



HANYANG UNIVERSITY

Hanyang International Summer School

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	Department	Department of Industrial and Management Engineering					
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Course Information	Class No.	TBA	Course Code	GEN0036	Credits	3	
	Course Name	Introduction to Statistics					
	Lecture Schedule	Mon-Thu /					
	Course Description	Big data, AI and Data analytics are very popular in the 4th Industrial Revolution era. Statistics is fundamental to the big data and AI regardless of major. This course covers the basics of probability and statistics such as random variable, distributions, population and sample, estimation, hypothesis testing, analysis of variance, regression analysis, design of experiments and so on.					
	Course Objective	The objectives of this course are three: 1. Understanding of random variable and its distribution 2. Understanding of estimation and hypothesis testing 3. Understanding of regression analysis and design of experiments					
	Prerequisite	Basic mathematics					
	Materials/Textbooks	1. Probability & Statistics for Engineers and Scientists, Walpole, Myers, Myers, Ye, 9 th edition, Prentice Hall (optional) 2. Download eZ SPC software at https://www.hanyang.ac.kr/web/eng/it_s 3. Lecture note will be provided.					
Evaluation	Attendance	10 %	Quiz	%			
	Assignment	10 %	Mid-term Exam	40 %			
	Presentation	%	Final Exam	40 %			
	Group Project	%	Participation	%			
	Etc.	Evaluation Item			Ratio		
					%		
Daily Lecture Plan	Week 1	Day 1	Introduction to the course				
		Day 2	Random experiment, Sample space, Event				



		Day 3	Definition of probability, Conditional probability, Bayes' theorem
		Day 4	Random variable, Discrete and continuous random variable
	Week 2	Day 1	Mean and variance of random variable
		Day 2	Covariance, Correlation coefficient
		Day 3	Binomial distribution, Poisson distribution, Hypergeometric distribution
		Day 4	Normal distribution, Exponential distribution
	Week 3	Day 1	Midterm exam, Population and sample
		Day 2	Sampling distribution
		Day 3	Point estimation, Interval estimation
		Day 4	Hypothesis testing
	Week 4	Day 1	Regression analysis
		Day 2	Analysis of variance
		Day 3	Design of experiments
		Day 4	Final exam