

POLS 4071  
Tues & Thurs, 3:55-5:10 p.m.  
Baldwin 301  
Spring, 2020

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[http://spia.uga.edu/faculty\\_pages/dougherk/](http://spia.uga.edu/faculty_pages/dougherk/)

## **Social Choice and Elections**

The field of 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 with one another 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.

### COVID-19 Adjustments

Face coverings in public spaces, including classrooms, are mandatory. Wearing a face covering is in addition to and not a substitute for also maintaining six feet social distancing. Anyone not using a face covering when required will be asked to wear one or must leave the area.

### Hybrid Classroom

Our course will follow the F2F-online-remote hybrid model. ...what a mouthful. For us, that means our class will be divided into four groups: AF, GJ, KM, and NZ. Group AF includes all students with a last name starting with A through F, unless you added after noon on Aug 17 (in which case contact me). Group GJ includes all students with last names starting with G through J, unless you added after noon on Aug 17 (in which case contact me). Same idea for KM and NZ. Each group will attend class once every two weeks on a rotating basis. On the day your group does meet face-to-face, you will either take the class synchronously, through Zoom, or watch a recorded version of the lecture asynchronously from home through Zoom. Typically you can choose synchronously or asynchronously, with the exceptions listed in the next paragraph. All recorded lectures will be posted on e-commons (i.e., [eLC](#)).

To keep COVID safe, all assignments will be available and turned in through [eLC](#). In addition, both the midterm and final exam will be administered through [eLC](#). There is no face-to-face class those days. After Thanksgiving all classes will move entirely online, which you can take

synchronously or asynchronously – your choice. The day each group is in class is listed in the schedule below.

### Dawg Check

Please perform a quick symptom check each weekday on DawgCheck—on the UGA app or website—whether you feel sick or not. It will help health providers monitor the health situation on campus: <https://dawgcheck.uga.edu/>

If you test positive for COVID-19 or learn you have been directly exposed to it, report the test or symptoms in DawgCheck and self-isolate immediately. Then send an email to your instructors, with a cc: to Student Care & Outreach at [sco@uga.edu](mailto:sco@uga.edu), to coordinate continuing your coursework while self-quarantined. If you are demonstrating symptoms of COVID-19, you should call the University Health Center. It offers testing by appointment for students; appointments may be booked by calling 706-542-1162.

### 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 [BeWellUGA](#) for 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.

### Grading

Your grade will consist of three homework assignments, a mid-term exam, and a final exam. I expect students to either attend class, participate synchronously through Zoom, or watch a Zoom recording of every class. I assume you are mature enough to understand what happens if you don't. You are more than welcome to watch a recording of a class at any time. All assignments will be posted on my web page.

I generally think of 90-100 as an A, 80-90 as a B, etc., but since the university moved to a plus minus system I have used the following scale for overall grades:

	A	92 or above	A-	90-91.99
B+	B	82-87.99	B-	80-81.99
C+	C	72-77.99	C-	70-71.99
D+	D	62-67.99	D-	60-61.99
F		59.99 or below		

### Home Work Assignments

You will be assigned three homework assignments. The first is worth 12% of your grade and the second two are worth 14% of your grade each. 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. Feel free to remind me if they don't get posted quickly enough.

### Exams

The preponderance 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. The idea is to give you multiple types of questions to evaluate your understanding of the material, not your aptitude for a particular type of test question. You will be given a review sheet for each. The final is *not* cumulative. Note: up to one-fifth of each exam may come from the readings not covered in lecture, so please read the assignments. You might also want to work on the starred problems in the book.

### 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 *working day* they are late and will not be accepted later than two *working days* after the due date**, 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> as soon as possible to avoid any unnecessary late penalties. Grades are lowered for every *working day* they are late, not every class day they are late.

If you miss the midterm or final exam 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 exam will be as close as possible to the scheduled exam. Make-up exams are more difficult than regular exams and should be avoided.

	<u>Date</u>	<u>Percent of Grade</u>
HOMEWORK 1 (apportionment & Downs)	Sept 10	12%
MIDTERM EXAM	Sept 22	30%
HOMEWORK 2 (voting rules)	Oct 27	14%
HOMEWORK 3 (liberty)	Nov 24	14%
FINAL EXAM	Dec 17	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.

### Required Texts

The best way to learn material like this is to solve problems on your own. The Hodge and Kilma book is chalk full of questions you can work through. Starred questions are answered at the end of each chapter. I recommend you work out each of these on your own. It will help.

Some of the more important readings come from the drop box. The few that read like history are generally more descriptive and can be read like history. Shorter readings are usually analytical and may require a second or third read to be fully comprehended. Remember, if you work hard and complete all the readings, this should be a very rewarding course.

Required readings will come from three sources: a text book, the dropbox, and a couple of readings on-line. The first is available from the book store. Older editions are fine. I will send you a link to the dropbox folder early in the semester. Ask if you don't get it. The third will be marked on the day of the assignment on my web page (password: dougherty).

1. Hodge, Jonathan K. and Richard E. Klima. 2018. *The Mathematics of Voting and Elections: a hands-on approach*, 2<sup>nd</sup> edition. American Mathematical Society.
2. Additional chapters and articles will be in the dropbox set up for the course. They are marked with **DB** below. I will send you directions on how to sign up for dropbox to your uga email address shortly after the class begins. It's free. If any of the electronic readings require a password, it will be "dougherty", all lower case.

