

Department of Industrial Engineering			
Quantitative Methods (65211)			
Total Credits	3		
major compulsory			
Prerequisites	P1 : Calculus II (21102)		
Course Contents			
The Role of Statistics in Engineering, Probability, Discrete Random Variables and Probability Distributions, Continuous Random Variables and Probability Distributions, Random Sampling and Data Description, Point Estimation of Parameters, and Statistical Intervals for a Single Sample.			
Intended Learning Outcomes (ILO's)		Student Outcomes (SO's)	Contribution
1	Applying the basic concepts of probability theory and its principles in industrial engineering	A	30 %
2	Recognizing the basic concepts of statistical models and its importance in analyzing data.	B	25 %
3	Recognizing the effect of randomness in solving problems.	E	20 %
4	Acquainting the ability use diverse statistical and probabilistic techniques and skills in addressing industry and management related problems	K	25 %
Textbook and/ or References			
Textbook: Douglas C. Montgomery, George C. Runger, 2007. Applied Statistics and Probability for Engineers, 4th Edition, John Wiley and sons. References: Scheaffer, R.L. and McClave J.T. Probability and Statistics for Engineers, 2010, 5th Ed., Duxbury Press. Ross, Sh. A First Course in Probability, 2009, 8th Ed., Prentice-Hall.			
Assessment Criteria		Percent (%)	
First Exam		25 %	
Second Exam		25 %	
Quizzes		10 %	
Final Exam		40 %	
Course Plan			
Week	Topic		
1	The role of statistics in engineering. (ch.1)		
2-4	Probability (ch.2)		
5-7	Discrete Random Variables and Probability Distributions (ch.3)		
8-10	Continuous Random Variables and Probability Distributions (ch.4)		
11	Joint Probability Distributions (ch.5)		
12	Random Sampling and Data Description (ch.6)		
13	Point Estimation of Parameters (ch.7)		
14-16	Statistical Intervals for a Single Sample (ch.8)		