INST 314 – Statistics for Information Science

Section 0103,
Key 0126
Tuesday & Thursday 12:30 PM – 1:45 PM
This syllabus has a heading outline for navigation ease.

Instructor: Shawn Janzen
E-mail: sjanzen@umd.edu (DO NOT email me via ELMS)
Office: 1109K Patuxent Building
Office Hours: Mondays 12:30 – 1:30 pm and Thursdays 2:15- 4:00 pm, & by appointment on-campus & via Google Meet (formerly Google Hangouts)

Academic Peer Mentors (AMPs): Class tutors with drop-in office hours
Office: HBK 0215A
AMP Name – Office Hours – Email
Sarah Winters – Mondays & Wednesdays 11:00 am – 12:00 noon – wintesar@gmail.com
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Advances in hardware and software technologies have led to a rapid increase in the amount of data collected, with no end in sight. Decision making in the coming decades will depend, to an ever greater extent, on extracting meaning and knowledge from all that data. In this class we focus on one branch of statistics, inferential statistics, to help us reason about data. By gathering datasets, formulating proper statistical analyses and executing these analyses, information professionals play a significant role in bridging the gap between raw data and decision making.

This course will introduce basic concepts in data analytics including study design, measure construction, data exploration, hypothesis testing, and statistical analysis. The course also provides an overview of commonly used data manipulation and analytic tools. Through homework assignments, projects, and in-class activities, you will practice working with these techniques and develop statistical reasoning skills.

Learning Objectives

After completing this course, you will be able to:

- Select and evaluate various types of data to use in decision making;
- Use prescriptive and descriptive analyses to reach defensible, data-driven conclusions;
- Select and apply appropriate statistical methods;
- Use MS Excel and R for basic data manipulation and analysis;
- Critically evaluate data analyses and develop strategies for making better decisions.

Course Materials

Software

The following software is necessary for you to successfully complete the course activities.

Required:

- You must install and use R. R programming language and software is free and available online (https://www.r-project.org/). You may want to use R Studio, which will be used predominately through the class; R studio is an integrated development environment for R (http://web.cs.ucla.edu/~gulzar/rstudio/). I have posted links to R tutorials on Elms/Canvas.
- Microsoft Excel or Open Office Calc. Microsoft Excel is available for Macintosh through the university's TERPware website (https://terpware.umd.edu). Open Office Calc is a free software spreadsheet application available online (https://www.openoffice.org/product/calc.html).

Recommended (see extra credit EC 1):

- Python, Minitab, SPSS, Stata

Readings

Completing the required reading for the class is essential to understanding the core statistical concepts. In order to learn, you must review the material multiple times. The required reading listed below in the course schedule is given for the main textbook used in the class. There are a few advanced topics that are beyond the course textbook, readings for these sections will be posted on Elms/Canvas.

Required:

- Radziwill, N.M. (2017), *Statistics (The Easier Way) With R,* 2nd ed., Lapis Lucera. ISBN-13: 978-0-9969160-5-9.
    - o The author offers a free e-book version with proof of purchase of the physical book copy.
- Diez, D., Barr, C., and Çetinkaya-Rundel, M. (2015), *OpenIntro Statistics*, 3rd ed., OpenIntro. https://www.openintro.org/stat/textbook.php
    - o Available as a free pdf download, color hardcover of black & white paperback for purchase, and free interactive website.
- Verzani, J. (2004), *Using R for Introductory Statistics,* Chapman & Hall/CRC. ISBN/ASIN: 1584884509 ISBN-13: 9781584884507 https://cran.r-project.org/doc/contrib/Verzani-SimpleR.pdf
    - o Available as a free pdf download.

Recommended:

General statistics

- Online Statistics Education: A Multimedia Course of Study (http://onlinestatbook.com/). Project Leader: David M. Lane, Rice University.
  - This is a free, online stats book available via HTML, pdf, and e-pub. It is a textbook used in other sections of 314 and offers videos and other interactive tools.
- Field, A., Miles, J., & Field, Z. (2012), *Discovering Statistics with R,* Sage Publications, Inc. ISBN-13: 978-1446200469
  - This is a large and comprehensive book—a great resource with many examples using R that will take you beyond the scope of INST 314.

