GVPT 221 – SPRING 2019

INTRODUCTION TO FORMAL THEORIES OF POLITICAL BEHAVIOR AND POLITICS

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Office hours: Tuesdays and Thursdays: 12:00pm-1:00pm in TYD 1140 G. If this time is not good for you, send me an email and we will arrange some other day and time to meet.
Lectures: TYD 0117 Wednesdays 2:00pm – 4:45pm.

Teaching Assistants: Matthew Blum and Aharon Logue will be our TAs. You can contact them at matthewblum98@gmail.com and aharon.logue@gmail.com . They will hold their office hours in SQH 1125 on Tuesdays, beginning Tuesday, February 26. Matthew, 1:00pm-2:00pm and Aharon, 2:00pm-3:00pm.

IMPORTANT: THIS DOCUMENT WILL BE UPDATED THROUGHOUT THE SEMESTER. PLEASE CONSULT FOR UPDATES AND CHANGES.

If you look up any major journals in political science (e.g., the American Political Science Review) you will see that a good part of the modern political science looks more like physics and other "hard" sciences than a traditional social science. This is the new face of the science of politics and the direction in which the discipline is moving rapidly. My objective in this class is (1) to show you the reasons for this transformation, (2) to teach you how formal theories are constructed, and (3) to show you how this mode of research can be applied to solve a number of important problems of politics and society. The list of topics below will give you an idea about the scope and the content but here is a quick example of one of the major problem that we will cover.

In one of my research projects we have asked students to solve the following problem: Jury in a competition consists of three jurors. Each of the jurors gives his recommendation on how to award the first, the second and the third prize to three finalists: A, B and C. A juror's recommendation is simply a ranking of candidates; for instance, CAB represents a recommendation to award the first prize to candidate C, second to A and third to B. Suppose now that you get the following recommendations from the three jurors: ABC, ABC and BCA. What would you consider to be the best, the most just allocation of prizes to the three candidates? I suggest that you make your own choice before reading on. If you feel strong about the choice you have just made consider this: ABC was chosen as the most just outcome by 84% of students in the US and 86% of students in Poland; in Japan, however, only 36% chose ABC—64% selected BAC as the most just allocation of prizes. So, what is the best allocation of prizes?

The three-jurors-three-candidates example is a very simple case of one of the most fundamental problems of politics: In a group/society of individuals with different preferences over a set of possible outcomes (e.g., presidential candidates) how should we decide what is the best, the most just outcome? The answer to this problem, which got its author a Nobel Prize, is one of the most important findings of political science.

There is one textbook we will be using for this class: "Analyzing Politics" by Kenneth Shepsle. It is a very well written text that has been widely used in political science. I will supplement it with a few selected readings that will be posted online and regular lecture notes of my own.

READINGS Required: "Analyzing Politics" by Kenneth Shepsle, Norton, 2010. All other readings are also required but will be placed on ELMS. They include excerpts from: Robert Axelrod, *The Evolution of Cooperation*, Basic Books, 2006 (1st ed. 1984); Avinash Dixit and Susan Skeat, *Games of Strategy*, Norton, New York, 2004. Raymond Wilder "The Axiomatic Method," pages 1621-1640 in *The World of Mathematics*, Simon and Schuster, 1956; Kenneth Williams, *Game Theory a Behavioral Approach*, Oxford University Press, 2013.

WARNING: This is not a typical social science class. Much of the material is deductive and mathematical—**students who do not like this type of reasoning may find it agonizing if not prohibitive.**

MANDATORY GRADING

TESTS (60%): There will be four mandatory tests. You are allowed to have a single page crib sheet for each test and exam. You cannot, however, use textbooks or any other notes. Calculators are allowed.

HOMEWORKS (30%): There will be four mandatory homeworks. The average of your homework grades (all homeworks carry the same weight) will count as 30% of your class grade.

PARTICIPATION (10%): Your attendance combined with class participation will count 10%.

PERCENTAGE GRADES WILL TRANSLATE INTO LETTER GRADES as follows: A- for 90-92, A for 93-96% and A+ for 97% up; and analogously for B (80's), C (70's) and D (60's).

DATES, DEADLINES AND COMMUNICATION: I will use ELMS email system to inform you about posted files, homework deadlines, upcoming tests, etc. Please make sure that your email address as listed with ELMS is current and working.

