

# Course Information Sheet: CSC200Y – 2015/16

## Instructor

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To contact the instructor about course material, please use the email address: [instr200y@cs.toronto.edu](mailto:instr200y@cs.toronto.edu). See the course web page for more on communication.

## Course Web Page and Discussion Board

Please see the course web page which provides more details about the course than in this handout; the web page will be updated frequently:

<http://www.cdf.toronto.edu/~csc200y/fall>

Please consult the web page frequently for materials and important announcements. The course discussion board will also be used for announcements and discussion of various topics. It is also the preferred forum for asking questions about class material (or other topics) that are likely to be of general interest to the class.

## Topics

CSC200Y provides an informal, yet rigorous treatment of a variety of topics in social and economic networks. It will introduce relevant background in graph theory, social network formation, incentives, game theory and social choice. It will also provide exposure to the relevant mathematical and informal computational tools required to analyze these various network phenomena. Specific topics include: structural analysis of social networks, homophily, segregation, matching markets, web structure, web search and link analysis, auctions and online advertising, information cascades, network externalities and tipping points, power laws and popularity, recommender systems, diffusion models, small world phenomena, epidemic spread, and voting systems, among other possible topics.

## Textbook

The textbook for CSC200 is *Networks, Crowds, and Markets: Reasoning About a Highly Connected World*, Cambridge University Press, 2010, by Easley and Kleinberg. This will be the main source for the course. You will also need to rely on lecture material. For topics not covered in the text, we will provide more

detailed lecture notes for your reference. For an online version of the book, see: <http://www.cs.cornell.edu/home/kleinber/networks-book/>

### Prerequisites

The course has no university-level prerequisites, requiring only high school mathematics (one OAC/U math). However, we will assume a basic understanding of discrete probability theory (relevant concepts will be reviewed in the course and pointers provided to suitable tutorial resources for those who want to brush up). Very occasionally we will touch on basic concepts from calculus to explain certain phenomena, but no working familiarity with calculus is needed to take the course.

### Course Evaluation

Course evaluation will be based on four assignments, eight relatively short in-tutorial quizzes, two in-tutorial mid-term tests, and one final examination. The grading scheme is as follows:

- Assignments (4): 48% (12% each)
- Quizzes (8): 16% (2% each)
- Tests (2): 16% (8% each)
- Final Exam: 20%

**Please note:** We may adjust one or two assignment or test dates below as the course proceeds. This will only be done after consultation with the class and with advance notice.

**Assignments** There will be four assignments given over the year. None will involve programming, but some may involve the use of installed software to work with or visualize specific network phenomena in action. The scheduled due date (reasonably fixed for the fall term) for the assignments are:

- Assignment 1: due Oct. 16, 2015
- Assignment 2: due Nov. 25, 2015
- Assignment 3: due Feb. 10, 2016
- Assignment 4: due March 30, 2016

Assignments will be due at the beginning of class unless stated otherwise. **Late assignments will not be accepted.**

**Quizzes** There will be eight quizzes. These will be held at the beginning of tutorials and will be approximately 15-20 minutes in length. They will be intended to test your understanding of the material and will require that you keep up with the course readings. They are not intended to be as difficult as the midterm tests. The scheduled dates for quizzes are:

- Oct. 2, 2015
- Oct. 23, 2015
- Nov. 13, 2015
- Dec. 4, 2015
- Jan. 15, 2016
- Feb. 5, 2016
- March 11, 2016
- April 1, 2016

Quiz dates will be confirmed at least two weeks in advance.

**Midterms** There will be two midterm tests of 50 minutes duration. These will be held in tutorial. They are currently scheduled for:

- Nov. 27, 2015
- Feb. 12, 2016

Midterm dates will be confirmed at least three weeks in advance.

**Final Exam** There will also be a final examination at the end of the course to be scheduled by the registrar.

**Other Policies** Detailed information in our remarking policy, cheating and collaboration policy, email/communication policy, and other issues can be found on the course web site.