The Hong Kong University of Science and Technology

UG Course Syllabus

Course title: Operating System

Course code: COMP3511

Number of credits: 3 credits

Prerequisite(s): COMP 2611 OR [(ELEC 2300 OR ELEC 2350) AND (COMP 2011 OR COMP 2012H)]

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Course Description

This is an introductory course on operating systems. The topics will include the basic concepts of operating systems, process and threads, inter-process communications, process synchronization, scheduling, memory allocation, page and segmentation, secondary storage, I/O systems, file systems, security and protection. It contains the key concepts as well as examples drawn from a variety of real systems such as Microsoft Windows and Linux.

List of Topics

Chapter 1: Introduction
Chapter 2: Operating System Structures
Chapter 3: Processes
Chapter 4: Threads and Concurrency
Chapter 5: CPU Scheduling
Chapter 6: Synchronization tools
Chapter 7: Synchronization examples
Chapter 8: Deadlocks
Chapter 9: Memory Management Strategies
Chapter 10: Virtual-Memory Management
Chapter 11: Mass Storage Systems
Chapter 12: I/O Systems
Chapter 13: File-System Interface
Chapter 14: File-System Implementation
Chapter 16: Security
Chapter 17: Protection

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Midterm Exam	20%
Final Exam	30%
Homework	20%
Project	30%

Required Texts and Materials

<u>Textbooks</u>

Operating System Concepts, 10th Edition
Abraham Silberschatz, Peter B. Galvin, Greg Gagne
John Wiley & Sons Ltd, April 2018
ISBN: 978-1-118-09375-7

[Optional] Additional Resources

<u>Reference books</u>

Operating Systems: Three Easy Pieces
Remzi Arpaci-Dusseau & Andrea Arpaci-Dusseau
ISBN: 978-1-985-08659-3