STA 520 Class Policy

2020 / Spring
STA 520.001
Statistical Analysis I

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Office Hours: MWF 9-10:45
Class meeting time and place: MWF 8-8:50 at MTH 213

Course Description:
Probability, statistical inference, rank tests, chi-square tests, linear regression and correlation, analysis of variance, multiple regression.

Program Learning Outcomes (PLO): Students graduating from SFASU with an M.S. degree and a major in statistics will demonstrate:
1. A command of core probability and statistical concepts through major definitions and theorems. [Concepts] (Probability and Statistical Inference)
2. Strategic competence in formulating a standard probabilistic/statistical model for a given problem. [Modeling] (Model Choice and Model Interpretation)
3. Skill in using statistical software in order to process and interpret data. [Data Processing] (Computational Skills and Model Validation)
4. The ability to independently apply principles of probability and statistics to model and solve new or non-standard problems. [Independent Thinking and Application] (Existing Literature Comprehension, Independent Progression, Resourcefulness)
5. Proficiency in communicating probability and statistics in a format appropriate to expected audiences. [Communication] (Written Communication, Oral Communication)

Student Learning Outcomes (SLO): At the end of STA 520, a student who has studied and learned the material should be able to:
1. Solve problems encountered in research projects and make decisions based on data and life experiences beyond the classroom and university setting. [PLO: 2,3,4,5]
2. Investigate the nature of independence and/or dependence among several variables. [PLO: 1]
3. Formulate statistical hypotheses in terms of the parameters of populations. [PLO: 1,2]
4. Test hypotheses using appropriate test statistics. [PLO: 3,4,5]

Text and Materials:
An Introduction to Statistical Methods and Data Analysis by Ott and Longnecker, 6th Ed.

Course Requirements:
Homework, Projects, and Exams

Course outline:
Descriptive Statistics
- Graphical Methods
- Measures of Central Tendency
- Measures of Variability

Approximate time spent
5%
Probability  15%
  o Probability Laws
  o Conditional Probability and Independence
  o Probability Distributions for Random Variables:
    ♦ Discrete
    ♣ Continuous
  o Random Sampling
  o Sampling Distributions

Statistical Inference (Estimation and Hypothesis Tests)  15%
  o Inferences about a single population parameter
  o Inference comparing parameters of two populations

Statistical Inference Comparing Parameters for More Than Two Populations  25%
  o Analysis of Variance (ANOVA)
  o Kruskal-Wallis Test

Multiple Comparisons  10%
  o Fisher's Least Significant Difference Test
  o Tukey's Test
  o Student-Newman-Keuls Test
  o Duncan's Test
  o Dunnett's Test
  o Scheffe's Test

Chi-Square Tests  10%
  o Goodness-of-Fit Test
  o Tests for Independence and Homogeneity

Regression  20%
  o Correlation and Simple Linear Regression
  o Multiple Regression

Grading Policy: The final average will be computed using the following weights:

  Homework/Projects  35%
  Exams  65%

Attendance Policy:
Attendance/participation is expected.

Academic Integrity (A-9.1):
Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been
purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit.

Please read the complete policy at http://www.sfasu.edu/policies.academic_integrity.asp

Withheld Grades Semester Grades Policy (A-54):
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

Students with Disabilities:
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Acceptable Student Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.