CORE121 Election Science Syllabus Spring 2022

CORE 121-09 and CORE121-13 Numbers: Election Science

Section 13 meets MWF at 11:30am - 12:30pm in JR Howard 116
Section 9 meets MWF at 1:50pm - 2:50pm in JR Howard 254
Lewis & Clark College
Spring 2022

Instructor: Ian McDonald, Ph.D.
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Office Hours
Monday and Wednesday 3:30-5 or additional times by appointment. You can meet with me in person or via teleconferencing.

Syllabus Links

html: https://core121-election-science-spring2022.netlify.app/syllabus.html
pdf: https://core121-election-science-spring2022.netlify.app/syllabus.pdf

Course Description

We expect democracies to translate public desire into coherent political choices. And we expect elections to deliver these results. But aggregating preferences with elections is harder than it looks. The simplest elections based on innocent design choices will produce paradoxical and confounding results.

In this course, we'll introduce mathematical and logical tools that can help us understand the paradoxes of elections. You will use these tools to develop and refine your quantitative reasoning skills and apply them to a fundamental problem: how does adding together individual preferences make democracy possible? Topics will include redistricting, voting procedures, and election prediction models. We will look at contemporary examples such as the recent New York City mayoral primary election, and the effect of using districts in choosing the Seattle City Council. You will develop arguments, apply data visualization tools and consider the relevance of statistical reasoning and causal inference.

This section will teach quantitative reasoning and numeracy skills using applications related to elections. Currently, scholars employ a wide variety of quantitative approaches when trying to understand problems of social choice and democratic outcomes. Topics and data examined in this section include those related to campaign finance, redistricting, voting algorithms, voter turnout, polling, and election fraud analysis. You will learn the production and interpretation of data visualizations, statistics, and how to design research for causal inference. You will also gain basic proficiency with Microsoft Excel and RStudio.

This class discusses political topics but it is not part of the college's political science curriculum. It might leverage your interest in political topics but doesn't require any political knowledge, at all. We will use politics to demonstrate the power of quantitative reasoning.

Learning Objectives

At the conclusion of this course, you will be able to:

- Examine ideas, arguments, biases, and assumptions coming from many perspectives, including your own, with an open yet critical mind.
- Analyze texts and/or quantitative information, recognizing, describing, and questioning patterns, trends, anomalies, and relationships.
- Present clear, compelling, and effective arguments and/or analysis, supported by evidence.
- Critically assess numbers and quantitative data as they are employed by political scientists, pundits, and the media for understanding and predicting political phenomena.
- Relate issues of diversity, equity, and inclusion to how data is gathered, interpreted, and emphasized.
- Master basic skills in data manipulation and visualization, using spreadsheets and other tools.

Course Website

https://classroom.google.com/u/0/c/NDUwMzYxODk3MTUw

This website will be used for both sections. Google Classroom is one of two sites you will use to submit assignments; the other is My Open Math. Google Classroom will direct you to the right source for readings and submissions. This site will also contain all documents and links related to the course.

The invitation link for Google classroom is https://classroom.google.com/c/NDUwMzYxODk3MTUw?cjc=mds6pv2. The course code is mds6pv2. Both sections enroll in the same Google classroom.

Course Administration

Course Portals

In this course you will access four different portals that require your LC id and password for initial contact. Google Classroom will direct you from session to session, but you will directed to these sites at different phases of the course.

My Open Math
The first two weekly exercises will come from the website My Open Math. Sign up using the link below. All material will be directly linked from our My Open Math class website, so you do not need to regularly check this site directly. https://www.myopenmath.com/forms.php?action=enroll The course ID: 132786 The enrollment key: democracy

Google Classroom
In addition to serving as the class website, you will submit papers and your spreadsheet labs through Google Classroom. Enroll using this link: https://classroom.google.com/c/NDUwMzYxODk3MTUw?cjc=mds6pv2

The class code is: mds6pv2

RStudio
You will have a couple of simple labs that will introduce you to the R programming language. o do that, we'll use a tool called RStudio. You're not expected to learn any syntax, but you should see this programming language in action.

