

SLHS 1302 Rate Your World: Quantifying judgments of human behavior
Spring, 2012 (01/17/2012 - 05/04/2012)

Instructor: Yang Zhang, Ph.D., associate professor, <http://www.tc.umn.edu/~zhang470>

Telephone: 612-624-7818

E-mail: zhang470@umn.edu

Instructor office hours: Tu, Th 11:15 A.M. - 12:05 P.M.
or by appointment, Shevlin 49 & 46

Teaching Assistants: Anna Boyer, boye0102@umn.edu,

Yu-wen Chen, chen1887@umn.edu

TA office hours: To be announced during 1st week of class and on Moodle web site.

Lecture: 001 LEC , 11:15 A.M. - 12:05 P.M. , Tu & Th, [FraserH 101](#)

Discussion: 002 DIS , 12:45 P.M. - 01:35 P.M. , Tu, [ShevH 20](#)

003 DIS , 12:45 P.M. - 01:35 P.M. , Th, [ShevH 20](#)

Course Overview

Human behavior provides a natural context within which students can develop quantitative thinking skills. One can easily observe human behavior such as verbal communication, but to evaluate it, one must learn to quantify, measure, compare, plot and analyze behavioral data. This course will apply measures of human behavior to quantitative reasoning and mathematical thinking. Course contents are organized in four main units: (a) variables and scales, (b) distributions, probability, and hypothesis testing, (c) non-linearity in physical and psychological data, (d) evaluating research evidence. Examples will be drawn from communication sciences as well as social sciences using both physical and psychological measures.

Students will use different numerical scales (nominal, ordinal, interval, exponential) and learn to describe and discuss graph results accurately using R to calculate central tendency (mean, median, mode), dispersion (range, scatter, quartile cutoffs, standard deviation), and test hypotheses using compound probability, binomial test, and t-test. In assignments, students will make observations, collect data, analyze results, plot trends, and interpret mathematical data. Students will learn the fallacies of bias, measurement error, and overgeneralization in survey and observation methods. Throughout the course, students will have hands-on experiences in small groups that will allow peer-based learning to supplement the lecture information.

Course requirements

Required textbook (available online on Moodle site)

- Beckman, M.; Bergmann, A. & Smith, B. (2010). Analyzing the Sounds of Languages (ASL).
- Acoustics for Audiologists: Chapters 1 and 2.

Supplementary Texts (available at University bookstore and online bookstores):

- Niederman and Boyum (2004) *What the numbers say: (WNS)*.

Course notes:

- Lecture notes and materials are available on the Moodle course web site.

Course structure

- Class Lectures (2 per week in Frasier Hall)
- Weekly Discussion Group (once a week in Shevlin Hall)
- Assignments (10)
- Quizzes (3)
- Quantifying Human Behavior Project (QHB) (1)
- Final Exam (1)

Assignments:

The purpose of the assignments is to reinforce and integrate the concepts introduced in class and continued in discussion group activities. Assignments require students to report information obtained by answering questions and reporting data using graphs and basic descriptive statistics.

To complete the assignments, students will upload electronic reports within one week of each project assignment date. Late reports will be downgraded by 10% for each day that the report is late (1 day late = 10% reduction, 2 days late = 20% grade reduction, etc.) No report will be accepted if more than ten days late. Attendance will be taken for participation points (10% of course grade) for the discussion meetings in Room 20 Shevlin Hall.

Quizzes:

There will be **three quizzes** given during class time. The quizzes will have True or False, multiple-choice and short-answer questions that focus on lecture materials and readings. Make-up quizzes will only be offered when students contact the instructor prior to the quiz, with a medical excuse documented for the dates in question by a health care provider.

Quantifying Human Behavior Project:

Students will work in pairs to define and complete a human behavior analysis project. Additional details concerning this project will be provided online.

The project will require three components:

1. **QHB Proposal:** state the research question with operational definitions of the human behavior you will analyze; identify scales
2. **QHB PowerPoint:** submit in advance and present project summary in class
3. **QHB Final Report:** a formal written report of your project

Final Examination:

The **two-hour final examination** will be comprehensive and will be given at the scheduled time during final examination week (See last page for course schedule.) It will be worth 20% of the total grade.

Required Discussion Group Meetings:

The class will break into two smaller discussion groups for required weekly meetings. The groups will provide students additional close instruction and hands-on experience with the assignments. The discussion groups will meet in Shevlin Hall Room 20. If students would like to work together with specific classmates on assignments and projects, they should sign up for the same discussion section. Students may change discussion group sections during the first two weeks of class.

Extra credit:

Opportunities will be available during lecture hours throughout the semester.

Grading

- Participation (10%)
- Quizzes (3) (30%)
- Assignments (10) (30%)
- Quantifying Human Behavior Project (1) (10%)
- Final Examination (1) (20%)

Grades will be computed as follows:

A 100-93%	C+ 76-78%
A- 90-92%	C 71-75%
B+ 87-89%	C- 68-70%
B 83-86%	D+ 65-67%
B- 79-82%	D 60-65%
F 59% and below	

Students enrolled for S/N grading option will need to achieve a C- or better (68%) to achieve an S.

