

**Sociology 476WI/476L** (Fall 2017)  
**Social Statistics/LAB**  
T R 9:00-10:15 (Business AD C103)

Instructor: Yean-Ju Lee (yjlee@hawaii.edu)  
Saunders 216 (956-7116)  
Office Hours: R 1:45-3:45 (or T 1:30-2:00)  
(or by appointment)

**Lab R 10:30-11:45 (Crawford 220)**  
TA: Nathalie Rita (nprita@hawaii.edu)

### Course Description

This course is designed to provide students with basic knowledge of descriptive and inferential statistics. Descriptive statistics involves organizing and summarizing the characteristics of the data. Statistical inference involves making informed guesses about the unknown characteristics of a population based on the known characteristics of a sample.

The course starts with *univariate analysis* (i.e., analysis of each variable separately, with the statistics of central tendency and variability), but the focus will be on the techniques of *bivariate analysis* (i.e., analysis of the relationships between two variables), including **t-test, cross-tabs, analysis of variance (ANOVA), correlation, and linear regression**. Using the linear regression model, this course will also provide an introduction to multivariate analysis (where there are two or more explanatory variables predicting the dependent variable).

The LAB sessions are held in a computer LAB, and the TA will be in charge. The focus is on analyzing GSS (General Social Survey) data using **SPSS (Statistical Package for Social Sciences)**.

Required Text: Agresti, Alan and Barbara Finlay. 2009. (4th edition). *Statistical Methods for the Social Sciences*. Prentice Hall.

Optional Text (used in LAB): Babbie, Earl and Fred Halley. 2010. *Adventures in Social Research: Data Analysis Using SPSS for Window*. Thousand Oaks, CA: Pine Forge Press.

### **SLO (STUDENT LEARNING OBJECTIVE):**

Learn the statistical principles of inferential and descriptive statistics

Learn the statistical principles and techniques of univariate and bivariate analysis

Learn SPSS to conduct the univariate and bivariate analysis using large-scale survey data

Learn how to conduct sociological research using the above techniques

### Course Requirement

Attendance and Individual Conferences: Attendance to all classes and lab sessions is **mandatory**. During the semester, there should be at least 2 individual sessions with the instructor. The first individual conference with the instructor should be done by the end of the 3<sup>rd</sup> week. Class attendance and individual sessions will comprise 5% of the final grade.

Problem Sets: There will be 5 problem sets, roughly bi-weekly except for the exam weeks, intended to make sure students understand the class materials. Each set has about 10 questions requiring numeric as well as verbal answers. The problems will be mostly from the textbook exercises, but may also from LAB projects. *Remember that the exam questions will be very similar to these problems*. All sets combined will comprise 10 % of the final grade. Meeting the deadlines is more important than having the correct answers.

Exam: There will be 2 in-class *non-cumulative* exams, mid-term and final. The two exams will comprise 30 % of the final grade. For each exam, one sheet of paper with *hand-written* formulas will be allowed.

Lab Assignment: In LAB, you will learn how to use SPSS, based on GSS (General Social Survey) data. If you do not finish the class project on time, the work may be given as an assignment. Performances at LAB, including attendance and assignment completion, will comprise 15 % of the final grade.

Course Paper: Based on the knowledge learned in regular and LAB classes, you will write a **research paper**, using **GSS data**. You may choose any research question that interests you, and choose any of the statistical method(s) discussed in this course to answer your questions. The paper should be at least **10 pages long, excluding tables or figures**. A first draft should be turned in *by the 14<sup>th</sup> week (November 21)*, and the final version, *in the last class (December 7)*.

A **research proposal—4 pages**—is due *by the 6th week (September 28)*. Toward the end of the semester, you will have an opportunity to **present your paper in class** for about 10 minutes including questions and answers. The course paper will comprise 40 % of the final grade (proposal, oral presentation, and written paper for 5%, 5%, and 30%, respectively).

**The draft will be returned to students with the instructor's written comments, and students are expected to resubmit the revised papers on the last day of class. Throughout the semester, students are encouraged to have individual conferences with the instructor to discuss the research project, including the instructor's written comments on the draft.**

Your paper must be typed, double-spaced with one-inch margins, and you must use ASA style. A brief summary of the American Sociological Association's Style Guide, which explains the rules clearly, can be found at: <http://www.buffalostate.edu/library/docs/asa.pdf>

Make sure that your references are legitimate academic sources by using Google Scholar. For an explanation of how to do that, go to: <http://library.manoa.hawaii.edu/research/tools/googlescholar.html>

**Important Note:** Please submit your draft paper by November 21 in a hard copy. The final paper should be an e-copy, and you should send it to me as an email attachment. Before you send your file, please rename the file to fit with this format: **course number, semester, and name**, e.g., **476F17SmithT.doc**

**The Writing Center:** The Writing Center is a part of the Sinclair Student Success Center. The staff at the center will review your paper with you and make suggestions for revisions and corrections. All students are *strongly* encouraged to make use of this free and very helpful service. To make an appointment, visit: <http://english.hawaii.edu/writingcenter/>

**Plagiarism:** *It is ultimately each student's responsibility to learn about plagiarism and how to avoid it. Ignorance of the rules, saying "I forgot about that" or "I made a mistake," are not considered valid excuses when it comes to plagiarism.*

The following definition of plagiarism comes from The University of Hawaii System-wide Student Conduct Code:

The term “plagiarism” includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement.