You can access RStudio using a web browser and signing in to the college's server at https://rstudio.cloud.

You can use RStudio to explore datasets, generate data visualizations, and perform simple calculations using the RStudio platform, based on the R programming language. Dozens of videos and online documents can provide a background explanation of R, and a good place to start is the online manual R for Data Science at https://r4ds.had.co.nz/introduction.html.

R Programming for Beginners I will introduce you to the R programming language using the RStudio platform. You don't need to achieve mastery of R syntax but you should see the basic workflow and help you recognize situations when R's power in data management and visualization will help you.

Students looking to develop an advanced skill with payoff in future classes should explore RStudio. A set of interactive primers can be found on the RStudio cloud website at: https://rstudio.cloud/learn/primers.

If you want to dive into R, I recommend the R Programming 101 video series in YouTube. It's entertaining and gentle.

We will have two labs in which you will copy and execute R code in RStudio and report the results. You will also observe the results of changing the code slightly. For ambitious data visualization projects, you may discover that R can satisfy your requirements better than Excel with a reasonable learning curve.

https://www.youtube.com/watch?v=nRtp7wSEtJA&list=PLtL57Fdbwb_AWmWWrFV_pLqq2uicpUIO9

Microsoft Excel, Google Sheets, and spreadsheets
You will also use Microsoft Excel, an ordinary spreadsheet tool, in labs. You will gain exposure to spreadsheets, and when you compare the experience to RStudio, you'll see how a scripted programming language has particular advantages and problems compared to spreadsheet applications.

Lewis & Clark has a Campus Agreement for Microsoft Office. Because of this, current students, staff and faculty can use their @lclark.edu email address to activate a free Office 365 account, which allows them to use Microsoft apps such as Excel. This program is 100% managed by Microsoft and is completely separate from Lewis & Clark College.

To set up Office 365:

- Go to https://products.office.com/en-us/student/office-in-education to sign up.
- Enter your Lewis & Clark email address
- Click the Get Started button
- Access the link that is sent to your email to complete the registration
- Follow the prompts to activate Office 365 and create your Microsoft account
- Install Office and sign-in with your newly created Office 365 ID

If you prefer to use Google sheets, you can complete the exercises in that tool, but the labs have been written with the downloadable version of Microsoft Excel in mind.

Lab Groups

You will regularly work on labs in groups of 3-4.

Please fill out this short survey to help me select your Excel and RStudio mates: https://forms.gle/kHNKVKgsM34vr7bK7. I will post this survey as an ungraded Google Classroom assignment. Please complete it by Monday January 24.

Attendance

Your attendance is expected every class session. If you can't attend class, please notify me. Attendance during the pandemic is more challenging than usual, but attendance is the easiest thing you can do to improve your performance in the class.

Your grade will be reduced if you routinely miss class without notification or reason. See the grade formula below for details.

Laptops and Phones

If you have access to a laptop computer, you *should* bring it to class routinely.

You can bring phones into the classroom, but please note that we have very limited time together and we need to make it count. We all need to be present and free of distraction. I will count on you to do your part.

Your classroom experience won't be successful if we aren't all focused. We don't have much time together and we can't afford to waste it. I will approach you if maintaining focus appears to be a problem.

Please note the Classroom Agreement, and please add anything

Recording Classes

Lewis & Clark policy generally forbids recording of classes. The policy states: "... the secret recording (audio or video) of classes, meetings or other conversations, including telephone calls, is prohibited, as not compatible with the law or the promotion of an open exchange of ideas."

Please do not record classes without discussing it with me. The concern is protecting privacy, for everyone in the classroom. See me if you have questions. The policy is available at https://www.lclark.edu/live/profiles/3606-recording-policy.

Rescheduling Exams

The exams will take place on the designated days, and cannot be rescheduled.

