Instructors: Dr. Kevin Fang  
            Dr. Shishir Mathur  
Office location: Fang: WSQ 218  
                Mathur: WSQ 216E  
Email: kevin.fang@sjsu.edu  
      shishir.mathur@sjsu.edu  
Office hours: Fang: Mondays 3:30-4:30pm  
            Mathur: By appointment  
Class days/time: Tuesday 4:15-7:00pm and 7:15-10:00 pm  
Classroom: WSQ 208  
Class website: On Canvas  
Prerequisites: None  
Units: URBP 204

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. They are:


You may also use the 10th edition of the book.


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.

Recommended Course Text to Purchase
There is one recommend text book for this course. It is:


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>Exercises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Social research</td>
<td>5%</td>
<td>1</td>
</tr>
<tr>
<td>2) Inferential Statistics</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>3) Linear Regression</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>4) Logistic Regression</td>
<td>10%</td>
<td>2</td>
</tr>
<tr>
<td>5) Survey Research and Research Design</td>
<td>5%</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>Engagement Unit: Quantitative Analysis of a San Jose Neighborhood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement Unit, Part 1</td>
<td>12.5%</td>
<td>2</td>
</tr>
<tr>
<td>Engagement Unit, Part 2</td>
<td>12.5%</td>
<td>2</td>
</tr>
<tr>
<td>Term Project</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Term Project</td>
<td>25%</td>
<td>2, 5 &amp; 6</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concepts Quiz</td>
<td>10%</td>
<td>1 &amp; 2</td>
</tr>
</tbody>
</table>
Resubmissions for Exercises 1-5
You will be able to correct and re-submit the five exercises. You will be able to earn up to 75% more points on an assignment resubmission up to a maximum score of 95%. Please do not re-submit your assignment if you earned a score of 95% or higher on your initial submission.

Late Assignments
Due to the relatively large number of assignments in this class and the potential for re-submissions, this class has a tight grading schedule. As a result, late work will not be accepted, except with the instructor’s prior permission.

Final Examination
On the final examination day, the “concepts quiz”, worth 10% of the total grade will be administered. The “concepts quiz” will be a qualitative evaluation of your knowledge of key terms and ideas covered in the class. Additionally, the full term project assignment will be due on the final examination day.

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 coursework. 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.
**URBP 204: QUANTITATIVE METHODS**

**FALL 2017**

**COURSE SCHEDULE**

(subject to change with fair notice)

Please note: In the Course Schedule below, the chapter numbers for the Earl Babbie book are as per the 13th Edition. The Chapters numbers for the 13th and the 10th editions are provided at the end of the syllabus. If you buy the earlier edition, look for the corresponding chapter titles.

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.

Chapter numbers for the Agresti and Finlay book are as per the 4th Edition. The Chapters numbers for the 4th and the 3rd 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</td>
<td>Aug 29</td>
<td>Course Overview Intro to Social Research</td>
<td>Babbie: Chapters 2, 3, 5</td>
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<tr>
<td>2</td>
<td>Sep 5</td>
<td>Intro to Social Research Into to Excel</td>
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<tr>
<td>3</td>
<td>Sep 12</td>
<td>Descriptive Statistics</td>
<td>Salkind: Chapters 2, 3, 4</td>
</tr>
<tr>
<td>4</td>
<td>Sep 19</td>
<td>Inferential Statistics I t-tests, ANOVA, chi-square</td>
<td>Salkind: Chapters 7, 8, 9</td>
</tr>
<tr>
<td>5</td>
<td>Sep 26</td>
<td>Inferential Statistics II t-tests, ANOVA, chi-square</td>
<td>Salkind: Chapters 11, 12, 13</td>
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<tr>
<td>6</td>
<td>Oct 3</td>
<td>Inferential Statistics III t-tests, ANOVA, chi-square in SPSS</td>
<td>Salkind: Chapters 14, 15, 17</td>
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<tr>
<td>7</td>
<td>Oct 10</td>
<td>Regression I Ordinary Least Squares Regression (OLS)</td>
<td>Agresti and Finlay: Chapters 9, 10, 11 (recommended)</td>
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<tr>
<td>8</td>
<td>Oct 17</td>
<td>Regression I (continued) Ordinary Least Squares Regression (OLS)</td>
<td>Agresti and Finlay: Chapters 11, 14 (recommended)</td>
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<tr>
<td>9</td>
<td>Oct 24</td>
<td>Regression II Logistic Regression</td>
<td>Agresti and Finlay: Chapters 15 (recommended)</td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Notes</td>
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<tr>
<td>10 Oct 31</td>
<td>Regression II (continued) Logistic Regression</td>
<td>Exercise 3</td>
<td></td>
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<tr>
<td>11 Nov 7</td>
<td>Introduce Term Project Research Questions Activity Term Project Work Time</td>
<td>Engagement Unit 2</td>
<td></td>
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<tr>
<td>12 Nov 14</td>
<td>Survey Research Term Project Work Time</td>
<td>Babbie: Chapter 9 Exercise 4 Exercise 3 revisions</td>
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<tr>
<td>13 Nov 21</td>
<td>Survey Research</td>
<td></td>
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<tr>
<td>14 Nov 28</td>
<td>Experiments &amp; Qualitative Field Research Term Project Work Time</td>
<td>Babbie: Chapters 8, 10 Exercise 4 revisions</td>
<td></td>
</tr>
<tr>
<td>15 Dec 5</td>
<td>Research Design Term Project Work Time</td>
<td>Babbie: Chapters 4, 6 Exercise 5 Partial Term Project</td>
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<tr>
<td>Dec 12</td>
<td>NO CLASS – Dead Day</td>
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<tr>
<td>Finals Dec 19</td>
<td></td>
<td>Concepts Quiz Full Term Project Exercise 5 Revisions</td>
<td></td>
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</table>
APPENDIX

