MATH 3150 Analysis I, Fall 2016

Syllabus

Instructor: Arthur J. Parzygnat

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- Office phone number: (860) 486-1282
- Office hours: Tues 4:00 PM–5:00 PM and Wed 10:00 AM–12:00 PM or by appointment

Course website: We will use HuskyCT, though I may have a static website as well.

Lecture time and location: Tuesdays and Thursdays at 9:30–10:45 AM in LH309.

Course Description: This course provides a rigorous treatment of many concepts from single variable calculus including the real number system, sequences, series, continuity, differentiation, and integration. Solving problems, discussing problems, and asking questions are key elements of learning the material effectively. The student will be expected to write a lot of proofs throughout the entire course and will learn to hone these skills. A much more detailed collection of keywords is provided in a tentative schedule at the course website. Warning: this is an intense course!

Textbook: Stephen Abbot, *Understanding Analysis* 2nd Edition, 2015. Springer. The first edition is also acceptable! In this syllabus document, this text will be referred to as [Ab]. You are expected to read the relevant sections before coming to class.

Prerequisites: The official prerequisites are MATH 2144Q or MATH 2410Q, MATH 2110Q or MATH 2130Q or MATH 2143Q, and a grade of C or better in either MATH 2142Q or MATH 2710. The student is expected to do a lot of proofs in this course and should have a good foundation for making statements and writing proofs.

Attendance/Notes: In addition to [Ab], there may be new topics introduced in lecture that are not presented in [Ab] or some concepts may be introduced slightly differently. It is therefore important that you attend all lectures. I may occasionally provide supplementary notes.

Homework: There will be a total of seven (7) or so homework assignments throughout the semester. Homework is always due at the *beginning* of class on the day it is due. Late assignments will not be accepted! If you do not finish by the deadline, submit whatever you have! Please begin the homework early! Most homework questions will come from the exercises in [Ab] though occasionally, I may add my own or use other references. You are encouraged to discuss material and homework with fellow classmates. However, you must acknowledge your collaborators and write all solutions in your own words. Clearly print your name on the top of the first page. If

there are several pages, staple them together. Please write clearly, legibly, and in an organized manner. If you type your homework, please double-side print (or re-use paper that has one blank side) or submit via HuskyCT by the time the homework is due. Proofs must be logical, concise, and to the point. Note: At least one homework assignment must be written in LaTeX. Avoid plagiarism and read (and abide by) the student code, including the section on Academic Integrity available at http://community.uconn.edu/the-student-code-appendix-a/.

Quizzes: There will be short 15 minute quizzes at the beginning of class once in a while. The questions will mostly be based on exercises in [Ab].

Exams: There will be one midterm and one final. The date of the final will be provided as soon as it becomes available to the instructor.

Grading: Attendance is mandatory because participation in class is especially important as this is a proof-based course. Habitual tardiness (which disrupts the class) and skipping of class will negatively affect your grade. The approximate distribution of grades is given in this table:

Quizzes	10%
Homework	30%
Midterm	30%
Final	30%

Grade conversion chart:

%	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	< 60
Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

More information about grades can be found at http://catalog.uconn.edu/academic-regulations/grade-information.

Secondary references: A good supplementary reference is Walter Rudin's *Principles of Mathematical Analysis* 3rd Edition, 1976, McGraw-Hill Education. Upshot: the presentation is concise and straight to the point. One should use this text as a guide for how to write concise proofs. Downside: the author assumes the reader is quite familiar with proofs. Intuition and history is rarely provided. There are other references as well, please browse to find any that are suitable for you that also cover our material. I will also try to provide my notes.

Important dates: Please refer to the academic calendar http://registrar.uconn.edu/academic-calendar/fall-2016/ for important dates (last day to drop a course, etc.).

Special accommodations: The Center for Students with Disabilities (CSD) at UConn provides accommodations and services for qualified students with disabilities. If you have a documented disability for which you wish to request academic accommodations and have not contacted the CSD, please do so as soon as possible. The CSD is located in Wilbur Cross, Room 204 and can be reached at (860) 486-2020 or at csd@uconn.edu. Detailed information regarding the accommodations process is also available on their website at www.csd.uconn.edu.

LaTeX: You are required to type at least one of your homeworks using LaTeX(LaTeX). What is LaTeX? See https://en.wikipedia.org/wiki/LaTeX and https://www.latex-project.org/ for more details or speak with me outside of class. I will upload all homework assignments with minimal LaTeXcode so that you can see what it looks like. There may also be a virtual session or a video where I teach you the basics of LaTeX.

Policy Against Discrimination, Harassment and Related Interpersonal Violence: The following is directly from UConn (http://cetl.uconn.edu/syllabus-design/): "The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the Universitys mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help." More information can be found at http://equity.uconn.edu/ and http://titleix.uconn.edu/.

Other: Calculators are unnecessary in this course. Only writing utensils are allowed on the exam. There will be no make-up exams or quizzes unless under extreme circumstances (serious illness, family emergency, religious holidays, etc.). In this event, please notify the instructor as soon as possible. In particular, the date of the midterm exam (Oct 11) may affect some of you. Please let me know immediately if this is the case!

Disclaimer: This syllabus is not set in stone and I may adjust it as I deem necessary throughout the semester. By taking this course, you acknowledge that you have read this syllabus and abide to it and any such changes.