國立東華大學

課　　綱　Course Outline
電機工程學系碩士班一般組

中文課程名稱 Course Name in Chinese	影像視訊編碼				
英文課程名稱 Course Name in English	Image and Video Coding				
科目代碼 Course Code	EE__51000	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					

<table>
<tr><td colspan="3" align="center">課程目標
Course Objectives</td></tr>
<tr><td colspan="3">讓學生在修習此一課程後，能對影像視訊編碼有深入的了解，以利研究工作的進行。</td></tr>
<tr><td colspan="3" align="center">系教育目標
Dept.'s Education Objectives</td></tr>
<tr><td>1</td><td colspan="2">高階人才培育—厚實學生專業知能，培育高階科技人才。
To cultivate talents with advanced professional knowledg</td></tr>
<tr><td>2</td><td colspan="2">團隊分工領導—落實分工合作觀念，具備領導協調能力。
To train students with teamwork leading ability</td></tr>
<tr><td>3</td><td colspan="2">創新思維啟發—訓練專業實用技術，展現創新研發能力。
To inspire students with creative thinkin</td></tr>
<tr><td>4</td><td colspan="2">國際視野養成—營造國際宏觀視野，培育全球市場人才。
To educate students with global perspectiv</td></tr>
<tr><td colspan="2" align="center">系專業能力

Basic Learning Outcomes</td><td>課程目標與系專業能力相關性
Correlation between Course Objectives and Dept.'s Education Objectives</td></tr>
<tr><td>A</td><td>培育具備電機電子資訊工程等專業技術研發之能力。
To cultivate the research and developing ability of electrical, electronics and information engineering。</td><td align="center">●</td></tr>
<tr><td>B</td><td>培育系統分析、模擬驗證、實作實現之能力。
To cultivate the advanced ability of analysis, verification and implementation of systems。</td><td align="center">●</td></tr>
<tr><td>C</td><td>訓練軟體工具使用與硬體實務驗證相互輔助之能力
To train the auxiliary ability between the utilization of software tool and the verification of the hardware practice。</td><td align="center">●</td></tr>
</table>

D	訓練電機電子資訊專業知識與工程實務相互結合運用之能力。 To train the integrate ability between professional EECS knowledge and engineering practice	●
E	落實論文研究之群體討論與團隊合作之互助能力。 To fulfill the research ability in thesis by group discussion and teamwork cooperation	○
F	落實發掘問題、邏輯分析、克服瓶頸與持續學習之能力。 To fulfill the ability of question finding, logical analyzing, bottleneck overcoming and continuous learning	●
G	了解學術倫理與智慧財產觀念，掌握國內外產業更迭需求與具備多元專長之能力。 To obtain the ability of multi-specialization and to meet the industry demand as well as to have the ability of academic ethics and concept of intellectual property	○
H	了解國內外市場變化，具備科技英文閱讀溝通與科技論文寫作之能力。 To understand the change of global market and to have the ability of reading, conversation and technical writing in English。	○

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

課程大綱
Course Outline

本課程介紹可變長度編碼、離散餘弦轉換、動態預測、量化、預測編碼等技術，並涵蓋靜態影像壓縮標準(JPEG、JPEG 2000)及視訊壓縮標準(MPEG-1、MPEG-2、MPEG-4、H.261、H.263、H.264、H.265、H.266)。

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.)

以具有所開課程專長之教師擔任授課；資料整理所需之電腦、影印機；討論
所需之投影機、幻燈機等教學設備。

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

以指定教材按預訂進度進行教學。教學以講授及討論為主，必要時以相關文獻資
料加以補充，並要求學生分組進行專題研究並報告。

其他
Miscellaneous