SOC SCI 10B
Probability and Statistics for the Social Sciences

About the Course:

Number: SOC SCI 10B
Title: Probability and Statistics for the Social Sciences
Quarter: Winter 2013
Meeting Time: MWF 3:00-3:50 pm
Meeting Place: Social Science Hall, Room 100
Special Info: This course is a requirement for the Social Sciences
Final Exam Time: Monday, March 18, 4:00-6:00 pm (SSH 100)

About the Instructor:

Name: Dr. James R. Hull
Email: james.hull@uci.edu
Phone: 949.824.5691
Office: Social Science Plaza A, Room 4169
Education: Ph.D., Sociology, U. of North Carolina, Chapel Hill
Fun Fact: Jim has lived in 4 U.S. states: MI, NC, RI, CA

Office Hours:

By Appointment: Monday 11:00-12:20 pm
Drop-In: Wednesday 4:00-6:00pm
Finals Week Only: Saturday, March 16, 12:00-3:00pm (location TBA)

Communication Guidelines:

- To make a Tuesday appointment, use the SignupSheet tool on EEE
- Please restrict phone calls to normal office hours (Wed 4-6pm)
- Please put “10B:“ at the start of the subject line in emails
- Please allow 24 hours for an email response, 48 over the weekends
- Most responses will be much quicker than this, but please be patient

ESPECIALLY IMPORTANT OR USEFUL INFO IS HIGHLIGHTED IN THE SIDEBAR

Please read the communication guidelines for more guidance on how best to contact me
You do not need an appointment during drop-in office hours, it's just first come, first serve,
You can also phone me during drop-in hours
Email subject lines should read “10B:“ followed by a descriptive subject so that I will notice them in my inbox
Registrar Issues:

**Drops and Adds:** You are responsible for your own drops and adds. Please take care of these through WebReg, StudentAccess, or the Registrar’s Office. For complete information, please see: [Official Registrar’s Drop Add Policy](#).

**Key Deadlines:**
- *Drop* without approval: Friday of WEEK 2
- *Drop* and avoid a “W” grade: Friday of WEEK 6
- *Add* without approval: Friday of WEEK 3

**Audits?** No. Students must be officially registered to attend

**Waitlist:** Waitlisted students will be added automatically by the Registrar’s office if seats become available

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**Academic Honesty:**

A study of over 4200 undergraduates at 99 schools determined that 55 percent of students had *never* cheated on an exam and 42 percent had *never* cheated on written work (McCabe, Treviño, and Butterfield 2001). That leaves a lot of room for improvement! Among schools with “honor codes” these numbers jumped to 70 percent and 58 percent.

That’s one reason we will use an honor code in conjunction with UCI’s existing policies on academic honesty. The honor code is simple. It is a short document that each of you will sign at the start of the semester. Then, each time you submit a major assignment, you reaffirm your commitment to the code by writing out the statement, “I have neither given nor received unauthorized aid on this assignment” and signing your name (*). I will remind you in the directions for each assignment.

It’s that simple.

The basic text of our class honor code derives from [Appendix VIII of the UCI Academic Senate Manual](#). You should take time to read this document carefully, and view the reports at [http://honesty.uci.edu/](http://honesty.uci.edu/).

Let’s work together to keep our class “honesty percentage” at 100!

(*) Students having religious or moral objections to making such a pledge should arrange to speak with me in person during the first full week of class.
Course Text:


***Additional Readings may be assigned. These will be provided via Dropbox one week in advance (two for students using DSC and CAM) New textbooks will be in soon! I’ll put initial chapters online for your convenience. The textbook will also be on reserve in the library.

Course Website:

Over the course of the semester, we will rely heavily on UCIs in-house EEE system and related tools. Specifically, we will utilize the following:

- Course Website – announcements, general info, official schedule
- DropBox – distribution and collection of notes, homework, etc.
- Quizzes – we will rely heavily on in-class online assessment
- SignupSheet – this tool will enable you to make appointments
- Podcasts – view prerecorded lectures prior to arriving in class
- Survey – help me learn more about you and your learning needs
- Evaluation – your opportunity to provide useful feedback
- MessageBoard – this tool will be vital for asking questions in class
- GradeBook – Use this to keep track of your progress

There are even more tools than what we will use. Do explore them all!

