NAU NORTHERN ARIZONA UNIVERSITY

Course Title: STA 270 Applied Statistics

Term: Summer 2023

Instructor: TBA

Course Credit: 3

Mode of Instruction: Online

Course Description:

In this course, basic topics including graphical and quantitative description of data; binomial, normal, and t distributions; one- and two-sample hypothesis tests and confidence intervals; simple linear regression and correlation. Emphasis will be placed on applying statistical methods and techniques for solving business problems and making decision. Descriptive analytics, statistical inference, predictive analytics, forecasting techniques, data mining, prescriptive analytics will be also explored.

Course Prerequisites:

MAT 114 Quantitative Reasoning

Learning Outcomes:

By the end of the course, the student should be able to:

A. Build up a broad understanding and knowledge of the concepts and applications of statistics in business;

B. Have a upper understanding of the value and use of quantitative methods in business and decision making;

C. Interpret the results of business analytics and their implications to business administrations;

D. Use tools and techniques learnt in this course to handle uncertainty and analyze data efficiently in the real business world.

Course Material:

Applied Statistics in Business and Economics, David Doane, Lori Seward, McGraw-Hill, 2016.

*Business Analytic*s, James R Evans, Second Edition, Pearson, 2017.

Evaluation:

- 4 Assignments [20%]
- Term Essay [15%]
- Mid-term Exam [30%]
- Final Exam [35%]

Description of the Evaluation tasks:

Assignment/ Essay/ ... : During the term, students will be required to finish several evaluation tasks within due date. All the tasks are linked with specific course topics/ outcomes and will adequately assess students' competence and learning outcomes. Students are encouraged to meet with instructor about these tasks at any point.

Mid- term/ Final Exams/ Quiz/. .. : There may be periodic quizzes given at the beginning of lecture sessions; the feedback from these quizzes will monitor the progress of the learners and help to set learning priorities. There will be mid- term exam/ final exam for the course. They are the basic criteria for the evaluation of students' learning outcomes and final grade.

Grading Policy:

Students are supposed to finish each online lecture. Prior to each class, students should finish the required readings. During the class time, students are encouraged to make use of all relevant online course resources and communicate with the instructor. Students' grades are accumulated based on the cumulative evaluations.

Students' letter grade will be assigned according to the following scale:

A+ 90- 100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D+ 57-59	D 53-56	D- 50-52
F < 50		

Academic Integrity:

Students must strictly adhere to the university' s academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Course(s):

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

Tentative Schedule:

1	Overview of Statistics
2	Data Collection Describing Data Visually
3	Sampling Distributions and Estimation
4	one- and two-sample hypothesis tests
5	Simple Regression Multiple Regression **Assignment 1**
6	Analysis of Variance Time-Series Analysis

7	Quality Management
8	Foundations of Business Analytics Analytics on Spreadsheets
9	Descriptive Analytics **Assignment 2**
10	Descriptive Statistics Measures
11	Probability Distributions and Data Modeling
12	Sampling and Estimation
13	**Mid- term Exam**
14	Statistical Inference
15	Predictive Analytics
16	Forecasting Techniques
17	Introduction to Data Mining **Assignment 3**
18	Spreadsheet Modeling and Analysis
19	Monte Carlo Simulation and Risk Analytics
20	Prescriptive Analytics
21	Linear Optimization **Assignment 4**
22	Integer Optimization
23	Decision Analysis
24	Final Exam Review **Term Essay**
25	**Final Exam**