Department of Mathematics & Statistics
Concordia University

MATH 464
Real Analysis
Fall 2025

Instructor: Dr. A. Stancu
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Lectures: Mondays and Wednesdays: 13:15-14:30.

Midterm Break: No classes between October 11 and October 17, 2025.

Office Hours: Tuesdays, 3:00-4:30 pm.

Textbooks: *Principles of Mathematical Analysis*, 3rd Edition, by W. Rudin;
Metric Spaces by E.T. Copson.
The hard-copy text can be purchased at the Concordia bookstore, https://www.bkstr.com/concordiastore/home.
Note: Students should order textbooks as early as possible, especially for printed versions in case books are backordered or there are any shipping delays.

Topics: Metric spaces: Topology, connectedness, completeness, compactness, separability, Baire category theorem, fixed point theorems, notions of dimension. Key examples of metric spaces such as Euclidean spaces, spaces of sequences, spaces of functions.

Real valued functions: Pointwise convergence, uniform convergence, equicontinuity, Arzela-Ascoli theorem, Weierstrass approximation theorem, Weierstrass's pathological function.

The Moodle page will be updated with relevant information throughout the semester. Students are expected to monitor the Moodle page regularly.

Final Grade: The grade will be calculated as the higher of the following two:
Homework 20%, Midterm Evaluation 30%, Final Evaluation 50%;
Homework 20%, Final Evaluation 80%.

If the grading scheme for this course includes graded assignments, a reasonable and representative subset of each assignment may be graded. Students will not be told in advance which subset of the assigned problems will be marked and should therefore attempt all assigned problems.

Homework will be assigned approximately every week and posted on Moodle. It is the student's responsibility to seek the assignment online and submit it by pdf upload, on Moodle). **No late assignments will be accepted. The midterm exam is scheduled for Wednesday, October 22 in class. Please be aware that a missed test cannot be made up.**

PLEASE NOTE: Students are responsible for finding out the date and time of the final exam once the schedule is posted by the Examination Office. Any conflicts or problems with the scheduling of the final exam must be reported directly to the Examination Office, **not** to your instructor. It is the Department's policy and the Examination Office's policy **that students are to be available until the end of the final exam period. Conflicts due to travel plans will not be accommodated.**

Student Services
You may wish to access the many services available to you as a Concordia student. An overview of these resources can be found here: https://www.concordia.ca/students/services.html

Academic Integrity and the Academic Code of Conduct
This course is governed by Concordia University's policies on Academic Integrity and the Academic Code of Conduct as set forth in the Undergraduate Calendar and the Graduate Calendar. Students are expected to familiarize themselves with these policies and conduct themselves accordingly. "Concordia University has several resources available to students to better understand and uphold academic integrity. Concordia's website on academic integrity can be found at the following address, which also includes links to each Faculty and the School of Graduate Studies: https://www.concordia.ca/conduct/academic-integrity.html" *[Undergraduate Calendar, Sec 17.10.2]*

Behaviour
All individuals participating in courses are expected to be professional and constructive throughout the course, including in their communications.

Concordia students are subject to the Code of Rights and Responsibilities which applies both when students are physically and virtually engaged in any University activity, including classes, seminars, meetings, etc. Students engaged in University activities must respect this Code when engaging with any members of the Concordia community, including faculty, staff, and students, whether such interactions are verbal or in writing, face to face or online/virtual. Failing to comply with the Code may result in charges and sanctions, as outlined in the Code.

Intellectual Property
Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor. Any unauthorized sharing of course content may constitute a breach of the Academic Code of Conduct and/or the Code of Rights and Responsibilities. As specified in the Policy on Intellectual Property, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

Extraordinary circumstances
In the event of extraordinary circumstances and pursuant to the Academic Regulations the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the change.