



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					
課程目標 Course Objectives					
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。					
系教育目標 Dept.'s Education Objectives					
1	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				
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				
3	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				
4	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				
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	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.				
B	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.				
C	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.				

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