



Korea University International Summer Campus (KU ISC) 2023

Embark on a unique summer

June 27, 2023 ~ July 20, 2023

ISC508 –Introduction to Data Analytics - Fundamental Concepts and Applications

I . Instructor

Professor	:	Myong K Jeong
E-mail	:	mjeong@soe.rutgers.edu
Home Institution	:	Rutgers, The State University of New Jersey
Class Time	:	09:0am0-11:40 am
Office	:	
Office Hours	:	

II . Textbook

Required Textbook	:	Introduction to Data Mining by Pang-Ning Tan
Recommended Additional Readings	:	Will be provided by the instructor

III . Course Description and Objectives

This course introduces popular methods to analyze various data types. Statistical background on different classification methods, clustering methods, regression methods are taught. Also, this course teaches the concepts of anomaly detection methods, feature extraction methods, and feature selection methods. This course has small amount of the overlap with the course named "데이터분석 기법 및 응용" which was offered in KU Winter School, but most of contents will be different. Students who did not take this winter course will have no difficulty understanding the contents of this summer class.

IV. Grading

Midterm Exam	:	25%
Final Exam	:	25%
Assignments	:	30%
Participation	:	20%

V. Class Outline

Date	Topic	Chapter	Remarks
June 27 (Tue)	Orientation Day (no classes)		
June 28 (Wed)	Overview of data mining	Ch 1 & additional materials	
June 29 (Thu)	Overview of classification methods	Ch 4 & additional materials	
June 30 (Fri)	Tree-based methods	Ch 4.3	
July 3 (Mon)	Multivariate statistics	additional materials	
July 4 (Tue)	Support vector machines (SVMs) for classification	Ch 5.5	
July 5 (Wed)	SVMs – Kernel-based methods	Ch 5.5 & additional materials	
July 6 (Thu)	Midterm		
July 10 (Mon)	Ensemble methods	Ch 5.6	
July 11 (Tue)	Random forests and its variants	Ch 5.6 & additional materials	
July 12 (Wed)	Anomaly detection	Ch 10	
July 13 (Thu)	SVMs for regression	additional materials	
July 17 (Mon)	Regression – loss functions	additional materials	
July 18 (Tue)	Clustering methods: basics and advanced methods	Ch 8 & 9	
July 19 (Wed)	Final exam		
July 20 (Thu)	Summary for the covered topics and future research topics	additional materials	