國立東華大學

課　綱　Course Outline
資訊工程學系國際組

中文課程名稱 Course Name in Chinese	影像處理				
英文課程名稱 Course Name in English	Image Processing				
科目代碼 Course Code	CSIEM0180	班　別 Degree	碩士班 Master's		
修別 Type	選修 Elective	學分數 Credit(s)	3.0	時　數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標
Course Objectives

The aim of this course is to provide the fundamental knowledge of image processing and the
corresponding fields.
After learning the course, students will have the ability to develop the techniques needed in an
imaging system.
The content of the course contains digital image fundamentals, image enhancement in the
spatial/frequency domain, image restoration, color image processing, image compression, image
segmentation, and description. Deep learning is also mentioned in the course.

系教育目標
Dept.'s Education Objectives

1	探究學科知識，善用專業技能 Explore academic knowledge, utilize professional skills.
2	訓練評析思考，創新解決問題 Exercise analytical thinking, enhance creative problem solving skills.
3	學習團隊分工，強化溝通表達 Participate in teamwork, strengthen communication skills.

系專業能力 Basic Learning Outcomes		課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	統合資工知識技術之能力 Ability to integrate knowledge and technologies of computer science and information engineering.	●

B	設計技術理論驗證實驗之能力 Ability to design and conduct science experiments and to validate hypotheses.	●
C	資訊軟硬體設計開發之能力 Ability to design and develop computer software and hardware.	○
D	團隊專案開發之能力 Ability to design and develop team projects.	●
E	批判性思考與創新研發之能力 Ability of analytical thinking, creative research planning, and innovative development.	○

圖示說明Illustration ：● 高度相關 Highly correlated ○中度相關 Moderately correlated

課程大綱
Course Outline

課程內容包含基本知識背景、影像預處理技術、及影像分析。
前三章的基礎，對於後續章節的瞭解有很重要的關係。
第四章討論影像增強技術，涵蓋雜訊消除、對比增強、銳利和色彩處理。
第五章詳細地討論影像復原的技術資料壓縮在第六章提及。
後三章探討影像分割、辨識與解析技術。

資源需求評估（師資專長之聘任、儀器設備的配合···等）
Resources Required (e.g. qualifications and expertise, instrument and equipment, etc.)

 Existing suitable full-time teachers

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

Class lectures, assignments, lab sessions and term project

其他
Miscellaneous