

Studying for the Exam. The best method of studying for the class exams is to (i) review the class notes and readings, (ii) work through the study guide and (iii) review the problems in the lecture notes. Everything covered in the notes and in class may be included on the exams, although clearly the exam will focus most of its attention on the material covered in lecture.

The hardest questions on the study guide are more difficult than the hardest questions on the final. So, if you can do everything on the study guide you should be in good shape for the exam. The actual problems on the exam will be similar to, but somewhat different from the practice problems included below.

I. Identify and or Define

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| a. Pigou | k. contractarian |
| b. von Mises | l. market failure |
| c. Buchanan | m. political failure |
| d. Rawls | n. public choice |
| e. Hayek | o. externality |
| f. Rand | p. median voter |
| g. Edgeworth box | q. prisoner’s dilemma game |
| h. real gnp per capita | r. assurance game |
| i. social net benefit | s. work ethic |
| j. aggregate utility | t. entrepreneur |
| k. welfare economics | u. progress |

II. Matching exercise: link the following philosophers with their ideas.

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| Aristotle | The protestant work ethic launched capitalism |
| Bastiat | utopia as a monastery |
| Bentham | harmony of economic and moral interests |
| Buchanan | The veil of uncertainty facilitates constitutional agreement. |
| Franklin | categorical imperative |

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|------------|---|
| Hayek | Moral conduct generates praise from an impartial spectator. |
| Hobbes | Markets are a spontaneous order. |
| Kant | Better to be a human unsatisfied than a pig satisfied. |
| Locke | Government's power is limited to the public good of the society. |
| Mill | Happiness is the ultimate end. |
| Mises | Life in a state of anarchy is solitary, poor, nasty, brutish, and short. |
| More | He that gets all he can honestly and saves all he can, will certainly become rich |
| Nozick | Moral law preserves social cooperation |
| Pigou | utility principle |
| Rand | Distributive justice requires the use of just procedures and an initially just distribution |
| Rawls | creator of welfare economics |
| Schumpeter | heroic concept of the entrepreneur |
| Smith | justice as fairness, decisions from behind the veil of ignorance |
| Spencer | creative destruction |
| Weber | co-evolution of man, morality, and society |

III. Diagrams, Games, and Puzzles

1. Use demand and supply diagram to illustrate:

- i. The efficiency of competitive markets (maximization of social net benefits)
- ii. The inefficiency of monopoly (failure to maximize social net benefits)
- iii. An externality problem (failure to maximize social net benefits)
- iv. How an increase in the extent to which employees have internalized a work ethic can affect the supply of a product
- v. How an increase in integrity can increase both demand and supply of products in which defects are possible but difficult to detect

- vi. Why do labor markets might pay honest employees more than their dishonest counter parts (assuming this can be recognized)?
- vii. Briefly explain each of the above diagrams and **label all details**.

2. Applications of Game Theory and Economics to Ethics, Markets, and Politics

- i. **On the advantages of Promise Keeping.** Construct a 3x3 game in which two persons can keep their promises all of the time, half of the time, or none of the time. Assume that for this community, keeping one's promises always yields the greatest aggregate utility, but that individually each benefits when he/she breaches their promise and the other keeps it.
 - a. Characterize the Nash equilibrium of this game
 - b. Are their mutual gains from adopting a norm of promise keeping?
 - c. Are their mutual gains from paying an enforcer (government) to enforce promises/contracts?
 - d. Show how either of the above can increase aggregate utility. (Hint: show how internal and external sanctions can change the payoffs and equilibrium.)
 - e. Show that either of the above solutions can be a Pareto Superior move.
- ii. **On the advantages of Team Production.** Construct a 3x3 game in which two persons contribute to each others productivity. The team's total output increases with each person's (team member's) work. However, suppose that the private rewards of free riding are always greater than those of working hard.
 - a. Characterize the Nash equilibrium of this game
 - b. Are their mutual gains from internalizing a norm of working hard and well?
 - c. Are their mutual gains from paying an enforcer (firm owner or coop manager) to punish shirking?
 - d. Show how either of the above can increase aggregate output and utility. (Hint: show how the internal and external norms change the payoffs, etc.)
 - e. Use a marginal value product diagram to illustrate how a work ethic or other productivity enhancing ethic tends to generate increased salaries and output.

