Faculty of Engineering & Technology

Probability and Statistics (Math 6)

Information :

Course Code :	MTH 312	**Level**	: Undergraduate	**Course Hours :**	3.00- Hours

Department :	Department of Electrical Engineering

Instructor Information :

Title	Name	Office hours
Associate Professor	Nashwa Mohamed El Sayed Mohamed	8
Associate Professor	Nashwa Mohamed El Sayed Mohamed	8
Assistant Lecturer	Doaa Nabil Sayed Mohamed Elsayed Khodair	2
Assistant Lecturer	TAREK ALI ABDALLAH TEAMA	4
Assistant Lecturer	Basma Magdy Ahmed Mohamed	2
Teaching Assistant	Ahmed Elsayed Abdellatif Ibrahim Bedeir	

Area Of Study :

Probability: Definitions and concepts, Conditional probability, Statistical independence and Baye's theorem, Discrete and continuous random variables, Distribution functions, Probability distributions functions: Normal distribution, Binomial distribution, Poisson distribution. Joint distributions and moments.
Applied Statistics: Reviewing methods of data presentation and analysis and the important statistical measures, Sampling methods, Sample and population measures (point estimate), Tests of hypothesis and confidence intervals, Correlation analysis, Regression analysis.

Description :

Probability: Definitions and concepts, Conditional probability, Statistical independence and Baye's theorem, Discrete and continuous random variables, Distribution functions, Probability distributions: normal, binomial, Poisson,õ ËJoint distributions and moments, Numerical Analysis: numerical solution of systems of linear and nonlinear algebraic equations, methods for numerical solution of ordinary differential equations (Euler, modified Euler and Runge, Kutta methods), Finite difference method for partial solutions of differential equations.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Understand probabilistic problems and statistical concepts.
2 -	Define basic probability distributions and know related concepts.
3 -	Define basic statistical tools and know related models.

b.Intellectual Skills: :

1 -	Think logically and critically to analyze and solve problems.
2 -	Identify the role that statistics can play in the engineering problem-solving process
3 -	Ability of presenting a method to give an application to some theory.

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c.Professional and Practical Skills: :

1 -	Use basic rules of probability to solve statistical problems.
2 -	Identify how variability affects the data collected and used for making engineering decisions.
3 -	Ability of dealing with theories and distinguishing various models.

d.General and Transferable Skills: :

1 -	The student should be able to deal with statistical package techniques and seek a connection with applied problems.
2 -	Professional attitude towards problem solving.
3 -	Ability of dealing with theories and distinguishing various methods.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Descriptive Statistics and Data Analysis	10	6	4
Introduction to Probability	10	6	4
Random Variables and Probability Distribution	10	6	4
Expected value and Variance	5	3	2
Some Important Probability Distributions	10	6	4
Sampling Methods and the central Limit Th.	5	3	2
Introduction to Estimation and Tests of Hypothesis	15	9	6
Correlation and Regression	10	6	4

Teaching And Learning Methodologies :

Presentation of course material.

Interactive questions

class exercises.

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Class Participation &Assignment	10.00	1	To assess lecture material comprehension
Final Exam	40.00	16	To assess understanding and problem solving skills
First Midterm Exam	20.00	7	To assess understanding and problem solving skills
Quizzes	10.00	2	
Second Midterm Exam	20.00	12	To assess understanding and problem solving skills

Course Notes :

handout

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Recommended books :

Probability & statistics for engineers & scientists/Ronald E. Walpole . . . [et al.] 9th ed. ISBN 978-0-321-62911-1, Prentice Hall,2012.

Periodicals :

www.statcrunch.com

Web Sites :

www.statcrunch.com

http://www.fue.edu.eg