

SYLLABUS

Course Information

Title: **Statistics**

Location: **Horton 307**

Schedule: **TR 9:40am-11:00am**

Semester: **Fall 2016**

Number: **SOC 502 (02)**

CRN: **10184**

Credits: **4**

Attributes: **Quantitative Reasoning (Disc), Quantitative Reasoning GP 2**

Instructor Information

Name: **Ezra Temko**

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Office Hours: **Tuesdays & Thursdays, 3pm-4pm in McConnell 338A, or by appointment**

Course description

Elementary applied statistical techniques; tables, graphs, cross-clarifications; central tendency and dispersion; correlation and linear regression; confidence intervals and hypothesis testing. Other statistical classes including ADM 430, BIOL 528, ADMN 420, EREC 525, HHS 540, MATH 439, MATH 539, OHIL 412, MATH 644, PSYC 402 cannot be used to satisfy the major requirement. This is, all majors must take SOC 502 even if they have taken an introductory statistics course in another department. A student can, however, petition to receive eight credits for two introductory statistics courses, if and only if, SOC 502 is taken after the student became a sociology major and took their first statistics course prior to declaring SOC as their major. Majors cannot receive credit for statistics courses taken after they have declared SOC.

Course objectives

By the end of this course, you will be able to:

- Understand the utility of correctly obtaining and analyzing data for understanding social phenomena
- Intelligently discuss and critique studies and reports that involve statistical issues
- Apply basic statistical techniques to uncover patterns and suggested truths within data sets
- Use SPSS to produce and interpret graphic and tabular representations of data

For more information about course objectives, see the American Statistical Association's "Goals for Students in an Introductory Course: What it Means to be Statistically Educated"

at http://www.amstat.org/education/gaise/GAISECollege_Goals.pdf

Required Materials

1. You have one required textbook for this course. You must bring the book to class, so you should only purchase/rent the e-version if you will be bringing a laptop to class. The book is available from Durham Book Exchange. It has not been ordered through the UNH Barnes & Nobles Bookstore.

Linneman, Thomas J. 2014. *Social Statistics: Managing Data, Conducting Analyses, Presenting Results* (2E). New York: Routledge.

2. You also need a calculator, which you need to bring to class as well. If you will be bringing a laptop to class, you may use Excel or a calculator on your laptop. If you have a cell phone, it usually has a calculator already, but with limited abilities; I would suggest a scientific calculator. If you have a smartphone, there are apps to download scientific calculators (including free apps) if you would like to use your phone.
3. You will need a writing utensil and something to write on. Even if you are a laptop person, there are times it will be useful to be able to write things out by hand (e.g. copying down or using a particular equation). On exam days you will need a #2 pencil and your student ID number.
4. You will make a nameplate on the first day of class (I will provide the paper and markers) with your preferred name that you would like to be called by your peers and me. It is your responsibility to bring your nameplate back with you and display it each class period.
5. You will need to use SPSS as part of this course. You can install it on your personal computer for free and/or use it on UNH computers. If you would like to install it on a personal computer, visit: <https://www.unh.edu/it/kb/article/unh-academic-software-applications.html>. To use SPSS off-campus (as well as perhaps to install it via wifi), you will also need to connect via the [UNH network VPN](#).
6. You will need to submit your problem sets as Microsoft Word documents. You may also want to use Microsoft Powerpoint as part of your reading research presentation. These applications are available on UNH computers, but if you would like them on your personal computer, you can install them for free here: <https://www.unh.edu/it/kb/article/installing-microsoft-office-students.html>.

Course Requirements

Time Commitment

While there is variability in how much work students have for various classes, federal regulations require the equivalent of a minimum amount of work of approximately 45 class and work hours per semester course credit. According to the 2015-2016 UNH Student Rights, Rules, & Responsibilities Handbook, in order to comply with the federal definition of credit hour, “[f]or each credit hour, the University requires, at minimum, the equivalent of three hours of student academic work each week.” Therefore, this class entails a minimum of 12 hours of work each week. In compliance with these regulations, and with three hours of class time each week, you should expect to complete, on average, a minimum of nine hours of work each week outside of class time. This of course will have variation from week to week and from student to student.

It requires substantial time to learn statistics. One cannot learn statistics just by reading about it or hearing about it. Learning statistics requires doing statistics. Completing textbook exercises,

I highly suggest completing the textbook exercises that have answers in the appendix. Additionally the homework problem set assignments and in-class exercises are a critical part of the learning experience.

