

**SAN JOSÉ STATE UNIVERSITY**  
**URBAN AND REGIONAL PLANNING DEPARTMENT**  
**URBP 204: QUANTITATIVE METHODS**  
**Spring 2021**

**Instructors:** Dr. Shishir Mathur  
Dr. Chao Liu

**Office location:** Mathur: online  
Liu: online

**Email:** shishir.ma



## Other Readings

There is one recommend textbook for this course. It is:

Agresti, Alan, and Barbara Finlay. 2008. *Statistical Methods for the Social Sciences*, 4<sup>th</sup> edition. New Jersey: Prentice Hall. (ISBN: 9780130272959). A paperback edition would cost approximately \$60. You may also use the 3<sup>rd</sup> edition of the book.

## Course Assignments and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

Your grade for the course will be based on six take home exercises and two engagement unit activities. You will be able to revise and re-submit the take home six exercises and several term project-related assignments and earn up to 75% of the lost points.

Assignments	Share of Course Grade	Course Learning Objectives Covered
<b>Exercises</b>		
1) Exercise 1: Social research	10%	1
2) Exercise 2: Survey, experiments, field research	10%	3 & 4
3) Exercise 3: Inferential Statistics, Part 1	10%	2, 5& 6
4) Exercise 4: Inferential Statistics, Part 2	10%	2, 5& 6
5) Exercise 5: Logistic Regression	10%	2, 5& 6
6) Exercise 6: Ordinary Least Squares Regression	25%	2, 5& 6
<b>Engagement Unit: Quantitative Analysis of a San Jose Neighborhood</b>		
Memo A: Engagement Unit, Part 1	15%	2
Memo B: Engagement Unit, Part 2	10%	2

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, H[FHSW ZLWK WKH LQVWUXFWRU¶V SULRU SHUPLVVLRQ

Preparing profile of a San Jose neighborhood and comparing and contrasting your profile with \RXU FODVVPDWHV¶-unit engagement unit. For the engagement unit, the instructor will spend an additional 15 hours per semester on activities such as: designing the engagement unit activities and the related assignments, coordinating with community partners to implement the activities, advising students outside of class on a weekly basis as needed, and grading the engagement unit activity assignments.

## **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:

A plus = 100 to 96

A = 95 to 93 points

A minus = 92 to 90 points

B plus = 89 to 87 points

B = 86 to 84 points

B minus = 83 to 81 points

C plus = 80 to 78 points

C = 77 to 73 points

C minus = 72 to 70 points

D plus = 69 to 67 points

D = 66 to 63 points

D minus = 62 to 60 points

F = 59 points or lower

## **University Policies**

Per University Policy S16-9 (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on Syllabus Information web page (<http://www.sjsu.edu/gup/syllabusinfo>), which is hosted by the Office of Undergraduate Education. Make sure to visit this page to review and be aware of these university policies and resources.



**Week 5 (March 1)**

Instructor: Mathur

Survey Research continued

Required reading: Babbie, Earl, Ch. 9

1 HLJKERUKRRG 3 U R I L O H O H P R 3 \$ ' (email at [shishir.mathur@sjsu.edu](mailto:shishir.mathur@sjsu.edu) with the subject line: 3 ILUVW QDPH (M D W ; Q D P H will distribute your Memo A to classmates for preparing Memo B) Exercise 1 Graded

**Week 6 (March 8)**

Instructor: Mathur

Experiments and Qualitative Field Research

Required reading: Babbie, Earl, Ch. 8 and 10

Exercise 2 Introduced

Revised Exercise 1 Due (email at [shishir.mathur@sjsu.edu](mailto:shishir.mathur@sjsu.edu) Z L W K W K H V X E M H F W O L Q H 3 name, 204: Rev Ex 1 )

1 HLJKERUKRRG 3 U R I L O H O H P R 3 \$ ' Graded

**Week 7 (March 15)**

Instructor: Liu

Descriptive Statistics; Normal Distribution, Hypothesis Testing; T-statistics

Required reading: Salkind, Neil. Ch. 2, 3, 4, 7, 8 and 9

Research Questions Assignment Introduced (not graded)

1 HLJKERUKRRG 3 U R I L O H O H P R 3 \$ ' (email at [shishir.mathur@sjsu.edu](mailto:shishir.mathur@sjsu.edu) with the subject line:

