Course: Statistics 1053.11

Note: Statistics 1051, 1053, 1091, 1104, 1111, and 1127 are similar courses and credit for only one of these courses can be given. Please contact me for further details.

Lectures: Monday and Wednesday, 12:45-2:00pm, 1957 E Street Room 214

Instructor: Michael D. Larsen, PhD

Office: Old Main 301 D, 1922 F Street NW, Washington DC 20052; mlarsen@gwu.edu

Office hour: Monday after class and by appointment

Course Description: The course will cover the basics of probability, research design, descriptive statistics, and inferential statistics. Examples will be used throughout and drawn from a variety of fields, including the social sciences.

Learning Objectives:
1. Distinguish types of studies and their limitations and strengths.
2. Describe a data set including both discrete and continuous variables to support or refute a statement.
3. Apply laws of probability to concrete problems
4. Perform statistical inference in several circumstances and interpret the results in an applied context.
5. Use confidence intervals and hypotheses tests in statistical inference and explain their meaning.
6. Examine statistical modeling assumptions in contexts including linear regression and analysis of tables of counts

Recitation/lab: Thursdays either section 40 (9:35-10:25am, 1957 E street Room 316) or section 41 (11:10-12:00, Funger Hall 222). Please attend the section for which you are enrolled.

Course assistant: Junchi Guo, PhD student in Statistics


Calculator: A basic calculator is needed for quizzes and exams.

Software:

(1) The class will be directed to use the R statistical package for simulation and some data analysis. No prior experience is assumed. R is free and can be downloaded onto personal computers. Basic instructions will be provided. It is your responsibility to allow time for computer work, including the possibility of temporary power outages, computer crashes, and changes in software locations. That is, it is advised that you do not start the
computer portion of assignments at the last minute. Computers through simulation allow the illustration and exploration of various topics in this course, so they can be a useful instructional/learning tool.

(2) The class also will gain some experience with the program SPSS. SPSS is a commercial software package utilized by some researchers in social science. No prior experience is needed.

(3) For your information, http://statistics.ats.ucla.edu/stat/ is a website that provides some help on R, SPSS, and other software packages.

Blackboard/Lecture notes: Material to be delivered through the website includes syllabus, course information, lecture notes, assignments, assignment solutions, exam information, and practice exam problems and solutions. Students should download/print copies of handouts before class.

Prerequisites: No calculus prerequisite or assumption of prior courses in statistics.

Homework assignments

- Assignments are due in class as noted in the syllabus and web page. A 20% penalty will be imposed on homework assignments submitted up to two days late. Solutions will be posted on the class web site.
- You may work together, but you must write your submitted work in your own words. This includes showing calculations, derivations, and proofs. This also includes summary sentences and paragraphs.
- If we are unable to quickly decipher what you did and wrote, then no credit will be given.
- You are responsible for clearly and neatly organizing your homework and expressing your ideas. You should use complete sentences in answers requiring explanation and show intermediate steps in calculations and derivations. Staple your papers together. Include your name, the assignment number, and date on your assignment.

Exams: Two one-hour midterm exams and a final exam. Information to be included on exams will be announced in class. Exam one will be Wednesday, October 7, and exam two will be Wednesday, November 11. The final will occur during finals period and will follow the schedule to be produced by the university registrar. If you have a conflict for any reason, you must let the instructor know before the exam. Failure to do so will result in a zero for the exam.

Quizzes: There will be short closed book quizzes in some recitation/lab meeting. Dates of quizzes are posted online. Quizzes help you practice for the exams and earn some points.

Grading: The relative contribution of grade components to the overall grade are as follows: Midterm Exam 1, 13%; Midterm Exam 2, 13%; Final Exam 30%; Homework 27%, Quizzes 8%, Project 9%. The homework score will be based on your best 9 homework assignments (3% each). The quiz score will be based on your best 4 quizzes (2% each).
Disabilities and religious observance

We will follow university policy in regard to observance of religious holidays and accommodations of disability. Students anticipating the observance of religious holidays impacting course schedule should let the instructor know during the first week of class. You may contact Dr. Larsen via email or phone in this regard or discuss your situation in person.

Students needing accommodation for disabilities should let the instructor know during the first week of class, or as soon as possible if your status changes. You may contact Dr. Larsen via email or phone in this regard or discuss your situation in person. Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Marvin Center, Suite 242, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: http://gwired.gwu.edu/dss/

ACADEMIC INTEGRITY

I personally support the GW Code of Academic Integrity. It states: “Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information.” For the remainder of the code, see: http://www.gwu.edu/~ntegrity/code.html

University Policy on Religious Holidays:

1. Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance;
2. Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations;
3. Faculty who intend to observe a religious holiday should arrange at the beginning of the semester to reschedule missed classes or to make other provisions for their course-related activities.

SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM

DISABILITY SUPPORT SERVICES (DSS)

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UNIVERSITY COUNSELING CENTER (UCC) 202-994-5300

The University Counseling Center (UCC) offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
- confidential assessment, counseling services (individual and small group), and referrals
http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices
http://counselingcenter.gwu.edu/stress-management-college