How You Earn Your Grade

I follow the UNH grading policies as outlined in the 2016-2017 UNH Student Rights, Rules, & Responsibilities Handbook. For information on letter grading and other grading policies, please refer to the handbook.

Your grade will be determined through the following five areas:

- Problem Sets (40%)
- Tests (35%)
- Final (20%)
- Reading research presentation (5%)

Here is more detail on these areas:

Problem Sets (45%)

You will have four problem sets.

Problem Set	Percent of Total Grade	Due Date (9am)	Coverage
Problem Set #1	15%	10/3	Introduction through Variation
Problem Set #2	10%	10/14	Chi-square through ANOVA
Problem Set #3	10%	10/28	Regression
Problem Set #4	5%	12/9	Advanced topics

These homework assignments should either be completed independently or with one partner. If you complete it with someone, you will list who you did it with and turn in an identical document and receive the same grade., though you are always welcome to collaborate on reviewing course content and learning the underlying skills needed to complete the problem sets. This means you prepare, submit, and correct your own work, analyze data and answer all questions yourself. Academic honesty is critical for the academic enterprise. There will be serious consequences befitting the nature of any offenses.

Your problem set must be submitted via MyCourses and should be a Microsoft Word file.

Do not leave them until the last minute, as they may take awhile, and it may end up being too late for questions/feedback.

Tests & Final Exam (45%)

You will take your tests during class time. Your final exam will be during the designated final exam period. All will be taken via MyCourses. The test will become available at the start of class or final exam period and will be available for the length of the normal class period / final exam period. Tests should be completed independently. Tests correspond with the material from the correspondingly numbered problem set. The final exam is cumulative.

Exam	Percent of Total Grade	Date	Coverage
Test #1	10%	10/18	Introduction through Variation
Test #2	10%	11/1	Chi-square through ANOVA
Test #3	10%	11/15	Regression
Final Exam	25%	12/13	Part One: Advanced topics Part Two: Modules 1-3

Reading research presentation (5%)

You will be assigned a group and an article that uses statistics to answer a research question. Your group will be responsible for a brief presentation of the article's thesis and for explaining the statistics it utilizes. These presentations will occur throughout the semester. More information will be shared in class.

Course Policies

Academic Citizenship

Academic citizenship is your exercise of rights and responsibilities as a student, co-creating knowledge through actively contributing to the class. Studies consistently show that if you engage in active learning rather than passive learning, you will learn more, better retain that learning, and improve your ability to transfer your learning to new contexts. You are expected to participate in class. While “class participation” or engagement is not directly graded, it is reflected indirectly in your grade through assignments that will demonstrate that you were actively engaged in class and mastered what we learned together. The following sections on attendance, academic honesty, norms, and asking questions all correspond with exercising your academic citizenship.

Attendance

The baseline for academic citizenship is attendance. You should make your best effort to attend every class and be present and actively engaged for the entire class period. I understand that you may on rare occasion have other priorities that you must attend to and for which you cannot make other arrangements (e.g. attending a funeral, ill health, participation in official intercollegiate events, instructional trips, etc.). If this is the case, you should make sure to find out what you missed. Much of what we will learn builds on concepts and skills from previous class sessions, so it is important not to fall behind. Attendance is a prerequisite for active collaborative learning. Please make it a priority to be here and be present.

Academic Honesty

The following statement is from the 2016-2017 UNH Student Rights, Rules, & Responsibilities Handbook:

Honesty is a core value at the University of New Hampshire. The members of its academic community both require and expect one another to conduct themselves with integrity. This means that each member will adhere to the principles and rules of the University and pursue academic work in a straightforward and truthful manner, free from deception or fraud. Any attempts to deviate from these principles will be construed as acts of academic dishonesty and will be dealt with according to the rules of due process outlined [in the 2016-2017 UNH Student Rights, Rules, & Responsibilities Handbook.]

Please reach out if you have any questions about how this policy applies to your work in this class.

Norms

It is vital that we create an environment that ensures this class is as beneficial as possible to every student’s educational and professional goals. We will best be able to meet our goals and grow together if the classroom is a supportive space and if everyone practices proper etiquette. There are certain norms we want to co-create and hold within this space that reflect a vision for how we want to be as a class and in relation to one other—safe, supported, open, productive, trusting, intellectually curious, thoughtful, and engaged. Creating a classroom environment that is conducive to learning is a shared responsibility.

