Tues \& Thurs, 2:20-3:35 p.m.
Baldwin 102
Fall, 2023

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http://spia.uga.edu/faculty pages/dougherk/

## Social Choice and Elections

Social Choice examines the structure of a fair voting system based on the preferences of individuals. Think of it as examining how a constitution could be engineered to satisfy certain democratic principles. These principles have to be mathematically consistent or they won't work. The problem is pertinent to the creation of new governments, such as those after the Arab spring. Studying social choice should help students think about democracy analytically, objectively, and deeply.

We will ask how new democracies should structure their elections. Is proportional representation or voting in a single member districts more appropriate? What are the paradoxes of apportionment? Why do candidates always tend to be centrists in two party elections? Do the rules of a democratic process affect political outcomes, and if so, how? What kinds of systems, be they for electing national leaders or student council presidents, go furthest toward truly representing the wishes of the voters? What concepts of liberty are consistent with democracy and how might they conflict? These classic questions will be analyzed using formal analytical techniques - that is, using some simple logic and mathematics. Although we will go deeply, no prior understanding of formal theory or economic reasoning is required to master this course.

## Polling

Occasionally, I will use Google Forms for in-class polling. That means you will login to a form to pick an answer. I will not know who answered what nor record individual responses. However, Google Forms will allow us to see how the class responds in real time. The Google Form login is https://forms.gle/fJTbrTY3H2daXXUbA. Please keep it in a handy location.

## Grading

Your grade consists of discussing readings in perusall, three homework assignments, a mid-term exam, and a final exam. I expect students to attend class and assume that you are mature enough to understand what happens when you miss class. Ask another student for notes if you are absent. All assignments are posted on eLC.

I generally think of $90-100$ as an $\mathrm{A}, 80-90$ as a B , etc., but since the university uses a plus minus system I use the following scale for overall grades:

|  |  | A | 92 or above | A- | $90-91.99$ |
| :--- | :--- | :--- | :--- | :--- | :--- |
| B+ | $88-89.99$ | B | $82-87.99$ | B- | $80-81.99$ |
| C+ | $78-79.99$ | C | $72-77.99$ | C- | $70-71.99$ |
| D+ | $68-69.99$ | D | $62-67.99$ | D- | $60-61.99$ |
| F | 59.99 or below |  |  |  |  |

## Perusall and Readings

All required reading assignments are posted on Perusall - a social e-reader which you can use for free. Perusall gets you to discuss the readings with other students. Each reading is considered an assignment that you read, question, and comment on. $10 \%$ of your grade will be based on your Perusall discussions. Students often ask, "how does Perusall grade me?" The simple answer is it grades reading and discussion. Focus on "discussion," not posting, and pay attention to its nudges to get full points. Note, each assignment (a.k.a., each reading) should be completed before the relevant class. To find the Presuall reading, click on the Perusall link in ELC.

## Home Work Assignments

You will be assigned three homework assignments, each worth $10 \%$ of your grade. These assignment will help you practice the analytic skills taught in the course and help you prepare for the exams. Assignments will be posted on-line at least one week before they are due. Please remind me if they don't get posted.

## Exams

Most of your grade will come from a mid-term exam and a final exam. Both may contain multiple choice, fill in the blank, problem solving, and essay type questions worth $30 \%$ of your grade each. A review sheet for each will be posted on eLC. The final is not cumulative. It only covers the material from the first day after the midterm to the end. Note: some questions may come from the readings not covered in lecture, so working in Perusall should pay off. You might also want to work on the starred problems in the Hodge and Kilma chapters - the most important questions are listed in the practice problems section on eLC.

## Make-ups

Homework assignments require a fair amount of analysis time. Please plan ahead to avoid turning them in late. Late assignments will be lowered one letter grade for every day they are late and will not be accepted after the next class begins, so folks can get their homeworks back in a timely fashion. If an assignment is late, it would be a good idea to e-mail it to me [dougherk@uga.edu](mailto:dougherk@uga.edu) as soon as possible to avoid any unnecessary late penalties. Grades are lowered for every day they are late, not every class day they are late. If an assignment is late, it would be a good idea to upload it on eLC then e-mail me so I know it is posted.

If you miss the midterm for a good reason, such as coming down with COVID, and your excuse is pre-approved by me, you will be allowed to complete a make-up exam. The make-up for the midterm will be at 4 pm on September 26, meeting in Baldwin 408. Make-ups are not available any other time or date. They are more difficult than regular exams and should be avoided.

|  | Date | Percent of Grade |
| :--- | :--- | :---: |
| PERUSALL (reading and discussions) | daily | $10 \%$ |
| HOMEWORK 1 (apportionment) | Sept 7 | $10 \%$ |
| MIDTERM EXAM | Sept 21 | $30 \%$ |
| HOMEWORK 2 (voting rules) | Oct 26 | $10 \%$ |
| HOMEWORK 3 (liberty) | Nov 21 | $10 \%$ |
| FINAL EXAM | Dec 7 | $30 \%$ |

## Student Honesty

All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about these standards before performing academic work. The penalties for academic dishonesty are severe and ignorance is not an acceptable defense. Also note that the course syllabus is a general plan for the course and that deviations announced to the class by the instructor may be necessary.

## Mental Health and Wellness Resources

If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit https://sco.uga.edu. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.