Tutoring at the SQRC

The Symbolic and Quantitative Resource Center (SQRC) is an informal and free drop-in peer tutoring center. The SQRC will offer both in-person and remote tutoring this semester. In-person tutoring will take place in JR Howard 134 and remote tutoring will take place on the SQRC Discord server. Use this link to join the Discord server: https://discord.gg/VWfT99b

Changing Sections or Withdrawing

Any requests to change your Words or Numbers section should be directed to the General Education Office (GenEd@lclark.edu). Because it is a required course designed for first year students, withdrawal is not permitted (unless you are withdrawing from all courses for the semester).

Diversity, Equity, and Inclusion

Lewis & Clark and its faculty are committed to diversity, equity, and inclusion in the classroom. I will work hard to ensure that all backgrounds and perspectives thrive in this course.

I am committed to the goal that anyone can achieve mastery of basic quantitative reasoning and the ideas presented in this course. Typecasting ourselves as a "math" or "non-math" person is self-limiting and needless.

If your learning needs are not being met, or you do not feel comfortable with the material being discussed, I am counting on you to let me know. I will do my best to support a classroom climate that supports a diversity of thoughts, perspectives, and experiences, and that honors your identities (including race, gender, class, religion, ability, etc.). Matters of identity and American politics are inextricably intertwined and as such will be regularly discussed in class and will likely require consideration in your research projects.

Class work and Grading Formula

Our class will ask: How do preferences and choices of individuals in a democracy translate to political action?

Somehow, a democracy must translate the goals people want into policy, by adding up preferences, weighing public opinion, and establishing representation. When we can reason with quantities and measurement, we can make good judgments about how well we're translating the public's desires, and how we can improve.

We will also explore how claims concerning these subjects can be argued, or misrepresented, by data and data visualizations. Some fluency in the basics of data organization is necessary for quantiative reasoning, and this fluency does not require mathematics.

The topics in the class include:

- Surveys, sampling, and the basic of survey computation
- Using percentages and growth formulas to express political claims
- Computing voter turnout percentages with spreadsheets and the R programming language
- US House apportionment

- Districting and Gerrymandering
- Voting systems, with focus on Ranked Choice Voting
- The US Electoral College used to elect presidents
- Political polarization

The class work focuses on mastering the basic computational details of these topics.

- Preparation for the capstone presentations and papers
- Pre-class readings
- Some exercises using the My Open Math platform
- Labs and lab submissions using Microsoft Excel and RStudio
- Two group projects

Weekly assignments and group projects 35% of total

Most weeks, you will complete a simple assignment that applies your knowledge about one of the topics. Some of the assignments ask for answers to questions sets and some are lab completions.

After the break, the weekly assignments shifts to two group projects that you will submit collectively.

Learning Objectives #1, #2, #3, #4, and #5)

First draft of capstone report 10% of total

Submit a first draft of your research project. The draft is due March 14. Your peer review response is due March 16. Your grade will combine work on both of these tasks.

Midterm (10% of total) and final exam (15% of total)

The final exam is cumulative. (Learning Objectives #2 and #4). The final exam takes place as scheduled by the college: https://college.lclark.edu/offices/registrar/final_exam_schedule/spring/

Students cannot take the exams with the other section.

The section 9 final exam takes place on Monday, May 2 from 1-4pm in JR Howard 254.

The section 13 final exam takes place on Wednesday, May 4 from 1-4pm in JR Howard 116

Each component of the grade is based on a 100 point scale, and I try to adhere to that formula so that you don't have to reweight the numbers that you see in assignments or exams in Google classroom.

Capstone Presentation and Paper 25% of total

You are responsible for one 5-6 page paper one of these topics:

Attendance/ Participation 5% of total

This portion of the grade will be reduced if you routinely miss class without prior notification or some important reason. Some sessions will not require in class attendance, and you will know about those sessions well in advance. Two or more absences will reduce the score given.

Grading Rubric

In addition, you will present your argument and analysis to the class and answer questions from your colleagues about your analysis. As part of this project, you will need to address how your data and analysis reflects on issues of inclusion, diversity, and equity. (Learning Objectives #2, #3, #4, and #5).

Late work submissions Unless otherwise specified, late work will be penalized by 2/3 of a grade per day. This means, for example, that an assignment graded as a B will be dropped to C+ the first late day, and to C- the second day. Work submitted more than 48 hours late will not be accepted.

