

Statistics Research & Analysis

Course Name	Course type (credit/hours)	Required course(3/3)	Course code	E034
	Target students Division/major/grade	Architecture/Freshman	Opening semester	2021 2ND SEMESTER
	Class time and classroom	Mon B(Seong304)Thu B(Seong304)	English Grade	A(100%English)
Reference to this course	Prerequisite courses	-		
	Related basic courses	-		
	Recommended concurrent courses	-		
	Related advanced courses	-		

Instructor	Name (title/division)		Byungjoo Choi(Assistant Professor, Architecture)		
	Office Room Number	Industry-University Cooperation Building 711	Office phone Number	2494	e-mail
	Office hours	Check availability time after contacting in advance		Homepage address	www.smartconstructionlab.com
Teaching Assistant	Name (title/division)				
	Office Room Number		Office phone Number		e-mail

1. Introduction

The main objective of this course is to provide students with a basic understanding of probability and statistics by learning and practicing the basic statistical concepts. After the course, students will be able to understand the characteristics of data and to make a decision from the statistical point of view.

2. Course Objectives

Educational objectives: to educate the various concepts and essential techniques of statistics that are fundamental to engineering and daily life.

1. Large amounts of data can be summarized and expressed in various ways.
2. Understand the basic concept of probability distribution.
3. I can understand the principles of statistical reasoning (hypothesis testing).
4. Various techniques can be used to solve various problems statistically.

3. Class types and activities

This course mainly consists of lecture and problem-solving. Students will see a number of statistical problems from various areas.

4. Teaching Method

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|--|---|
| <input checked="" type="checkbox"/> lecture | <input type="checkbox"/> discussion and debate |
| <input type="checkbox"/> team project(presentation and case studies) | <input type="checkbox"/> experiments(role-playing,etc) |
| <input type="checkbox"/> designing and production | <input type="checkbox"/> on-site learning(on-site training) |
| <input type="checkbox"/> others | |

5. Support Systems in Use

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| <input checked="" type="checkbox"/> AjouBb | <input type="checkbox"/> automatic recording system | <input type="checkbox"/> web-based assignment |
| <input type="checkbox"/> cyber lecture | <input type="checkbox"/> online content | |
| <input type="checkbox"/> class behavior analyzing system | <input type="checkbox"/> others | |

6. Teaching Tools

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|---|---|---|
| <input checked="" type="checkbox"/> PBL(Problem Based Learning) | <input type="checkbox"/> CBL(Case Based Learning) | <input type="checkbox"/> TBL(Team Based Learning) |
| <input type="checkbox"/> UR(Undergraduate Research) | <input type="checkbox"/> FL(Flipped Learning) | <input type="checkbox"/> DSAL(Data Science Active Learning) |
| <input type="checkbox"/> others | | |

7. Knowledge and ability required for taking this course

1. High school-level mathematical skills (understanding basic differential equations, computation of matrices, etc.)

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance	32	8	1% deduction for each absenteeism (electronic attendance)
midterm exam	1	30	
final exam	1	30	
quiz	2	32	Once before midterms (16%), Once before finals (16%)
presentation			
discussion			
homework			
etc			
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Lecture Note (Provided via Ajou BlackBoard)	Byungjoo Choi		
Sub	Online Statistics Education (Provided via Ajou BlackBoard)	David M. Lane		
Main	Statistics for the Behavioral Science 10 ed.	Gravetter & Wallnau	CENGAGE	2017

10. Class system and Class shedule

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< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Introduction to Statistics	E	Byungjoo Choi			
2	Understanding Data	E	Byungjoo Choi			
3	Probability and Random Variable	E	Byungjoo Choi			
4	Quiz (1)	E	Byungjoo Choi			

< Class Schedule >

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Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
5	Statistical Inference	E	Byungjoo Choi			
6	Hypothesis Test (1)	E	Byungjoo Choi			
7	T-test	E	Byungjoo Choi			
8	Mid-Term	E	Byungjoo Choi			
9	Correlation	E	Byungjoo Choi			
10	ANOVA	E	Byungjoo Choi			
11	Bivariate Regression (1)	E	Byungjoo Choi			
12	Quiz (2)	E	Byungjoo Choi			
13	Bivariate Regression (2)	E	Byungjoo Choi			
14	Multiple Regression	E	Byungjoo Choi			
15	Logistic Regression	E	Byungjoo Choi			
16	Final Exam	E	Byungjoo Choi			

11. Other items of notification