Mathematics-Computing & Information Systems 4215H – Mathematical logic
TRENT UNIVERSITY, Fall 2012

The Dean's Office thinks you should be made aware at this point that this course takes place in Peterborough.

Instructor

Stefan Bilaniuk (pronounced Стефан Біланюк)
office: GCS 337
hours: Tuesday and Fridayday 11:00-11:50, Wednesday and Thursday 12:00-12:50, or by appointment, or just drop by!
phone: 705 748-1011 x7474
home: 705 742-7862 [Do *not* call between 10 p.m. and 8 a.m. unless it's an emergency.]
e-mail: `sbilaniuk@trentu.ca` and `stefanbilaniuk@cogeco.ca`
[E-mail sent to my Trent address all too frequently vanishes. If it's important, send it to both.]
web: `http://euclid.trentu.ca/math/sb/`

Department of Mathematics

office: GCS 342
hours: weekdays 09:00-12:30
phone: 705 748-1011 x7531
e-mail: `math@trentu.ca`

Prerequisites

Prerequisite: 60% or higher in MATH–COIS 2600H, or permission of instructor.

Text

A Problem Course in Mathematical Logic, Version 1.6, Stefan Bilaniuk, 2003. It's free and can be downloaded from:

`http://euclid.trentu.ca/math/sb/pcml/`

Please see the handout *Readings & Schedule* for a tentative week-by-week schedule.

Meetings

Lectures: Wednesday 11:00-11:50 in SC W3, Thursday 11:00-11:50 in CC K1, and Friday 12:00-12:50 in CC K1.
Seminars: Friday 13:00-13:50 in CC K1.

Marking Scheme

There will be eleven weekly problem sets, with problems taken from the text, which will be mostly be due on Fridays, and a take-home final examination. The final examination will be distributed on Wednesday, 21 November, and will be due on Wednesday, 19 December. The final mark will be calculated as follows:

Best 10 problem sets (10 @7% ea.)	70%
Final examination	30%

Problem sets will not normally be accepted after the due date. Students who cannot submit work on time for reasons beyond their control should contact the instructor as soon as possible.

This scheme may be modified for students in *exceptional* circumstances. Any such modification will require the agreement of both the student and the instructor.

Web Page

Up-to-date information about the course and all handouts to date (in pdf) can be found at: `http://euclid.trentu.ca/math/sb/4215H/` MATH 4215H will make little, if any, use of Blackboard.

Content & "Learning Outcomes"

This course is an introduction to the study of logic as a mathematical object(s) in its own right. The objective is to acquire a knowledge of the basic language(s) of formal logic and techniques for analyzing their capabilities and limitations. In particular, we will cover the following topics:

1. Propositional logic: language, truth assignments, deduction.
2. Propositional logic: Soundness, Completeness, and Compactness Theorems.
3. First-order logic: languages, structures and models, deduction.
4. First-order logic: Soundness, Completeness, and Compactness. Theorems ; applications of the Compactness Theorem.

Please see the handout *Readings and Schedule* for a tentative week-by-week schedule. Depending on time and interest, other topics may come up in class or on the problem sets.

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 4215H:

You are permitted and encouraged to work together and ask anyone willing (especially the instructor!) for explanations, hints, and suggestions on the problem sets, and to consult whatever sources you wish, with the exception that **you may not consult anyone who has taken a similar course recently or their work**. However, **all work submitted for credit must be written up entirely by you, giving due credit to all relevant sources of help and information**. The restrictions for the take-home final exam will be spelled out on the exam.

In some circumstances you 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

Except as noted above, you may use whatever aids you wish.

Miscellaneous

The last date to drop Fall term half-courses such as this one without academic penalty is Tuesday, 6 November, 2012.

Last modified 2012.09.10.