Grades will be awarded in accordance with the University of Minnesota Senate Policy on grading, using these standards:

- A Achievement that is outstanding relative to the level necessary to meet course requirements.
- B Achievement that is significantly above the level necessary to meet course requirements.
- C Achievement that meets the course requirements in every respect.
- D Achievement that is worthy of credit even though it fails to meet fully the course requirements.
- F (or N) represents failure (or no credit) and signifies that the work was either (1) completed but at a level of achievement that is not worthy of credit, or (2) not completed and there was no agreement between the instructor and the student that the student would be awarded an I (see also I). Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.
- I (Incomplete) Assigned at the discretion of the instructor when, due to extraordinary circumstances, e.g. hospitalization, a student is prevented from completing the work of the course on time. Requires a written agreement between instructor and student. All assignments and reports must be completed during the semester. A grade of "I" will **not** automatically be given to students who cannot hand in the assignments on the due dates. See more details on the university policy for incompletes at http://onestop.umn.edu/grades_and_transcripts/grades/incompletes.html

Expectations for students

University of Minnesota Senate Policy states that for each semester credit the average workload expectation is 1 hour of class and 3 additional hours of preparation per week. Therefore, a 3-credit course will involve approximately 9 hours of outside class preparation on your part, plus 3 hours of in-class time. *Students are expected to attend all lectures and to participate actively in exercises and discussion.*

Policies on Student Conduct and Academic Integrity:

Students who engage in scholastic dishonesty will be penalized. Seeking unfair advantage over others or misrepresenting someone else's work as your own will result in an "F" or "N" for the course and possibly other. The University Student Conduct Code elaborates: "*Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete*

records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering forging , or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.”

Detailed descriptions of university policies on student conduct and academic integrity are provided online:

<http://www.oscai.umn.edu/integrity/faculty/index.html>

Accommodation for students with disabilities

It is University of Minnesota policy to provide on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Please contact the instructor if you would like to discuss your individual needs for accommodations.

USE OF EMAIL AND COURSE WEB SITE

In accordance with Academic/Administrative Policy 2.2.3, “A University assigned student email account shall be the University’s official means of communication with all students on the Twin Cities campus. *Students are responsible for all information sent to them via their University assigned email account and the designated course web site.* If a student chooses to forward their University email account, he or she is responsible for all information, including attachments, sent to any other email account.”

As a matter of good practice, *students are urged to check their UMN Email account at least once daily and also at least once over the weekend.*

THIS MATERIAL IS AVAILABLE IN ALTERNATIVE FORMATS ON REQUEST. PLEASE CONTACT THE INSTRUCTOR IF YOU REQUIRE AN ALTERNATIVE FORMAT.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Course Schedule

Date	Lecture	Discussion	Assignments
1/17 1/19	Unit 1. Variables and Scales Course Introduction; Chapter 1: Categorical data	Introduction to R software	Read WNS Ch 1 ASL Ch 1:
1/24 1/26	Chapter 2: Numerical data and bar plots	Numerical data with R	Read WNS Ch 2 ASL Ch 2: Assignment 1
1/31 2/2	Chapter 3: Continuous data and time plots	Numerical data with R	Assignment 2
2/7 2/9	Quiz 1 Unit 2: Distributions, Probability and Hypothesis Testing Chapter 4: Probability	Probability with R	Read WNS Ch 3 ASL Ch 3 Assignment 3
2/14 2/16	Chapter 4: Probability	Probability with R	Read WNS Ch 4 ASL CH 4 Assignment 4
2/21 2/23	Chapter 5: Hypothesis testing	Central tendency, mean, median, and histograms with R	ASL Ch 5 Assignment 5
2/28 3/1	Chapters 6 & 7: Central tendency & Dispersion	Central tendency, mean, median, and histograms with R	Read WNS Ch 5 ASL Ch 6 & 7: Assignment 6
3/6 3/8	Quiz 2	Hypothesis testing with R	Assignment 7
3/13 3/15	Spring break		
3/20 3/22	Unit 3: Linearity and nonlinearity Chapter 8: Scatter plots	<i>Brainstorming Quantifying Human Behavior Project:</i> 1. define research question 2. identify measurements & scales	QHB proposal draft
3/27 3/29	Chapter 9: Regression	Scatter plot with R	Read WNS Ch 6 ASL Chapter 8: Scatterplots Assignment 8
4/3 4/5	Chapters 1 & 2 : Sound wave and the measurement of sounds	Regression with R	Read ASL Chapters 9 & 10: Regression Assignment 9
4/10 4/12	Speech acoustics data analysis Quiz 3		Read the provided chapters for speech acoustics Assignment 10
4/17 4/19	Unit 4: Evaluating Research Evidence	Work on QHB project	QHB presentation
4/24 4/26	Evaluating Research Evidence QHB presentations	Work on QHB project	QHB presentation
5/1 5/3	Evaluating Research Evidence QHB presentations	Work on QHB project	QHB presentation
Regularly Scheduled Final Exam: 10:30 a.m.-12:30 p.m. Friday, May 11 in lecture room Alternate final exam date to be announced.			

Note: The course schedule is tentative and subject to change depending on actual course progress.