

# COURSE DETAIL

## STATISTICAL MACHINE LEARNING

**Country**

Korea, South

**Host Institution**

Korea University

**Program(s)**

Korea University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Statistics Computer Science

**UCEAP Course Number**

107

**UCEAP Course Suffix****UCEAP Official Title**

STATISTICAL MACHINE LEARNING

**UCEAP Transcript Title**

STAT MACHINE LEARN

**UCEAP Quarter Units**

4.00

**UCEAP Semester Units**

2.70

## **Course Description**

This course establishes the foundation of a wide range of statistical learning methods. It aims to understand and utilize the fundamentals of various statistical learning models.

The course covers:

- statistical learning;
- classical linear methods for regression and classification;
- cross-validation;
- bootstrap;
- modern linear methods;
- nonlinear methods;
- tree-based methods;
- support vector machines;
- unsupervised learning;
- neural networks, and
- deep learning.

These topics are the basics of statistical learning, but the core of machine learning. By the end of this course, students will have easier access to and understanding of deep learning and artificial intelligence.

The course requires the following prerequisites:

- Python Basic - this course assumes a basic knowledge of Python
- STAT 241: Matrix Theory or Linear Algebra - provides a computational foundation for understanding statistical models.
- STAT 232: Mathematical Statistics- knowledge of probability theory and asymptotic evaluations.

## **Language(s) of Instruction**

English

## **Host Institution Course Number**

STAT424

**Host Institution Course Title**

STATISTICAL MACHINE LEARNING

**Host Institution Course Details**<https://infodepot.korea.ac.kr/lecture1/lecsujectPlanView.jsp?year=2023&term=2R...>**Host Institution Campus****Host Institution Faculty****Host Institution Degree****Host Institution Department**

Statistics

**Course Last Reviewed**

2023-2024

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