3 ILUVW QDPH (M D W ; Q D P H )

Revised Exercise 1 Graded

**Week 8 (March 22)**

Instructor: Liu

Tests between Means of Different Groups; Tests Between Means of Related Groups; ANOVA

Required reading: Salkind, Neil. Ch. 11, 12 and 13

Exercise 2 Due (email at [shishir.mathur@sjsu.edu](mailto:shishir.mathur@sjsu.edu) Z L W K W K H V X E M H F W O L Q H 3 ILUV 204: Ex 2 )

1 HLJKERUKRRG 3 U R I L O H O H P R 3 \$ ' Graded

Exercise 3 Introduced

Research Questions Assignment Discussion

**March 29 - no class, Spring Break!**

Exercise 2 Graded

### Week 9 (April 5)

Instructor: Liu

Tests between Means of Different Groups; Tests Between Means of Related Groups; ANOVA (continued); Factorial ANOVA; Chi-squared tests; Correlation

Required reading: Salkind, Neil. Ch. 14, 15 and 17

Exercise 4 Introduced

Research Questions Assignment Discussion

Revised Exercise 2 Due email at [shishir.mathur@sjsu.edu](mailto:shishir.mathur@sjsu.edu) Z L W K W K H V X E M H F W O L Q H 3 Q D P H 5 H Y ( [ ' )

### Week 10 (April 12)

Instructor: Liu

Factorial ANOVA; Chi-squared tests; Correlation (continued); Logistic Regression

Required reading: Salkind, Neil. Ch. 14, 15 and 17

Recommended Reading: Agresti and Finlay Ch. 15

Exercise 5 Introduced

Research Questions Assignment Discussion

Revised Exercise 2 Graded

Exercise 3 Due email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu) Z L W K W K H V X E M H F W O L Q H Ex<sup>3</sup> I L U V W 3 )

### Week 11 (April 19)

Instructor: Liu

Logistic Regression continued and working session

Recommended Reading: Agresti and Finlay Ch. 15

Exercise 4 Due email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu) Z L W K W K H V X E M H F W O L Q H Ex<sup>3</sup> I L U V W 4 )

Exercise 3 Graded

### Week 12 (April 26)

Instructor: Liu

Ordinary Least Squares Regression (OLS)

Recommended Reading: Agresti and Finlay Ch. 9, 10, 11 and 14

Exercise 4 Graded

Revised Exerc

**Week 13 (May 3)**

Instructor: Liu

Ordinary Least Squares Regression (OLS) continued

Recommended Reading: Agresti and Finlay Ch. 9, 10, 11 and 14

Exercise 6 Introduced (email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu)) Z L W K W K H V X E M H F W O L Q H 3 I L U  
204: Ex 6 )

Revised Exercise 4 Due (email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu)) Z L W K W K H V X E M H F W O L Q H 3 I L U  
204: Rev Ex 4 )

Exercise 5 Graded

**Week 14 (May 10)**

Instructor: Liu

OLS continued; Working session for Ex 6

Recommended Reading: Agresti and Finlay Ch. 9, 10, 11 and 14

Revised Exercise 5 Due (email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu)) Z L W K W K H V X E M H F W O L Q H 3 I L U  
204: Rev Ex 5 )

**Exercise 6 Due May 13** (email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu)) Z L W K W K H V X E M H F W O L Q H 3 I L U  
204: Ex 6 )

Revised Exercise 4 Graded

**Week 15 (May 17)**

Instructor: Mathur, Liu

Research Design (Mathur); Working session for revising Ex 6 (Liu)

Required reading: Earl, Babbie Ch. 4 and 6

Revised Exercise 5 Graded

**Week 16 (May 24)**

Instructor: Liu

Please note: Since this is exams week, the class will begin at 7:45 pm

Course reflection

Revised Exercise 6 Due (email at [chao.liu01@sjsu.edu](mailto:chao.liu01@sjsu.edu)) Z L W K W K H V X E M H F W O L Q H 3 I L U  
5 H Y ( [ ' )

## **Plagiarism and Citing Sources Properly**

Plagiarism is the use of someone else's language, images, data, or ideas without proper attribution.





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