Syllabus for 2022 1st semester

신규강좌

[Course Basic Information]

Course Title	Applied Statistics			Classroom	Frontier Hall(032)-509
				Lecture Time	Fri(6 ~ 8)
Attachment	No file	Course Language	Module (M)	Intensive Session	
Department	Department of Industrial and Systems Engineering[IT Management]			Grade/ Semester	2 / 1
Credit Classification	Major Electives	Credits	3 (Theory:3, Practice:0)	Course Code/ Class Code	146038 / 21001
Lecture Type	☐ Offline ☐ Online ☑ Blended ☐ Team Teaching				
Teaching Methods	☑ Lecture ☐ Discussion ☐ Project-based/Problem-based ☐ Laboratory Practice ☐ Flipped ☐ Internship ☐ Studio ☐ etc.				
EPiC Core Competency	Humanities 10 %	Communication 0 %	Academic 60 %	Global 20 %	Creativity 10 %	Convergence 0 %

[Prof. Information]

Prof. Name	국광호	Office Bldg.	
Phone	010-4046-6960	E-mail	khkook@seoultech.ac.kr
Home Page		Office Hours	

[Course Overview]

Course Overview	This module deals with the basic concepts of statistics. This module focuses on the sample statistics, various sample distributions and its applications. This module will enable the students to perform statistical analysis of the data obtained in a manufacturing system						
Course Objectives	The objective of this module is to lay a foundation for students in statistical theory and computer skills. Students are expected to learn how to process real data using statistical package, R.						
Grading System	방법	① Attendance ☑	② Mid term ☑	③ Final ☑	④ Homework ☑	⑤ Team ☐	⑥ Others ☑
	배점 (비율)	10 %	35 %	35 %	10 %	0 %	10 %
	평가방법	Mid Term 35%, Final Exam 35%, Homework 10%, Quiz 10%, Attendance 10%					
Textbooks & References	Probability and Statistics for Engineers and the Sciences Jay L. Devore 8th edition						
Classroom Equipment							

[출결관리기준]

(학칙 제77조제3항) 수업일수 3분의 2이상 출석하고, 시험성적이 D0 이상이면 취득학점으로 인정
* 3분의 1초과 결석 시에는 출석미달로 "F"학점 부여
(학사관리규정 제22조의4) 지각 3회는 결석 1회로 환산 처리

[장애학생 지원 사항]

장애로 인하여 학습에 어려움을 겪는 경우 담당 교수와 상담을 통해 수업에 필요한 편의를 제공받을 수 있음
장애학생지원센터 : 제2학생회관 2층 201호 (Tel. 02-970-6054)

[Course Schedule]

Week	Contents	Lecture Methods, Assignments, Contents of Evaluation
1	Introduction to Statistics. Computer practice for R software	Lecture
2	Overview and Descriptive Statistics : Sample mean, Standard deviation, Stem-and-Leaf Plots, R software	Lecture, R software
3	Probability : Sample spaces, Conditional probability, Independence	Lecture, R software, textbook exercise homework
4	Discrete Random Variables: Random variables, Probability distributions for discrete random variables	Lecture, R software
5	Discrete Random Variables : Binomial, Hypergeometric, Negarive Binomial, Poisson Distributions	Lecture, R software
6	Contunuous Random Variables : Normal distribution, Exponential distribution, O ther continuous distribution	Lecture, R software, textbook exercise homework
7	Joint Probability Distributions and Random Samples : Covariance, Correlation, Distribution of the sample mean.	Lecture, R software
8	Mid Term Examination	Lecture, R software, textbook exercise homework

9	Point Estimation : Unbiased Estimators, Maximum Likelihood Estimation	Lecture, R software
10	Statistical Intervals Based on a Single Sample : Confidence Intervals for a population mean and proportion, and varinace	Lecture, R software
11	Inferences for two samples : Inferences on the difference between two means and proportions	Lecture, R software, textbook exercise homework
12	Linear regression : Least-squares coefficients, Checking assumptions	Lecture, R software
13	Linear regression : Multiple regression, Model selection	Lecture, R software
14	Factorial Experiments : Single-factor experiments	Lecture, R software, textbook exercise homework
15	Final Exam	