Introduction to Real Analysis
MATH 281/MTHE 281 - Winter 2015

Course description: The goal of the course is to be able to understand and calculate with sequences and series of real numbers and real valued functions. The basic problem is to expand a function into a series and then to perform operations on this series: addition, multiplication, differentiation, and integration. Along the way we shall learn how to write a mathematical proof, develop some topology of $\mathbb{R}^n$ and tools for dealing with convergence of infinite series.

Instructor: Federico Galetto, 506 Jeffery Hall, math281@mast.queensu.ca.

Office hours: Wed: 3:30 - 4:30 pm, Thu: 2:30 - 3:30 pm.

Course website: All course information, material and updates will be posted on Moodle.

Lectures: Wed: 11:30 am - 12:30 pm (Stir B), Thu: 1:30 - 2:30 pm (Stir B), Fri: 10:30 - 11:30 am (Stir A).

Textbook: Math 281, Course Notes by O. Nielsen and D. Norman; available at the Queen's bookstore.

Teaching assistant: Francois Seguin, 14fs11@queensu.ca.

Tutorials: Mon: 12:30 - 1:30 pm (127 Jeffery Hall), Tue 11:30 am - 12:30 pm (101 Kingston Hall). The tutorial sessions will present complementary material and provide help with homework and practice problems.

Grading scheme: Your mark will be determined according to the following scheme.

Homework assignments: 25% ‖ Midterm exam: 25% ‖ Final exam: 50%

Your final letter grade will be assigned using the following table.

Grade	Percentage conversion
A+	90-100
A	85-89
A−	80-84
B+	77-79
B	73-76
B−	70-72

C+	67-69
C	63-66
C−	60-62
D+	57-59
D	53-56
D−	50-52
F	49 and below

Homework assignments: There will be ten assignments (the best nine marks count). Assignments are due each Friday in class or in my mailbox by 12:30 pm. You are allowed to submit your homework as a team of up to 3 members; all team members receive the same grade. Every team is expected to submit independent work. There will also be four optional challenge problems; those who submit them, will receive an additional homework mark.

Exams: There will be one midterm exam on Thursday, February 12, 6:30 - 8:30 pm, in Chernoff Auditorium. There will be one (cumulative) final exam. More information will be provided in class and on Moodle.

Calculator: The inexpensive Casio 991 series is the only calculator approved for use during exams by arts and sciences, and engineering. (Calculators from previous years with coloured stickers will still be allowed.)

Books on reserve: The following textbooks are on reserve in Stauffer Library.

- The theory of infinite series, Bhatnagar P., QA295 B555
- An introduction to the theory of infinite series, Bromwich T., QA295 B85
- Real analysis with real applications, Davidson K. & Donsig A., QA300 D3435 (available online)
- Aspects of calculus, Klambauer G., QA303 K654
- Infinite sequences and series, Knopp K., QA295 K72
- Introduction to real analysis, Trench W., QA300 T667
- Analysis I & II, Tao T., QA300 T327

Academic integrity: Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (as articulated by the Centre for Academic Integrity, Duke University; see http://www.academicintegrity.org/) all of which are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see Report on Principles and Priorities). Queen's students, faculty, administrators and staff therefore all have ethical responsibilities for supporting and upholding the fundamental values of academic integrity.

It is your responsibility to acquaint yourself with the regulations and procedures described at http://www.queensu.ca/academicintegrity/index.html.

Disability accommodations: Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Disability Services Office (DSO) and register as early as possible. For more information, including important deadlines, please visit the DSO website at: www.queensu.ca/hcds/ds/.