Advanced Statistics for Finance

Course Name	Course type (credit/hours)	Required course(3/3)	Course code	I076
	Target students Division/major/grade	Financial Engineering/Sophomore	Opening semester	2019 2ND SEMESTER
	Class time and classroom	Tue F(Da311)Thu E(Da311)	English Grade	A(100%English)
Reference to this course	Prerequisite courses			
	Related basic courses			
	Recommended concurrent courses			
	Related advanced courses			

Instructor	Name (title/division)	Shim, Gyoocheol(Professor, Financial Engineering)				
	Office Room Number	다산관 431호	Office phone Number	1880	e-mail	
	Office hours	Wednesday 13:30~14:30		Homepage address		
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

In this course, students study important theories and methods of statistics which can be applied to the solution of problems in finance and economics. This course covers probability and distributions, estimation, inference, hypothesis testing, and Bayesian estimation.

2. Course Objectives

3. Class types and activities

The classes proceed mainly by lectures.

4. Teaching Method

- [V] lecture
- [ ] discussion and debate
- [ ] team project(presentation and case studies)
- [ ] experiments(role-playing,etc)
- [ ] designing and production
- [ ] on-site learning(on-site training)
- [ ] others

5. Support Systems in Use

- [V] AjouBb
- [ ] automatic recording system
- [ ] web-based assignment
- [ ] cyber lecture
- [ ] online content
- [ ] class behavior analyazing system
- [ ] others

6. Teaching Tools

- [ ] PBL(Problem Based Learning)
- [ ] CBL(Case Based Learning)
- [ ] TBL(Team Based Learning)
- [ ] UR(Undergraduate Research)
- [ ] FL(Flipped Learning)
- [ ] DSAL(Data Science Active Learning)
- [ ] others

7. Knowledge and ability required for taking this course

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance		10%	
midterm exam	1	40%	
final exam	1	40%	
quiz			
presentation			
discussion			
homework	2	10%	
etc			
study hours			

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	Introduction to mathematical statistics (7th edition)	Robert V. Hogg, Joseph W. Mckean, Allen T. Craig	Pearson	2014

10. Class system and Class shedule

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Probability, Random variables, Distributions	E	Shim, Gyoocheol	Lecture		
2	Probability, Random variables, Distributions	E	Shim, Gyoocheol	Lecture		
3	Multivariate Distributions	E	Shim, Gyoocheol	Lecture		

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
4	Multivariate Distributions	E	Shim, Gyoocheol	Lecture		
5	Some Important Distributions	E	Shim, Gyoocheol	Lecture		
6	Some Important Distributions	E	Shim, Gyoocheol	Lecture		
7	Unbiasedness, Consistency, and Limiting Distributions	E	Shim, Gyoocheol	Lecture		
8	Mid-term Exam.	E	Shim, Gyoocheol	Mid-term		
9	Statistical Inferences	E	Shim, Gyoocheol	Lecture		
10	Statistical Inferences	E	Shim, Gyoocheol	Lecture		
11	Hypothesis Testing	E	Shim, Gyoocheol	Lecture		
12	Hypothesis Testing	E	Shim, Gyoocheol	Lecture		
13	Maximum Likelihood Estimation	E	Shim, Gyoocheol	Lecture		
14	Maximum Likelihood Tests	E	Shim, Gyoocheol	Lecture		
15	A Brief Introduction to Baysian Estimation and Testing Procedures	E	Shim, Gyoocheol	Lecture		
16	Final Exam.	E	Shim, Gyoocheol	Final Exam.		

11. Other items of notification