UGA has several resources for a student seeking mental health services or crisis support. If you need help managing stress anxiety, relationships, etc., please visit BeWellUGAfor a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center. Additional resources can be accessed through the UGA App.

## Readings

The best way to learn this type of material is to solve problems on your own. The Hodge and Kilma text (on Perusall) is full of questions you can work through. Starred questions are answered at the end of each chapter. I recommend you work out each of those on your own. It will help. Most of the readings are shorter but analytical, which may require more than one read to be fully comprehended. Remember, if you work hard and complete all the readings, this should be a very rewarding course.

If you want a hard copy of the Hodge and Kilma book, it is available at the bookstore.
Hodge, Jonathan K. and Richard E. Klima. 2018. The Mathematics of Voting and Elections: a hands-on approach, $2^{\text {nd }}$ edition. American Mathematical Society.

## Disclaimer

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

## Schedule of Topics and Readings

## I. INTRODUCTION

Aug 17 Introduction

## Electoral Systems Around the World

Aug 22 *David Farrell, (2001) Electoral Systems, pp. 1-12.

## II. PROPORTIONAL REPRESENTATION

Paradox of Apportionment
Aug 24 *Hodge and Kilma, Ch 11, "Proportional (Mis)representation"
Aug 29 *Recommended: Balinski and Young, 2001, Fair Representation. Washington, D.C.: Brookings Institution Press - on course reserve.

## III. PLURALITY RULE AND POPULAR ELECTIONS

## The Median Voter Theorem

Aug 31- *Hinich and Munger, Ch 2, "The Spatial Model of Downs and Black," Analytical

Sept 5

Sept 7 *Hodge and Kilma, Ch 1, "What's So Good about Majority Rule?"
*Mueller, "May's theorem on Majority Rule," Public Choice III - the correct statement of May's theorem.

## The Downsian Voter

Sept 12 *Downs, Anthony 1957. "An Economic Theory of Political Action in a Democracy," Journal of Political Economy, 65(2): 135-150.
*Hinich and Munger, Analytical Politics, Ch 6, "Uncertainty and Policy Preference."

## Application: U.S. Presidential Elections

What are the policy positions of the major candidates? What were/are their best strategies for gaining more votes in terms of changing stances on policy?
Sept $14 \quad * 2020$ election (click here)
*2024 election (click here)
Sept $15 \quad$ CONSTITUTION DAY
*5 extra credit points on your second homework assignment for attending. If you can't make the lecture but want the extra points, please email me a 1.5 page summary of Thomas Jefferson's role in creating the Constitution by 5 pm Saturday, Sept 16.

Sept 19 Catch-up and Review

## Sept 21 MIDTERM EXAM.

## IV. PROBLEMS WITH VOTING RULES

Plurality Rule and Pairwise Majority Rule
Sept 26 *Scientific America, "Ranking Candidates Is More Accurate Than Voting," October 6, 2008.
*Hodge and Kilma, Ch 2, "Le Pen, Nader, and Other Inconveniences"
Sept 28 *Hodge and Kilma, Ch 3, "Back into the Ring"

## Other Voting Rules

Oct 3-5 *NPR News, "Ranked-Choice Voting Gets A Prime-Time Shot Under New York City's Bright Lights," June 23, 2021.
*The Center for Elections Science, "The Limits of Ranked-Choice Voting," February 7, 2019.

## Arrow's Impossibility Theorem

Oct 10 *Hodge and Kilma, Ch 4, "Trouble in Democracy" - a rough idea of Arrow's theorem. Focus on the strong form.

Oct 12 *Sen, Amartya "Collective Rationality," Collective Choice and Social Welfare, Ch 3, pp. 33-40 - the correct statement of Arrow's theorem.

## Ways out of Arrow's Theorem

Oct 17 *Hodge and Kilma, Ch 5, "Explaining the Impossible."
*Vickrey, William, "Utility, Strategy, and Social Decision Rules," in Brian Barry and Russell Hardin Eds. Rational Man and Irrational Society, pp. 343353.
*Recommended: Russell Hardin, "Public Choice Versus Democracy" in Copp, Hampton, and Roemer eds., The Idea of Democracy, pp. 157-172 - on eLC.

The Probability of Violating Voting Criteria
Oct 24-26 *Dougherty and Heckelman, "The Probability of Violating Arrow's Conditions," European Journal of Political Economy.

Oct 31- *Dougherty and Edward, Ch 6, "Electoral Decision Making," The Calculus of Nov 2 Consent and Constitutional Design.

## V. LIBERTY AND DEMOCRACY

## Liberty

Nov 7-9 *Sen, "Markets and Freedoms," Oxford Economic Papers, focus on sections 3-5 (pp. 522-532), skim rest.

## Sen's Liberal Paradox

Nov 14-17
Nov 24 No Class! Thanksgiving Break

## The Probability of Sen's Paradox

Nov 28 *Saari, Donald, Decisions and Elections, chapter 2 (pp. 56-67).
*Recommended: Sen, Amartya, "Liberty, Unanimity, and Rights," Economica, 43(171): 217-245 - on eLC. The reading introduces several criticisms of Sen's paradox as well as Sen's response to them.

Nov 30 Catch-Up \& Review
Dec 7 FINAL EXAM: 3:30-5:30 pm (same location).