Use of TurnItIn:

At your instructor’s discretion, the services provided by TurnItIn.com may be utilized to help ensure that all students are submitting only original work in keeping with the honor code pledge that they signed.

**PLEASE READ THIS NOTICE**

Students agree that, by taking this course, all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin service is subject to the Usage Policy posted on the Turnitin.com site.

For more information, please visit [www.turnitin.com/](http://www.turnitin.com/)

For login or other problems, email eee@uci.edu
- or- email oit@uci.edu
- or- dial 949.824.2222

Learn more about how each of these tools is used in the descriptions of each course element on pages 10-11
Some Ground Rules for Class:

- Have respect for yourself and for your fellow students
- We start and end class on time: come late and you will miss quizzes
- Remember to turn off or silence phones and other gizmos
- Check the website regularly for updates, assignments, grades, etc.
- Check email regularly. I will use email only for important things
- Respect discussion guidelines and other rules adopted by the class

In short, be a good citizen and always treat classmates with respect

Special Needs:

If you require special arrangements for testing, readings, assignments, or other aspects of the course, please contact the UCI Disability Services Center. Their website has detailed instructions on the procedures to follow to qualify and register. Official notice from DSC is required before accommodations will be made. Please also contact me within the first two weeks of class to discuss these arrangements.

Writing and Study Help:

UCI provides numerous resources to assist students in developing their maximum potential as writers. I suggest that you utilize these services, even if you feel assured that you are already a consummate wordsmith.

In particularly egregious cases, I reserve the right to require you to use LARC or the Peer tutors programs as a condition of passing the course.

Campus Resources:

Writing & Library Research Peer Tutors – help with writing & research
Learning and Academic Resource Center – help with academic skills
Social Sciences Academic Resource Center – help with career planning

A Few Writing Tips:

1.) Very few people are able to create and edit at the same time – if you feel blocked, try turning off your internal editor and just write – shred it later
2.) Still having trouble? Try setting a time limit – say, “I will write continuously for 30 minutes straight, and then take break” – then be sure to do it
3.) Getting feedback from others WILL improve your writing – so seek it out
4.) Keep at it – writing is hard work – just ask Maya Angelou
5.) For much more, visit one or more of the pages at left
What is this Course About?

Probability and Statistics is a requirement for all Social Science degree programs. Why is that? Because statistics are everywhere, affecting every aspect of our daily lives, while statistical literacy is often absent.

Most folks have precious few resources to protect themselves from falling for bogus statistics and the claims that they support. Whether the person creating a table or running a statistical test is trying to force a particular conclusion or is simply not very knowledgeable about the process, the result for you will be the same: you will be misinformed.

To be truly educated means, among other things, that one is not easily fooled. Put differently, being a responsible person in the twenty-first century requires that we all become savvy consumers of knowledge and information. And therein lays a motivation to learn statistics.

To become statistics-smart, you need not know be able to recite formulas by heart or be able to calculate a standard deviation in your head, as those amazing lovers of statistics can readily do. But you will need to study the research process and learn the role that statistical evidence plays. You will need to understand the conditions under which particular statistical procedures are appropriate, when they are not, and what happens when you use one anyway.

Above all, you will need to develop something I call statistical poise. Statistical poise means having self-assurance that you understand the methods and therefore can defend your choices and those of others. Unlike your statistics book or class, which usually provide you with the correct answers when you goof up, you will not find such poise just anywhere. Decisions about such correctness must come from within. Statistical poise must be tempered by solid understanding of the limitations of statistics and the importance of skillful usage. If you don’t, you might find yourself instead practicing statistical pose. That’s the self-assurance that you understand the methods when you don’t.
What are the Objectives of this Course?