Math & formula focused

- Hinton, P. (2004) *Statistics Explained: A Guide for Social Science Students*, *2nd ed*,. Routledge. ISBN-13: 978-0415332859
  - I find this one to be very theory and formula driven with no software exercises.
- Rice, J.A. (2006). *Mathematical Statistics and Data Analysis, 3rd ed*. Cengage Learning. ISBN-13: 978-8131519547
  - This book provides more mathematical detail about the techniques we will cover in the class.

Statistics in software other than R

- Salkind, N.J. (2016), *Statistics for People Who (Think They) Hate Statistics Using Microsoft Excel 2016, 4th ed.,* Sage Publications, Inc. ISBN-13: 978-1483374086
  - This is an easy and light-hearted read that hits on many generally used statistical concepts with an analytical focus entirely based in Excel.
- Kremelberg, D. (2011) *Practical Statistics: A Quick and Easy Guide to IBM SPSS, Stata, and Other Statistical Software*, Sage Publications, Inc. ISBN-13: 978-1412974943
  - This is more of a quick review for stats and focuses on how to perform statistical tests using SPSS and Stata software.

Less stats, more data science

- Grolemund, G. & Wickham, H. (2017), *R for Data Science*, O'Reilly Publishing, Inc. ISBN-13: http://r4ds.had.co.nz/index.html
  - This is a free book available in HTML and a physical copy is available for purchase. This book focuses on working with data in R, rather than

statistics, but many of the techniques may be useful to prepare your data for statistical analysis.

Course Activities

Homework
There will be a total of 8 homework assignments. These assignments are meant to assess your mastery of the topics and techniques covered in class. These will be textbook-style problems that cover material from the last few lectures. <u>Homework assignments will be submitted via ELMS by 11:59 pm on the day it is scheduled due.</u> Since homework are submitted online via ELMS, they will be unaffected by campus closures or changes in the classroom schedule.

Quizzes
There will be a total of 7 quizzes. Each is designed to test your knowledge from recent lectures (since the last quiz) and provide you rapid feedback to improve your understanding of the material. <u>Quizzes will be taken on Elms/Canvas on the scheduled day at an unspecified time during class.</u> The best way to do well on the quizzes is to do the reading and homework problems. Your lowest quiz score will be dropped from the final grade. If you miss a quiz, it will receive a zero (0) score unless you have an excused absence and take a makeup quiz; see excused absences for more information.   If class is cancelled for any reason on a quiz day, the quiz will be automatically rescheduled for the next regular day of class.

Projects
There will be a total of 4 projects. These are your opportunity to apply concepts learned in class to real problems and data sets from ideas and hypotheses you develop and test. These assignments will be memo-style narrative reports with statistical analysis. You may work with your colleagues to figure out the underlying concepts and problem-solving processes, but are expected to work *individually* to write your own project paper. <u>Projects will be submitted via ELMS by 11:59 pm on the day it is scheduled due. Project 4 will be a "Final Class Project" and graded with greater scrutiny than previous projects.</u> Since projects are submitted online via ELMS, they will be unaffected by campus closures or changes in the classroom schedule.

Exams
There will be two midterms and a cumulative final exam. These exams provide an opportunity for you to test your understanding of the concepts, techniques, and problems associated with statistical reasoning. To learn and understand the material fully it is important to review and revisit it multiple times. The cumulative final is optional. The two highest exam scores will be used for your final grade. If you do not take the final exam, your midterm exams will be used for your final class grade. All exams are an open-book style take-home exam format to be completed in ELMS. The online exams will be timed, but you will be able to choose when you start the exam from anytime within the 2-day scheduled timeframe. You must be prepared work in multiple windows on your computer and to copy/paste content from those windows into ELMS. Since

exams are held online, they will be unaffected by campus closures or changes in the classroom schedule.

Class Engagement
See below: Extra Credit – Method 4: Competitive Engagement

Grading
20% Homework (8)   each 2.5%
18% Quizzes (7 drop 1)   each 3.0%
32% Projects (4)   each 8.0%
30% Exams (highest 2 of 3)
   Midterm 1   15.0%
   Midterm 2   15.0%
   Cumulative Final   15.0%

Grades will be assigned based on the total percent earned, using the following rubric. *Grades will not be rounded because an extensive amount of extra credit is offered.* Please come and talk to me early if you think that there might be a problem.

