

COSC 018 – NETWORKS, CROWDS, AND MARKETS

COURSE SYLLABUS

Instructor: Ray Essick

Office Hours: By appointment
342C St. Mary's Hall
ray.essick@georgetown.edu

Textbooks: *Networks, Crowds, and Markets: Reasoning About a Highly-Connected World* by David Easley and Jon Kleinberg. Available online at <http://www.cs.cornell.edu/home/kleinber/networks-book/networks-book.pdf> (paper copies also available on, e.g., Amazon)

COURSE DESCRIPTION

This course explores the impact of "connectedness" of modern society. Social, technological and natural interactions can be represented using links in a network formed by people and other entities. This network impacts many phenomena, including the manner in which opinions and epidemics spread through society. This course will explore topics such as spread of opinions, the small-world phenomenon, robustness and fragility of financial markets, and the structure of the Web.

Prerequisite: None.

COURSE OBJECTIVES

Students passing this course will be able to ...

1. Understand the basics of graph theory and network analysis.
2. Understand the basics of game theory.
3. Apply both graph theory and game theory to real-world networks and other information systems.

POLICIES

- Please turn off cell phones during class.
- I will do my best to respond promptly to any emails about the course; to aid in a speedy reply, please put the course number (COSC 018) in the subject of your e-mail so I can find it quickly.
- Behave civilly: don't be late for class; don't read newspapers/blogs/etc. during class; don't solve Sudoku puzzles during class; don't struggle with crossword puzzles during class; respect others' opinions, even if they are clearly wrong.
- Adhere to good scientific principles and practices, and uphold the Georgetown Honor System.

Academic Integrity

Academic integrity is central to the learning and teaching process. Students are expected to conduct themselves in a manner that will contribute to the maintenance of academic integrity by making all reasonable efforts to prevent the occurrence of academic dishonesty. Academic dishonesty includes (but is not limited to) obtaining or giving aid on an examination, having unauthorized prior knowledge of an examination, doing work for another student, and plagiarism of all types, including looking at or copying another student's code.

Plagiarism is the intentional or unintentional presentation of another person's idea or product as one's own. Plagiarism includes, but is not limited to the following: copying verbatim all or part of another's written work; using phrases, charts, figures, illustrations, code, or mathematical / scientific solutions without citing the source; paraphrasing ideas, conclusions, or research without citing the source; and using all or part of a literary plot, poem, film, musical score, or other artistic product without attributing the work to its creator. Students can avoid unintentional plagiarism by following carefully accepted scholarly practices. Notes taken for papers and research projects should accurately record sources of material to be cited, quoted, paraphrased, or summarized, and papers should acknowledge these sources in footnotes.

In short, do not cheat. Dealing with cheating is by far the worst part of a professor's responsibilities, and it's one that we would greatly like to avoid. **If you are caught cheating, you will be referred to the Honor Council, without exception.** It doesn't matter if you plagiarized one part of one answer in a homework assignment or outsourced your entire semester project to www.willdoyourprojectforcupcakes.com. Telling us that we're ruining your future/career/life will make us feel wicked bad, but won't stop us from referring you to the Honor Council.

Ignorance of Georgetown's [Standards of Conduct](#) is not an acceptable excuse for academic dishonesty. You are expected to be familiar with and abide by these standards.

Bottom Line: If you are unsure whether something is permissible, ask us beforehand.

GRADING

Homeworks	60%
Midterm exam	15%
Final exam	25%

NOTE: I reserve the right to change content in the syllabus with one's notice.