- **TO LEARN**: To learn thoroughly the assumptions and conditions for use associated with various statistics
- **TO PRACTICE**: To develop solid understanding of fundamental data management and statistical practice
- **TO THINK**: To think critically and use evidence-based reasoning when discussing and writing in class
- **TO REMEMBER**: To cultivate a sense of statistical poise that will serve you beyond the classroom walls

What Will You Get Out of this Course?

I have **two major goals** for you as a student.

**First**, I want to help you find reasons to learn more about statistics. Important reasons. Reasons that matter to you.

**Second**, I do not simply want to teach you statistics. I want to show you how to learn statistics, with or without my guidance.

Above all else, this will require you to learn how to evaluate your own work objectively and diagnose your own statistical strengths and weaknesses. This will allow you to continue to learn long after our class is done. With these two things in hand, desire and skill, you will be prepared for a lifetime of careful, reflective study of whatever it is you truly care about. For believe me, there is no area of life that has not received the studied attention of a curious statistician. Or will.
How Can You Succeed in this Course?

1.) Participate actively in class and discussions
Learning information is only the first step in acquiring real knowledge and wisdom. In order to hone the higher-level thinking skills that are required to function successfully in today’s global society, you must practice them, and to gain practice, you must come to class and engage with others. Students who participate learn more, on average, than those who observe passively (Cross 1987).

2.) Read assigned books, chapters, and articles
Reading is the root of scholarship. In order for your mind to grow, you must fertilize it with provocative ideas, facts, and information. Before we can get to the meaning of what we have read as a group, each of you must do your part. Reading may sometimes seem slow and old-fashioned, but at present there is no substitute.

3.) Prepare for class
If there is an assignment due, please submit it by the deadline. Plan ahead to ensure that they are completed on time even in the face of technical glitches. Good time management is a requirement for present and future success.

4.) Contact me with questions
I am here to help you learn. Although not all college instructors share my view, I believe the teacher-student relationship extends beyond basic course content to include study skills, time management, critical thinking, reading, writing, and analysis. You are among the best and brightest students, but few of us can do without some improvement in one or all of these areas. Also, I hope you will be challenged by this class, but none of you should have to struggle. Please contact me with questions of all types. For simple questions that are not answered here, the quickest way to get an answer is to email me at james.hull@uci.edu.

5.) Visit me during office hours
For more challenging questions, you should visit drop-in office hours or make an appointment for more intensive focus. Making an appointment is easy, so please do it. You should learn to view office hours as an extension of class. I have found that many students are unaware of the tremendous learning opportunities that this individualized instruction provides. Here are some reasons you might want to stop in:

- Ask for an explanation of an idea that you did not understand in class
- Suggest a different way for me to teach some aspect of the material
- Discuss difficulties with assignments, classroom activities, or assessments
- Brainstorm ideas or topics for assignments and projects
- Have a conversation about a shared topic of interest
- Alert me to special learning concerns or needs that you may have
- Get suggestions and strategies for improving study habits

"We are what we repeatedly do. Excellence, then, is not an act, but a habit." ~ Aristotle (384-322 BCE)

Most of the readings will require an hour or more of steady concentration to read and understand, and some may require that you read them more than once.
Evaluation and Grading

1.) Components of grade
Assessment of your performance in this class will be based on regular in-class quizzes, exercises and activities, the lab portion of class, a paper, and a final exam:
- Quizzes (approximately 20) and Message Board Questions (3 per quarter)* 30%
- Statistics Worksheets and Lab Homework (approx. 10)* 30%
- Midterm Evaluation* 20%
- Final Exam* 20%

Total 100%

(*) The above is an approximation provided to inform you of my general grading strategy. Final grades will roughly reflect these general proportions; specific contributions may differ.

2.) Grading Scale
I grade according to what is called a standard of excellence system, and do not use relative, or comparison grading in my course. This means that everyone who does “A” quality work will receive an “A” and so on.