A-	90.0-92.9%	A	93.0-100%		
B-	80.0-82.9%	B	83.0-86.9%	B+	87.0-89.9%
C-	70.0-72.9%	C	73.0-76.9%	C+	77.0-79.9%
D-	60.0-62.9%	D	63.0-66.9%	D+	67.0-69.9%
		F	0-59.9%		

Extra Credit
I believe that there is only so much we can do in the classroom and that much of your learning will be reinforced through applied activities outside of class. I am also interested in helping you develop additional skills and experiences beyond the scope of this class that may help position yourself better for future employment. There are 4 different types of extra credit. You are not obligated to complete any of it, but earned extra credit will be added as percentage toward your final grade.

EC 1: Learning other statistical software
While this course focuses on R as the software of choice, it is not the only one for statistical analysis. Knowing more than one software for statistical analysis may make you a more qualified job/intern candidate and valuable data team member.

When a homework or project requires the use of R, you must use R to obtain credit for your work; however, you may also submit the same work also performed using Stata, SPSS, Minitab, or Python (or Jupyter). Script/Syntax and output files for the bonus software must be submitted with the homework or project before the assignment deadline to receive extra credit. No extra credit for this method will be given for late assignments. Each homework and project with this method will receive an 0.32% extra credit toward your final grade; if you complete this method for all 7 homework and 4 projects (no code for HW1), the maximum extra credit for this method is 3.5% toward your final grade.

Most statistical software is not free; however, you may have free access to this software on select campus computers (see labs in Lefrak Hall https://oacs.umd.edu/facilities/oacs-

computer-labs). If you wish to have your own copy of these software, trial, student, and other versions may be available. See the Office of Academic Computing Services for more information (https://oacs.umd.edu/services/statistical-software-sas-spss-stattransfer-stata).

Although no class time will be dedicated toward software other than R or Excel, there are many free resources online to help you learn. I will also be happy to help answer any questions about using them during office hours.

EC 2: Review statistics in practice
As well as learning statistical theory and applying the techniques, you are encouraged to attend events where statistics play an integral role. The statistics used in the event must be more than simple descriptive statistics, such as averages and proportions; there must be some form of detailed analysis that uses statistics to test a hypothesis, conduct exploratory research, and/or predict one or more activities.

To obtain extra credit related to events, you must provide proof of attendance at both the beginning and ending of the event, e.g. selfie photos capturing you and the event/speakers with timestamps. You must also provide a summary of the event, no more than ½ to 1-page in length, describing the event, its purpose, and how statistics were used in the event, presentations, etc. Go into detail about what data was used, if there were any interesting aspects of the data (e.g. how it was collected, privacy or missing data concerns), how the data was processed for the event, and so on. You must also include a discussion about what statistical methods were used; it is alright if you are unfamiliar with the specific techniques, but obtain the names of the techniques and discuss how/why they were used. Detail what results were found and what, if any, implications the results may carry (e.g. affect policy decisions, develop new applications).

Gaining sufficient information may require you to ask the event speaker(s) or other attendees more familiar with the statistical methods used. You are encouraged to participate and ask questions before, during, and after the event. Bonus: this can help you develop a professional network.

Your completed summary report must be written in a Word document and emailed to me (sjanzen@umd.edu) using the file name convention:

       EC_LastName_FirstName_EventName.docx

You may perform this type of extra credit twice—once for an event that occurs on campus and once for an event that occurs off-campus. An on-campus example is an iSchool faculty or guest research presentation; an off-campus example is a data or policy seminar. Extra credit summaries must be received no later than Thursday, December 6th. Each event report extra credit is worth one bonus percent towards your final grade; so, a total of two percent extra credit is possible with this method.

EC 3: Online training modules for R
Although we use R for lecture and assignments, only a limited amount of time is spent teaching you how to use R. DataCamp is an online learning platform specifically geared toward data science and quantitative methods education. This is normally a paid subscription service, but while in my class, you will have free access to select DataCamp

materials. All of you will be registered to a matching course in DataCamp with the list of materials broken into courses, chapters, and exercises. Each has an associated point value. You will earn 0.1% extra credit, for a maximum of 2.0% extra credit, for every 1,000 points you earn by completing these materials. You may choose which materials to complete or skip, pending any materials pre-requisites.

There will be more materials than you will be able to obtain extra credit, but I encourage you to continue working on them and advancing your skills. Because DataCamp is brand new to my course, I do not yet have the full material list ready, but it will grow over the early weeks. I may also adjust the extra credit to DataCamp point values based on how much I add to the Datacamp materials list.

