ESI 3215

Evaluation of Engineering Data I

Section: U02

In Person

Spring Term 2026

Course Meeting Information

Class meeting times	
Day:	Tu Th
Time:	9:30 AM - 10:45 AM
Location:	EC1112

Professor Information

Atoussa Tehrani

Roles: Primary Instructor

Email: hosseini@fiu.edu

Response Time: 24 hours

Phone: (305)348-4943

Office Hours: Thursdays 2 PM - 4 PM or by appointment

Office Location: EC3113

Department or Academic Unit: ECE

Course Prerequisites

Course prerequisites, if any, are listed below.

Prerequisite: MAC 2311 or MAC 2281, or instructor permission

Course Description

This is undergraduate-level course which covers the fundamentals of statistics for engineers. Engineers play a significant role in designing and developing new products, manufacturing systems and processes, and also improving existing systems. Statistical methods are an important tool in these activities because they provide engineers with both descriptive and analytical methods for dealing with variability in observed data. This course presents statistical methods for data analysis that must be carried by engineers. Since the course is intended to serve students with a background in engineering, prior knowledge of algebra and calculus is expected. Topics covered include: Sampling and descriptive statistics, Probability, Confidence intervals, Hypothesis testing, Regression, and Statistical quality control.

Textbook and Course Materials

CONNECT ONLINE ACCESS FOR STATISTICS

Required/Recommended: Required

Authors: NAVIDI

Publisher: McGraw Hill

Publication Date: 2024

Copyright Date: 2024

ISBN 10: 8220130831400

ISBN 13: 8220130831400

Notes: Use this link to see introduction video: https://www.mheducation.com/highered/support/support-at-every-step/connect/first-day-of-class/ia-canvas

Chapters/Pages: Chapters 1, 2, 4, 5, 6, 7, 10

Panther Book Pack

Get all required course materials for $20.50 per undergrad credit hour through Panther Book Pack. You'll be charged automatically unless you opt out within 3 days after the add/drop deadline.

For more details, to compare costs, and to learn how to access your course materials, visit the Panther Book Pack information page on FIU OneStop.

Student Learning Outcomes/Objectives

- Describe some ways to draw a valid sample from a collection of objects or outcomes.
- Compute summary statistics.
- Produce appropriate graphs for both categorical and quantitative data.
- Interpret graphs and descriptive statistics for univariate and bivariate data.

- Apply the theory of probability and apply probability rules to study the physical world.
- Use common distributions to estimate the probability mass or density function, the concepts of expected value and variance for discrete and continuous variables.
- Identify confidence interval that can be used to estimate a population parameter.
- Perform different hypothesis testing methods.
- Use correlation coefficient to summarize bivariate data.
- Carry out and interpret statistical modeling using multiple regression and analysis of variance.
- Use statistical methods to apply basic quality control procedures in an industrial setting.
- Learn how to access, manipulate and analyze data using statistical software.

Expectations of the Course

Relationship of course to program outcomes
In the course ESI3215 students will have to show

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

Course Communication

Course Material:

- Course material is shared with students in Canvas.

Policies & Resources

Before starting this course, please review the Policies & Resources Page in Canvas which includes comprehensive information on various University and Course Level Policies such as:

- University Policies
- Accessibility and Accommodations
- Technical Requirements and Skills
- Computer & Digital Literacy Skills
- Course Technology Accessibility Statements and Privacy Policies
- Academic Integrity
- Copyright Statement
- Core Principles of This Course
- Nondiscrimination Statement
- Panthers Care & Counseling and Psychological Services (CAPS)
- Fair Use Policy

- **Academic Misconduct:** For work submitted, it is expected that each student will submit their own original work. Any evidence of duplication, cheating or plagiarism will result in at least a failing grade for the course.

Assignments & Assessments

Assignments

Practice Assignments:

- Students are provided with practice problems and solutions to use as preparation for assignments and assessments.
- Practice assignments are not graded. Student work is not submitted.

Assignments:

- Students will have to complete an individual assignment for each chapter. These assignment are included in the connect edition of the textbook and can be accessed in Canvas.
- Two attempts are allowed for each assignment.
- The assignment will be automatically submitted on the due date.
- No extension can be given past the due date for the assignment.
- **Students** must submit the assignments by the due date in Connect, *otherwise they will be submitted automatically on the due date*. No extension is possible for Connect assignments.

Software used for assignments

- Minitab and Excel are used for these course assignments.

Assessments

Exam and Quiz Expectations:

- Exams and quizzes are closed books. Students will take them in class during class time. You may use a calculator and one page of formula sheet that you prepared yourself during the exams and quizzes.
- **No alternatives are available for midterm and final exams date and time.** Students must enroll in other sections of this course if they have a conflict with scheduled exams time. Only one attempt is permitted.

