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：林宗翰

Instructor:Tzung-Han Lin

課程名稱：電腦視覺與應用

Course Title：Computer Vision and Applications

2026/11/3

課程代號： CI5336701 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： Time/Location	T6(IB-304) T7(IB-304) T8(IB-304)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	https://ci3d.ntust.edu.tw/wordpress/?page_id=1988
課程宗旨： Course Objectives	This lecture focuses on the mathematical analysis of computer vision field, particularly on camera model, 3D space to image domain conversion.
課程大綱： Outline of Lectures	This course will discuss about the principle and technology of “Computer Vision” research field. Applications on Stereo / Multiview / Augmented Reality are also revealed, and this course outline includes, 1. Pin-hole camera, 2. Projective 2D geometry, 3 Camera Models, 4. Projective 3D geometry, 5. Camera Calibration, 6. Epipolar geometry, 7. Multiview and 3D reconstruction, 8. Applications on stereo vision, 9. Application on augmented reality.
授課方式： Method of Instruction	講授 Lecture：100% 分組討論 Group discussion：0% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	No specific textbook. Slides will be provided.
參考書目： References	Reference book “Multiple View Geometry in Computer Vision,” Richard Hartley and Andrew Zisserman, 2nd Edition Cambridge University Press. 2004. (ISBN: 0521540518) “Computer Vision, A Modern Approach,” David A. Forsyth and Jean Ponce, Prentice Hall.
修課須知： Notice	This course will be EMI (English-spoken) lecture.
評量方式： Grading	Tentative: reference grade policy: Participation (10%) 3~4 homework assignments (50%) Midterm project (20%) Final project (20%)

備註說明： Notes	You must have the ability to write programs. All homework/project will be based on programming (in "python" "C/C++", "Matlab"), And strongly recommend have the relevant math background: Basic matrix calculation.