

# 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 17: Protection

### Assessments:

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

## **Required Texts and Materials**

### Textbooks

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**

### Reference books

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