Final Exam Material

The final exam is **Thursday, May 12 8:00AM - 10:00AM** in EGR 2116. The exam will consist of multiple-choice questions, short answers and essay questions.

1. The exam will contain multiple choice questions (consult the quizzes for examples of questions that might be asked). You will need to be familiar with the following voting methods: Plurality Rule, Majority Rule, Borda Count, Hare System, Approval Voting.

2. Short answers (I will select from among the following questions)

   - We discussed a number of theorems and paradoxes this semester. State each of the following theorems or paradoxes *and* explain in your own words what are the implications of the theorem for group/individual decision-making: von Neumann-Morgenstern Theorem, Prisoner's Dilemma, Paradox of Economic Modeling (see Reiss, Chapter 7), Condorcet Paradox, May's Theorem, Arrow's Theorem, Harsanyi's Theorem, Doctrinal Paradox/Discursive Dilemma, Sen's Paradox of the Paretian Liberal, and the Condorcet Jury Theorem.

   - State the Pareto property for a social choice function. Does Approval Vote satisfy the Pareto property? If it does, explain why. If it does not satisfy the Pareto, give an example to illustrate the failure of the property.

   - What is the problem of interpersonal comparison of utilities?

   - Another method for dividing goods between two people is *balanced alternation*. The two parties take turn choosing the goods and the party that chooses second is compensated by being able to choose two items during his/her first turn. Suppose that Ann chooses first, Bob chooses second and third, then Ann receives the remaining object. Suppose that Ann and Bob report the following valuation for four goods A, B, C, and D:

Item	Ann	Bob
A	40	20
B	30	30
C	30	30
D	0	20

     (a) Which allocation does Ann prefer: The allocation given to her under Adjusted Winner or the Allocation given to her under Balanced Alternation? (You must explain your answer.)

     (b) Which allocation does Bob prefer: The allocation given to him under Adjusted Winner or the Allocation given to him under Balanced Alternation? (You must explain your answer.)

3. Essay questions (I will select from among the following questions):

- Condorcet argued that if candidate A beats every other candidate in a pairwise election (i.e., A is the Condorcet winner), then A should be declared the winner. Give an example where the Borda count does not select the Condorcet winner. What is an argument in favor of electing a Condorcet winner? What is an argument against electing a Condorcet winner?

- Throughout the course, we assumed that the decision maker's preferences are complete and transitive. Give an argument in favor of this assumption. (I.e., give an argument in favor of assuming that a decision maker's preference ordering is transitive and an argument in favor of assuming that a decision maker's preference ordering is complete). What are the arguments against making these assumptions?

- Explain the difference between the Allais and Ellsberg Paradoxes.

- What is a Nash equilibrium? Is it always rational to play a Nash equilibrium? You must explain your answer (using examples).

- Consider the utilitarian social choice function used in Harsanyi's Theorem. Does this function satisfy all of postulates in Arrow's Theorem (is it a social welfare function and does it satisfy IIA, Pareto and non-dictatorship). You must explain your answer (for each of Arrow's axioms explain why Harsanyi's functions does/does not satisfy that axiom).

- Compare the criticism of game theory as explanatory theory in the section on "Game Theory as Explanatory Theory" in Reiss with the criticism of rational choice theory in Chapter 3 of Reiss. Are there commonalities between the two?