Chapter Titles: Babbie 13th edition
Ch. 1: Human Inquiry and Science
Ch 2: Paradigms, Theory and Social Research
Ch 3: The Ethics and Politics of Social Research
Ch 4: Research Design
Ch 5: Conceptualization, Operationalization, and Measurement
Ch 6: Indexes, Scales, and Typologies
Ch 7: The Logic of Sampling
Ch 8: Experiments
Ch 9: Survey Research
Ch 10: Qualitative Field Research
Ch 11: Unobtrusive Research
Ch 12: Evaluation Research
Ch 13: Qualitative Data Analysis
Ch 14: Quantitative Data Analysis
Ch 15: The Logic of Multivariate Analysis
Ch 16: Statistical Analyses
Ch 17: Reading and Writing Social Research

Chapter Titles: Babbie 10th edition
Ch.1: Human Inquiry and Science
Ch 2: Paradigms, Theory and Social Research
Ch 3: The Ethics and Politics of Social Research
Ch 4: Research Design
Ch 5: Conceptualization, Operationalization, and Measurement
Ch 6: Indexes, Scales, and Typologies
Ch 7: The Logic of Sampling
Ch 8: Experiments
Ch 9: Survey Research
Ch 10: Qualitative Field Research
Ch 11: Unobtrusive Research
Ch 12: Evaluation Research
Ch 13: Qualitative Data Analysis
Ch 14: Quantitative Data Analysis
Ch 15: The Elaboration Model
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

14. Predicting Who'll Win the Super Bowl: Using Linear Regression
15. What to Do When You're Not Normal: Chi-Square and Some Other Nonparametric Tests
16. Just the Truth: An Introduction Understanding Reliability and Validity
17. Some Other (Important) Statistical Procedures You Should Know About
18. A Statistical Software Sampler

Part V
19. The Ten Best Internet Sites for Statistics Stuff
20. The Ten Commandments of Data Collection

Chapter Titles: Agresti and Finlay 4th edition

1. Introduction
2. Sampling and Measurement
3. Descriptive statistics
4. Probability Distributions
5. Statistical inference: estimation
6. Statistical Inference: Significance Tests
7. Comparison of Two Groups
8. Analyzing Association between Categorical Variables
9. Linear Regression and Correlation
10. Introduction to multivariate Relationships
11. Multiple Regression and Correlation
12. Comparing groups: Analysis of Variance (ANOVA) methods
13. Combining regression and ANOVA: Quantitative and Categorical Predictors
14. Model Building with Multiple Regression
15. Logistic Regression: Modeling Categorical Responses
16. Introduction to Advanced Topics

**Chapter Titles: Agresti and Finlay 3rd edition**

1. Introduction
2. Sampling and Measurement
3. Descriptive statistics
4. Probability Distributions
5. Statistical inference: estimation
6. Statistical Inference: Significance Tests
7. Comparison of Two Groups
8. Analyzing Association between Categorical Variables
9. Linear Regression and Correlation
10. Introduction to multivariate Relationships
11. Multiple Regression and Correlation
12. Comparing groups: Analysis of Variance methods
13. Combining regression and ANOVA: Analysis of Covariance
14. Model Building with Multiple Regression
15. Logistic Regression: Modeling Categorical Responses
16. Introduction to Advanced Topics