The grading rubric will appear in each assignment description found in Google Classroom. Assignments will be scored with a number, and the aggregate of the scores determines your letter grade.

Letter grades will follow this scale: 92-100: A 89-91: A- 86-88: B+ 78-85: B 74-77: B- 69-73: C+ 62-68: C 58-61: C- 50-57: D Less than 50: F

Weekly Assignments

The first seven graded assignments (before spring break) are worth three points each. The two group assignments after spring break are worth eight points each. The first assignment (due on January 19) is ungraded.

Note that I will solicit your input in various ways, through online surveys and response forms. These solicitations will not be graded, but will give you chances to test our understanding of ideas that we talk about, and give me your input about the course.

Week 1 (due Jan 21)

This assignment is ungraded. Please sign up for these services:

- Access Microsoft Office and download the office suite: http://www.office.com
- Create a FREE account https://rstudio.cloud. **Be sure to use the Google login option at the bottom of the page, and use your Lewis & Clark Google account (the one with the format lc21-XXXX@lclark.edu).** See the assignment for an example
- Register as a new student at myOpenMath.com: http://myopenmath.com As noted earlier, the Course ID is **132786** and the passcode is **democracy**
- Make sure you are enrolled in the course portal for Google Classroom. https://classroom.google.com/u/0/c/NDUwMzYxODk3MTUw

Week 2 (due Jan 28)

My Open Math Percentage Problem Solving
Enter your results in the My Open Math website. We will review the process in class.
https://www.myopenmath.com/course/course.php?cid=132786&folder=0-1

The assignment is worth three points and you will see your score in Google Classroom. https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwNjkwNzMyOTk4/details

Week 3 (due Feb 4)

My Open Math Growth Models exercise at https://www.myopenmath.com/assess2/?cid=132786&aid=9486788#/

The assignment is worth three points, and the results will be posted at https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwNzIyNTE2NjU1/details

Week 4 (due Feb. 11)

Group Excel Lab #1 https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwODY2OTQ5MTMw/details

Week 5 (due Feb 18)

Identify an election reform proposal, or a datase suitable for the capstone project. https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwOTEwMTIyNjU0/details

Week 6 (due Feb 25)

Group Excel Lab 2 https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwOTYwNTQyMjE4/details

Week 7 (no assignment)

Week 8 (due Mar 11)

Submit a 300 word summary of the Gender Studies symposium at https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwOTE3ODg3NDI5/details

Week 9 (due Mar 18)

Weekly Assignment: Apportionment https://classroom.google.com/c/Mzc2MjMzMzQ1ODU0/a/MzgwMDI0MDExNjU3/details First draft of your research project.

Week 10 (no assignment)

Week 11 (due Apr 1)

Group Project #1: Voting Systems https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwOTYzMTY2Mjgw/details

Week 12 (due Apr 8)

The last weekly assignment Group Project #2: Gerrymandering https://classroom.google.com/c/NDUwMzYxODk3MTUw/a/NDUwOTY1OTE1MzI3/details

Course Schedule

Week 1

Wednesday, January 19 Topic: A personal course introduction. Syllabus review, a few words about me, and the purpose of CORE121.

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Friday, January 21 Reasoning with probability with the Monty Hall Problem.

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Pre-class Reading:
Read about the back story of the Monty Hall problem. (No submission but consider the discussion questions before class.)

https://www.statisticshowto.com/probability-and-statistics/monty-hall-problem/ https://www.nytimes.com/1991/07/21/us/behind-monty-hall-s-doors-puzzle-debate-and-answer.html https://www.vox.com/2015/12/1/9821256/monty-hall-problem-mansplainers

Week 2

Monday, January 24 Manipulating Percentages with Voter Turnout, and the context of voter turnout.

Pre-class Homework Assignment: Read pages 1-6 of this textbook chapter. http://www.opentextbookstore.com/mathinsociety/2.5/ProblemSolving.pdf

In class we will complete the first three "Try it Now" examples from the reading.

