Course Outline

Title: NETWORK PROTOCOLS & SERVICES

Code: ITECH1003

Formerly: CP660

Faculty / Portfolio: Faculty of Science

Program Level:

	AQF Level of Program					
	5	**6**	**7**	**8**	**9**	**10**
Level						
Introductory			✔			
Intermediate						
Advanced						

Pre-requisites: (BCS)

Co-requisites: Nil

Exclusions: (CP660 and CP881 and ITECH5003)

Progress Units: 15

ASCED Code: 020113

Learning Outcomes:

Knowledge:

K1. describe the role and function of network connectivity in current computing;
K2. explain the principles of communication in networks;
K3. explain how local and remote networking functions;
K4. describe the operation and function of specific network protocols;
K5. discuss protocol stacks;

Skills:

S1. interpret and convert hexadecimal, decimal, octal and binary number representations;
S2. observe and interpret network traffic using industry standard protocol analysis software;
S3. express services and network interactions as protocol diagrams;
S4. describe complicated networks in terms of routing tables;

Application of knowledge and skills:

A1. observe and interpret network traffic to fault find networking and application issues;

Values and Graduate Attributes:

Values:

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    V1. appreciate the responsibility that comes with the ability to see and reconstruct network traffic;

Graduate Attributes:

Attribute	Brief Description	Focus
Continuous Learning	In a blended learning approach facilitated by the use of network simulation software and industry standard protocol analyser software, students learn how to investigate the interactions between networking entities to solve technical problems, these skills will continue to develop their knowledge beyond the classroom.	High
Self Reliance	Students will participate in a self-directed and collaborative learning environment to develop their theoretical and technical expertise in the field of networking.	High
Engaged Citizenship		
Social Responsibility	Students will use industry standard software to observe and diagnose networking and software related issues.	Low

Content:

Topics may include:

- the binary number system.
- local and remote delivery - the delivery of information through an extended network will be explained in terms of a series of local deliveries and protocols that are used to accomplish this will be studied.
- reliable and unreliable delivery - the concept of a connection and the building of a connection from a series of connectionless messages demonstrated.
- protocol stacks - investigate various protocol stacks.
- file services - the use of shared file systems, FTP, peer to peer and server-centric solutions. NFS and SMB file sharing will be introduced to demonstrate finer grained sharing.
- directory services - the X.500 standard will be explained and the development of a universal name-space discussed.
- OSI model - relate networking concepts studied to the industry standard model of networking.

Assessment:

There will be extensive hands-on exposure to actual examples of the network protocols and services being discussed. Throughout the course students will use a network analyser program to add a concrete dimension to what they are learning in theory.

Students will work in pairs during these lab sessions, applying and analysing the effectiveness of network tools and protocols.

Assignments will cover the use of tools and the application of theory taught in lectures. An end of semester exam will cover the theoretical and practical aspects of the course.

Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting

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ITECH1003 NETWORK PROTOCOLS & SERVICES

K1 - K5, S1 - S4, A1.	Attend laboratory sessions, apply techniques and tools, research background to material presented	Laboratory exercises, assignments and projects	20 - 50%
K1 - K5, S1 - S4, A1.	Attend lectures, read and summarise theoretical aspects of the unit	Final examination and tests	50 - 80%

Adopted Reference Style:

APA

Presentation of Academic Work:

https://federation.edu.au/students/assistance-support-and-services/academic-support/general-guide-for-the-presentation-of-academic-work