. The quizzes will account for 20% of your grade, the homework will account for 25%, the midterm exam will account for 25% and the final exam will account for the remaining 30%.

Grades: The ranges for the grades are the following:

A-, A	90% and above	B-, B, B+	80% - 89%
C-, C, C+	70% - 79%	D, D+	60% - 69%

How to get help: You should log in to my personal room on Webex during my office hours, if you have difficulties with the subject matter.

Make-ups: There will be no make-ups for quizzes, since I will drop the lowest one. Make-ups for the midterm exam are strongly discouraged and might be allowed for truly exceptional reasons only, and with my prior permission.

Students with disabilities: Eastern Connecticut State University is committed to following the requirements of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. If you are a student with a disability (or think you may have a disability), and require adaptations or accommodations, or assistance evacuating a building in the case of an emergency, please contact the Office of AccessAbility Services (OAS) at 860-465-0189 to discuss your request further. Any student registered with the OAS should contact the instructor as soon as possible for assistance with classroom accommodations. Please note that accommodations are not retroactive, and must be communicated through a Letter of Accommodation which is drafted by the OAS.

Academic Misconduct: Students should read and understand Eastern's Academic Misconduct Policy, which can be found in the student handbook or at the following website:

<https://www.easternct.edu/academic-misconduct/index.html>

All violations will be handled under the procedures established in this policy.

Disclaimer: *The instructor reserves the right to make changes to this syllabus during the semester as necessary.*