

## Statistics Research & Analysis

Course Name	Course type (credit/hours)	Required course(3/3)	Course code	E086
	Target students Division/major/grade	Architecture/Freshman	Opening semester	2020 2ND SEMESTER
	Class time and classroom	Mon B(Pal108)Thu B(Pal108)	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	산학협력원711	Office phone Number	2494	e-mail	
	Office hours	사전 연락 후 상담가능 시간 확인		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

교육목표: 공학 및 일상생활에서 기본이 되는 통계학의 여러가지 개념과 필수 기법을 교육

1. 대량의 데이터를 정리 요약하고 다양한 방법으로 표현할 수 있다.
2. 확률 분포의 기본적인 개념을 이해할 수 있다.
3. 통계적 추론(가설 검정)의 원리를 이해할 수 있다.
4. 여러기법을 통하여 다양한 문제를 통계적으로 해결할 수 있다.

### 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

- |  |   |
|--|---|
| <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

- |  |   |   |
|--|---|---|
| <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

- |   |   |   |
|---|---|---|
| <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. 고등학교 수준의 수학 능력 (기본적인 미분 방정식의 이해, 행렬의 연산 등)

## 8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance	32	8	매 결석마다 1% 감점 (전자 출결)
midterm exam	1	30	
final exam	1	30	
quiz	2	32	중간고사 이전 1회 (16%), 기말고사 이전 1회 (16%)
presentation			
discussion			
homework			
etc			
study hours			

## 9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Lecture Note (Ajou BlackBoard를 통해 제공)	최병주		
Sub	Online Statistics Education (Ajou BlackBoard를 통해 제공)	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 Raddom Variable	E	Byungjoo Choi			
4	Quiz (1)	E	Byungjoo Choi			

< Class Schedule >

\* language : K-korean, E-English

Week s	Topics	lang uag e	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