

# 主導課程一：資料探勘與應用 (Data Mining : Concepts, Techniques, and Applications)

## 課程基本資料

開設學校：清華大學

開授教師：陳宜欣老師

班級人數：5000人 (保留250人給清大, 聯盟校自訂, 若為封閉型授權盟校, 不超過100人)

開課級別：研究所開放大三(含)以上選課

授課語言：英文

授權方式：封閉式

同步遠距上課時間：星期一 9:00~12:00

是否接受非同步授課：是

實體期末評量時間：2026/12/14

遠距上課位置：

[https://www.youtube.com/@NTHU\\_ISA5810\\_DataMining](https://www.youtube.com/@NTHU_ISA5810_DataMining)

課程網頁：<https://www.cs.nthu.edu.tw/~yishin/courses/ISA5810/ISA5810-2026.html>

## 課程概述

Data mining serves as a crucial field that leverages advanced algorithms to reveal hidden, yet invaluable insights buried within extensive datasets. These algorithms are drawn from a multitude of areas such as machine learning, artificial intelligence, pattern recognition, statistics, and database systems, working together to facilitate a deeper understanding and analysis of data.

This course is designed to equip you with the foundational knowledge and hands-on experience needed to delve into the expansive world of data mining. Whether you are looking to enhance your skill set or embark on a new career path, this course will serve as a stepping stone to achieving your goals. The curriculum encompasses a range of topics that will introduce you to the core concepts and techniques prevalent in the field of data mining. These include:

- Association Rules: Understand the principles behind identifying rules that highlight relationships between seemingly independent data in a database.
- Clustering: Learn about grouping a set of objects in such a way that objects in the same group are more similar to each other than to those in other groups.
- Classification: Gain knowledge on the procedures for identifying the predefined class of a new observation.
- Text Mining: Equip yourself with the skills needed to analyze and interpret large collections of text data to extract meaningful information.
- Data Mining Applications: Explore the various practical applications of data mining across different industries and sectors.

## 參考書目

Pang-Ning Tan, Michael Steinbach, Vipin Kumar, Introduction to Data Mining, Addison

Wesley

## 課程內容大綱

週次	日期	課程內容
1	7-Sep	Orientation
2	14-Sep	Overview and Data
3	21-Sep	Overview and Data
4	28-Sep	Lab For Data Exploration And Management (Make up for Teacher's day)(Recording)
5	5-Oct	Classification
6	12-Oct	Classification
7	19-Oct	Text Mining & Project Progress Report
8	26-Oct(光復節)	Lab for Deep Information Retrieval And Neural Word Embedding (Recording)
9	2-Nov	Text Mining
10	9-Nov	Text Mining
11	16-Nov	DM Clustering & Project Progress Report
12	23-Nov	DM Clustering

13	30-Nov	Association
14	7-Dec	Student Paper Presentation
15	14-Dec	Final Exam
16	21-Dec	Final Demo Presentation

### 成績評量方式

- Two assignments: 20%
- One short presentation: 10%
- One project: 25%
- One exam: 35%
- Class participation (in or after class): 10%

### 課程要求

- 建議學生需已修過Python程式設計、有基本機率概念
- 本課程期末專題採分組開發，請審慎評估可投入的時間在選課，若需退選最晚須於第十週以前退選，以避免影響同組修課同學之權益。