University of Illinois at Chicago Spring 2019
CS 594 — Economics and Computation
Course Syllabus

Room: SH220
Time: TR 2:00 – 3:15 PM
URL: https://www.cs.uic.edu/~iankash/courses/SP19/CS594/CS%20594%20Schedule.htm

Staff

Instructor: Prof. Ian Kash
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Office Hours: TR 3:15-4:15 PM

Course Objectives

In this course, students will become broadly familiarized with research topics at the interface between economics and computer science through reading and discussing important papers. The course is self-contained and does not assume prior economics background, so there will also be a lecture component covering the basics of the relevant mathematical techniques from economics. Upon completion of this course, students will have a foundation for further research using economic techniques, both in computer science broadly and as applied to their specific research interests.

Textbooks (Optional)

Noam Nisan, Tim Roughgarden, Eva Tardos, Vijay V. Vazirani editors. Algorithmic Game Theory. Cambridge University Press, 2007. A pdf of this book is **freely available online**. URL: https://www.cambridge.org/us/academic/subjects/computer-science/algorithmics-complexity-computer-algebra-and-computational-g/algorithmic-game-theory?format=HB (look under resources)

Yoav Shoham and Kevin Leyton-Brown. Multiagent Systems: Algorithmic, Game-Theoretic, and Logical Foundations. Cambridge University Press, 2009. A pdf of this book is **freely available online**. URL: http://www.masfoundations.org/download.html

Prerequisites

Mathematical maturity

Tentative Schedule

Posted on the course website

Exams

This course does not have an exam.

Grading Criteria

The grading for the course will be based on two equally weighted components. The first is participation, which covers both preparation (studying the assigned reading for the day in advance of class) and attendance and active participation in the class discussion. Initially, preparation will be tracked via participation on Piazza, but this is subject to change as necessary.

The second is a course project. This is intended to be done in a group of 2-3 students and has 3 deadlines. The first, Friday March 1, is to propose a research area and approximately 3 papers to be read on it. I will be available for discussion in advance of this and will either approve the topic or schedule a meeting to discuss modifications. Topics can be drawn either from a deeper exploration of a topic related to those we discuss in the course (the list of further readings may be useful for this) or as an application of techniques related to the course to your own existing research interests. The second, Friday April 5, is to turn in an approximately 10-15 page single spaced report discussing the research area, describing and critiquing the papers read, and proposing an original research question for further exploration. In the final week of class each group will make a short presentation about their results and turn in a final report by Friday May 3 of approximately 15-25 single spaced pages. This should be an expansion of the initial report discussing the progress made on the research question.

Religious Holidays

Students who wish to observe their religious holidays shall notify the faculty member by the tenth day of the semester of the date when they will be absent. The faculty member shall make every reasonable effort to honor the request, not penalize the student for missing the class, and if an examination or project is due during the absence, give the student an exam or assignment equivalent to the one completed by those students in attendance. If the student feels aggrieved, he/she may request remedy through the campus grievance procedure.

Policy on Academic Integrity

Academic dishonesty will not be tolerated. Please see the CS department policy below on the topic; this policy specifies penalties for violations.

What is academic dishonesty? To hand in any work which is not 100% the student's creation, unless you are explicitly allowed to do so. Thus:

1. **Exams.** All work on all exams must be individually performed.

2. **Homework:** no student may give any other student any portion of their solutions or code, through any means. Students are not allowed to help each other debug the code, or to show each other any portions of code or homework. Exceptions for closer collaboration are only allowed if EXPLICITLY stated in the homework assignment itself.

Important Note: almost every semester somebody is caught red-handed and as a consequence fails the class. Isn't it better to get a B or a C than an F?

CS department policy on academic dishonesty

The CS Department will not tolerate cheating by its students. The MINIMUM penalty for any student found cheating will be to receive an F for the course and to have the event recorded in a department and/or College record. The maximum penalty will be expulsion from the University.

Cheating includes all the following, though this is not a complete list:

- Copying or any other form of getting or giving assistance from another student during any test, quiz, exam, midterm, etc.

- Plagiarism–turning in writing that is copied from some other source.

- Obtaining solutions to homework by posting to the Internet for assistance, purchasing assistance, obtaining copies of solutions manuals for instructors, and obtaining copies of previous year's homework solutions.

- Computer programs: Any time you look at another student's code, it is cheating. (Exception: If you are EXPLICITLY told that you may do so by the instructor.)

For computer programs, if for some reason we cannot determine who copied from whom, we may, at our discretion, give failing grades to both students.

It is the responsibility of all engineering and computer science professionals to safeguard their company's "trade secrets." An employee who allows trade secrets to be obtained by competitors will almost certainly be fired. So, YOU are responsible for making sure that your directories have permissions set so that only you can read your files, for being sure to log out at the end of working in the computer lab, etc.