

CS-0288: Programming Game Theory

COURSE INFORMATION

Instructor(s):

Lee Spector

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Office Extension: x5352

Office Hours:

Regular office hours: Tuesdays and Thursdays, 2:30-3:45, and Wednesdays 1:00-2:30. I am available at many other times as well; feel free to contact me in person or via [email](#) to arrange other meeting times. Sign up for regular office hours and advising day meetings [here](#).

Term:

2019S

Meeting Info:

Tuesday 01:00 PM - 02:20 PM Adele Simmons Hall (ASH) 126

Thursday 01:00 PM - 02:20 PM Adele Simmons Hall (ASH) 126

Description:

In this course we will read primary literature on mathematical models of conflict and cooperation (game theory), and we will write computer programs to replicate reported results and explore related hypotheses. We will also discuss applications of game theory in many areas, possibly including economics, politics, war and peace, responses to climate change, and evolutionary biology. Prerequisite: Strong computer programming skills.

Course Objectives:

- To engage in scientific inquiry, using computer programming to explore game theory.
- To understand and to be able to navigate current research literature.
- To work collaboratively with classmates.

Evaluation Criteria:

- On-time attendance. Necessary lateness or absences must be explained, preferably in advance.

- Active participation in all class activities.
- On-time completion of all assignments, which will involve reading, literature searches, and programming, among other activities.
- A portfolio containing notes on readings, program code, and documentation of all work done for the class, updated continuously and resubmitted every Thursday.

Additional Info:**MATERIALS**

All necessary materials will be distributed in class or on this site.

COURSE STRUCTURE

1. Introduction to game theory
2. First programming assignment
3. Evolution of tag-mediated altruism
4. Project cycle (repeated **n** times):
 - Find/present/discuss abstracts and project ideas
 - Project work
 - Presentations

PROGRAMMING LANGUAGES AND SKILL DEVELOPMENT

You may work in any programming language or languages. You are encouraged also to explore and to learn new languages and to develop new programming skills, but you should devote no more than half of your programming time to such activities. You should devote at least half of your programming time to using skills that you have already acquired for project work related to the course.

WORK TIME EXPECTATIONS

In this course, students are expected to spend six to eight hours per week in preparation and work outside of class time. This time includes reading course materials, searching the research literature, and engaging in project work.

HOW TO GET AN EVALUATION FOR THIS COURSE

1. Attend every class and participate in all discussions and other activities.
2. Do all of the reading and complete all of the assignments on time.
3. Resubmit your updated portfolio every Thursday.

You should not expect to receive an evaluation unless you have met these expectations, or unless the ways in which you fall short are: 1) minor and/or unavoidable (e.g. because of illness), AND 2) well-explained both when the lapses occur and in your final self evaluation. If you are ever in doubt about your status in the class vis-a-vis evaluation then come talk to me.

INCOMPLETES

Course incompletes are restricted and governed by College policy, and will be negotiated on an individual basis.

ILLNESS

If you have a fever, please stay home, take good care of yourself, and contact me by email or phone. If your illness makes it impossible for you to meet the course deadlines then contact me and we will negotiate an accommodation.

A "RESPONSIBLE EMPLOYEE"

Text from the Dean of Faculty

A "Responsible Employee" is any Employee who is not a Confidential or Private Employee. Responsible Employees include Faculty, Staff and Resident Advisors, Teaching Assistants, EMTs and all other student employees when disclosures are made to any of them in their capacities as employees. As a faculty member, I am required to immediately report to the College's Title IX Coordinator all relevant details (obtained directly or indirectly) about Sexual Misconduct Violations or potential violations that involve a College Student or Employee as a Complainant or Respondent, including dates, times, locations, and names of parties and witnesses. If a Complainant requests (a) that personally-identifying information not be shared with the Respondent, (b) that no investigation be pursued, and/or (c) that no disciplinary action be taken, the College will seek to honor this request unless there is a health or safety risk to the Complainant or to any member of the College community. Section VI IA. of the Policy provides additional information about remedial and protective measures.

Responsible Employees are not required to report information disclosed (1) at public awareness events (e.g., "survivor speak-outs", candlelight vigils, protests, or other public forums in which students may disclose Sexual Misconduct Violations; collectively "Public Awareness Events"; or (2) during an individual's participation as a subject in an Institutional Review Board-approved human subjects research protocol ("IRB Research"). The College may provide information about Title IX rights and about available College and community resources and support at Public Awareness Events, however, and Institutional Review Boards may, in appropriate cases, require researchers to provide such information to all subjects of IRB research.

ACADEMIC DISHONESTY: PROCEDURES FOR DEALING WITH VIOLATIONS

Text from the Dean of Faculty

Academic dishonesty (plagiarism (presentation of another's work as one's own), fabrication, or falsification of data) is a breach of the ethics of scholarship and a violation of one of the central norms of an academic community. Because reports of academic dishonesty are most likely to arise from work done in a course or for

a divisional project, a member of the college faculty usually brings forward the report. When such a report is brought forward, the procedure is as follows:

The faculty member will inform the student and the School dean that a violation of academic honesty may have occurred. The School dean will inform the dean of advising of the violation. The faculty member will provide all documentation to the dean of advising, who will meet with both the student and faculty member, and recommend a course of action. If the dean of advising determines that it is more likely than not that academic dishonesty has occurred and determines that it is a first offense, the dean of advising will:

- Write a letter of warning to the student, to remain in the student's academic file;
- In consultation with the faculty member and the School dean, determine academic consequences that may include but are not limited to submitting a revised or new assignment; no evaluation given for the course regardless of add/drop/withdrawal deadlines or, in the case of Division III work, a decision to set aside the project in question and require the student to do an alternative project on a different topic with a different committee (unless the committee concerned agrees to continue working with the student).

Additional text specific to this course

In this course we will often be sharing and borrowing code. This is an important aspect of the course and an important aspect of modern programming practice. This does not mean, however, that it is acceptable to submit code that is not your own without acknowledging sources. Sources should be clearly and explicitly provided in everything that you produce.

OFFICE OF ACCESSIBILITY RESOURCES AND SERVICES (OARS)

Text from the Dean of Faculty

Hampshire College offers services on an individual basis to students with documented disabilities. The College recognizes its obligation under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 to provide reasonable accommodations for individuals with disabilities so they may participate as fully as possible in the College's academic programs. Disabilities may include, but are not limited to, sensory impairments, mobility impairments, chronic illnesses and medical disabilities, learning disabilities, developmental disabilities and psychological disabilities. The director of OARS is responsible for the coordination of services and accommodations for students with disabilities. Accommodations may be provided by OARS directly, but often accommodations are implemented in collaboration with faculty or other relevant campus offices and services. OARS may be reached at 413.559.5498 or via email: accessibility@hampshire.edu.

 Announcements

 Portfolios