It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials (E7.208, Pages 4 and 5).

(For the entire Student Conduct Code, see: <http://www.hawaii.edu/apis/ep/e7/e7208.pdf> and [http://studentaffairs.manoa.hawaii.edu/downloads/conduct\\_code/UHM\\_Student\\_Conduct\\_Code.pdf](http://studentaffairs.manoa.hawaii.edu/downloads/conduct_code/UHM_Student_Conduct_Code.pdf).)

■It is very important to read the relevant chapters before each class!

Course Schedule

Week	Readings
1. Aug 22-24	Introduction (CH 1) Sampling and Measurement (CH 2) --Variables and Measurements Descriptive Statistics (CH 3) --Tabular and Graphical Description --Measures of Central Tendency
2. Aug 29-31	Descriptive Statistics (CH 3) --Measures of Central Tendency --Measures of Variation
<u>Problem set #1: due September 7</u>	
Chapter 1: 2, 8 Chapter 2: 4, 6, 20 Chapter 3: 4, 6, 8, 14, 26, 36	
3. Sep 5-7	Probability Distributions (CH 4) --Probability Distributions for Discrete and Continuous Variables --Normal Probability Distribution
4. Sep 12-14	Probability Distributions (CH 4) --Sample Distributions of a Sample Mean --Central Limit Theorem Statistical Inference: Estimation (CH 5) --Point Estimation --Confidence Intervals
<u>Problem set #2: due September 21</u>	
Chapter 4: 4, 10, 14, 20, 24 Chapter 5: 4, 10, 12, 20, 28	
5. Sep 19-21	Statistical Inference: Significance Test (CH 6) --Elements of Significance Test --Significance Test for a Mean --Significance Test for a Proportion

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Course Schedule

Week		Reading
6	Sep 26-28 Comparison of Two Groups --Quantitative Data: Comparing Two Means --Qualitative Data: Comparing Two Proportions	(CH 7)
<b>Due September 28: RESEARCH PROPOSAL (4 pages)</b>		
<u>Problem set #3: due Oct 5</u>		
Chapter 6: 2, 3, 16, 19, 24		
Chapter 7: 6, 10, 16, 18, 22		
7	Oct 3-5 Comparison of Two Groups --Qualitative Data: Comparing Two Proportions --Comparing Dependent Samples	(CH 7)
8	Oct 10-12 T: Review Session: Q and A about mid-term exam, LAB, or paper	
<b>Oct 12: MID-TERM EXAM (15 %) Chapters 1-3, 4-6, 7</b>		
9	Oct 17-19 Analyzing Association between Categorical Variables --Contingency Tables --Chi-Squared Test of Independence --More on Testing Independence --Measuring Association in 2 X 2 Tables	(CH 8)
10	Oct 24-26 Analyzing Association between Categorical Variables --Association between Ordinal Variables, etc.	(CH 8)
<u>Problem set #4: due Nov 2</u>		
Chapter 8: 4, 8, 9, 14, 16, 18, 24		
11	Oct 31-Nov 2 Linear Regression and Correlation --Linear Relationships --Least Squares Prediction of Equation --Linear Regression Model --Inference for the Slope --Measuring Linear Association –Correlation	(CH 9)
12	Nov 7-9 Linear Regression and Correlation --Inference for the Slope and Correlation --Model Assumptions and Violations	(CH 9)
<u>Problem set #5: due Nov 16</u>		
Chapter 9: 2, 4, 8, 12, 16, 22, 26, 30		

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Course Schedule

Week			Readings
13	Nov 14-16	Comparing Group Means: Analysis of Variance --Comparing Several Means: One Way ANOVA	(CH 12)
14	Nov 21	Comparing Group Means: Analysis of Variance --Comparing Several Means: One Way ANOVA	(CH 12)
<u>Problem set #6: due Nov 30</u> Chapter 12: 2, 4, 6, 10, 12			
15	Nov 28-30	Introduction to Multivariate Relationships --Association and Causality --Controlling for Other Variables Multiple Regression and Correlation --Multiple Regression Model	(CH 10)  (CH 11)

**Due Nov 28, Thursday: DRAFT of RESEARCH PAPER (10 pages of text, plus tables)**

16	Dec 5-7	Multiple Regression and Correlation --Multiple Regression Model	(CH 11)
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**STUDENT PAPER PRESENTATIONS**

**DEC 12 Tuesday: Revised PAPER is due** (Tell me in advance if you need an extension.)

**DEC 12 Tuesday: 9:45-11:00**      **FINAL EXAM** (15%): Chapters 8, 9, 12