EXTRA CREDIT

One notorious problem that leaves everyone upset are the borderline grades. 89%, for instance, is a B+ while 90% is an A-. This feels unreasonable if not outright silly. I consider this grading practice both unreasonable and unfair. To address this problem I use two tie-breaking tools: extra credit points for in-class competitions and the final exam.

EXTRA CREDIT POINTS: We will have a good number of in-class group competitions. Extra credit points accumulated in these competitions will be classified into four categories: top, middle, low and "statistically insignificant." Students in the top category will get an extra 3%, middle 2% and low 1%. "Statistically insignificant" category won't get any extra credit.

FINAL EXAM (TBA) An optional way to improve your grade is by taking the final exam. Final exam will count for 50% of your test grade. For example, suppose your average test score is 86%. In that case if

you decide not to take the final exam, your class grade will be calculated with the 86% test average counting as 60% of your class grade. If, however, you take the final exam and score 94% on it, your class grade will be calculated with 0.5*86% + 0.5*94% = 90% counting as 60% of your class grade.

OTHER ISSUES

CRIB SHEET: All testing is closed book but you ARE ALLOWED to have a **crib sheet—**a single standard size sheet of paper with whatever information you want to put on it (both sides.)

SPECIAL PROBLEMS AND SITUATIONS: If you have any problems, e.g., medical, that can affect your performance in class you should let me know immediately. I can only help you solve the problem if you tell me about it in advance.

MISSING A TEST will **not** be **allowed** except for extraordinary circumstances like medical emergencies, jury duty, etc, for which, as our university requires, you will have to supply relevant documents (from the physician, court, etc). You have to inform me about such emergencies immediately and **no later than a week after** the missed test. If you neglect to document your absence within a week, I will assign zero points to a missed test; there will be no appeals.

LECTURES VERSUS READINGS: A good part of the material will not be contained in the readings and will only be presented in class. Most of the readings are not a substitute for what we do in class—they are **supplementary**. Attending classes, for all I know from students who took it, are necessary to do well in this course.

Please don't use **NOTE(NET)BOOKS/LAPTOPS, PHONES and other electronic devices** in class.

UNIVERSITY POLICIES

ACADEMIC INTEGRITY: The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu/whatis.html.

MEDICAL EMERGENCIES: Campus Senate policy requires students who are absent due to illness/injury to furnish documentary support to the instructor. I require students to contact me by email or by phone prior to class time in which you indicate that you have an illness or an injury. You must provide written documentation verifying your illness/injury immediately upon your return to class. You will not be allowed to turn in missed assignments or make up quizzes, tests, papers, etc. if you have not provided this documentation. Documentation not presented to me in a timely manner will not be accepted. In addition, if it is found that you have falsified the documentation provided, I will refer you to the University's Student Conduct Office.

SCHEDULE OF TOPICS AND RELATED READINGS

NOTE: ALL READINGS ARE DUE AFTER THE RELEVANT MATERIAL HAS BEEN EXPLAINED IN CLASS

WEEK 1 (Jan. 30)

Introduction: Examples of Topics, Methods, and Solutions

WEEK 2 (Feb. 6)

What Is (Political) Science, What is Formal Theory, And Why Do We Need Them?

Is political science a science, like physics or chemistry? Why do we need a science of politics and what are the alternatives.

Readings: Lecture notes and excerpts from Wilder's "Axiomatic Method" (online.)

WEEK 3 (Feb.13) and WEEK 4 (Feb. 20) HWK 1 posted.

Individual Behavior and Political Institutions
(Theory of Preferences and the Expected Utility Theory)

If we hope that outcomes of a political process like tax rates, nondiscrimination acts or gun laws, are going to affect individual behavior we need to make some assumptions about how individuals make their choices. Thus any science of politics and other social sciences as well, has to begin with a set of assumptions about individual behavior. What is this most general foundation of the social science?

Readings: "The Model of Choice" pages 13-34 in Shepsle's "Analyzing Politics" also Kreps, pages 7-11 (for those who like it short and mathematical) and Williams pages 48-50 and 61-66 (for those who want something more specific than Shepsle and less mathematical than Kreps.)

WEEK 5 (Feb. 27)

Group Choice—the Defining Problem of Politics
Voting Methods and Electoral Systems

Three friends who want to spend an evening together but have different ideas what they should do face the defining problem of politics. Should they let the leader, or leaders, of the group decide? Should they all take part in the decision and solve the problem democratically, by taking a vote, for example? But if they want to vote on the three proposals how should they do it? Will all reasonable methods of voting result in the same outcome and if not are there some methods that are better than others?

