

Social Choice Theory (Econ 211)
(With focus on voting theory)
Spring 2013
Monday and Wednesday 10:30 – 11:50am at McNeil xxx.
Instructor: SangMok Lee

Course Logistics

Office hours: Thursday 1-3pm (McNeil 462)
Email: sangmok-at-sas.upenn.edu

Teaching Assistant: Ilwoo (Iru) Hwang
TA Office Hours, Class Websites: TBA

Please check website regularly for announcements, class handouts, notes, homework assignments etc.

Update: No Class on Mar 13. Office hours on Mar 14 will be 1-3pm on Mar 11.

Course Description

Summary: The course will provide an introduction to social choice theory, which is a formal analysis of the problem of preference aggregation in general, and of alternative voting rules.

Prerequisites: Econ 101 (Intermediate Micro Theory), Math 104 and either Math 114 or Math 115 (Calculus Part I and II). Second half of the course will use Game Theory. I highly recommend you to take Econ 212 (Game Theory) as well.

Textbooks: I recommend the following textbooks, though they are not required. There will be lecture notes, supplemented by papers and handouts.

Recommended textbook:

- *Social Choice Theory: An Introduction*. Springer-Verlag. 1988, by Jerry S. Kelly. (Out-of-Print. Reserved in the Van Pelt Library. Used copies are available from Amazon.)

- *Liberalism Against Populism: A Confrontation Between the Theory of Democracy and the Theory of Social Choice*. San Francisco: W. H. Freeman and Company, by William H. Riker. (Reserved in the Van Pelt Library. Available in Penn bookstore.)

Other textbooks:

- *A Primer in Social Choice Theory*. Oxford University Press, Revised Edition, 2009, by Wulf Gaertner.

- *Fair Division and Collective Welfare*. The MIT Press, 2004, by Hervé Moulin.

Requirement and Grading Policy

1. Grades

		<u>Due/Exam dates</u>
Three problem sets	3 x 10%	Jan 30, Mar 18, Apr 17
Two midterm exams	2 x 25%	Feb 13, Mar 27 (class time)
Term paper	1 x 20%	May 1 (due 5pm)

2. **Assignments** will be given one-week prior to the due dates and will be due at the start of the lecture on the day they are due. You can submit in class, or electronic submission via email is also allowed. Collaboration on homework assignments is allowed and encouraged, but final solutions must be written independently. Each student should participate fully in solving each problem and understand the answer.

3. **Midterm examinations** will be *in-class* and *closed-book*. Collaboration on the examinations is prohibited.

4. **Term paper:** A student is required to study any cases on collective choices. One option is to evaluate a choice rule currently used in an organization. You are expected to clearly state the choice rule and examine pros and cons. If the rule suffers from drawbacks, you may propose an alternative choice rule and justify the new rule by discussing potential outcomes. Another option is to propose new ideas for choice rules in a situation where a formal choice rule has not yet been implemented. During the course, we will discuss a few term-paper ideas and I will also provide one term-paper example. I encourage you to search for a case from your personal experiences, rather than, for example, presidential elections. The paper should not exceed 10 pages with 1.5 spacing. The originality of the idea and logically tight arguments are much more valued than the length of the paper.

Topics to be covered (Subject to change)

I. Elements of Social Choice Theory

Intro: Course Introduction. Motivating examples. A Special Case with Two Alternatives: Simple majority. May's theorem, Condorcet winner. Condorcet paradox.: Kelly(Chapter 1 and 2), Riker (Chapter 3, Chapter 4.B)

II. General Social Choice Theory

1. Preference Aggregation Rules: Binary Relations. Preferences. Preference aggregation rule. Arrow's Impossibility Theorem with a sketchy proof: Kelly (Chapter 6, 7), Riker (Chapter 3, Chapter 4.A, 5. A-B)

2. Voting rules: Majoritarian methods (Sequential majority. Copeland voting rule). Positional methods (Plurality. Approval voting. Borda score voting rule). Evaluating voting rules. Gibbard-Satterthwaite Impossibility Theorem Kelly (Chapter 5, 10), Riker (Chapter 4, 6)
3. Possibility Results: Single peaked preferences. Approval voting: Kelly (Chapter 2, Chapter 3, Chapter 12), Riker (Chapter 4.E, Chapter 5.B-C)
4. Further Discussions on Strategic Voting: Illustration with examples. Case studies. Game theory. Nash equilibrium. Experimental and Empirical Evidences.

* Students are not required to read journal articles.

Myerson Roger, and Robert Weber. 1993. A Theory of Voting Equilibria. American Political Science Review 87:102-14.

Forsythe, Robert E., Roger B. Myerson, Thomas A. Rietz, and Robert J. Weber (1996) An Experimental Study of Voting Rules and Polls in Three-Way Elections, International Journal of Game Theory. Vol 25, pp 355-83.

Kawai, K. and Y. Watanabe (2012) Inferring Strategic Voting. American Economic Review, forthcoming.

III. Voting and Information Aggregation

1. Review: Games of incomplete information. Bayesian Nash Equilibrium.
2. Condorcet Jury Theorem: Austen-Smith and Banks (1996). Feddersen and Pesendorfer (1998).

Austen-Smith and Banks (1996): Information Aggregation, Rationality, and the Condorcet Jury Theorem; American Political Science Review Vol. 90(1)

Feddersen, T., and W. Pesendorfer (1998): Convicting the Innocent: The Inferiority of Unanimous Jury Verdicts under Strategic Voting, The American Political Science Review, 92(1)

Guarnaschelli, S., R. D. McKelvey, and T. R. Palfrey (2000): An Experimental Study of Jury Decision Rules, The American Political Science Review, 94(2)

IV. Voting with Side Payments:

1. Vote market (within an electorate)

Philipson, T. and J. Snyder (1996), Equilibrium and Efficiency in an Organized Vote Market, Public Choice, 89, 245-265.

Casella, A., A. Llorente-Saguer, and T. Palfrey (2013) Competitive Equilibrium in Markets for Votes. Journal of Political Economy, Forthcoming

2. Vote bidding/buying (Mechanism design approach).

Jacob K. Goeree and Jingjing Zhang (2012) Electoral Engineering: One Man, One Vote Bid, mimeo.

E. Glen Weyl (2012), Quadratic Vote Buying, mimeo

3. Vote bidding/buying (Lobbying)

T. Groseclose and J.M. Snyder (1996): Buying Supermajorities; American Political Science Review Vol. 90(2), 303-315.

E Dekel, MO Jackson, A Wolinsky (2008) Vote Buying: General Elections, Journal of Political Economy, 2008

Other Course Policies

1. Late assignments and final paper will not be accepted without either proper prior arrangement or a compelling and verifiable reason.

2. All hand written answers to exam questions should be legible. Anything that the TA or I cannot read or understand is wrong.

3. Assignments and exams will be returned to you during class. You are responsible for picking them up. Your exams will be scanned to deter cheating.

4. A request for a re-grade of a problem set or an exam must be submitted to me in writing within 1 week after the graded assignment has been returned. In such a case, I will reevaluate your complete homework set or exam.

5. If you miss an exam, you need to obtain a letter signed by the coordinator of the undergraduate studies, Lynn Costello, that excuses your absence. If you do not obtain such a letter, you will fail the exam.

6. There are no make-up midterm exams. If you have to miss one in-class midterm exam, the other mid-term exam and the final paper will be worth 40pts and 30pts, respectively.