SAN JOSÉ STATE UNIVERSITY
URBAN AND REGIONAL PLANNING DEPARTMENT
URBP 204: QUANTITATIVE METHODS
SPRING 2018

Instructor: Dr. Kevin Fang
Office location: WSQ 218A
Email: kevin.fang@sjsu.edu
Office hours: By appointment until spring break
Tuesday’s 3:30-4:15pm, 7:15-8:00pm after spring break
Class days/time: Wednesday’s 7:30-10pm
Classroom: WSQ 208
Class website: On Canvas
Prerequisites: None
Units: 4

Course Catalog Description
Urban research design, measurement, selected statistical research tools and introduction to computer processing. Extensive treatment of survey research.

Course Description
Over the course of your academic and professional careers, you are going to need to work with data: understand it, analyze it, present it, and collect it. We will begin with an overview of social science research and then delve into statistical tools that you can use to make inferences from quantitative data. What constitutes a statistically significant finding versus an anecdotally apparent one? In the second half of the course, we’ll explore survey research and the elements of research design.
Course Learning Objectives

Upon successful completion of the course, students will be able to:

• Identify the overall strengths and weaknesses of quantitative, qualitative, experimental, and survey research methods, and assess which research method/s, given resource constraints, are most appropriate for answering a specific research question.

• Develop research questions worthy of informing public policy, and identify the statistical tools appropriate for answering the research question. (The tools learned in this class are: Tests between Means of Different Groups, Tests Between Means of Related Groups, ANOVA, Factorial ANOVA, Correlation, One- and Two- Factor Chi Square; Ordinary Least Squares Regression; Logistic Regression.)

• Develop survey research questions that conform to conventional best practices in survey design.

• Critically evaluate the strengths and weaknesses of various non-probability and probability-based sampling techniques.

• Present quantitative data and results in text and graphics.

• Identify the policy implications of statistical test results.

Planning Accreditation Board (PAB) Knowledge Components

This course partially covers the following PAB Knowledge Components:

  1e) The Future: understanding of the relationships between past, present, and future in planning domains, as well as the potential for methods of design, analysis, and intervention to influence the future.

  2a) Research: tools for assembling and analyzing ideas and information from prior practice and scholarship, and from primary and secondary sources.

  2b) Written, Oral and Graphic Communication: ability to prepare clear, accurate and compelling text, graphics and maps for use in documents and presentations.

  2c) Quantitative and Qualitative Methods: data collection, analysis and modeling tools for forecasting, policy analysis, and design of projects and plans.
Required Course Texts
There are two required text books for this course.


A new paperback edition would cost approximately $50.

You may also use the 2nd edition of the book. A used book would cost approximately $20.

You do not need to buy the book that comes with SPSS CD.


This is a free open access e-textbook available from the University of South Florida at: http://scholarcommons.usf.edu/cgi/viewcontent.cgi?article=1002&context=oa_textbooks

The book is also available in Arabic, Chinese, and Korean at: http://scholarcommons.usf.edu/oa_textbooks/3/

Course Assignments and Grading Policy
Assignments in this class include a series of exercises reviewing and practicing material learned in class, a term project and engagement unit activity applying your new quantitative analysis skills to a real neighborhood in San Jose, and one qualitative quiz.

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Share of Course Grade</th>
<th>Course Learning Objectives Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercises</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inferential Statistics</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>Linear Regression</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>Logistic Regression</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td><strong>Engagement Unit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part 1 – Site Visit</td>
<td>10%</td>
<td>3</td>
</tr>
<tr>
<td>Part 2 – Presentation</td>
<td>15%</td>
<td>2, 5</td>
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<tr>
<td><strong>Term Project</strong></td>
<td></td>
<td></td>
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<tr>
<td>Part 1 – Draft of calculations</td>
<td>6.25%</td>
<td>2, 5, 6</td>
</tr>
<tr>
<td>Part 2 – Full write-up and final calculations</td>
<td>18.75%</td>
<td>2, 5, 6</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concepts Quiz</td>
<td>20%</td>
<td>1, 2, 3, 4</td>
</tr>
</tbody>
</table>

Resubmissions for the three exercises
You will be able to correct and re-submit the exercises on Inferential Statistics, Linear Regression, and Logistic Regression. You will be able to earn up to 75% more points on an assignment resubmission up to a maximum score of 90%. Please do not re-submit your assignment if you earned a score of 90% or higher on your initial submission.
Late Assignments
Late assignments will not be accepted for the Inferential Statistics, Linear Regression, or Logistic Regression exercises. If you miss the initial due date, you may turn it on the re-submission date for 75% credit.