In the 1912 US Presidential Election there was an interesting distribution of votes over the set of three major presidential candidates: Wilson, Roosevelt and Taft. Wilson won the election. But what would have happened had the US been using a different voting method to elect the President? Different countries and different organizations use different election methods. How should we decide which method is good which is bad and which one we should use? Deciding on how we decide is the most important act of democracy—its outcome is the society's Constitution.

Related readings: pages 41-52 from "Getting Started with Group Choice Analysis" and pages 191-197 from "Voting Methods and Electoral Systems" in Shepsle's "Analyzing Politics."

WEEK 6 (Mar. 6) HWK 1 due.

The Nature of Democracy

No matter how we decide to elect the President we would agree that any democratic method of choice should have some basic properties. For instance, if all voters prefer A over B then B should not win the election when running against A. So, what are the most fundamental principles of democratic choice that we should insist on being preserved and which methods of voting have these properties? Arrow's Theorem answers these questions. Many consider Arrow's finding to be the most important result of political science.

Related readings: pages 53-76 from "Group Choice and Majority Rule" in Shepsle's "Analyzing Politics."

WEEK 7 (Mar. 13) Test 1 on the content of HWK 1. HWK 2 posted.

Strategic Behavior, Misrepresentation and Manipulation

One common aspect of politics is a continuous effort of all involved in decision making to affect the outcome of a democratic process in their favor. What are the most common ways in which voters can change the outcome of voting? Can we develop democratic institutions that would prevent people from manipulating the system?

Related readings: "Strategic Behavior: Sophistication, Misrepresentation, and Manipulation," pages 156-188, in Shepsle's "Analyzing Politics."

WEEK 8 (Mar. 20) SPRING BREAK

WEEK 9 (Mar. 27) HWK 2 due.

Predicting Outcome of an Election

If you ask a physicist how long it will take for a ball dropped from the top of the Eiffel Tower to reach the ground he will give you a precise prediction. Can we do the same in

political science? Can we, for instance, predict what will happen in an election—under some circumstances at least?

Related readings: pages 90-123 from "Spatial Models of Majority Rule" in Shepsle's "Analyzing Politics."

WEEK 10 (Apr. 3) Test 2 on the content of HWK 2.

The Borders of Politics

Do we need state or other political institutions at all? Perhaps most if not all problems can be solved without any need for a state intervention? And if we need a state to tell us what to do, how much should we allow it to interfere with individual freedoms? Which individual behaviors should be regulated by state and which should be not? This is the oldest and the most fundamental problem of politics. We will briefly look at the solutions proposed by Hobbes, Locke, Hume and Rousseau and the way we can redefine these ideas in the modern science of politics.

Readings: pages 231-241 from "Cooperation" in Shepsle's "Analyzing Politics."

WEEK 11 (Apr. 10) HWK 3 posted.

A General Theory of Strategic Interaction
(*Game Theory; Basic Concepts and Their Interpretations)*

Strategic behavior became synonymous in modern social science with game theory. Game theory is a theory of strategic interactions and as such is a fundamental theory of behavior in all social sciences. Prisoner's Dilemma is the most famous game of all and there is a very good reason for that. Jon Elster, for instance, defines political science as a science of transcending the Prisoner's Dilemma.

Readings: Dixit and Skeath, pages 3-14, 27-34.

WEEK 12 (Apr. 17) HWK 3 due.

Game Theory (continued)

WEEK 13 (Apr. 24) Test 3 on the content of HWK 3. HWK 4 posted.

The Darwinian Nature of the Social Sciences

When we make a prediction in the social sciences, its outcome hinges on the assumptions we make. The most common form of a social science prediction is equilibrium which is the modern form of the classical Darwinian spirit of the social sciences—what we observe in reality is the outcome of an evolutionary process that has selected for this outcome. In games we will look at two kinds of equilibria, how they are related to each other, and what

are the assumptions on which each of them relies.

Readings: Dixit and Skeath pages 83-99.

WEEK 14 (May 1) HWK 4 due.

WEEK 15 (May 8) Test 4 on the content of HWK 4.

Is Cooperation among Nation States Possible?

If Hobbes is right that peace/cooperation in society is possible only because the government is able to punish transgressions, then we have the following problem: Can we have cooperation among states even though we don't have the government of states? What are the prospects of cooperation developing in systems without government?

Readings: excerpts from Axelrod's "The Evolution of Cooperation" (online.)