At the end of the term, you will receive a grade based on the following scale:
- A = 93-100%
- A- = 90-92%
- B+ = 87-89%
- B = 83-86%
- B- = 80-82%
- C+ = 77-79%
- C = 73-76%
- C- = 70-72%
- D = 60-69%
- F = Below 60%

3.) Grade descriptions:
The descriptions below are provided as a courtesy to clarify the meaning of grades:

“**A**”
Mastery of course content at the highest level of attainment that can reasonably be expected of students at a given stage of development. The A grade states clearly that the students have shown such outstanding promise in the aspect of the discipline under study that he/she may be strongly encouraged to continue.

“**B**”
Strong performance demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.

“**C**”
A totally acceptable performance demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that, while not yet showing unusual promise, the student has shown intellectual development.

“**D**”
A marginal performance in the required exercises demonstrating a minimal passing level of attainment. A student has given no evidence of prospective growth in the discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.

“**F**”
For whatever reason, an unacceptable performance. The F grade indicates that the student's performance in the required exercises has revealed almost no understanding of the course content. A grade of F should warrant an advisor's questioning whether the student may suitably register for further study in the discipline before remedial work is undertaken.

My basic philosophy towards grades may be summarized:
If you focus only on getting that “A” you might incidentally learn some things in the process, but focus on really learning the material and you won’t need to worry much at all about getting the “A”...
Make-up Work and Special Circumstances

Please do not schedule appointments, trips, association meetings, or other activities during class time – it is only 4 hours a week with the lab.

If you do so, you run the risk of missing out on one of our many in-class assignments. Examinations and papers can only be made up with medical documentation or other valid excuse at the instructor’s discretion.

If you are celebrating a recognized religious holiday or absent on official University business you will be allowed to make up missed work. To be fair to other students, you must give notice of any planned absence at least one week in advance and turn in any quizzes or assignments due on the day of the absence IN ADVANCE of that day.

You will find that I am quite flexible if made aware of your upcoming absence ahead of time, and conversely, quite inflexible if notified after the fact. If you have questions about a particular set of circumstances, contact me as far in advance as possible and we can discuss solutions.

**CAREFULLY READ BELOW AND HEED IT**

From time to time, I encounter students who state that they need to achieve a certain grade in my course for any number of reasons (graduation requirements, honors and scholarships, sports eligibility, etc.). In fairness to all students, I will NEVER give special consideration to these types of circumstances in assigning final grades for the course. Do not ask.

That being said, I also recognize the importance of grades to all students and the additional pressures that such requirements may place on you. If you foresee finding yourself in such a situation, please bring this to my attention promptly at the beginning of the semester. I will do what I can to assist you in crafting a personal plan to work toward a specific grade in my course. But only you can determine the final outcome. I will meet individually with any student to discuss: 1.) progress and performance, 2.) general strategies to succeed in my class, 3.) specific mistakes on quizzes, exams, homework, or other assessments, and solutions.

Policy on Disputing Grades

All queries about specific grades for individual assignments or for past quarters must be presented in writing, with a detailed description of the alleged error and a justification of your response if necessary, before we can proceed. This written statement should be emailed to me, and followed up by making an appointment. I do not discuss grading matters via email ever. These discussions must be face-to-face.
**Detailed Descriptions of Course Elements**

**A.) Quizzes**

I follow the motto, assess early and assess often. What does this mean? The need to assess your progress throughout the semester and not just at key junctures is the reason for quizzes. If you and other students are having trouble understanding a concept, waiting until “test time” to find out will not suffice because statistics is cumulative. More importantly, taking these regular quizzes will help you learn to diagnose your problem areas as much as it helps me. Based on the results of quizzes, we may move on to the next subject or spend more time understanding a difficult concept. Most importantly, quizzes will also be valuable opportunities for learning.

*Now for the good news. You will receive full credit for each quiz simply by being present in class and doing your best on the quiz at the scheduled time. The grade assigned for each quiz is to be used for your own diagnostics.*

The net result of this approach is that most of you should receive very good grades on the quizzes. But if you find that you are performing poorly on the quizzes, you should schedule a time to meet with me to discuss options.

**B.) Statistics Worksheets and Labs**

For the lab portion of the course, you will be conducting guided research activities using SPSS, which will help you to further develop and practice your skills as a statistician, researcher, and data consumer.