Another great learning tool for R is a package called Swirl. This was the previous extra credit learning tool, but will not provide any extra credit for your class as it was replaced by DataCamp. I encourage you to explore the Swirl lessons if you have the time. Check with me for which lessons will be most relevant to our class.

EC 4: Competitive Engagement
By the second week or sooner, I will sort the class into four teams. Those teams will compete throughout the term for points. Students earn/lose points that contribute to the team aggregate. I will try to make all teams have an equal number of students, but if a team has an 'off-number', then I will weight that team's contributions accordingly.

Team points may be earned and lost by any of the following:

- Attending class: +1 point per student for each day of class attendance
- Participating in class by replying to questions during lecture: +2 points per participating student (*may be earned once per student per class*).
- Responding to another student's question on the discussion board: + 3 points *(may be earned once per discussion board section, e.g. Homework 2 is one section).*
- Missing a quiz*: -5 points per student per quiz
- Missing an exam*: -10 points per student per exam
- Failing to submit an assignment on time*: -5 points per student per assignment per day it is late.

* *Deadlines take into consideration any excusals.*

I will post weekly updates of team scores for the entire class. I may disclose how points were earned or lost, but I will not provide names of the students responsible for the earned or lost points. Teams are encouraged to communicate within their team to support each other to attend class, participate, and complete assignments.

At the end of the term, the teams will be ranked highest to lowest by point total. All students on the 1st place team will receive 3% extra credit. Students on the 2nd place team will receive 2% extra credit. Students on the 3rd place team will receive 1% extra credit. The last place team will all students on the team with the highest number of points will receive three percent (3%) extra credit toward your final grade. The second highest team will receive two percent (2%) extra credit, third highest group receives 1% extra credit. The fourth team will not receive any team-based extra credit.

I reserve the ability to modify the earn/lose points list during the term, but any modifications will not affect points already earned or lost.

Course Policies

Attendance
Attending class is not mandatory; however, it is likely to influence on your class performance and grade. It also affects your team's competitive engagement score (see above). DO NOT email me if you are unable to attend class, UNLESS it is a quiz or exam day (see below).

Excused Absences
If an assignment due date or scheduled quiz or exam is a religious holiday for you, inform me via email at least one week in advance, so an alternate due date can be set. Missed quizzes and exams with an excused absence must be made up within one (1) week of the original deadline—anything during the last week of class may require a sooner makeup. Missed quizzes, or exams without a documented, excused absence cannot be made up and will receive a score of zero (0).

If you miss class for being sick/injured on a regular class day, this is not a problem and you do not need to contact me. If you miss class for being sick/injured on a quiz or exam day, or if you have a prolonged sickness/injury that affects your ability to complete assignments, you MUST obtain a signed note from a doctor AND that note MUST identify if you are well enough to attend class or not and/or are well enough to complete assignments in or out of class. Send a copy of the doctor's note to me via email. I reserve the right to contact that doctor's office to only verify the authenticity of your note and its contents.

If you have a death in the family, have a family member with a severe injury or illness, or have a similarly grave situation—come discuss it with me. You will be granted an excused absence for the first instance, but any other instances or if additional time will be considered on a case-by-case basis.

Be aware of how any time lost in class may affect your ability to complete your studies.

Late Work
Timely submission of the completed assignments is essential. The due date of each assignment will be stated clearly in the assignment description. Late assignments will be increasingly penalized for each day it is late. Late work will be accepted up until two weeks after the original assignment deadline or the last day of class date—whichever comes first, after which you will receive a zero (0) score.

Late Penalty Schedule

Up to 1 day	$1 \leq 2$ days	$2 \leq 3$ days	$3 \leq 4$ days	$4 \leq 5$ days	$5 \leq 6$ days	> 6 days	14 days
10%	15%	20%	25%	30%	40%	50%	0%

Re-grading
Fair, accurate, and consistent grading is very important to me. If you receive a grade different than what you believe you should have received, then within one week of receiving the assigned grade, you must submit a written document in which you include the graded work, an explanation of what you believe was improperly graded, and an explanation for why you think it should be given a different score. For any re-grade requests, the entire assignment will be regarded, and your score may go up or down.

Other Policies
Other policies relevant to undergraduate courses are found here: http://ugst.umd.edu/courserelatedpolicies.html. Topics that are addressed in these various policies include academic integrity, student and instructor conduct, accessibility and accommodations, attendance and excused absences, grades and appeals, copyright and intellectual property.

