



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

BME301 Statistics For Biomedical Engineers

First Semester 2023-2024

Course Catalog

3 Credit Hours. 3 Credit hours (3 h lectures). Basic concepts of probability; Random variables ; discrete and continuous, probability mass & density functions, cumulative distribution function; Functions of random variables; Descriptive Statistics, histogram, Inferential statistics: hypothesis testing, significance levels, t-test; Linear regression.

Text Book

Title	Probability and Statistics for Engineering and the Sciences.
Author(s)	Jay L. Devore.
Edition	8th Edition
Short Name	Ref#1
Other Information	...

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref #2	Biostatistics	W. Dainel	7th Edition	
Ref #3	Applied statistics and Probability for Engineers	D.C. Montgomery. and G.C. Runger	2nd Edition	

Instructor

Name	Dr. Hossam H El-Khalil
Office Location	-
Office Hours	Sun : 13:00 - 13:30 Mon : 11:00 - 11:30 Tue : 11:00 - 14:00 Wed : 11:00 - 13:00

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Class Schedule & Room
Section 2: Lecture Time: Mon : 11:30 - 13:00 Room: M5127

Prerequisites		
Line Number	Course Name	Prerequisite Type
902010	MATH201 Intermediate Analysis	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Overview and descriptive statistics	
Week 2	Probability	
Week 3	Discrete random variables and probability distributions	
Weeks 4, 5	Continuous random variables and probability distributions	
Weeks 6, 7, 8	Joint probability distributions and random samples	
Weeks 9, 10	Statistical Intervals based on a single sample	
Weeks 11, 12, 13	Tests of hypothesis based on a single sample	
Week 14	Inferences based on two samples	
Week 15	The simple linear regression and correlation	

Mapping of Course Outcomes to Program Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Appreciate the role of Biostatistics in biomedical engineering. [1SO1, 1SO3, 1SO4, 1SO6]	10%	
Acquaint basic biostatistics concepts essential to the understanding of biomedical engineering and to provide exposure to a wide range of biomedical engineering technology in hospitals. [1SO1, 1SO3, 1SO4, 1SO6]	10%	
To be able to represent data in different ways. [1SO1, 1SO6]	10%	
To develop a practical understanding of probability and its relationships. [1SO1, 1SO2, 1SO6]	10%	
To be able to use statistics in clinical engineering. [1SO1, 1SO3, 1SO4]	10%	
To understand the concepts of discrete and continuous random variables. [1SO1]	10%	

To develop skills of using discrete random variables to analyze probability problems. [1SO1]	10%	
To develop skills of using continuous random variables to analyze probability problems. [1SO1]	10%	
To understand the concepts of t-test [1SO1, 1SO2, 1SO4, 1SO6]	7%	
To be able to assess a situation involving data analysis, stating the nature of the question and the null and alternative hypotheses proposed. [1SO1, 1SO2, 1SO4, 1SO6]	7%	
To understand the concepts and ideas about linear regression. [1SO1]	6%	

Relationship to Program Student Outcomes (Out of 100%)						
SO1	SO2	SO3	SO4	SO5	SO6	SO7
56.17	6.83	8.33	11.83		16.83	

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

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