

Course Code	EM 213		
Course Title	Probability and Statistics		
No. of Credits	2		
Pre-requisites	-		
Compulsory/Optional	Compulsory		
Aim(s): To introduce basic concepts of probability and inferential statistics.			
Intended Learning Outcomes : On successful completion of the course, the students should be able to;			
<ul style="list-style-type: none"> • Demonstrate fundamental probability and statistical concepts. • Apply standard discrete and continuous probability distributions and observe their role as the foundation for statistical inference. • Perform estimation and testing of hypothesis on common measures in decision making. 			
Time Allocation (Hours): Lectures 24 Tutorials 4 Practical Assignments 4			
Course content/Course description:			
<ul style="list-style-type: none"> • Concepts of probability: Discrete and continuous random variables, probability functions, mean, expectation and variance, moment generating functions. • Discrete probability distributions: Bernoulli (Point binomial) Distribution, binomial distribution, Poisson distribution, geometric distribution, hypergeometric distribution. • Continuous probability distributions: Uniform distribution, exponential distribution, normal distribution, Student-t distribution, Weibull distribution and Chi-square distribution. • Sampling distributions: The central limit theorem and normal approximation to the binomial distribution, sampling distribution of sample mean and sample variance. • Estimation and Confidence Intervals: Estimation and calculation of Confidence Intervals for mean, difference of means and variance. • Test of Hypothesis (3): Test of hypothesis for mean and difference of means. 			
Recommended Texts :			
<ul style="list-style-type: none"> • D.C. Montgomery and G.C. Runger Applied Statistics and Probability for Engineers, 6th edition, (2013), John Wiley and Sons Inc. • Jay L. Devore, Probability and Statistics for Engineering and the Sciences, 8th edition, (2010), Cengage Learning. 			
Assessment	Percentage Mark		
In-course			
Tutorials	10		
Mid Semester Examination		30	
End-semester	60		