Operating Systems

Syllabus Information

CS 2850 - Operating Systems

Associated Term: 2022/23 Academic Session
Learning Outcomes:

By the end of the course students should be able to:

1. Demonstrate an understanding of the principles of computer operating systems

2. Evaluate the theory and practice of existing operating systems

3. Demonstrate a working understanding of program execution, memory hierarchy, and the implementation of data structures

4. Understand system-level programming aspects such as memory management, interrupts, sockets and basic threading in C

5. Write simple shell scripts

Course Summary:

This course aims to introduce students to the principles of the function and architecture of operating systems, and also to give an understanding of how programs operate at system level. Course content includes:

Introductory topics: role of an operating system, computer architecture

Processes and threads: process management and scheduling, inter-process comunication, concurrency

Memory: partitioning, swapping and paging, caching, virtual memory, page replacement algorithms

File systems: implementation and maintenance

UNIX shell: starting programs, input and output streams, pipes, filters, utilities

System-level programming: memory handling, processes, threads, synchronisation, I/O

Required Materials:

Click here for the reading list system

Technical Requirements:

The total number of notional learning hours associated with the course are 150.

These will normally be broken down as follows:

Teaching & Learning Methods:

Lectures - 1 hour two to three times per week - 11 weeks - 27 hours

Laboratory classes - 1 hour once or twice per week - 11 weeks - 17 hours

Formative Assessment:

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Summative Assessment:

Examination (120 minutes) - 60%

Coursework (1 term) - 40%