Office Hours
Please visit me during office hours. Open hours will be regularly scheduled for anyone to drop in. Individual and group office hours are available by request. All office hours are safe spaces to discuss anything related to our class, other iSchool & UMD studies, professional development, or anything else that you'd like to discuss.

If you are having trouble in the course, please talk to me as soon as possible. If you do poorly or lower than you expected on the first exam, quizzes, or assignments, it is imperative that you come to office hours so that we can figure out the problem early.

Academic Dishonesty
Cheating in any form (copying, falsifying signatures, plagiarism, etc.) will not be tolerated. It will result in a referral to the Office of Student Conduct irrespective of scope and circumstances, as required by university rules and regulations. There are severe consequences of academic misconduct, some of which are permanent and reflected on the student's transcript. If you have any questions regarding the University's policies on scholastic dishonesty, please see http://osc.umd.edu/OSC/Default.aspx.

It is very important that you complete your own assignments, and do not share files (excluding raw data), partial work or final work.

I take plagiarism VERY seriously. It is quite likely that you will use the Internet or class materials to help answer your assignments, quizzes, and exams. I prefer that you summarize or paraphrase source materials rather than copy & paste content. If you copy and paste content from ANYTHING you did not write yourself, I expect you to put it in quote and clearly cite the source. I will heavily enforce plagiarism violation penalties.

University of Maryland Code of 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://shc.umd.edu/SHC/Default.aspx.

Accommodations

Please come and see me as soon as possible if you think you might need any special accommodations for disabilities. In addition, please contact the Disability Support Services (301-314-7682 or http://www.counseling.umd.edu/DSS/). Disability Support Services will work with us to help create appropriate academic accommodations for any qualified students with disabilities. If you experience psychological distress during the course of the semester you can get professional help at the Counseling Center (301-314-7651 or http://www.counseling.umd.edu/.

Class and Campus Cancellations

If I am physically unable to teach class on campus on a given day, I may either hold or reschedule class online, using Google Meet; you will be notified in advance of this change and emailed the link to access the online class session. If I am completely unable to teach class on a given day, and rescheduling is not preferred, I may ask another instructor to assist for the day. In that event, you will be expected to attend class as usual with the guest instructor.

Weather and other events may require campus to close and cancel class. Campus closures will be posted on the UMD homepage (www.umd.edu) and many of its social media channels. You may also call the weather emergency phone line: 301-405-7669. See https://umd.edu/weather for more information. In the event of a campus closure, expect our class to be held online. I will contact you with instructions for the online class.

Course Schedule (Subject to Change)

Readings: [R] = Radziwill, [O] = Open Intro Stats, [V] = Verzani
Bookmark: [R] p.299 Which Statistical Test Should I Use? & Appendices A, B, C, & E

Week	Day	Topics	Reading	Milestones due at 11:59 pm Quizzes in class	Problem Sets (Optional.)
1	Tue 8/28	Intro to 314 Inference Part 1: Foundations & Sampling	[R] 1.1, 1.3, 3.1, & 3.2 Skim: [O] Ch 1 (opt) [V] Sections 1 & 2 p.1-9 (R intro)		[O] 1.9, Odd Answers p.405 [V] p.9-10
	Thurs 8/30	Descriptive & Graphs	[R] 1.4 & 1.5 Skim: [R] Section 2 (opt) [V] Section 3 p.11-25 (univariate data), Section 4 p.25-32 (bivariate data)	Homework 1	[V] p.24-25, p.40-42
2	Tue 9/4	Descriptive & Graphs (con't.) Basic Data Management	[R] 1.6 (opt) [V] Section 5 p.42-54 (multivariate data)	Quiz 1	
	Thurs 9/6	Basic Data Management			
3	Tue 9/11	Inference Part 2: Intro to Hypotheses, Power, and Effect Size	[R] Sections 3.5 p.200-203 (power) Skim: [O] Ch 3 (distributions)	Homework 2	

