

CSC165: Mathematical Expression and Reasoning for Computer Science Winter 2015

Instructors:

MWF 11-noon:

Bahar Aameri, bahar@cs.toronto.edu

Office hours: Friday 12:30-1:30pm & 3:30-5pm in BA4261

MWF 2-3pm:

Dr. Jing (Lisa) Yan, lyan@cs.toronto.edu

Office hours: Wednesday 3-5 in BA4261

Course website: www.cdf.toronto.edu/~csc165h/winter

Lecture slides will be posted on weekly basis**.

**** All announcements will be made through the course web page and it is your responsibility to visit it frequently.**

Course Materials:

There is no required textbook for this course. Instead, we offer you course notes authored by several instructors of this course.

Syllabus topics:

- Logic and expression
- Proof techniques
- Complexity, program running time
- Halting problem and computability

Evaluation:

- 10%: 8 quizzes (1.25% each)
- 30%: 3 assignments (10% each)
- 20%: 2 term tests (10% each)
- 40%: a 3-hr final examination

In order to pass the course, you need to pass the final examination (**obtain 40% or more of the final marks**).

Tentative course weekly plan and tentative due date:

January:

Week 1: Introduction, precision, quantifiers, verify/falsify

Week 2: More quantifiers, symbols, sentences, negation
(A1 out) Quiz

Week 3: Conjunction, disjunction, implication
Quiz

Week 4: Implication/disjunction, mixed quantifiers, proof
(A1 due) Quiz

February:

Week 5: Contradiction, existence, sequences
(Term test 1)

Week 6: Cases, multiple quantifiers
(A2 out) Quiz

Week 7: **Reading week**

Week 8: Limits, Sorting algorithm complexity, big-Oh
Quiz

March:

Week 9: Counting steps, worst-case, formal big-Oh
(A2 due) Quiz

Week 10: Big-Oh of polynomials, non-polynomials, limits
(Term test 2)

Week 11: Big-Omega, Big-Theta, general properties
(A3 out) Quiz

Week 12: Halting problem, computability
Quiz

April:

Week 13: Computability, final review
(A3 due)

Week 14: No class

Week 15-16: Final exam

Summary:

Lectures are Monday, Wednesday, and Friday 11-12, 2-3.

There will be eight 90-minute tutorials for you to work through published exercises with your teaching assistant, and then take a brief quiz based closely on the exercises.

Course work includes the following:

- 35 lecture hours
- 8 tutorials (with quizzes: 1.25% each) 10% subtotal
 - Weeks 2, 3, 4, 6, 8, 9, 11, 12
- 3 assignments (10% each) 30% subtotal
 - A1: Due on Jan 30, 11:59pm
 - A2: Due on Mar 06, 11:59pm
 - A3: Due on Apr 02, 11:59pm
- 2 term tests (10% each) 20% subtotal
 - Test 1: Feb 03 or Feb 05, in tutorial
 - Test 2: Mar 10 or Mar 12, in tutorial
- 3-hr final examination (40%)- TBD

Assignments submission:

PDF submission on MarkUs (<https://markus.cdf.toronto.edu/csc165-2015-01>)

Late work & re-marks:

One time 24-hour grace period with no penalty. You can use this only once towards any of the three assignments, according to your own reasons.

The grace period will not be used toward missed deadlines that are due to valid and documented reasons.

If you feel a piece of your work has been graded unfairly, please submit a written re-mark form within a week of receiving the work back.

Discussion board:

General questions about the course or assignments should be submitted to the discussion board (<http://piazza.com/utoronto.ca/winter2015/csc165>).

The discussion board will be monitored by TAs and instructors, but can also be used for discussion among students.

You may not discuss the assignment solutions until 24 hours after the due dates.

Email policy:

Please put 165 in the subject line, and use your utoronto.ca or cdf.toronto.edu email address.

Email response time may be 24 hrs or longer; if you do not hear back as your expectation, come to the weekly office hour. Compose a short message and clearly describe a single topic. An open-ended question, such as: what's wrong with this proof, is recommended for office hour or tutorial sessions.

Important Administrative Dates :

- Feb 17-20: Reading week
- Mar 8: Last day to drop S course
- Apr 2: Classes end. All term work due.
- Apr 08-30: Final exam period

Plagiarism:

Plagiarism—or simply, cheating—is taken to be the handing in of work not substantially the student's own. It is usually done without reference, but is unacceptable even in the guise of acknowledged copying. It is reprehensible, and the penalty will be severe.

It is not cheating, however, to discuss ideas and approaches to a problem, nor is it cheating to seek or accept help with a program or with writing a paper. Indeed, a moderate form of collaboration is encouraged as a useful part of any educational process. Nevertheless, good judgment must be used, and students are expected to present the results of their own thinking and writing. Never copy another student's work—it is plagiarism to do so, even if the other student "explains it to you first." Never give your written work to others. Sharing work with others for the purposes of plagiarism is also a violation. Do not work together to form a collective solution, from which the members of the group copy out the final solution. Rather, walk away and recreate your own solution later. If you are really stuck on a problem, don't panic...just come and talk to the instructor or one of the TAs. For details on the meaning of plagiarism and how it is dealt with at this university, see:

<http://www.cs.toronto.edu/~fpitt/documents/plagiarism.html>