### Schedule of Topics and Readings

#### **I. INTRODUCTION**

Aug 20      **Introduction**  
(AF face to face)

Aug 25      **Electoral Systems Around the World**  
\*David Farrell, (2001) *Electoral Systems*, pp. 1-12, **DB**.  
(GJ face to face)

#### **II. PROPORTIONAL REPRESENTATION**

Aug 27      **Paradox of Apportionment**  
\*Hodge and Kilma, Ch 11, "Proportional (Mis)representation"  
(KM face to face)

Sept 1      \**Recommended*: Balinski and Young, 2001, *Fair Representation*. Washington,  
D.C.: Brookings Institution Press – on course reserve.  
(NZ face to face)

### III. PLURALITY RULE AND POPULAR ELECTIONS

- The Median Voter Theorem**
- Sept 3 \*Hinich and Munger, Ch 2, “The Spatial Model of Downs and Black,” *Analytical Politics*, **DB**.  
(AF face to face)
- Sept 8 (GJ face to face)
- The Downsian Voter**
- Sept 10 \*Downs, Anthony 1957. “An Economic Theory of Political Action in a Democracy,” *Journal of Political Economy*, 65(2): 135-150, **DB**.  
\*Hinich and Munger, *Analytical Politics*, Ch 6, “Uncertainty and Policy Preference,” **DB**.  
(KM face to face)
- Application: U.S. Presidential Elections**
- Sept 15 \*2000 election ([click here](#))  
\*2008 election ([click here](#))  
\*2016 election ([click here](#))  
(NZ face to face)
- Sept 17 CONSTITUTION DAY  
\*Students will receive 5 extra credit points for Zooming synchronously into the Constitution Day lecture, 2:30-3:45 pm. Questions are encouraged. If you can't make the lecture but want the extra points, please send me a one page summary of Thomas Jefferson's role in creating the Constitution by 5 pm Friday, Sept 18.
- Catch-up and Review  
(AF face to face)
- Sept 22 **MIDTERM EXAM** – online exam that you can start anytime 8 am - 8 pm.  
(no face to face)

### IV. PROBLEMS WITH VOTING RULES

- May's Theorem**
- Sept 24 \*Hodge and Kilma, Ch 1, “What's So Good about Majority Rule?”  
(GJ face to face)
- Plurality Rule and Pairwise Majority Rule**
- Sept 29 \*Hodge and Kilma, Ch 2, “Le Pen, Nader, and Other Inconveniences”  
(KM face to face)

- Oct 1 \*Hodge and Kilma, Ch 3, “Back into the Ring”  
(NZ face to face)
- Recommended:* Donald Saari, *Decisions and Elections*, Ch 1.
- Other Voting Rules**
- Oct 6 \*Marron, Brian. 2004. “One Person, One Vote, Several Elections: Instant Runoff Voting and the Constitution” *Vermont Law Review*, 28: 343-372, **DB**.  
(AF face to face)
- Oct 8 (GJ face to face)
- Arrow’s Impossibility Theorem**
- Oct 13 \*Hodge and Kilma, Ch 4, “Trouble in Democracy” – focus on the strong form.  
(KM face to face)
- Oct 15 \*Hodge and Kilma, Ch 5, “Explaining the Impossible.”  
\*Sen, Amartya “Collective Rationality,” *Collective Choice and Social Welfare*,  
Ch 3, pp. 33-40, **DB**.  
(NZ face to face)
- Ways out of Arrow’s Theorem**
- Oct 20 \*Vickrey, William, “Utility, Strategy, and Social Decision Rules,” in Brian Barry and Russell Hardin Eds. *Rational Man and Irrational Society*, pp. 343-353, **DB**.
- \*Recommended:* Russell Hardin, “Public Choice Versus Democracy” in Copp, Hampton, and Roemer eds., *The Idea of Democracy*, pp. 157-172 – on electronic course reserve.  
(AF face to face)
- The Probability of Violating Voting Criteria**
- Oct 27 \*Dougherty and Heckelman, “The Probability of Violating Arrow’s Conditions,”  
(mimeo: University of Georgia), **DB**.  
(GJ face to face)
- Oct 29 (KM face to face)
- Nov 3 \*Dougherty and Edward, Ch 6, “Electoral Decision Making,” *The Calculus of Consent and Constitutional Design*, **DB**.  
(NZ face to face)
- Nov 5 (AF face to face)

## V. LIBERTY AND DEMOCRACY

- Liberty**
- Nov 10 \*Sen, “Markets and Freedoms,” *Oxford Economic Papers*, focus on sections 3-5 (pp. 522-532), skim rest, **DB**.  
(GJ face to face)
- Nov 12 (KM face to face)
- Sen’s Liberal Paradox**
- Nov 17 \*Sen, “The Impossibility of a Paretian Liberal” *The Journal of Political Economy*, **DB**.  
(NZ face to face)
- Nov 19 (AF face to face)
- The Probability of Sen’s Paradox**
- Nov 24 \*Saari, Donald, *Decisions and Elections*, chapter 2 (pp. 56-67) – on course reserve.  
(GJ face to face)
- Nov 26 **No Class! Thanksgiving Break**
- Dec 1 \*Recommended: Sen, Amartya, “Liberty, Unanimity, and Rights,” *Economica*, 43(171): 217-245 – introduces several criticisms of Sen’s paradox as well as Sen’s response to them.  
(no face-to-face)
- Dec 3 Catch-Up & Review  
(no face-to-face)
- Dec 8 **FINAL EXAM – online exam that you can start anytime 8 am - 8 pm.**