Be present. It is important to arrive on time and devote the entire class period to concerted intellectual engagement. Participate actively and critically in exercises and discussions, having completed the readings and thought about the concepts at hand. Focus your energy and attention to the topic at hand. Refrain from activities that can cause distractions. Do not pack up to leave prematurely. Unless you have explicit permission from me, the use of electronic devices is prohibited during in-person classes and should remain off or in silent/vibrate mode for the duration of class. Exceptions to this include use of laptops, which may be used but only for class related work, as well as use of phones, which may be used but only for calculations. Presented slides will be posted on Blackboard. That being said, you are in college and will be treated as an adult. Take care of yourself and step out if you need to do so. If you need to use the bathroom, do so. If you need to take a call because a family member is in the hospital, do so. If you can handle your needs before or after class, even better. You are responsible for any material you miss. Respect the space and the people in it. Be conscientious and courteous.

Be respectful, thoughtful, and conscientious. A good deal of sociological content is of a sensitive nature; individual students may have strong opinions and/or personal experiences that relate to the material we cover. Therefore, it is essential that your participation maintains a civil tone, respects the beliefs of others, and does not inhibit others from sharing or participating. Follow the guidelines below to help create a healthy classroom climate:

- Be professional and respectful, considerate and kind. Do not make derogatory comments of any kind. Only one person should speak at a time. Evaluate and reflect on the amount of space you are taking up in a particular conversation. If you have not spoken up and have something to add to the conversation, speak up; if you feel like you have been talking a lot, create space for others to share. Listen to others' thoughts and feelings, even if they differ significantly from your own. Your comments should be professional in nature, based on content knowledge, and related to course material (Note: Professional does not mean it cannot be personal). Ask clarifying questions when appropriate. Your comments and questions are meant to probe and shed new light, not to minimize or devalue others' comments. Make sure if you are disagreeing with an idea your comments are aimed at the idea and are not a personal attack on a fellow student.
- Take risks. Share what you are thinking or ask questions even if you are worried that your question makes you seem less knowledgeable or if you have not put what you are feeling or thinking into the right words or that it may not be the "right" thing to say. Share and surface disagreements and ideas that seem at tension with one another. You are encouraged to express your opinions, encourage others to develop and share their ideas, risk making mistakes, and ask for help in understanding ideas you do not understand. This intellectually rigorous work may be uncomfortable or frustrated at times, but taking risks often leads to insight. Lean into discomfort. Be patient in situations in which you may feel challenged or uncomfortable. Help ensure others who may feel this way are supported. Keep an open mind and be willing and open to being challenged or confronted about ideas or prejudices you have been socialized into and internalized. Temporarily suspend your disbelief and seek to understand; understanding should precede critiquing. When challenging others, do so with the intent of facilitating their growth; do not demean or embarrass others.
- Assume good intentions and give others the benefit of the doubt. Comments and assertions by others in this space should be assumed to be coming from a place of good intentions. Understand that there may be a range of knowledge and experience in our class. This is a space where you can challenge things you do not necessarily agree with and be challenged by others, without taking things personally or being clouded by feelings of offense.
- Respect everyone's individual identity. Speak from your own experience and analysis of the readings. Only speak on behalf of yourself; do not generalize. Do not expect others to speak as representatives of a social or cultural group. Do not make assumptions about other class members' identities, experiences, or beliefs. Recognize and value the diversity of the class and everyone's experiences, abilities, and knowledge that they bring to the class that we can all learn from. Personal stories or experiences that are shared in class should remain confidential. However, what you learn from those stories and experiences can definitely be shared.

Asking Questions

You are encouraged to ask questions, both about content and about course requirements and policies. Take control of your own learning. One way to ask me a question is via a discussion board set up on MyCourses for this purpose. This is a useful tool because other students may have the same question and they will also be able to see the question and my response.

Monitoring MyCourses

MyCourses is the University's online course management system and the portal for student and faculty electronic services. Do not expect me to issue a warning to you if you are in danger of failing the course or to contact you if you do not successfully submit an assignment. You are responsible for keeping track of your progress in this course. I will be regularly updating grades on MyCourses. Make sure to check your submitted assignments to make sure they submitted correctly as well as for grades and feedback. Take charge of your

success in this class. I encourage you to contact me or meet with me if you have any questions or concerns about your progress.

Curtailed Operations

I will post an announcement on MyCourses if UNH curtails operations and it becomes necessary to make last-minute adjustments to the course schedule. Unless I indicate otherwise, you should assume that the schedule of readings, assignment deadlines, etc. on the syllabus remains in effect.

Grading

Any work that you are turning in for me to grade must be submitted via MyCourses, unless otherwise specified. Specific formatting requirements will be given for particular assignments.