Late assignments will be accepted for the Engagement Unit – Part 1, the Term Project – Part 1, and the Term Project – Part 2. Assignments submitted within one day of the due date will be reduced in score by 10%. Assignments submitted thereafter will be reduced an additional 5% per day with a maximum late penalty of 40%. The deadline to turn in late assignments is Thursday, May 24 at 11:59pm.

Grading Information
Grades for the course will be assigned based on your percentage of total points earned on all assignments according to the following distribution: >96.67% = A+, >93.33%-96.67% = A, >89.5%-93.3% = A-, >86.67%-89.5%, B+, >83.33%-86.67% = B, >79.5%-83.3% = B-, >76.67%-79.5%, C+, >73.33%-76.67% = C, >69.5%-73.3% = C-, >66.67%-69.5%, D+, >63.33%-66.67% = D, >59.5%-63.3% = D-, 0%-59.5% = F

Course Workload
Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

Because this is a four-unit class, you can expect to spend a minimum of nine hours per week in addition to time spent in class and on scheduled tutorials or activities. Special projects or assignments may require additional work for the course. Careful time management will help you keep up with readings and assignments and enable you to be successful in all of your courses.

University Policies
Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs’ Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/
Plagiarism and Citing Sources Properly

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Plagiarism is the use of someone else's language, images, data, or ideas without proper attribution. It is a very serious offense both in the university and in your professional work. In essence, plagiarism is both theft and lying: you have stolen someone else's ideas, and then lied by implying that they are your own.

Plagiarism will lead to grade penalties and a record filed with the Office of Student Conduct and Ethical Development. In severe cases, students may also fail the course or even be expelled from the university.

If you are unsure what constitutes plagiarism, it is your responsibility to make sure you clarify the issues before you hand in draft or final work.

Learning when to cite a source and when not to is an art, not a science. However, here are some common examples of plagiarism that you should be careful to avoid:

• Using a sentence (or even a part of a sentence) that someone else wrote without identifying the language as a quote by putting the text in quote marks and referencing the source.

• Paraphrasing somebody else's theory or idea without referencing the source.

• Using a picture or table from a webpage or book without reference the source.

• Using data some other person or organization has collected without referencing the source.

The University of Indiana has developed a very helpful website with concrete examples about proper paraphrasing and quotation. See in particular the following pages:

• Overview of plagiarism at www.indiana.edu/~istd/overview.html

• Examples of plagiarism at www.indiana.edu/~istd/examples.html

• Plagiarism quiz at www.indiana.edu/~istd/test.html

If you still have questions, feel free to talk to me personally. There is nothing wrong with asking for help, whereas even unintentional plagiarism is a serious offense.

