

# COURSE DETAIL

## MACHINE LEARNING

**Country**

Taiwan

**Host Institution**

National Taiwan University

**Program(s)**

National Taiwan University

**UCEAP Course Level**

Upper Division

**UCEAP Subject Area(s)**

Mechanical Engineering

**UCEAP Course Number**

108

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

MACHINE LEARNING

**UCEAP Transcript Title**

MACH LEARNING

**UCEAP Quarter Units**

4.50

**UCEAP Semester Units**

3.00

## Course Description

The core spirit of machine learning is to learn the relevance of the data hidden in the data from the existing data through the mathematical model of the fusion hypothesis, so as to achieve the purposes of quantitative analysis, inference exploration, prediction, decision-making, etc. Machine learning can be roughly divided into two categories: machine learning hand-crafted features and deep learning. The main difference between the two is that the former is artificially designed and selected to describe the characteristics of the data, while the latter relies on deep learning theory to extract features.

This course mainly focuses on the introduction and exploration of the first type of machine learning (machine learning with hand-crafted features). The course uses actual medical imaging data to introduce typical methods of hand-crafting various features. And through actual clinical problems, implement hand-crafted features and understand their advantages and disadvantages. At the same time, in the part of machine learning algorithm, it will cover a variety of supervised, unsupervised and hybrid learning methods, such as: Linear Discrimination, decision Tree, Neural Network, Support Vector Machine, Bayesian Learning, Clustering, Reinforcement Learning and other methods.

### Language(s) of Instruction

English

### Host Institution Course Number

DBME5027

### Host Institution Course Title

MACHINE LEARNING

### Host Institution Course Details

[http://nol.ntu.edu.tw/nol/coursesearch/print\\_table.php?course\\_id=528%20U0150&cl...](http://nol.ntu.edu.tw/nol/coursesearch/print_table.php?course_id=528%20U0150&cl...)

### Host Institution Campus

**Host Institution Faculty**

Engineering

**Host Institution Degree****Host Institution Department****Course Last Reviewed**

2022-2023

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