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Wednesday, January 26 Using growth formulas: artithmetic vs. geometric/exponential growth. Political inequality and exponential growth, and the example of wealth tax.

Pre-class Reading Assignment: Read the first 10 pages of PDF at http://www.opentextbookstore.com/mathinsociety/2.5/GrowthModels.pdf. Read through Example 6, pp. 173-182.

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Friday, January 28 Computing inflation and real dollars

Skim Excel Lab #1 and watch this short video: https://www.youtube.com/watch?v=y_Nt5BL_wgU

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Week 3

Monday, January 31 Excel lab (Campaign Finance): Turnout computation from simple data in Excel.

We will finalize lab groups for the semester and begin the lab

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Wednesday, February 2 Statistics, the difference between Statistics vs. Mathematics.

Pre-class Reading Assignment #1:
Read Pages 1-11 in http://www.opentextbookstore.com/mathinsociety/2.5/Statistics.pdf

Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Friday, February 4 Introduction to Surveys using statistical inference.

Pre-class Reading Assignment #1: Before class, read https://www.nytimes.com/2020/11/10/upshot/polls-what-went-wrong.html (PDF here: https://drive.google.com/file/d/1HKM5UQzn3F1WkuURYjzzkEbepdumG_Qj/view?usp=sharing)
Zoom link for both sections: https://zoom.us/j/96286143040?pwd=UlRjYTBZTXdmQkhvQmRLaG5JZ2Vzdz09

Week 4

Monday, February 7 As of January 11, this will be our first class in person Data organization: observations, variables, and description. Read http://www.opentextbookstore.com/mathinsociety/2.5/DescribingData.pdf pp. 247-269. Watch this 7:47 minute video. https://www.youtube.com/watch?v=Kno1gJiO5Dg

Wednesday, February 9 Public Opinion and COVID https://www.pewresearch.org/2021/03/05/a-year-of-u-s-public-opinion-on-the-coronavirus-pandemic/

Friday, February 11 Excel Lab Completion

Week 5

Monday, February 14 Topic:
Introduction to R and RStudio Lab 1

Pre-class Homework Assignment #1:
We will recreate the lab described here: https://core121-election-science-spring2022.netlify.app/core121-lab-1-v1

Watch this R Programming 101 video (6:55 in length). https://www.youtube.com/watch?v=nRtp7wSEtJA&list=PLtL57Fdbwb_AWmWWrFV_pLqq2uicpUIO9.

Wednesday, February 16 My Open Math: Collecting Data
https://www.myopenmath.com/course/course.php?cid=118940&folder=0-6&r=6116fc9cd5bcf Complete the exercises in the myOpenMath site.

Friday, February 18

Week 6

Monday, February 21 Topic:
Politics and Margins of Error

Pre-class Reading Assignments: Read https://www.statisticshowto.com/probability-and-statistics/hypothesis-testing/margin-of-error/

Read https://myopenmaths3.s3.amazonaws.com/cfiles/29937/MAT14xTextbook1stEditionCh12.pdf (pp. 1-5) AND https://myopenmaths3.s3.amazonaws.com/cfiles/2408/ReadingE8.pdf (pp. 1-4)

Wednesday, February 23 Surveys and Public Opinion Part I

Pre-class Reading Assignment: https://seeing-theory.brown.edu/probability-distributions/index.html Read through the interactive online chapters from Chapter 1: Basic Probability to Chapter 5: Bayesian Inference.

Friday, Febuary 25 Surveys and Public Opinion Part II

Week 7

Monday, February 28 Voting Theory Part 1: Ordering preference and preference tables Read http://www.opentextbookstore.com/mathinsociety/2.5/VotingTheory.pdf (pp. 35-43)

Wednesday, March 2 Ranked Choice Voting and the New York Mayoral Primary https://www.thecity.nyc/2021/7/19/22584637/did-ranked-choice-voting-work-in-nyc-eric-adams

Friday, March 4 Midterm Exam

Week 8

Monday, March 7 Voting Systems (continued) Apportionment and the U.S. House of Representatives

Topic:
Apportionment and the U.S. House of Representatives.

