



Jordan University of Science and Technology
Faculty of Engineering
Nuclear Engineering Department

NE204 Applied Engineering Statistics

Second Semester 2018-2019

Course Catalog

3 Credit Hours. Three credit hours (3h lecture) Basic concepts of probability, rules of probability, conditional probability, independence, conditional probability and Bayes theorem. Random variables: introduction, discrete and continuous, probability mass and density functions, cumulative distribution function. Common discrete and continuous distributions. Descriptive Statistics: describing and summarizing data sets, histogram, statistical distributions, and inferential statistics: hypothesis testing, significance levels. Correlation, simple linear and multiple regressions. Goodness of fit tests.

Text Book

Title	Applied Statistics and Probability for Engineers
Author(s)	Douglas C. Montgomery
Edition	3rd Edition
Short Name	TB1
Other Information	

Instructor

Name	Mr. Neil Abu Ennab
Office Location	E2 L-2
Office Hours	Sun : 12:30 - 13:30 Sun : 14:30 - 15:30 Mon : 13:00 - 14:00 Tue : 11:30 - 12:30 Wed : 13:00 - 14:00 Thu : 12:30 - 13:30
Email	nrabuennab@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Sun, Tue, Thu : 13:30 - 14:30

Room: E2113

Prerequisites

Line Number	Course Name	Prerequisite Type
902030	MATH203 Ordinary Differential Equations	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Probability	chapter 2 From TB1
Week 2	Rules of probability	chapter 2 From TB1
Week 3	conditional probability	chapter 2 From TB1
Week 4	Independence	chapter 2 From TB1
Week 5	Bayes theorem	chapter 2 From TB1
Weeks 5, 6, 7	Discrete random variables and probability distributions	chapter 3 From TB1
Weeks 8, 9, 10	Continuous random variables and probability distributions	chapter 4 From TB1
Weeks 11, 12	Random sampling and data description	chapter 6 From TB1
Weeks 13, 14	Tests of hypotheses for a single sample	chapter 9 From TB1
Week 15	Simple linear regression and correlation	chapter 11 From TB1
Week 15	Multiple linear regression	chapter 12 From TB1

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Understand and describe sample spaces and events for random experiments with graphs, tables, lists, or tree diagrams [11, 17]	20%	first exam, Second exam
Determine probabilities from probability mass functions and the reverse [11, 17]	20%	first exam, Second exam
Compute and interpret the sample mean, sample variance, sample standard deviation, sample median, and sample range. [11, 17]	20%	first exam, Second exam
Structure engineering decision-making problems as hypothesis tests. [11, 17]	20%	Final exam

Analyze residuals to determine if the regression model is an adequate fit to the data or to see if any underlying assumptions are violated [11, 17]	10%	Final exam
Use multiple regression techniques to build empirical models to engineering and scientific data [17]	10%	Final exam

Relationship to Program Student Outcomes (Out of 100%)						
1	2	3	4	5	6	7
45						55

Evaluation	
Assessment Tool	Weight
first exam	30%
Second exam	30%
Final exam	40%

Date Printed: 2020-01-07