Library Liaison

The SJSU Library Liaison for the Urban and Regional Planning Department is Ms. Toby Matoush. If you have questions, you can contact her at toby.matoush@sjsu.edu or 408-808-2096.
Please note: In the Course Schedule below, the chapter numbers for the Salkind book are as per the 4th Edition. The Chapters numbers for the 4th and the 2nd editions are provided at the end of the syllabus. If you buy the earlier edition, look for the corresponding chapter titles.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignment Due</th>
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</thead>
<tbody>
<tr>
<td>1 Jan 24</td>
<td>Course Overview</td>
<td>Bhattacherjee: Chapter 1</td>
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<tr>
<td></td>
<td>Intro to Social Research</td>
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<tr>
<td>2 Jan 31</td>
<td>Descriptive Statistics</td>
<td>Salkind: Chapter 2, 3, 4</td>
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<td>3 Feb 7</td>
<td>NO CLASS</td>
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<td>4 Feb 14</td>
<td>Inferential Statistics I</td>
<td>Salkind: Chapter 7, 8, 9</td>
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<td></td>
<td>t-tests, ANOVA, chi-square</td>
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<tr>
<td>5 Feb 21</td>
<td>Inferential Statistics II</td>
<td>Salkind: Chapter 11, 12, 13</td>
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<tr>
<td></td>
<td>t-tests, ANOVA, chi-square</td>
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<tr>
<td>6 Feb 28</td>
<td>Inferential Statistics III</td>
<td>Salkind: Chapter 14, 15, 17</td>
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<tr>
<td></td>
<td>t-tests, ANOVA, chi-square in SPSS</td>
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<tr>
<td>7 Mar 7</td>
<td>Regression I</td>
<td></td>
<td>Inferential Statistics Exercise</td>
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<td>Ordinary Least Squares Regression (OLS)</td>
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<tr>
<td>8 Mar 14</td>
<td>Regression I (continued)</td>
<td>Salkind: Chapter 16</td>
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<td>Ordinary Least Squares Regression (OLS)</td>
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<tr>
<td>9 Mar 21</td>
<td>Regression I (continued)</td>
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<td>Engagement Unit Part 1 Due</td>
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<td>Ordinary Least Squares Regression (OLS)</td>
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<td>Inferential Statistics Resubmissions</td>
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<td>ESRI Community Analyst Tutorial</td>
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<td>Mar 28</td>
<td>SPRING BREAK</td>
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<td>NO CLASS</td>
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<td>10</td>
<td>Regression II</td>
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<td>Linear Regression</td>
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<tr>
<td>Date</td>
<td>Activity</td>
<td>Notes</td>
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<td>Apr 4</td>
<td>Logistic Regression</td>
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<td>11 Apr</td>
<td>Survey Research 1</td>
<td>Bhattacherjee: Chapter 9</td>
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<td>Term Project Research Questions Activity</td>
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<td>12 Apr</td>
<td>Survey Research 2</td>
<td>Bhattacherjee: Chapter 8</td>
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<td>Term Project Work Time</td>
<td>Linear Regression Exercise Resubmissions</td>
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<tr>
<td>13 Apr</td>
<td>Research Design</td>
<td>Bhattacherjee: Chapter 3, 5, 10</td>
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<td>Term Project Work Time</td>
<td>Logistic Regression Exercise Resubmissions</td>
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<td>14 May</td>
<td>Qualitative Research</td>
<td>Bhattacherjee: Chapter 13</td>
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<td>Term Project Work Time</td>
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<tr>
<td>15 May</td>
<td>Engagement Unit 2 Presentations</td>
<td>Term Project Part 1 Due</td>
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<td>Engagement Unit 2 Presentations</td>
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<tr>
<td>Finals</td>
<td>Final Quiz</td>
<td>Final Quiz</td>
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<td>Engagement Unit 2 Presentations</td>
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<td>May 9</td>
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<tr>
<td>Tue May 22</td>
<td>END OF FINALS WEEK NO CLASS</td>
<td>Term Project Part 2 Due by 11:59pm (to Canvas)</td>
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</table>
APPENDIX

Chapter Titles: Salkind 4th edition

1. Statistics or Sadistics? It's Up to You

Part II

2. Means to an End: Computing and Understanding Averages
3. Vive la Diff,rence: Understanding Variability
4. A Picture Really Is Worth a Thousand Words
5. Ice Cream and Crime: Computing Correlation Coefficients
6. Just the Truth: An Introduction Understanding Reliability and Validity

Part III

7. Hypotheticals and You: Testing Your Questions

Part IV

10. Only the Lonely: The One-Sample Z Test
11. t(ea) for Two: Tests Between the Means of Different Groups
12. t(ea) for Two (Again): Tests Between the Means of Related Groups
13. Two Groups Too Many? Try Analysis of Variance
14. Two Too Many Factors: Factorial Analysis of Variance
15. Cousins or Just Good Friends? Testing Relationships Using the Correlation Coefficient
16. Predicting Who'll Win the Super Bowl: Using Linear Regression
17. What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests
18. Some Other (Important) Statistical Procedures You Should Know About
19. A Statistical Software Sampler

Part V

20. The Ten (or More) Best Internet Sites for Statistics Stuff
21. The Ten Commandments of Data Collection
Chapter Titles: Salkind 2nd edition

1. Statistics or Sadistics? It's Up to You

Part II
2. Means to an End: Computing and Understanding Averages
3. Vive la Diff,rence: Understanding Variability
4. A Picture Really Is Worth a Thousand Words
5. Ice Cream and Crime: Computing Correlation Coefficients

Part III
6. Hypotheticals and You: Testing Your Questions
7. Are Your Curves Normal? Probability and Why It Counts

Part IV
9. t(ea) for Two: Tests Between the Means of Different Groups
10. t(ea) for Two (Again): Tests Between the Means of Related Groups
11. Two Groups Too Many? Try Analysis of Variance
12. Two Too Many Factors: Factorial Analysis of Variance
13. Cousins or Just Good Friends? Testing Relationships Using the Correlation Coefficient

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