



Math 19
Section 01

Mathematics of Social Choice
Course Information

Spring 2015

Instructor: [Sarah Bray](#)

Time: Block D+, Tues Thurs 10:30 - 11:45 am

Office Hours: (subject to change) Wed 10:30 am - 12:00 pm, Tues/Thurs 11:45 am - 12:30 pm

Office: [Robinson Rm. 154](#)

Email: sarah.bray@tufts.edu

Course Website: <http://courses.math.tufts.edu/math19/bray>

Text: Christoph Börgers, **Mathematics of Social Choice**, Society for Industrial and Applied Mathematics, Philadelphia, 2010. (ISBN-13: 978-0-898716-95-5)

There are two copies of the text on reserve in Tisch Library.

Description: We will cover three topics around the general theme of social decision-making and resource allocation: fair voting, fair compensation, and fair division.

Homework: Homework will be assigned during each class meeting and should be done before the next class. It will not be collected or graded. Complete or partial answers to many problems are in Appendix D of the text. You can ask questions about the homework during office hours or by email.

Quizzes: There will be two ten-minute quizzes a week at the beginning of class. You will not be given extra time if you arrive late. Each quiz will be graded out of 10 points. **There will be no make-up quizzes.** An unexcused absence from any quiz will be counted as a zero. You may be excused for serious reasons only (example: medical reasons with documentation). Should you have a serious but foreseeable conflict with one of the quizzes, you are obligated to contact me as soon as you become aware of it. I will determine whether or not you will be excused from the quiz. If you are not excused, then you must take the quiz during the first ten minutes of class or it will be counted as a zero. If you fail to inform me well in advance of a foreseeable conflict and then miss the quiz, it will be counted as a zero.

The quizzes will determine 50% of your course grade; please see [Grading](#) for complete details.

Exams: There will be one midterm exam covering voting and a final exam covering compensation and fair division. The midterm exam will be in class, on Tuesday March 3. The final exam will be on [Monday May 4, 7:00 pm](#). You must be there; **there will be no make-ups** for any exams. Please arrange your travel plans accordingly. Each of the two exams will determine 25% of your course grade; see [Grading](#) for complete details.

Grading: Your two lowest quiz grades will be dropped. The remaining quiz grades will be averaged. Your final grade is computed as

$$\text{Final grade} = .50 \times \text{Quiz average} + .25 \times \text{Exam 1 score} + .25 \times \text{Exam 2 score}$$

Attendance: is essential. **Each lecture in this course depends on understanding all preceding lectures.** Missing even one class may make it impossible for you to understand subsequent lectures. Missing classes also makes it impossible for you to do quizzes, which constitute 50% of your total grade. If you do miss a class, you should get the notes from one or two classmates, read the pertinent section of the text, and do the homework **before** seeing me for questions, and **before** the next class meeting.

Calculators are not allowed in quizzes and exams.

Academic honesty: You are required to sign your exam book. With your signature you are pledging that you have neither given nor received assistance on the exam. Students found violating this pledge will receive an F in the course and will be reported to the Dean of Students. Cheating on quizzes will be dealt with similarly.

Learning objectives: The NEASC accreditation process requires us to specify learning objectives on syllabi. The relevant ones for this course include 1c, 1e, 2a, and to a lesser extent, 2b, 3a, and 3b on the list of mathematics undergraduate learning objectives at

<http://ase.tufts.edu/faculty/committees/objectives/math.htm>.

Student Accessibility Services: If you are requesting an accommodation due to a documented disability, you must register with the Student Accessibility Services Office at the beginning of the semester. To do so, call the Student Services Desk at (617) 627-2000 to arrange an appointment with Linda Sullivan, Program Director of Student Accessibility Services.

Important dates:

- Wednesday, January 28: Last day to add a class.
- Wednesday, February 18: Soph., Jr., Sr – Last day to request pass/fail or withdraw without a W.
- Tuesday, March 3: Midterm Exam** (in class)
- Monday, April 27: Last day to withdraw with a W.
- Monday, May 4: Final exam** (7:00 pm)