Statistics ACE

8 Modules + 1 Final Exam Module / Credit-by-Course / 3 Credits

Course Description:

This course provides a comprehensive overview of the core concepts in Statistics. Emphasis is placed on the foundations of statistics. Course topics cover the basic ideas of statistics, graphical summaries of data, numerical summaries of data, summarizing bivariate data, probability, discrete probability distributions, the normal distribution, confidence intervals, hypothesis testing, two-sample confidence intervals, two-sample hypothesis tests, tests with qualitative data, inference in linear models, analysis of variance, and nonparametric statistics.

Course Objectives:

After completing this course, you will be able to:

- Recognize the investigative process of statistics.
- Determine and distinguish between basic ideas of statistics, such as types of samples, data, variables, experiments, studies, and bias.
- Identify and apply data types and levels of measurement including sample vs. population, and distribution.
- Show an understanding of random sampling and the importance of randomness.
- Distinguish the distribution of a numeric variable by its center and spread.
- Represent numeric variable distributions graphically by dot plot, stem-and-leaf plot, box-and-whisker plot, and histogram.
- Identify the normal distribution of a variable and calculate normal probabilities.
- Construct and analyze a scatter plot for a set of bivariate data.
- Calculate the regression model for a set of bivariate data and use it to make predictions.
- Calculate the probability of simple and compound events.
- Use a variety of probability distributions to calculate the probability of an event.
- Construct one and two sample confidence intervals for population means or proportions.
- Conduct one and two sample hypothesis tests for population means or proportions.
- Recognize errors in hypothesis testing and their causes.
- Conduct Chi-square tests for uniformity of univariate data or independence of two categorical variables.
- Compare multiple population means using an ANOVA test.
- Interpret a randomized block experiment with an F-test.

E-Book:

Title: Elementary Statistics, Edition: 4, Authors: William Navidi and Barry Monk

Open Educational Resources (OER's)

If you are struggling with a term or concept, you can utilize the links below to search for the concept or term to find additional resources and explanations.

[Link Removed]

Khan Academy Statistics (https://www.khanacademy.org/math/ap-statistics)

Crash Course Statistics (https://thecrashcourse.com/courses/statistics)Crash Course Statistics

Openstax - Introductory StatisticsOpenstax - Introductory Statistics (https://openstax.org/details/introductory-statistics)

Closed Captioning

Lecture videos and extra resource videos have automatic closed captioning. These captions are generated by computer algorithms. To utilize closed captioning, you can click on the CC button at the bottom of a video.

Accommodating Student Disabilities

Gateway Education is committed to the belief that every individual should have an equal opportunity in education. Gateway Education seeks to assure access by providing accommodations to individuals with a disability as defined under the Americans with Disabilities Act of 1990 (ADA) and the ADA Amendments Act of 2008 (ADAAA). Accommodation includes, but is not limited to: aids or modification to courses, materials, or testing; and other services that allow better access by individuals with disabilities.

Individuals requesting accommodation should submit a request in writing or in an alternative format appropriate for their limitations. The request should include documentation of the disability, including information with recommendations of appropriate accommodation. Once eligibility has been established, accommodations must be requested on a course-by-course basis.

Requests can sent to the student services department at help@gatewayeducation.com