NEAR EAST UNIVERSITY – COMMON COURSES COORDINATION UNIT			
Department of mathematics Course Information Sheet & Course Outline			
Course Code MTH251	**Course Name** Statistics and probability for engineering students	**Credit** 3	**ECTS**
Pre-requisite: MTH102			
Language: English	**Course Type: compulsory**	**Year: 2**	**Semester: Fall**

Weekly Hours	**Class Hours**	**Laboratory**	**Practicum**	**Learning Sessions**			
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Lecturer: Assist.Prof.Dr. Mohammad Momenzadeh
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Learning Outcomes	After the completion of this course, the student will be able to ►Analyse the statistical system ►Understanding statistical inference ►Determining the true distributions according to the given problems ►Calculating the probability of different events ►Forecasting the probability of risk and future of the system.	
Course Description	This course covers the role of statistics in engineering, probability, discrete random variables and probability distributions, continuous random variables and probability distributions, joint probability distributions, random sampling and data description	
Course Objectives	The objective of this course is to provide an understanding for the graduate engineering student on statistical concepts to include measurements of location and dispersion, probability, probability distributions, sampling, estimation, hypothesis testing, regression, and correlation analysis, multiple regression and engineering Forecasting.	
Textbooks and/or References	1	R. L. Schaeffer, J. T. Mc Clave, Probability ad Statistics for Engineers, 3rd ed., PWS-Kent Publishing Company, Boston, 1990.
	2	R. E. Walpole, R. H. Myers, S. L. Myers, K. Ye, Probability and Statistics for Engineers and Scientists, 8th ed., Prentice Hall, 2002.
	3	R. Johnson, Miller's & Freund's Probability and Statistics for Engineers, Int. ed., Pearson Prentice Hall, 2005.
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Course Content	The Role of Statistics in Engineering , Descriptive Statistics , Probability , Discrete Random Variables and Probability Distributions ,Continuous Random Variables and Probability Distributions , Joint Probability Distribution, Statistical Interval for a Single sample	
Methods and Techniques Used in the Course	Communications and writing method in the class, taking the assignments, offering the related videos and discuss about all contents according to the last developments.	

WEEKLY OUTLINE

Week	Date	Topic	Activities	Reference
1		**Introduction to Classes**		
2	10/4-10/2021	descriptive statistics	Data, all kind of frequencies, table of distributions, measurements, collections of data,…	
3	10/11-17/2021	descriptive statistics	Mode, mean, Median, quartiles, IQR, plotting the diagrams,…	
4	10/18-24/2021	Counting and axioms	Combination, permutations, multiplicative rule of counting, axioms, set theory,…	
5	10/25-31/2021	sample space and probability	Sample point, sample set, axioms of probability, independency of events,…	
6	11/1-7/2021	additive rule	The union and intersection of events,…	
7	11/8-14/2021	bayes' rule	Conditional probability, multiplicative rule and all models, Bayes' rule total probability theorem,…	
8	11/15-21/2021	random variables	Random variables and properties, probability distribution functions, discrete and continuous variables and distributions,…	
9	11/22-28/2021	Joint Probability distribution	Discrete and continues joint probability distribution, review of double integrals,…	
10	12/..-5/2021	expected value, variance and covariance	Expected value as an average of probability, variance and covariance and analysis the variables	
11	12/6-12/2021	Uniform and Binomial distributions	Discrete distribution functions, Uniform and Binomial distributions and their properties	
12	12/13-19/2021	Hypergeometric, Geometric, Poisson,..	Hypergeometric, Geometric, Poisson and their functions and definitions and applications	
13	12/20-26/2021	Poisson distribution, Continuous distributions	Poisson distribution, Continuous distributions and their functions and definitions and applications	
14	12/27-31/2021	Normal distribution	Normal distribution, estimation, applications	
15	10/4-10/2021	Review		
16		**Final Exams**		

Attendance: Minimum 70 %

Assessment Breakdown	**Type**		**%**	**Reference/Source**	**Relevant Competencies**
	1	Midterm exam	40	Half of materials	

	2	Final exam	60	Material of course	
	3				
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Learning Program					
Educational Tool	**Amount**	**Student Work Load(Hours)**	**Educational Tool**	**Amount**	**Student Work Load(Hours)**
			Total		
		Recommended ECTS Credit (Total Hours / 30):	**/30 = ~**		