國立台灣科技大學 114學年 第2學期　課程大綱

Spring 2026 NTUST Course Outline

授課教師：陳鴻銘

Instructor:Hung-Ming Chen

課程名稱：電腦繪圖與視覺模擬

Course Title：Computer Graphics and Visualization

2026/11/3

課程代號：CT5706701 Course Code 學分數：3 Credits	必選修：選修/半學年 Required/Electve:Elective/Half Yr. 先修課程： Prerequisites
節次教室：R6(E2-412) R7(E2-412) R8(E2-412) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址：https://hungming.ct.ntust.edu.tw/ Course Website	
課程宗旨： Course Objectives	The computer-based visualization has been a useful tool for engineers in design examination and simulation results presentation. This course focuses on the principles of computer graphics and interactive graphical methods to provide students with basic knowledge of, and practical experience with, the fundamental mathematics, algorithms and representations that are needed to develop interactive computer graphics applications. The programming with advanced graphics packages/interfaces will also be discussed and practiced.
課程大綱： Outline of Lectures	• Display and graphics systems; Color; 2D clipping; Interactive techniques; 3D rendering; 3D clipping and viewing transformation; Perspective projection; GL Pipeline; Hidden line and surface removal; Illumination models; Shading methods; Ray tracing; Computational geometry; Curves and surface; Solid modeling. • Graphics programming packages/interfaces: OpenGL, three.js (WebGL). • State-of-the-art technologies or applications related to computer graphics and visualization (as the selected topics of independent study project).
授課方式： Method of Instruction	講授 Lecture：85% 分組討論 Group discussion：0% 案例研討 Case study：15% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	No required textbook. Class notes, programming examples, selected articles and handouts will be provided.
參考書目： References	OpenGL SUPERBIBLE.
修課須知： Notice	
評量方式： Grading	

	1. Programming Project (50%): There will be a final project using the programming packages/interfaces taught in this class. A final demo presentation on your project is required to fulfill the project. 2. Independent Study Project (50%): There will be an independent study project on a selected topic related to computer visualization. A report and a final presentation to present the results of your study are required.
備註說明： Notes	C programming