

# Syllabus

( 2013 / 1 )

Course No.	446.358	Sub. No.		Course Name	Introductory Engineering Probability	Unit	3
Lecturer	Name : Kim, Hyoun Jin (Title : Professor)			Homepage : icsl.snu.ac.kr			
	E-mail : hjinkim@snu.ac.kr			Telephone : 02-880-9252			
	Office hour : Tue/Thu 14:00-15:30 or email for appointment						
1. Goal	-The concepts of probability and the fundamental axioms of probability -The idea of conditional probability. -The concepts of a real-valued random variable and multi-dimensional random variables, and expected value, variances, covariances						
2. Textbook and references	Textbook: S. Ross, "A First Course in Probability (8th edition)," Prentice-Hall, 2008. references: 1. A. Leon-Garcia, "Probability and random processes for electrical engineering (Second edition)," Addison-Wesley, 1993 2. J. Pitman, "Probability," Springer 1997.						
3. Evaluation	attendance	homework	mid exam	final exam	project	e.t.c	Total
	10%	15%	30%	35%	%	10%	100%
	e.t.c: in-class quizzes(10%)						
4. Schedule	week	Schedule					
	1	Introduction, Probability Model					
	2	The Axioms of Probability					
	3	Random Variables, Mean and Variance					
	4	Independent Trials, Statistical Estimation					
	5	Confidence Intervals, Important Random Variables					
	6	Conditional Probability, Bayes' Formula					
	7	Decision-making under uncertainty					
	8	Independent Events					
	9	Density, Cumulative Distribution Function					
	10	Continuous Random Variables					
	11	Poisson Random Processes, Gaussian Random Variables					
	12	Functions of Random Variables, Hazard Rates					
	13	Joint Distributions of Random Variables					
	14	Jointly Continuous Random Variables, Expectation, Covariance, and Correlation					
15	Functions of Many Random Variables, Limit Theorems						

5. Notice	prerequisite: Understanding of dynamics, linear algebra, linear control systems, and probability theory at an undergraduate level (Open to upper-level undergraduate students with permission of the instructor)
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