From time to time (about every other week), I will assign worksheets or other application-based tasks that are designed to assess your current understanding of statistical concepts and ideas and challenge you to continue learning and improving. These are to be completed by the due date specified in the assignment description.

**C.) Midterm Evaluation**

Your midterm will not be a traditional, in-class or online exam. It will be some form of assessment that allows me to observe the development of your “statistical poise” and your ability to assess the strength of data and analysis in an applied setting. What this means in practical terms is that the midterm will likely be a take-home of some type, with a fairly open window during which you will be allowed to complete the evaluation online via EEE.
D.) Research Paper or Project (10 C Only)

For the paper portion of the class you will be responsible for a paper of moderate length presenting an analysis of data that you obtained that demonstrates the application of techniques we have studied and the proper interpretation of results. If class size permits, I will consider alternate proposals for projects that demonstrate these same skills in a nontraditional format such as a letter to the editor, webpage, or other communication venue. Please speak with me if this option interests you.

E.) Final Exam

The final exam will be cumulative, covering the breadth of material from the semester, but will emphasize major ideas and not focus on the recall of minor details. Students will be permitted various aids to memory, subject to approval by the instructor. More information on the final will be provided in advance.

A Note on Formatting of Written Work

Any written assignments to be turned in for this class should be typewritten in a standard font such as Times, Times New Roman, Palatino, Garamond, Georgia, etc. (no mono-spaced fonts), 12 point, with 1-inch margins all around. The final paper should be double-spaced, all other work may be single-spaced.

All final papers should have a COVER SHEET including your full name, the title of the paper, your ID number, and the honor code pledge with your signature. All other pages of the paper should have ONLY your ID number at the top of each page and page numbers at the bottom. The reason is so that I can grade your work fairly and impartially. Before beginning, I will fold over the cover sheet and grade each paper anonymously. In the event that the cover sheet gets separated, having a PID number on each page will prevent mix-ups. Students who attempt to turn in papers with incorrect formatting will be asked to reformat them before the paper will be accepted.
Letters of Recommendation

Applying for a job, study abroad program, or similar competitive opportunity? Need a letter of recommendation? I am happy to consider writing recommendations for you if the following apply:

1.) You **completed** one or more full quarter or semester courses with a grade of "B-" (80 %) or better (I need a full quarter to evaluate you)

2.) You complete **this form** in full **at least** one month prior to the deadline for letters to be submitted

I will contact you upon receipt of your request. If you do not receive an acknowledgment within 48 hours, please email me.

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Other Questions?

I have tried to include answers to the most commonly asked questions in these pages, but you may have others, either those specific to your circumstances, or of general interest to the entire class. Please contact me in the ways described in this document for more information.

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References:


Hull’s Abridged Course Schedule for SocSci 10B:

*** The schedule often changes; for the most current version, consult the online course schedule ***

Week 0:
- The Hypothesis Test I
- Intro to Statistical Inference

Week 1:
- The Hypothesis Test I (cont’d)
- Type 1 and Type 2 Errors
- Confidence Levels, p-values, significance

Week 2:
- Hypothesis Testing II
- Small Samples Tests
- Student’s t distribution
- Representativeness
- Tests with proportions

Week 3:
- Bivariate Relationships
- t-tests for comparing means, matched, unmatched, unequal variances
- Statistical relationships

Week 4:
- Comparing Means of three or more groups
- ANOVA – Analysis of Variance
- The General Linear Model
- Ecological Fallacy

Week 5:
- MIDTERM WEEK
- Review and Practice

Week 6:
- Bivariate relationships among nominal variables
- Chi-Square Distribution
- Binomial Distribution
- The Chi-Square Test
- Statistical Power and Sample Size

Week 7:
- Bivariate Correlation and Regression
- Pearson’s R
- OLS Regression
- Diagnostics and Assumptions

Week 8:
- Bivariate Correlation and Regression II
- Testing hypotheses using correlation and regression
- Significance
- Generalization
- Inference about causality

Week 9:
- Review and Practice

Week 10:
- FINAL EXAM