You will receive one of the following grades for each assignment, corresponding with the UNH grading system:

Grade	Performance Level
A	Excellent
B	Superior
C	Satisfactory, Competent, Acceptable
D	Marginal
F	Failure

Your final course grade will be rounded to the nearest whole number. The grading scale for this course is as follows:

A 93%-100%	B- 80%-82%	D+ 67%-69%
A- 90%-92%	C+ 77%-79%	D 63%-66%
B+ 87%-89%	C 73%-76%	D- 60%-62%
B 83%-86%	C- 70%-72%	F 0%-59%

Late Work

Assignments are due at the specified day and time. Assignments are considered late if completed (e.g. presentations) or electronically submitted after the day and time given as the deadline. Late assignments will receive the following penalties (given an assignment worth 100 points):

Tardiness	Penalty
Over 10 minutes	10 points

Over one hour	20 points
Over one day (24 hours)	30 points
Over two days (48 hours)	50 points
Over one week (168 hours)	100 points

Technical issues with submitting assignments via MyCourses do not excuse tardiness; it is your responsibility to identify and correct any technical problems regarding submitting assignments to ensure your work is submitted correctly and that I can open it. If you are asking for an extension or for some other exception to this late policy, you should contact me in advance of the deadline. I am much more open to working with you before an assignment is due. After an assignment is due I will be relatively inflexible. Unless you have an incomplete, no assignments may be submitted after December 9 for any reason.

Disability Services / Accommodations

According to the Americans with Disabilities Act (as amended 2008), each student with a disability is responsible for notifying the University of their disability and requesting accommodations. If you think you have a qualified disability and need classroom accommodations, contact Disability Services for Students (DSS) (201 Smith Hall). Please advise the instructor of your disability as soon as possible to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability from DSS but are under no obligation to provide retroactive accommodations. Contact DSS for more information (603.862.2607, 800.735.2964 Relay NH; disability.services@unh.edu). More information is available at <https://www.unh.edu/disabilityservices>.

Writing & Speaking Resources

The Connors Writing Center is a terrific resource for writers at all skill levels and at all stages of the writing process. The Connors Writing Center also offers assistance with speeches and presentations. For more information or to make an appointment, call 603-862-3272, e-mail writing.center@unh.edu, go to <http://www.unh.edu/writing/cwc/>, or stop by Dimond 329. The Connors Writing Center also has handouts and other resources on their website.

IT Technical Support

If you have questions about MyCourses, hardware or software issues (e.g. installing SPSS or Microsoft Word onto a laptop or getting the programs to load), or other technical matters relevant to this course, the [Academic Technology Support Center](#) is available to support you. They have a walk-in service desk on Level 3 (Main Level) of Dimond Library that is open Monday through Thursday from 8am-12am, Friday from 8am-5pm, Saturday from 10am-4pm, and Sunday from 10am-midnight. You can also call them at 603-862-4242 or [live chat](#) or [submit a question online](#).

Course Schedule

The course schedule below is only a guide. I reserve the right to make changes to the course schedule or other parts of the syllabus; I will inform you of any changes.

Complete the readings before the class date listed.

Course Schedule (subject to change)

