

Mathematics 3790H – Analysis I: Introduction to analysis
TRENT UNIVERSITY, Winter 2012

Instructor

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office: GCS 337
Winter hours: Monday 12:00-12:50, Tuesday 13:00-13:50,
Wednesday 11:00-11:50, and Thursday 10:00-10:50,
or by appointment, or just drop by!

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[E-mail sent to my Trent address sometimes just vanishes. If it's important, send it to both.]

web: <http://www.trentu.ca/mathematics/sb/>

Department of Mathematics

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Prerequisites

Prerequisite: Mathematics 1100Y or 1101Y, with at least 60%.

Pre- or co-requisite: Mathematics 2200H, with at least 60%.

Text

Elementary Real Analysis (Second Edition), by B.S. Thomson, J.B. Bruckner, and A.M. Bruckner, classicalrealanalysis.com, 2008, ISBN 1-434841-61-8.

Parts of the text, including the sections we need for the first half of the course, may be downloaded for free in pdf format from the given web site. The entire text may be ordered in paperback form from Amazon.

Meetings

Lectures: Monday 14:00-14:50 in BL 402, Wednesday 12:00-12:50 and Thursday 11:00-11:50 in CC K1.

Seminar: Thursday 12:00-12:50 in CC K1.

Marking Scheme

There will be at least ten weekly quizzes, at least ten weekly assignments, and a take-home final examination. Quizzes will normally be written weekly in the Thursday lectures and last between ten and twenty minutes each. The final examination will be handed out two weeks before the end of classes and will be due near the end of the examination period in April. (Please consult the handout *Readings and Schedule* for a detailed list of dates.) The work will weigh as follows in the final mark:

Best 9 quizzes (2% each)	18%
Best 9 assignments (5% each)	45%
Final Examination	37%

Assignments will not normally be accepted after the due date. Students who miss more than one quiz or assignment for reasons beyond their control should contact the instructor as soon as possible. Note that there is no attendance requirement *per se*, but the consequences of missing classes are ultimately the students' responsibility to deal with.

This scheme may be modified for individual students in *exceptional* circumstances, such as a lengthy absence due to illness. Any such modification will require the agreement of both the student and the instructor.

Content

MATH 3790H is a introductory course about analysis, with an emphasis on series. We will cover parts of Chapters 1 and 2 and most of Chapters 3, 5, 9, and 10 of the text, along with with a few necessary bits and pieces from other chapters. In particular, we will work through the following:

- Order properties of the real numbers (§1.4-1.7)
- Limits and convergence of sequences (most of Chapter 2)
- Sums and convergence of series (most of Chapter 3)
- Limits and continuity (most of Chapter 5)
- Sequences and series of functions (most of Chapter 9)
- Power series (§7.12, most of Chapter 10)

Additional material, including material not in the text, may be covered on assignments and in class, and other sources will be used to augment the text in a couple of places. Please consult the handout *Readings and Schedule* for a tentative description of what material will be covered when.

Honour & Help

The obligatory statement concerning **academic integrity** reads as follows:

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's Academic Integrity Policy. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more – www.trentu.ca/academicintegrity .

For clarity, the following guidelines will apply in MATH 3790H:

Students are permitted and encouraged to study together and to work together on the assignments, consult any books or other sources you wish, and ask anyone willing (especially the instructor!) for hints, suggestions, and help. However, **students must write up all work submitted for credit entirely by themselves, giving due credit to all relevant sources of help and information. No aid may be given or received on the quizzes and final exam**, except with the instructor's permission.

In some circumstances students may also be eligible for special help or accommodation. The obligatory statement concerning **access to instruction** reads as follows:

It is Trent University's intent to create an inclusive learning environment. If a student has a disability and/or health consideration and feels that he/she may need accommodations to succeed in this course, the student should contact the Disability Services Office (Blackburn Hall Suite 132, 705 748-1281, disabilityservices@trentu.ca) as soon as possible.

Aids

Students may use whatever calculators they wish. Symbolic computation software such as Maple or Mathematica may come in handy when doing some of the assignments or to check your answers when studying. For the quizzes students may also bring an 8.5" × 11" (or A4) aid sheet, with whatever they want on written on all sides of it.

Web Page

Hopefully up-to-date information about the course and all handouts to date (in pdf) can be found at: <http://www.trentu.ca/mathematics/sb/3790H/>

Miscellaneous

“Personal response systems” such as clickers will not be used in MATH 3790H and it will make only minimal use of myLearningSystem/WebCT.

The last date to drop Fall term half-courses such as this one without academic penalty is Friday, 9 March, 2012.

Last modified 2012.01.07.