Pre-class Reading Assignment Read https://www.ianrmcdonald.com/posts/2021-05-10-new-york-and-house-apportionment-in-2020_update/

Peer review response

Wednesday, March 9 GENDER SYMPOSIUM

Friday, March 11 GENDER SYMPOSIUM

Week 9

Monday, March 14 **Topic:** Gerrymandering in the United States and the Group Voting Rules project.

Read https://www.quantamagazine.org/the-math-behind-gerrymandering-and-wasted-votes-20171012/ and come prepared to discuss this question:

"What is the definition of gerrymandering, and how can we use the efficiency gap to measure it?"

We will also stqage the voting systems group project. Your group will be responsible for defining the outcome of the New York mayoral primary using Approval Voting. You will apply a common dataset to the project.

Wednesday, March 16 Gerrymandering and the politics of geography: More on the efficiency gap, measuring gerrymandering, and Seattle City Council Switches to Districts

Preclass Reading Assignment: Read https://sccinsight.com/2021/03/19/understanding-the-city-council-redistricting-process/ and come prepared to answer this question: "Why would Seattle voters have chosen to adopt a district based system in 2013, given all the uncertainty about managing and defining districts? Isn't that going backwards?"

Friday, March 18 Your Data Project and Presentation.

We will discuss the end-of-semester data projects, which include a presentation and a short paper. The presentations will cover the final five days of class, and the paper (2-3 pages) is due Wednesday, April 27.

The implications of district building with Dave's Redistricting tool and District Builder.
Pre-class Video Assignment Watch this video (13:38 minutes): https://www.youtube.com/watch?v=Pp42Rw2cVQA and peruse the online tool at https://davesredistricting.org/maps#home
We will compare this tool to https://www.districtbuilder.org/ if time permits

Week 10

Monday, March 21 - Friday, March 25: Spring Break

Week 11

Monday, March 28 Principles of Data Visualization

Preclass Reading Assignment: Read https://fivethirtyeight.com/features/the-52-best-and-weirdest-charts-we-made-in-2016/ https://towardsdatascience.com/data-visualization-101-7-steps-for-effective-visualizations-491a17d974de Read https://www.livescience.com/45083-misleading-gun-death-chart.html

Wednesday, March 30 Principles of Data Visualization

Friday, April 1 Datawrapper workshop

Look at this overview of an app called datawrapper. We will use this application to build maps for the lab due on November 15: https://www.datawrapper.de/maps

Week 12

Monday, April 4 Using District Building and Dave's Redistricing Tool

Watch this video (13:38 minutes): https://www.youtube.com/watch?v=Pp42Rw2cVQA and peruse the online tool at https://davesredistricting.org/maps#home
We will compare this tool to https://www.districtbuilder.org/ if time permits

Wednesday, April 6

Friday, April 8 Festival of Scholars: No class today

Week 13

No weekly assignment

Monday, April 11 The U.S. Electoral College

Preclass Reading Assignment: Read https://www.nytimes.com/article/the-electoral-college.html AND https://www.nationalpopularvote.com/written-explanation.

Come prepared to answer this question: "Maine and Nebraska don't use winner-take-all allocations of their electors. Why don't the other 48 states and DC follow their lead?"

Wednesday, April 13 Topic:
Polarization

Pre-class Reading Assignment: Read this article: Mason, Lilliana. 2018. Losing Common Ground: Social Sorting and Polarization *The Forum* v.18(1) https://bit.ly/3go9bZa

Friday, April 15 Presentations

Week 14

Monday, April 18 Presentations

Wednesday, April 20 Presentations

Friday, April 22

Week 14

Monday, April 25 Presentations

Wednesday, April 27 Final Exam Review

Capstone Paper is Due: https://classroom.google.com/c/Mzc2MjMzMzQ1ODU0/a/NDI1MjM4NzAwODE1/details

Week 15

Monday, May 2 Section 9 Final Exam: 1-4pm

Wednesday, May 4 Section 13 Final Exam: 1-4pm