課程資訊 (Course Information)

科號 Course Number	11420CS 357000	學分 Credit	3	人數限制 Class Size	75
中文名稱 Course Title	多媒體技術概論				
英文名稱 Course English Title	Introduction to Multimedia				
任課教師 Instructor	賴尚宏(LAI, SHANG–HONG) *more information*				
上課時間 Time	T5F5F6	上課教室 Room	DELTA台達103		

此科目對應之系所課程規畫所欲培養之核心能力 Core capability to be cultivated by this course	

- 具有設計與操作實驗以及分析、解釋數據的能力。(15%)
  To be able to design and perform experimentation as well as analyze and explain the experiment data. (15%)

- 具有發現問題、定義問題、並設計程式以解決問題的能力。(15%)
  To have the ability to discover problems, define them, and design computer programs to solve problems. (15%)

- 具有資訊、數學及科學的基礎知識。(10%)
  To have fundamental knowledge of computer science, mathematics, and science. (10%)

- 具有分析、設計、開發、整合、測試、與評估資訊系統、元件、或演算法的能力。(20%)
  To be able to analyze, design, develop, integrate, test, and evaluate systems, components, and algorithms of computer science. (20%)

- 具有良好的溝通技巧與跨領域團隊合作的能力。(10%)
  To have good communication skills and be able to cooperate with others in interdisciplinary teams. (10%)

- 瞭解與資訊相關之產業脈動與最新的資訊科技進展。(10%)
  To understand the most recent technological and industrial advancements regarding computer science. (10%)

- 瞭解資訊科技對於全球性社會、經濟、文化等層面的影響與責任。(10%)
  To understand the social, economical, cultural effects of computer science and related technologies on the global level. (10%)

- 瞭解國際視野及終身學習的重要性。(5%)
  To understand the importance of international view as well as lifelong education. (5%)

- 尊重學術、工程倫理、及智慧財產權。(5%)
  To respect academics, engineering ethics, and intellectual property. (5%)

課程簡述 (Brief course description)

This course aims to give technical background knowledge in multimedia technology. We will focus on the representation, processing, and analysis of various types of multimedia data, including image, graphics, audio and video. This course will require students to implement some important algorithms to process the major types of multimedia data.

Course keywords:
多媒體, 影像, 視訊, 音訊, 圖學, mutimedia, image, video, graphics, audio

一、課程說明(Course Description)
This course will cover the following topics:
1. Digital Data Representation and Communication
2. Digital Image Representation and Processing
3. Digital Audio Representation and Processing
4. Digital Video Representation and Processing
5. Computer Graphics
6. Multimedia retrieval
7. Multimedia & AI
8. AR & VR

二、指定用書(Text Book)

Course slides distributed to the class

Reference:
Ze-Nian Li, Mark S. Drew, and Jiangchuan Liu, Fundamentals of Multimedia, 3rd Ed., Springer, 2021

三、教學方式(Teaching Method)

Lecture presentation using slides

四、教學進度(Syllabus)

[1] 4-6 hours in average for each topic.
[2] The remainder is reserved for invited talks and final project presentation.

五、成績考核(Evaluation)

Homework Assignments (40%)
Midterm Exam (25%)
Final Project (25%)
Class Participation (10%)

六、可連結之網頁位址

https://eeclass.nthu.edu.tw/