- iii. Illustrate an overall equilibrium between a final goods market, market for inputs for that market, and market for persons with productivity enhancing ethical dispositions.
 - a. Explain how these three markets are related to one another.
 - b. How might an ethical "shock" affect this equilibrium (e.g. an increase in the number of persons with a productivity enhancing internalized ethic).
 - c. How do this shock and the diagram characterizing it relate to Max Weber's theory of the emergence of capitalism?
 - d. How do these results relate to Mill's theory that prosperity (and aggregate utility) tend to increase as persons become "better" at cooperation.
- iv. **On the ethics of the distribution of income associated with competitive and monopolistic markets.**
 - a. Explain why twentieth century utilitarians believe that the distribution of income that emerges in a competitive market does not maximize aggregate utility and so can be regarded as a failing of markets.
 - b. Explain why Rawls' analysis tends to agree with that of utilitarians on this point. What distributional rule does he recommend?
 - c. Explain why Buchanan would argue that given a competitive equilibrium distribution of income, voluntary redistribution would occur only among altruists.
 - d. What assumptions about utility are required for the utilitarian argument favoring redistribution to be true? Discuss cases in which it would not be true.
 - e. Nozick suggests that justice is about procedures through which resources are redistributed rather than final outcomes. If voluntary procedures are always better than coercive ones, what does this imply about market outcomes?
- v. **On the Advantage of Peace: Hobbesian Anarchy.** Use a 3 by 3 game matrix to characterize the "Hobbesian Jungle."
 - a. Is there a Nash equilibrium?
 - b. Is the Nash equilibrium Pareto Optimal?
 - c. Does it maximize social net benefits or aggregate utility?
 - d. Now assume that both players have internalized a "wrong to attack" norm. Show how the payoffs may change enough to escape from the Hobbesian dilemma.

- e. In a larger society would it be necessary for everyone to internalize this norm for peace to emerge?
 - f. Discuss how law external enforcement can substitute or augment internalized norms that oppose attacking others.
 - g. Illustrate this in your game matrix.
 - vi. Now consider Locke's characterization of anarchy as in intermediate equilibrium that is better than the Hobbesian one, but can still be improved upon by a social contract.
 - a. Construct a 3x3 game matrix to illustrate this point.
 - b. Locke assumes that many people (or the average person) has internalized anti-theft and anti-attack norms. Show how stronger norms might solve the problems that exist.
 - c. Without strengthening the preexisting norms, show how law enforcement can solve the Lockean version of the Anarchy dilemma.
 - d. Discuss differences in the Hobbesian and Lockean implications for the proper scope of the government of a commonwealth.
 - vii. **Ethics and the size of market and political failures.** Market failures can be corrected via voluntary private action or coercive governmental action.
 - a. Discuss how ethical dispositions can, for example, solve externality problems.
 - b. Discuss how Coasian bargaining can solve externality problems.
 - c. Discuss how Pigovian taxes can solve externality problems.
 - d. Discuss how the ethics of elected officials and members of the bureaucracy affect the productivity of government.
 - viii. Governments may fail to maximize social net benefits or aggregate utility.
 - a. Explain why agency problems tend to be harder to solve in the public sector than in the private sector.
 - b. Explain why corruption tends to be harder to avoid in the public sector than in the private sector.
 - c. Provide several examples of externalities generated by government services.
 - d. Are these externalities internalized by voters or not? Discuss.
 - ix. If governments always improve aggregate utility, then utilitarians would conclude that substantial authority (essentially unbounded authority) be delegated to government.
 - a. Are governments likely to attract more virtuous persons than markets? If so, explain why. If not, explain why.
 - b. Discuss the ways in which ethical persons may improve the performance of government.
 - c. Use marginal benefit and marginal cost curves to illustrate how a work ethic may increase the net benefits from a government service.
 - x. Government Failures: discuss why majoritarian decisions over cost shares can generate majority cycles and indecisiveness. How do ethics reduce this problem?
 - a. Discuss why unconstrained democracies might engage in excessive redistribution. How might ethics moderate this tendency?
 - b. If beyond some point, governments tend to generate costs greater than their benefits, does this imply that the proper scope of government action is larger than it should be? Explain.
 - xi. How do the presence of market and political failures affect conclusions about the ideal division of authority between governments and the private sector?
 - a. In what cases, if any, would utilitarians prefer laissez faire, in spite of externality and public goods problems?
 - b. In what cases, if any, would economic liberals prefer a strong central state over laissez faire, in spite of political agency problems?
 - c. Both Mises and Rawls suggest that ethics are relatively more important in democratic governments than in markets. Explain their reasoning and illustrate a case in which their argument is correct either with a diagram or game matrix.
- 3. The neoclassical framework provides equilibrium based models of market outcomes and consumer and firm choices. These models allows a good deal to be said about markets, but some of the predictions can be a bit misleading insofar as markets rarely, if every, reach a full equilibrium.**
- a. Hayek emphasizes a markets ability to solve information problems and to advance a wide variety of interests. Explain briefly his argument and

