

Statistical Methods I Syllabus

STA2023, Summer 2019, June 24 - July 26

Course & Faculty Information

Lecturer: TBA

E-mail: TBA

Time: Monday through Friday

Contact hour: 45 hours

Credit: 3

Officehour: By Appointment

Course Description

Statistics and probability constitute the mathematics of uncertainty. This is an introductory course that gives the students knowledge on both descriptive and inferential statistics. Topics include graphic and numerical representations of various types of data; probability and statistics, discrete and continuous probability distributions; sampling and estimations; statistical inferences.

Textbook Information

Triola Elementary Statistics, Pearson Publishing, 12th Edition

Calculators: You must have a graphing calculator, preferably the TI84 or TI86. All demos will be done using the TI84 Smartview. If you already have a graphing calculator such as the TI83 or TI85 there is no need to buy another model. Bring your calculator to class every day.

Teaching Assistants:

The TA will be available for questions. The TA will run a short review session on Fridays before the test.

Homework:

There will be homework assigned each day. The homework is for you to practice and master the material presented in class. The homework will not be graded.

Exams:

There will be four chapter tests. There will not be any makeup exams. There will be a cumulative final exam given the last day to replace a missed or the lowest scoring test, if it helps.

Grading Policy

Each test is worth 20% of your grade.

Grading Scale:

A = 90-
100%

B = 80-89%

C = 70-79%

D = 60-69%

F = Below 60%

Please note that this outline is meant to give an overview of the major concepts this course. Changes may occur in this calendar as needed to aid in the student's development.

Week 1: Describing data

- Discrete and Continuous variables
- Describing data with graph and numerical measures
- Variation, Boxplots, and z-scores

Week 2: Describing data and basic probability

- Basic probability
- Compound events, independent and dependent events
- Conditional probability and Counting rules

Week 3: Probability and Normal Distribution

- Discrete probability
- Binomial probability
- Normal distribution

- Sampling distributions
- The central limit theory

Week 4: Estimation, test of hypotheses

- Point, interval estimations
- Sample-size calculations
- Testing proportion hypothesis and P-values
- Testing mean hypothesis and P-values
- Two sample proportion hypothesis test
- Two sample mean hypothesis test (independent)
- Two sample mean hypothesis test (dependent)

Week 5: Regression

- Regression and correlation

Academic Integrity

As members of the Seminole State College of Florida community, students are expected to be honest in all of their academic coursework and activities.

Academic dishonesty, such as cheating of any kind on examinations, course assignments or projects, plagiarism, misrepresentation and the unauthorized possession of examinations or other course-related materials, is prohibited.

Plagiarism is unacceptable to the college community. Academic work that is submitted by students is assumed to be the result of their own thought, research or self-expression. When students borrow ideas, wording or organization from another source, they are expected to acknowledge that fact in an appropriate manner. Plagiarism is the deliberate use and appropriation of another's work without identifying the source and trying to pass-off such work as the student's own. Any student who fails to give full credit for ideas or materials taken from another has plagiarized.

Students who share their work for the purpose of cheating on class assignments or tests are subject to the same penalties as the student who commits the act of cheating.

When cheating or plagiarism has occurred, instructors may take academic action that ranges from denial of credit for the assignment or a grade of "F" on a specific assignment, examination or project, to the assignment of a grade of "F" for the course. Students may also be subject to further sanctions imposed by the judicial officer, such as disciplinary probation, suspension or dismissal from the College.

Selected Studies in Math Syllabus

MAT 2931, Summer 2019, June 24 – July 26

Course & Faculty Information

Course : MAT 2931 Selected Studies in Math- Statistical Methods I- STA 2023

Lecturer: TBA

E-mail: TBA

Time: Monday through Friday

Contact Hours: 15 (50minutes each)

Credit: 1

Office hour: By Appointment

Course Description

Statistics and probability constitute the mathematics of uncertainty. This is an introductory course that gives the students' knowledge on both descriptive and inferential statistics. Topics include graphic and numerical representations of various types of data; probability and statistics, discrete and continuous probability distributions; sampling and estimations; statistical inferences with the use of statistical software using big data.

Course Objectives

Upon completion, a student will be able to:

Identify and describe the methods and techniques commonly used in data science. Demonstrate proficiency with the methods and techniques for obtaining, organizing, exploring, and analyzing data.

Recognize how data analysis, inferential statistics, modeling, and statistical computing can be utilized in an integrated capacity.

Demonstrate the ability to clean and prepare data for analysis and assemble data from a variety of sources.

StatCrunch: You must have a handheld device or computer with internet capabilities. There are no exceptions. We will be using StatCrunch, an online statistical software. The cost will be \$13.

Projects:

There will be projects assigned each week. The projects will incorporate the knowledge that was learned in the course, Statistical Methods I. The projects will be completed and turned in the following week.

There will be a final project presentation. There will be devoted time in class to prepare the final project. The presentation will happen during the last week of class. All reports will be due prior to the end of the semester. Part of the grade will be participation and attendance during the presentations.

Grading Policy

Weekly Projects	See course outline for dates	40%
Project Presentation	July 25 – 27	55%
Participation and Attendance	Daily	5%

Grading Scale:

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = Below 60%

Course Outline:

Day	Activity	Day	Activity
June 24	Syllabus Introduction to Final Project Introduction to StatCrunch and data mining. Final Project objective: come up with a study	June 25	Form graphs including: histogram, pie chart, barchart, dotplot, stem-and-leaf. Analyze organized data. Final Project objective: turn in study objective.
June 26	Obtain descriptive statistics. Form a boxplot and analyze organized data. Final Project objective: Revise study and collect data	June 27	Final Project objective: Turn in study objective if revised and collect data
June 28	Final Project objective: Collect data	July 2	Final Project objective: Revise data and collect data.
July 1	Final Project objective: Turn in data and study objective		
July 3	Final Project objective: Form corresponding graphs.	July 4	Calculate Binomial and Poisson probability and the reasons we would use them. Final Project objective: Turn in graphs for teacher analysis and revise as needed.
July 5	Final Project objective: Turn in graphs for teacher analysis	July 8	Final Project objective: Write paper on beginning analysis
July 9	Calculate the normal probability distribution for z-scores.	July 10	Calculate the normal probability for normal distributions.
July 11	Use technology to form a confidence interval for the proportion and the mean. Final Project objective: Form at least one confidence interval with the data that corresponds with the study	July 12	Final Project objective: Turn in confidence interval for teacher analysis.
July 15	Final Project objective: Revise confidence interval.	July 16	Use technology to form a hypothesis test for the proportion.
July 17	Use technology to form a hypothesis test for the mean. Use technology to form a hypothesis test for two proportions.	July 18	Use technology to form a hypothesis test for two dependent and two independent means. Final Project objective: Form a null and alternative hypothesis to help answer your study question.
July 19	Final Project objective: Perform a	July 22	Use technology to form a regression

Course Outline:

	hypothesis test for your study and make a conclusion for your study.		equation. Final Project objective: Conclude your study
July 23	Final Project objective: Conclude study	July 24	Final Project presentation
July 25	Final Project presentation	July 26	Final Project presentation

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