Grading

Category	Weight
Assignments	30%
In-Class Quizzes	15%
Mid-Term Exam	25%
Final Exam	30%
Total	100%

Canvas Schedule

Due Date	Assignment Name	Assignment Type	Points
1/18/26	Ch 1 SmartBook	Assignment	100

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1/18/26	Ch 1 Assignment	Assignment	100
1/18/26	Ch 1 Quiz	Assignment	100
1/18/26	Connect Orientation Videos	Assignment	100
1/18/26	SmartBook 2.0 Orientation Videos	Assignment	100
1/20/26	In-Class Quiz1	Assignment	100
2/8/26	Ch 2 Assignment	Assignment	94.46
2/8/26	Ch 2 Quiz	Assignment	100
2/8/26	Ch 2 SmartBook	Assignment	100
2/10/26	In-Class Quiz2	Assignment	100
2/19/26	Midterm Exam	Assignment	100
3/8/26	Ch 4 SmartBook	Assignment	100
3/8/26	Ch 4 Assignment	Assignment	100
3/8/26	Ch 4 Quiz	Assignment	100
3/12/26	In-Class Quiz3	Assignment	100
3/22/26	Ch 5 SmartBook	Assignment	100
3/22/26	Ch 5 Assignment	Assignment	100
3/22/26	Ch 5 Quiz	Assignment	100
3/29/26	Ch 6 SmartBook	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
3/29/26	Ch 6 Assignment	Assignment	100
3/29/26	Ch 6 Quiz	Assignment	100
3/31/26	In-Class Quiz4	Assignment	100
4/12/26	Ch 7 SmartBook	Assignment	100
4/12/26	Ch 7 Assignment	Assignment	100
4/12/26	Ch 7 Quiz	Assignment	100
4/14/26	In-Class Quiz5	Assignment	100
4/19/26	Ch 10 SmartBook	Assignment	100
4/19/26	Ch 10 Assignment	Assignment	100
4/19/26	Ch 10 Quiz	Assignment	100
4/21/26	Final Exam	Assignment	100

Schedule of Topics

Wk	Date	ESI3215 Weekly Topic Spring 2026	Sections	Quiz
1	1/6/26	Overview of ESI3215, Sampling	1.1	
	1/8/26	Summary Statistics	1.2	
2	1/13/26	Graphical Summaries	1.3	
	1/15/26	Probability: Basic Ideas	2.1	Quiz 1
3	1/20/26	Counting Methods	2.2	
	1/22/26	Conditional Probability and Independence	2.3	

4	1/27/26	Conditional Probability and Independence	2.3	
	1/29/26	Random Variables	2.4	
5	2/3/26	Discrete Random Variables	2.4	
	2/5/26	Continuous Random Variables	2.4	
6	2/10/26	Distributions: Discrete Distributions	4.1 - 4.2	Quiz 2
	2/12/26	Distributions: Discrete Distributions	4.3	
7	2/17/26	Review for Midterm Exam		
	2/19/26	**MidTerm Exam Room EC1112 9:30 am – 10:45 am**	**CH 1, 2, 4.1-4.3**	
8	3/3/26	Distributions: Continuous Distributions	4.5	
	3/5/26	Distributions: Continuous Distributions	4.6 - 4.7	
9	3/10/26	Probability Plots, Central Limit Theorem	4.10 – 4.11	
	3/12/26	Large Sample Confidence Intervals	5.1	Quiz 3
10	3/17/26	Small Sample Confidence Intervals	5.2	
	3/19/26	Confidence Intervals for Proportions	5.3	
11	3/2426	Hypothesis Tests for a Population Mean	6.1 - 6.2	
	3/26/26	Tests for Small Sample, Tests for Proportion	6.3 - 6.4	
12	3/31/26	Correlation	7.1	Quiz 4
	4/2/26	The Least Squares Line	7.2	
13	4/7/26	Uncertainties in Coefficients, Checking Assumptions	7.3 - 7.4	
	4/9/26	Statistical Quality Control	10.1-10.2	

14	4/14/26	Statistical Quality Control	10.3 - 10.4	Quiz 5
	4/16/26	Review for Final Exam		
	4/21/26	**Final Exam Room EC1112 9:45 am - 11:45 am**	**CH 4, 5, 6, 7, 10**	

Nondiscrimination Statement

The **Office of Civil Rights Compliance and Accessibility** (CRCA) is responsible for ensuring that FIU maintains a workplace and learning environment free from discrimination, where current and prospective faculty, staff, and students are treated equitably. If any student, employee, or applicant has a sincere and reasonable belief that they have been discriminated against or harassed based on age, color, disability, marital status, ethnic or national origin, race, religion, retaliation, sex, or any other protected category, they can report their concerns to the CRCA team through report.fiu.edu.