Date	Class	Topic	Readings
T 8/30	#1	<ul style="list-style-type: none"> Intro to course Utility of Statistics 	
R 9/1	#2	<ul style="list-style-type: none"> Basic concepts Levels of measurement 	<ul style="list-style-type: none"> Syllabus Ch. 1 Wright, Bradley. 2008. "Causation." <i>Everyday Sociology</i>. Available URL: http://nortonbooks.typepad.com/everydaysociology/2008/07/causation.html
T 9/6	#3	<ul style="list-style-type: none"> Frequency distributions Crosstabs SPSS 	<ul style="list-style-type: none"> Ch. 2 (Stop when you get to "Tables with Three Variables: Elaboration in Crosstabs") Best, Joel. 2001. "Telling the Truth about Damned Lies and Statistics." <i>Chronicle of Higher Education</i> 47(34):B7. Available via UNH Library at: goo.gl/WPYILN
R 9/8	#4	Elaborated crosstabs	<ul style="list-style-type: none"> Ch. 2 (Read from "Tables with Three Variables: Elaboration in Crosstabs" and stop when you get to "Graphs with One Variable") Goldin, Rebecca. 2015. "Causation vs. Correlation" <i>Stats.org</i>. Available URL: http://www.stats.org/causation-vs-correlation/
T 9/13	#5	<ul style="list-style-type: none"> Graphs SPSS 	<ul style="list-style-type: none"> Ch. 2 (Finish chapter, starting with "Graphs with One Variable") Cherlin, Andrew. 2009. "One Thousand and Forty-Nine Reasons Why It's Hard to Know When a Fact is a Fact." In Cherlin, Andrew, Philip Cowan, Carolyn Cowan, and Linda Burton's "Is That a Fact? Three Brief Reports Prepared for the Council on Contemporary Families." Available URL: https://contemporaryfamilies.org/why-its-hard-to-know-when-a-fact-is-a-fact/
R 9/15	#6	<ul style="list-style-type: none"> Central tendency Dispersion 	<ul style="list-style-type: none"> Ch. 3 (Stop when you get to the paragraph beginning "Calculating the variance is straightforward," which is in the section "Assessing Variation among Groups") Go to http://www.statcan.gc.ca/edu/power-pouvoir/ch12/5214876-eng.htm and read from "Quartiles" on in the section on "Range and Quartiles," as well as the sections "Five-number summaries" and "Constructing box and whisker plots"
T 9/20	#7	Variation	<ul style="list-style-type: none"> Ch. 3 (Read starting at "Assessing Variation among Groups" and stop when you get to "Variation When There Is No Mean") Sternheimer, Karen. 2015. "The 'Starbucks Effect': Correlation vs. Causation." <i>Everyday Sociology</i>. Available URL: http://www.everydaysociologyblog.com/2015/04/the-starbucks-effect-correlation-vs-causation.html

Date	Class	Topic	Readings and Notes
R 9/22	#8	<ul style="list-style-type: none"> Variation Normal Distribution 	Ch. 3 (Finish chapter, starting with "Variation When There Is No Mean") Read Sections A. Introduction, B. History, C. Areas of Normal Distributions at: http://onlinestatbook.com/2/normal_distribution/normal_distribution.html
T 9/27	#9	Chi-square	Ch. 4
R 9/29	#10	Sampling distributions	Ch. 5
T 10/4, 9am		Problem Set #1 due	<i>15% of your grade; covers Introduction through Normal Distribution</i>
T 10/4	#11	Confidence Intervals	
R 10/6	#12	Confidence Intervals	
T 10/11	#13	T-tests	Ch. 6 (Stop when you get to the section "Testing the Differences Among More Than Two Means: ANOVA")
R 10/13	#14	ANOVA	Ch. 6 (Finish chapter, starting with "Testing the Differences Among More Than Two Means: ANOVA")
T 10/18	#15	Test #1	<i>10% of your grade; covers Introduction through Normal Distribution</i>
R 10/20	#16	Scatterplots; regression equations; prediction	Ch. 7 (Stop when you get to "Explained Variation")
F 10/21, 9am		Problem Set #2 due	<i>10% of your grade; covers Chi-square through ANOVA</i>
T 10/25	#17	Correlation coefficient; coefficient of determination	Ch. 7 (Finish chapter, starting with "Explained Variation")
R 10/27	#18	Linear Regression	Ch. 8
T 11/1	#19	Reference variables	Ch. 9
R 11/3	#20	Multiple regression	Read https://statistics.laerd.com/spss-tutorials/multiple-regression-using-spss-statistics.php and https://statistics.laerd.com/spss-tutorials/multiple-regression-using-spss-statistics.php
T 11/8	#21	Multiple regression	Ch. 10
R 11/10	#22	Test #2	<i>10% of your grade; covers Chi-square through ANOVA</i>
T 11/15	#23	Beta coefficients	Ch. 11
W 11/16, 9am		Problem Set #3 due	<i>10% of your grade; covers regression</i>
R 11/17	#24	Interactions	Ch. 12
T 11/22		No Class (UNH classes follows Friday schedule)	
R 11/24		No Class (Thanksgiving)	

Date	Class	Topic	Readings and Notes
T 11/29	#25	<ul style="list-style-type: none"> • Logistic regression • Odds ratios 	Ch. 13
R 12/1	#26	Test #3	<i>10% of your grade; covers regression</i>
T 12/6	#27	Review/Synthesis	
R 12/8	#28	Review/Synthesis	
F 12/9, 9am		Problem Set #4 due	<i>5% of your grade; covers advanced topics</i>
T 12/13, 10:30am – 12:30pm		Final exam	<i>Part #1: 5% of your grade; covers advanced topics</i> <i>Part #2: 20% of your grade; Modules 1-3</i>