

NEAR EAST UNIVERSITY - COMMON COURSES COORDINATION UNIT							
		Department of mathematics Course Information Sheet & Course Outline					
<b>Course Code</b> MTH251	<b>Course Name</b> Statistics and probability for engineering students			<b>Credit</b> 3	<b>ECTS</b>		
<b>Pre-requisite: Calculus I and II</b>							
<b>Language: English</b>		<b>Course Type: compulsory</b>		<b>Year:2020</b>		<b>Semester: spring</b>	
Weekly Hours	Class Hours	Laboratory	Practicum	Learning Sessions			
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<b>Learning Outcomes</b>		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.					
<b>Course Description</b>	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						
<b>Course Objectives</b>	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.						
<b>Textbooks and/or References</b>	1	R. L. Schaeffer, J. T. Mc Clave, Probability and 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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<b>Course Content</b>	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						
<b>Methods and Techniques Used in the Course</b>	Communications and writing method in the class, taking the assignments, offering the related videos and discuss about all contents according to the last developments.						
<b>Course Contents</b>	<ol style="list-style-type: none"> <li>1. Data, all kind of frequencies, table of distributions, measurements, collections of data,...</li> <li>2. Mode, mean, Median, quartiles, IQR, plotting the diagrams,...</li> <li>3. Combination, permutations, multiplicative rule of counting, axioms, set theory</li> <li>4. Sample point, sample set, axioms of probability, independency of events,...</li> <li>5. The union and intersection of events,...</li> <li>6. Conditional probability, multiplicative rule and all models, Bayes' rule total probability theorem,...</li> <li>7. Random variables and properties, probability distribution functions, discrete and continuous variables and distributions,</li> <li>8. Discrete and continues joint probability distribution, review of double integrals,...</li> <li>9. Expected value as an average of probability, variance and covariance and analysis the variables</li> <li>10. Discrete distribution functions, Uniform and Binomial distributions and their properties</li> <li>11. Hypergeometric, Geometric, Poisson and their functions and definitions and applications</li> <li>12. Poisson distribution, Continuous distributions and their functions and definitions and applications</li> <li>13. Normal distribution, estimation, applications</li> </ol>						