

CA170 Introduction to Operating Systems

Lecturer: Monica Ward
Room: L109
Requirements: writing utensil and paper

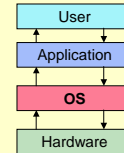


Notes: www.computing.dcu.ie/~mward/ca170/ca170.html

Questions welcome.

CA170 - Overview

- Operating Systems (OS)
 - many definitions
 - s/w interface between users/applications and h/w
 - manages the computer's resources



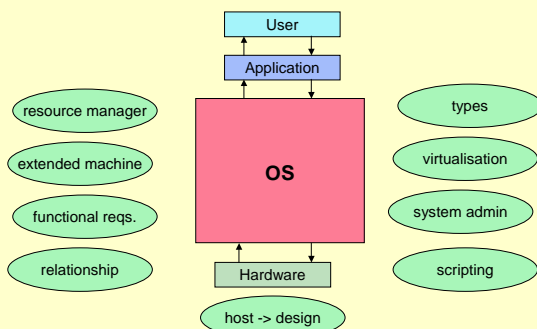
CA170 - Overview

- **Module Aims** to introduce students to:
 - OS history and changing roles
 - OS types and designs
 - OS management and system administration
- **Assessment**
 - Continuous Assessment: 30%
 - Examination: 70%

CA170 – Learning Outcomes

- By the end of this module, students will be able to:
 - Interpret OS as a **resource manager**
 - Interpret OS as an **extended machine**
 - Relate the OS to **users, applications and H/W**
 - Describe the major **functional requirements** of an OS
 - Compare and classify OS **types**
 - Explain how/why **host capabilities influence OS design**
 - Discuss the merits of **virtualisation and virtual machines**
 - Demonstrate basic **system administration skills**
 - **Write scripts** to automate basic system administration skills

CA170 – Learning Outcomes



CA170 Syllabus



- OS history
 - Vacuum tubes, batch systems, multiprogramming and PCs
- OS as a resource manager and extended machine
- OS concepts:
 - Process management, scheduling, memory management, I/O, file systems, networking and security
- OS types:
 - Mainframe, server, multiprocessor, embedded, handheld, distributed, network, real-time

(cont.)

CA170 Syllabus



- OS examples:
 - MS-DOS, Windows 95, Windows NT, Windows ME, Vista, Windows Mobile, Unix, Linux, Minix, TinyOS, PalmOS and Symbian
- OS hosts:
 - Computers, mobile phones, games consoles, home applications and cars
- OS structures:
 - Monolithic, layered, microkernels
- Virtualisation and virtual machines
 - The JVM , VMWare, hypervisors

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CA170 Syllabus



- System Administration:
 - Installing an OS and tuning its performance
 - Add/removing s/w
 - Adding/removing users
 - System backup and recovery
 - Patch management
 - Encryption
 - Partitioning and file system management
- Scripting for system administration
 - e.g. bash scripting on Linux