

# Course Outline

**Title:** NETWORK OPERATING SYSTEMS INTERNALS

**Code:** ITECH2113

**Formerly:** CP754

**Faculty / Portfolio:** Faculty of Science

## Program Level:

|              | AQF Level of Program |   |   |   |   |    |
|--------------|----------------------|---|---|---|---|----|
|              | 5                    | 6 | 7 | 8 | 9 | 10 |
| Level        |                      |   |   |   |   |    |
| Introductory |                      |   |   |   |   |    |
| Intermediate |                      |   | ✓ |   |   |    |
| Advanced     |                      |   |   |   |   |    |

**Pre-requisites:** (CP560 or ITECH1002)

**Co-requisites:** Nil

**Exclusions:** (CP754)

**Progress Units:** 15

**ASCED Code:** 020113

## Learning Outcomes:

### Knowledge:

- K1.** restate the concepts of process control in an operating system;
- K2.** illustrate the concepts of and practice of file systems;
- K3.** restate the concepts and practice of a layered service architecture;

### Skills:

- S1.** exhibit the ability to configure memory management on one or more platforms;
- S2.** demonstrate ability to manipulate variety of interoperating systems;
- S3.** identify the important aspects of memory management in an operating system;

### Application of knowledge and skills:

- A1.** construct process control on one or more platforms;
- A2.** configure file systems on one or more platforms;
- A3.** apply the layered model of networking in conceptualization of an operating system ;

## Values and Graduate Attributes:

### Values:

- V1.** appreciate the importance of memory management in operating systems ;
- V2.** understand the importance of secured file system in small and large organizations;

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V3. value the importance of process control in IT organisation;

### Graduate Attributes:

| Attribute             | Brief Description   | Focus  |
|-----------------------|---|--------|
| Continuous Learning   | Ability to discover and analysis various operating system internals and their operations.                           | High   |
| Self Reliance         | Self reliance in installing the operating system and the file system effectively                                    | High   |
| Engaged Citizenship   | Demonstrate ability to manipulate variety of operating systems in different environment.                            | Medium |
| Social Responsibility | Appreciate the complexities of an operating system and respect the issues associated with the file system security. | Medium |

### Content:

Topics may include:

- Memory Management: Virtual memory, protection
- Process Control: Priority, Privilege
- File Systems: Caching, Types of File System, Data protection
- Layered Services: Hardware abstraction, OS Core services, OS Modularity, Networking Layers

### Assessment:

This course will involve a combination of lectures, tutorials and group discussions.

| Learning Outcomes Assessed | Assessment Task  | Assessment Type  | Weighting |
|----------------------------|--|--|-----------|
| K1, S1, S2, A1, A2, A3     | Practical experience of configuring internal features of one or more operating systems | Laboratory exercises, assignments and practical projects | 20 - 50%  |
| K2, K3, S1, S2, S3, A3     | Attend lectures, read and summarise theoretical aspects of the course                  | 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>