	Thurs 9/13	Chi-Square: Goodness of Fit	[R] 5.8 [O] 6.3 (opt) [R] 5.9 (opt) [V] Section 12 p.93-97 (GoF)	Quiz 2	
4	Tue 9/18	Chi-Square: Test of Independence	[O] 6.4 [R] p.204 & 211 (power) (opt) [V] Section 12 p.97-99 (ToI)		[V] p.99-100
	Thurs 9/20	Chi-Square: Test of Independence Inference Part 3: Normal Distribution, Z-Scores & Confidence Intervals	[R] 3.6 & 3.7 Skim: [O] Ch 4 (inference) (opt) [V] p.59-60 (d, p, & q functions), p.60-61(z-scores), p. 62 (CLT)	Homework 3	[O] 6.7, Odd Answers p.419
5	Tue 9/25	Inference Part 3: Normal Distribution, Z-Scores & Confidence Intervals		Quiz 3 Homework 4 *(due date may change)*	[O] 3.6 & 34.6, Odd Answers p.410& 412
	Thurs 9/27	One-Sample: z & t tests	[R] 4.1, 4.4, 4.6, 5.2, 5.6 [O] 5.1, 6.1 (opt) [V] Section 9 p.77-79 (conf int), p.80-81 (prop test), p.81-84 (z & t), p.86-87 (one-sample tests)	Project 1	
6	Tue 10/2	One-Sample: z & t tests			[V] p.84-85 & p.87-88
	Thurs 10/4	Two-Sample: z & t tests	[R] 4.2, 4.3, 4.5, 4.7, 5.3, 5.4, 5.5, 5.7 [O] 5.2-5.4, 6.2 [R] p.204 -210 (power) Vaughn 11.5: Nonparametric (opt) [V] Section 11 p.89-93 (two sample) (opt) Vaughn 11.3: Wilcoxon	Quiz 4	
7	Tue 10/9	Two-Sample: z & t tests			[O] 5.6, Odd Answers p.415 [V] p.93
	Thurs 10/11	Midterm 1 Exam Review		Homework 5 Midterm 1 (by Saturday 10/13)	

8	Tue 10/16	One-Way ANOVA	[R] 5.10, 5.11 [O] Ch 5.5 [R] p.204 & 212 (power) (opt) [V] Section 15 p.116-121 (opt) Vaughn 11.4: Krusal-Wallis		
	Thurs 10/18	One-Way ANOVA		Project 2	[V] p.121
9	Tue 10/23	Factorial ANOVA	Vaughn 13.1 Two-Way ANOVA	Quiz 5	
	Thurs 10/25	Factorial ANOVA			
10	Tue 10/30	Correlations	[R] 2.9, p.178, & p.435-438 [O] 7.1.4 (Opt.) [V] p.34-35	Quiz 6	[O] 7.5-7.18 (p.357-362), Odd Answers p.423
	Thurs 11/1	Topic Review		Homework 6	
11	Tue 11/6	Simple Linear Regression	[R] 4.8, 6.1, 6.3 [O] Ch.7 [R] p.204 & 213 (power) (opt) [V] Section 4 p.32-34 & 36-40, Section 13 (p.100-108) 7 p.102-103		
	Thurs 11/8	Simple Linear Regression			[O] 7.5, Odd Answers p.423 [V] p.108-109
12	Tue 11/13	Midterm 2 Review		Homework 7	
	Thurs 11/15	Multiple Linear Regression	[R] 6.2 [O] Ch 8.1 – 8.3 (opt) [V] Section 14 (p.109-116)	Midterm 2 (by Saturday 11/17)	
13	Tue 11/20	Multiple Linear Regression		Project 3	
	Thurs 11/22	No Class: Thanksgiving			

14	Tue 11/27	Multiple Linear Regression		Quiz 7	[O] 8.5, Odd Answers p.425 [V] p.116
	Thurs 11/29	Topics Review		Homework 8	
15	Tue 12/4	Bonus Lecture TBD			
	Thurs 12/6	Final Exam Review		Project 4 Last day for EC event reports	
16	Tue 12/11	No Class: Reading Day			
	Thurs 12/13	FINALS DAY *Will hold class for anyone wanting to take the final exam with me present for clarification questions.*		Final Exam open on 12/12 complete by 12/14	

This schedule is for planning purposes and may change. See Elms/Canvas for current information and deadlines.

UMD Calendar Fall Semester 2018 Dates

First Day of Classes	August 27 (Monday)
Labor Day	September 3 (Monday)
Thanksgiving Recess	November 21-25 (Wednesday-Sunday)
Last Day of Classes	December 10 (Monday)
Reading Day	December 11 (Tuesday)
Final Exams	December 12-18 (Wednesday-Tuesday)
Commencement - Main Ceremony	December 18 (Tuesday)
Commencement - College/Department Ceremonies	December 19 (Wednesday)