explain its relevance for ethic appraisals of markets--as with utilitarian and procedural ones.

- b. Discuss Schumpeter's theory of creative destruction and its relevance for understanding how markets work in the long run.
- c. Together Spencer, Schumpeter, and Hayek suggest that markets evolve through time as innovation takes place.
 - ◆ Discuss how market shocks introduced by entrepreneurs may affect a societies ethics.
 - ◆ Discuss how ethical entrepreneurs may affect the distribution of ethics and thereby the extent of markets.
 - ◆ Use a diagram to illustrate your results in both cases.
- d. Discuss the relevance of these ideas for the concept of progress, especially economic progress. What role, if any, do ethics play in the definitions of and rates of progress?

4. Create a table of 10 philosophers in temporal order, listing the century in which they wrote and at least two of their ideas concerning ethics or markets.

IV. Discussion Questions and further Puzzles

1. Ethics and Commerce issues

- i. Several of the authors read in the first part of the course were skeptical about the effect of markets on virtue (as with More, Erasmus, and Montesquieu). Summarize their arguments. If such views were dominant, how would this affect the size of markets? [Assume that a significant number of persons (say 30%) take virtue into account when they choose their careers.]
- ii. Mill suggests that governments should promote the development of virtues that tend to increase progress. Review his argument and use a game to illustrate why increasing such those virtues tends to increase social utility, social output (GNP), and/or growth rates.
- iii. Spencer argues that utilitarians neglect the ambiguity of their aggregate happiness norm. List at least 3 reasons why a utilitarian may have a difficult time choosing virtuous actions in a setting where his/her choice affects dozens of other persons.
- iv. Laboratory experiments suggest that a good deal of human behavior is inconsistent with the predictions of game theory based on narrow models of self interest. For example, experiments normally find a good deal of cooperation in PD games, which is far more than the "zero" predicted. On the other hand, there is significant defection.
 - a. What do these experiments imply about the norms participants bring to the game?
 - b. What do these experiments tell you about the limits of game theory as a model of human decision making?
 - c. How can they be used to shed light on the role of internalized norms in human behavior?

2. Philosophical issues:

- a. One very difficult problem for utilitarians is that utility cannot be directly observed.
 - ◆ How can we tell when a policy increases aggregate utility?
 - ◆ Are we implicitly making use of Smith's theory of moral sentiments when we do so?

