

Mathematics 3820H – Mathematics from medieval to modern times

TRENT UNIVERSITY, Fall 2014

[In Peterborough!]

Instructor

Stefan Bilaniuk (pronounced Стефан Біланюк)

office: GCS 337

Fall hours: Tuesday 12:00-12:50, Wednesday, Thursday, and

Friday 11:00-11:50, or by appointment, or just drop by!

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Department of Mathematics

Tracey Horn

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hours: 08:30-12:00 & 13:00-16:00

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Prerequisites

Prerequisite: Mathematics 1100Y or 1101Y, with $\geq 60\%$, or permission of the instructor.

Recommended: Mathematics 2200H or Mathematics 2350H.

Text

A Short Account of the History of Mathematics (4th Edition), by W. W. Rouse Ball, 1908.

A version (in pdf and in T_EX) is available online (for free!) from Project Gutenberg at:

<http://www.gutenberg.org/etext/31246>

Additional readings will be assigned from other sources distributed in class or available online. Please see the handout *Readings & Schedule* for a tentative week-by-week schedule.

Meetings

Lectures: Tuesday 11:00-11:50 in OCA 206 and Wednesday 09:00-10:50 in GCS 111.

Seminars: Wednesday 12:00-12:50 in OCA 204.

Marking Scheme

There will be at least six assignments, a project (which may be a solo or group project), and a take-home final examination. The assignments will normally be due every other Wednesday; the proposal for the project will be due on Wednesday, 8 October, and the project proper will be due on Wednesday, 3 December; the final examination will be distributed on Wednesday, 19 November, and will be due on Wednesday, 17 December. The final mark will be calculated as follows:

Best 5 assignments (5 @ 7% ea.)	35%
Project proposal	4%
Project	30%
Final examination	31%

Assignments 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. Note that work worth at least 25% of the course will be marked and returned by the final date (Tuesday, 4 November, 2014) to withdraw from Fall term half-courses without academic penalty.

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

Last modified 2014.09.08.

Content & Outcomes

MATH 3820H is a survey of the development of mathematics in India, the Middle East, and Europe from medieval times to the modern era, with particular attention to the development and spread of the Hindu-Arabic number system, algebra, and the eventual development of calculus. You will be exposed to the problem of interpreting the available data (*e.g.* the priority dispute concerning the invention of calculus), and will read portions of several original sources in translation. In rough chronological order, we will consider the development of mathematics in:

1. Ancient and medieval India
2. The medieval Islamic world
3. Medieval, Renaissance, and modern Europe

Please see the handout *Readings & Schedule* for a tentative week-by-week schedule. Note that additional material may be covered on the assignments and projects.

Academic Integrity

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 3820H:

You are permitted and encouraged to work together and ask anyone willing (especially the instructor!) for explanations, hints, and suggestions on the assignments and projects, 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** (with the exception of group projects), **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. Except as noted on particular assignment questions, and with the restrictions noted above, you may use whatever aids you wish.

Access to Instruction

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 Student Accessibility Services Office (SAS), Blackburn Hall Suite 132, 705 748-1281, accessibilityservices@trentu.ca. For Trent University in Oshawa Student Accessibility Services Office contact 905 435-5102, ext. 5024. Complete text can be found under Access to Instruction in the Academic Calendar.

Web Page

This course will make little, if any, use of Blackboard. Information about the course and all handouts to date will be posted to: euclid.trentu.ca/math/sb/3820H/