Mathematics 1001H – Precalculus Mathematics

Trent University, Summer 2016 *[In Peterborough!]*

Instructor

Stefan Bilaniuk (pronounced Стефан Біланюк)
office: GCS 337
Office hours: Tuesday & 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 9 p.m. and 8 a.m. unless it's an emergency.]
e-mail: sbilaniuk@trentu.ca [E-mail sent to my Trent address sometimes disappears. If it's important, call!]
web: euclid.trentu.ca/math/sb/

Department of Mathematics

office: GCS 346
hours: 08:30-12:30 & 13:30-16:30
phone: 705 748-1011 x7531
e-mail: math@trentu.ca

Prerequisite

Any Grade 11 U or U/C mathematics course or equivalent.

Text

Precalculus: A Prelude to Calculus (2nd Edition), by Sheldon Axler.
Wiley, 2013, ISBN-13: 978-0-470-64804-9.

Meetings

Tuesday & Thursday 09:00-11:50 in GCS 106 during the S61 six-week summer term (9 May – 16 June).

Marking Scheme

There will be at least 10 quizzes, at least 5 assignments, a test, and a final examination. The final mark will be calculated as follows:

Best 9 quizzes (9 @ 3% each)	27%
Best 4 assignments (4 @ 6% each)	24%
Test	15%
Final examination	34%

Please see the section *Schedule* below for the dates work will be written or due. Note that work worth at least 25% of the course should be marked and returned by the final date (Thursday, 2 June) to withdraw from the course without academic penalty. Also, please note that late work will be accepted – or not – at the discretion of the instructor.

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

Content & Learning Outcomes

By the end of the course a successful student should be able to:

1. Understand notations and the algebraic properties of real numbers.
2. Manipulate elementary linear inequalities and equations.
3. Establish the concept of functions with different forms.
4. Sketch graphs of functions and evaluate their values.
5. Solve problems involving polynomial and rational functions.
6. Solve problems involving exponential and logarithmic functions.
7. Solve problems involving trigonometry.
8. Solve simple sequences and series.
9. Formulate mathematical models as applications of functions.

Schedule

Since no lesson plan survives contact with actual students unchanged, this schedule is a polite fiction where the material covered is concerned.

Week 1. *(9–13 May.)* Rational and real numbers. Functions and their graphs. Quiz #1 written on Thursday, 12 May.

Week 2. *(16–20 May.)* Polynomial and rational functions. Exponential and logarithmic functions. Quiz #2 written on and Assignment #1 due on Tuesday, 17 May; Quiz #3 written on Thursday, 19 May.

Week 3. *(23–27 May.)* Trigonometric functions. Quiz #4 written on and Assignment #2 due on Tuesday, 24 May; Quiz #5 written on Thursday, 26 May. *University closed on Victoria Day: Monday, 23 May.*

Week 4. *(30 May – 3 June.)* Analytic geometry. Test written on and Assignment #3 due on Tuesday, 31 May; Quiz #6 written on Thursday, 2 June. *Thursday, 2 June, is the last day to drop the course without academic penalty.*

Week 5. *(6–10 June)* Trigonometric algebra and geometry. Applications of trigonometry. Quiz #7 written on and Assignment #4 due on Tuesday, 7 June; Quiz #8 written on Thursday, 9 June.

Week 6. *(13–17 June.)* Sequences and series. Systems of linear equations. Quiz #9 written on and Assignment #5 due on Tuesday, 14 June; Quiz #10 written on Thursday, 16 June.

Examination period. *(17–18 June.)* The final examination will be written at a time and location to be determined.

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 this instance of MATH 1001H:

You are permitted and encouraged to work with others and ask anyone willing (especially the instructor!) for explanations, hints, and suggestions on the assignments, and to consult whatever sources and use whatever tools you wish. However, **all work submitted for credit must be written up entirely by yourself, giving due credit to all relevant sources of help and information. For the quizzes, test, and final examination you may not give or receive any help, nor use any aids apart from a calculator and a letter-size or A4 aid sheet** (with whatever you want on it), except as explicitly permitted by the instructor.

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, `sas@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 at most minimal use of Blackboard, and perhaps none at all. A web page at `euclid.trentu.ca/math/sb/1001H/` will have hopefully-up-to-date information and all handouts.