- b. Spencer argues that people have moral instincts that are analogous to their geometric sense.
- ◆ Explain why he believes that utilitarians must rely upon that instinct, but that utilitarian ethics should not stop with that instinct.
 - ◆ Why does Spencer believe that rational analysis can improve ethics, if everyone already has moral intuitions?
- c. Compare Mill's list of virtues that increase progress with Aristotle's list of virtues that increase lifetime happiness.
- ◆ Are there any important differences in the items on the list? If so, do these appear to represent differences between private and civil ethics?
- d. Consider (i) Smith's idea of moral sentiments and the impartial spectator, (ii) Spencer's idea of moral instincts, and (iii) Grotius' idea of natural law.
- ◆ Discuss differences and similarities in their analyzes.
 - ◆ Under what circumstance, could they be regarded as the same theory of ethics?

3. **Who said: "Virtue is the best guard against the many unavoidable evils incident to us; nothing better alleviates the weight of the afflictions, or gives a truer relish of the blessings, of human life."**

4. **Use a game matrix to represent the "paper, rock, scissors" game.**

- i. Show that there is no Nash equilibrium in pure strategies.
- ii. Find a Nash equilibrium mixed (random) strategy for your game.
- iii. In what sense is your solution an equilibrium?

5. **Find the Nash Equilibria to the following games and determine whether there is a "dilemma" or not. If there is one, explain the nature of the dilemma. If not explain why there is not.**

Game Matrix 1

Al \ Bob	Work	Shirk
	(A, B)	(A, B)
Ea = 8	10, 10	6, 12
Ea = 4	12, 6	8, 8

Game Matrix 2

Al \ Bob	Accept Offer	Reject Offer
	(A, B)	(A,B)
Make Offer	10, 8	-3,-1
Don't Make Offer	-1, -3	5, 5

Game Matrix 3

Al \ Bob	Eb= 8	Eb=6	Eb=4	Eb=2
	(A, B)	(A,B)	(A, B)	(A, B)
Ea = 8	10, 10	8,11	6, 12	5, 13
Ea = 6	11, 8	9, 9	7, 7	6, 11
Ea = 4	12, 6	10, 7	8, 8	6, 9
Ea = 2	13, 5	11, 6	9, 6	7, 7

Game Matrix 4

Al \ Bob	Eb= 8	Eb=6	Eb=4	Eb=2
	(A, B)	(A,B)	(A, B)	(A, B)
Ea = 8	10, 10	8,11	6, 12	5, 13
Ea = 6	11, 8	8, 8	7, 7	5, 6
Ea = 4	12, 6	7, 7	6, 6	5, 5
Ea = 2	13, 5	6, 5	5, 5	4, 4

B. As an exercise, construct a 3x3 game with an Pareto optimal equilibrium (i) in the middle cell (ii) in the upper lefthand cell, (iii) in the upper righthand and lower lefthand cells.

C. As an exercise, construct a 3x3 game with a dilemma equilibrium (i) in the middle cell (ii) in the upper lefthand cell, (iii) in the upper righthand and lower lefthand cells. Explain the nature of the dilemma in each case.

6. Some Additional Philosophical Exercises

Below are a few quotes from Ayn Rand's novel on the ethics of capitalism, *Atlas Shrugged*. Link her ideas to philosophers covered in the course when this is possible, and explain the connection. Discuss why this is not always possible.

(i) Man's reason is his moral faculty.

(ii) Happiness is a state of non-contradictory joy—a joy without penalty or guilt, a joy that does not clash with any of your values

(iii). Your body has two fundamental sensations, pleasure and pain, as signs of its welfare or injury, ...

(iv) Matter has no value except as a means for the satisfaction of human desires.

(v) When you live in a rational society, where men are free to trade, you receive an incalculable bonus: the material value of your work is determined not only by your effort, but by the effort of the best productive minds who exist in the world around you.

(vi). "What is morality?" Judgment to distinguish right and wrong, vision to see the truth, courage to act upon it, dedication to that which is good, integrity to stand by the good at any price.

(vii.) You know, I think that the only real moral crime that one man can commit against another is the attempt to create, by his words or actions, an impression of the contradictory, the impossible, the irrational, and thus shake the concept of rationality in his victim.

(vii) It was said that large, established railroad systems were essential to the public welfare; and that the collapse of one of them would be a national catastrophe.