Statistics and Probability

MASC110

Southwestern College Professional Studies

COURSE SYLLABUS

I.   Course Catalog Description

Statistics and Probability acquaints the student with the tools and major components of statistics. Students will apply technology to analyze data. The course also includes the foundational terminology and practices used in contemporary statistics, such as data collection, metrics, score interpretation, and experimental design. Additionally, this course will promote the skills that students need to be able to take information from the world around them and use it to make sound decisions based on solid evidence.

II.   Required and Supplementary Instructional Materials

Brase, C.H. and Brase, C.P. (2015). *Understandable Statistics: Concepts and Methods* (11th ed.). Stamford, CT: Cengage Learning.

Print ISBN: 9781285460918   This ebook is included in the course fees for this class. No additional book purchase is necessary.

III.   Learning Outcomes

Learning outcomes describe the knowledge, skills, values, and attitudes that learners gain as the result of a particular learning experience. Southwestern College Professional Studies has learning outcomes specific to each course and each undergraduate and graduate program of study, as well as institution-wide outcomes related to the mission and vision of the college. Outcomes can help learners and instructors focus on the big picture of the learning experience and can help inform potential employers about a graduate's knowledge and skills.

Upon successfully completing this course, the learner will be able to:

1. Discuss the use and purpose of data in a statistical study.
2. Define basic statistical terminology.
3. Communicate the appropriate strategy to solve a statistical problem.
4. Apply the appropriate statistical tool to answer a problem.
5. Evaluate evidence to determine an effectual decision.
6. Communicate conclusions and interpretations of statistical studies.

At the end of the course, learners may vary in their ability to achieve these outcomes. You are more likely to achieve these outcomes only if you attend class and/or online activities as required by the syllabus, complete the requirements for all assignments to the best of your ability, participate actively in class activities and group work as directed, and study diligently for exams.

IV.   Course Policies

Students are expected to read and abide by the course policies located in the instructor-specific syllabus in the blackboard course.

V. Course Requirements:

Requirements	Number of Assignments	Points Possible	Percent of Grade
Introductions	1	10	1
Discussions	6	300	30%
Assignments	20	490	49%
Final Exam	1	200	20%
Total Points		**1,000**	**100%**

VI. Course at a Glance:

Unit	Reading & Preparation Activities	Graded Work Due
1	• *Understandable Statistics: Concepts and Methods*, Chapters 1-3 • Lecture Slides: Chapters 1-3	Unit 1 Discussion Assignment 1.1: Creating a Stem and Leaf Plot Assignment 1.2: Finding Measures of Central Tendency Assignment 1.3: Gathering and Exploring Data
2	• *Understandable Statistics: Concepts and Methods*, Chapters 4-5 • Lecture Slides: Chapters 4-5	Unit 2 Discussion Assignment 2.1: Definition of Probability Assignment 2.2: Binomial Distribution Assignment 2.3: Probability and Probability Distributions
3	• *Understandable Statistics: Concepts and Methods*, Chapter 6 • Lecture Slides: Chapter 6	Unit 3 Discussion Assignment 3.1: Normal Distribution Assignment 3.2: Central Limit Theorem Assignment 3.3: Random Variables and Sampling Distribution
4	• *Understandable Statistics: Concepts and Methods*, Chapter 7 • Lecture Slides: Chapter 7	Unit 4 Discussion Assignment 4.1: Constructing Confidence Intervals Assignment 4.2: Setting Up the Hypothesis Assignment 4.3: Hypothesis Testing Assignment 4.4: Problem Set
5	• *Understandable Statistics: Concepts and Methods*, Chapter 9 and Chapter 10, Sections 10.1, 10.2, and 10.3 • Lecture Slides: Chapters 9-10	Unit 5 Discussion Assignment 5.1: Correlation Assignment 5.2: Linear Regression Assignment 5.3: Chi-Square Test of Independence Assignment 5.4: Problem Set
6	• *Understandable Statistics: Concepts and Methods*, Chapter 10, Sections 10.5 and 10.6; Chapter 11 • Lecture Slides: Chapters 10-11	Unit 6 Discussion Assignment 6.1: Example of a Two-Way Analysis of Variance Assignment 6.2: Sign Test for Matched Pairs Assignment 6.3: Problem Set Final Exam

VII. Other Policies and Requirements

Follow this link to the Southwestern College Professional Studies Standard Syllabus in Blackboard. You may be required to log in.