國立東華大學

課　綱　Course Outline
電機工程學系學士班

中文課程名稱 Course Name in Chinese	網路實驗				
英文課程名稱 Course Name in English	Network Laboratory				
科目代碼 Course Code	EE__40200	班　別 Degree	學士班 Bachelor's		
修別 Type	學程 Program	學分數 Credit(s)	1.0	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">經由實驗了解網際網路的特性與模擬各種常用的網路設備。</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">專業人才培育─奠立學生專業知能，培育產業技術人才。
To cultivate talents with basic professional knowledge</td></tr>
<tr><td>2</td><td colspan="2">團隊合作訓練─落實分工合作觀念，具備溝通服從能力。
To train students with teamwork ability</td></tr>
<tr><td>3</td><td colspan="2">創新思維啟發─具備自我學習能力，啟發創新思維模式。
To inspire students with creative thinking</td></tr>
<tr><td>4</td><td colspan="2">多元學習規劃─訓練觸類旁通思維，培養基本科技英文閱讀溝通能力。
To plan courses with multi-learning modes</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>培育具備工程、應用數學與物理科學等數理知識之基本能力。
To cultivate the basic knowledge of engineering, applied mathematics and physics.</td><td></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 basic ability of analysis, verification and implementation of systems.</td><td></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></td></tr>
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D	訓練電機本知學能技術與工程實務相互結合運用之能力。 To train the integrate ability between professional instinct in learning technique and engineering practice.	
E	落實專題製作之群體合作與團隊競爭之能力。 To fulfill the ability of group cooperation and teamwork competition.	
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，具備基本科技英文閱讀溝通之能力。 To understand the change of global market and the have the basic ability of reading and conversation 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

1.介紹課程並實際操作網路模擬工具
2.介紹網路(七層協定)並模擬網路狀況
3.使用Wireshark監測網路封包(HTTP、TCP、ICMP)
4.使用Wireshark監測網路封包(ICMP、FTP)
5.虛擬機器(VM)與網路模擬工具的基本指令教學
6.網路環境模擬實驗: P2P(peer-to-peer)
7.網路環境模擬實驗:TCP control I
8.網路環境模擬實驗: TCP control II
9.網路環境模擬實驗:Routing Protocols I
10.網路環境模擬實驗:Routing Protocols II
11.網路環境模擬實驗: CSMA/CD I
12.網路環境模擬實驗: CSMA/CD II
13.網路環境模擬實驗: Learning Bridge Protocols
14.網路環境模擬實驗: Spanning tree protocol
15.網路環境模擬實驗: Wireless LAN MAC protocol
16.網路環境模擬實驗: Mobile IP

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.)

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

1.實驗作業 70%
2.期末考 30%

其他
Miscellaneous