Math 390: Honors Seminar (Social Choice)
Fall 2012
TF: 12:30 – 1:45 BNW 469

Instructor Chris Staecker
Email: cstaecker@fairfield.edu
Phone: x3323
Office: BNW 16
Office Hours: T 9–9:30, 11–12:30, W 12–3 (usually), F 9–9:30, 11–12:30
or by appointment

Course Website Follow links from `http://faculty.fairfield.edu/cstaecker`

Textbooks *Mathematics of Social Choice* by C. Börgers
A Primer in Social Choice Theory by W. Gaertner

Course Description

The topic for this fall's seminar will be "Mathematics of Social Choice". Major topics will be voting, fair sharing of a divisible object (like a cake) among several competing parties, and fair portioning of sets of indivisible objects (like a bag of haloween candy). Specifically, we'll discuss things like: the ambiguities and paradoxes which arise when trying to devise a "perfect" voting system, and various methods for fair division in several contexts. Voting and fair division problems have been of serious interest to mathematicians since the mid 20th century, and major advances are still being made today.

Seminar talks

After the first class meeting, 100% of the class time will be devoted to student presentations of the course material. It is each student's responsibility to read the relevant sections from the textbooks and present to the other students.

Of the 75 minutes for each scheduled meeting, two students will present for 35 minutes each, with a 5 minute break in between. The two students scheduled on each day should communicate with each other about what topics the first will present, so the second can begin at the appropriate point.

Each talk will be graded by the professor for mathematical correctness and speaking style according to a rubric to be distributed with the syllabus.

Homework

Four or five times during the semester, students will complete exercises from the texts to by typed and handed in. Each class meeting has one student designated as the "victim", who will solve exercises from the topics presented on that day. The solutions will be typed and handed in at the next class meeting.

For each assignment the student will present three exercises of their choosing from our texts, one which they believe to be "easy", one "medium", and one "hard". If any student is unsure of the difficulty of the problems they are encouraged to ask the professor for advice.

Homework will be typed using LATEX, the industry standard for mathematical typesetting. Grading will be based on correctness of the solutions and clarity and style of writing according to a rubric to be distributed with the syllabus.

Homework may be handed in for full credit at any time on the due date. Late homework assignments (without good excuse) will lose 1/3 credit per calendar day elapsed since the due date.

Grading

Your course grade will be inspired by the following average:

Homework	33%
In-class presentations	66%

Attendance

All students are required to attend every class meeting. Each unexcused absence will reduce a student's overall semester average by 1.5%. "Had to go home early for break" is usually not an acceptable excuse.

Titular nomenclature

You may address the professor as "Papa Staecker," "Sergeant Staecker," "Dr. Staecker," "Professor," "Professor Staecker," or "Chris." I consider these options to be: ridiculous, technically incorrect, technically correct yet overly formal, acceptable, appropriate, and preferred, respectively. Please do not address me simply as "Staecker."