CMPU1022
Operating Systems 1

Lecturer Paul Kelly

Module Description

The module will provide the fundamentals for Advanced Operating Systems and the groundwork for other modules in computer science that assume a general understanding of operating systems principals and practice.

It provides an overview of the major components of a computer system and their interaction with the systems software.

Online Resources

Brightspace:

Operating Systems 1 CMPU1022: 2022-23

Self-enrolment

"Discover" tool

Instructions:

http://www.dit.ie/brightspace/studentlogin/

Install the Brightspace 'Pulse' app on your phone for class notifications

Virtual Learning Environment

- Once enrolled on the module, you will have access to the module learning material and resources
- Brightspace will be used to share slides and reading list
- You are strongly encouraged to get involved, fully engage and help yourself and others to learn
- Brightspace and MS Teams will be the primary communications tools between you and the module instructor

Module Description

The module provides a fundamental understanding of the concepts of operating systems. The module will also introduce networked, client-server and distributed operating systems, at a basic level.

You will also learn how and why operating systems have evolved over years and the impact this has had on modern operating systems.
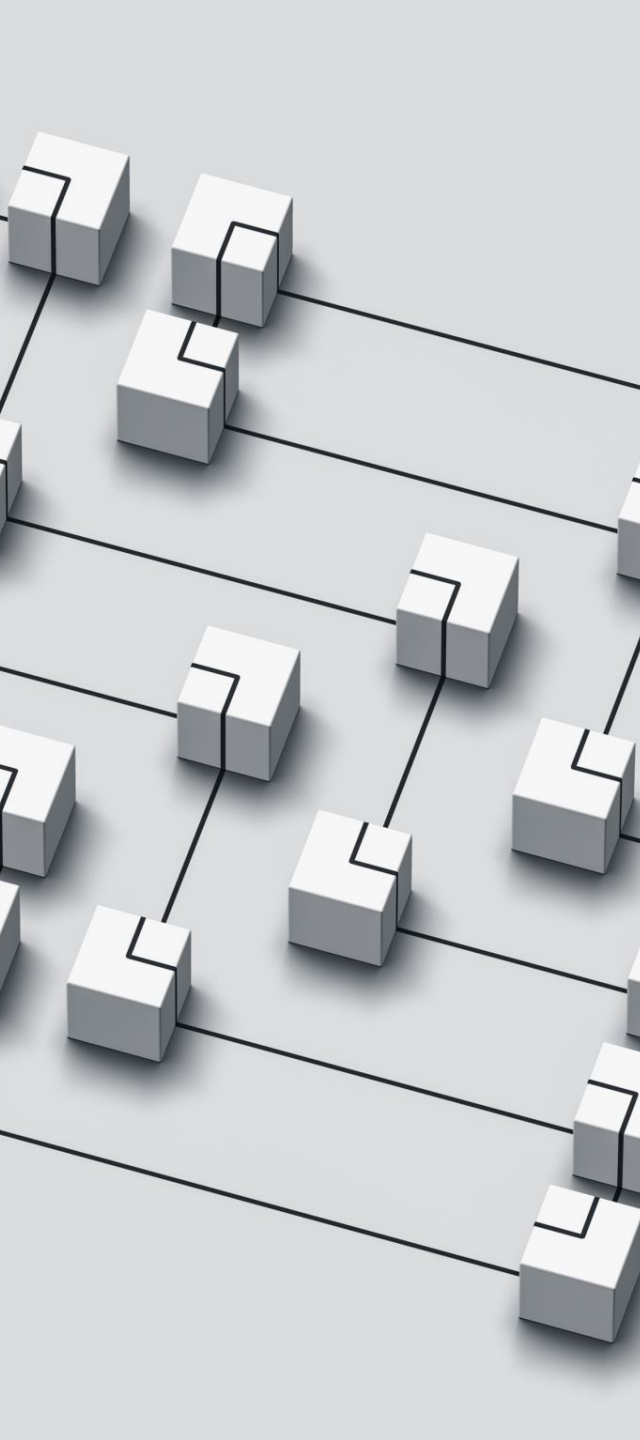
Module Description

The concepts will be reinforced with practical laboratory exercises in operations systems functionality, user interaction and management. Practical assignments will be given to develop practical operating systems skills.

This will be further backed up by a focus on command line interaction with various operating systems.

Module Aims

The aims of this module are to:

1. Introduce the principals of operating systems design

2. Give a working knowledge of a modern operating system

3. Provide a sound knowledge of the various components and interactions of a modern operating system

4. Facilitate a competency in practical interaction with an operating system

Assessment

Exams – 60%

CA – 40%

Policy on Plagiarism

Facilitators and perpetrators both get zero

May follow up with the school

Learning Outcomes

1. Explain the benefits of an operating system in a computing environment

2. List and describe the major components of an operating system and their basic functions

3. Discuss the fundamental trade-offs involved in the design of operating systems

4. Differentiate between the concept of processes and threads of control

5. Classify scheduling policies with examples from different operating systems

Learning Outcomes

6. Appraise memory management techniques and virtual memory implementations

7. Examine various file systems and illustrate their relationship with the IOCS

8. Compare and contrast the strengths and weaknesses of different modern operating system

9. Discuss networked, client-server and distributed operating systems and how they differ from single user operating systems

10. Display and perform proficient command line interaction with various operating systems

Your assignments and labs

When you get a lab/assignment:

- Open a Word document immediately
- Stick in some text, e.g.

> **Operating Systems 1 Lab #3**
> Paul Kelly
> D1234567
>
> Due Date: 29th Feb 2023

- Save it as

`OperatingSystems1-Lab3-D1234567.docx`

Your assignments and labs

Consider using Google Calendar to record due dates of all your assignments and labs:

https://www.google.com/calendar

When you get a chance to read the lab/assignment add in notes into the document of the actions you need to take to complete the lab/assignment.

Your assignments and labs

If you work hard on the labs and assignments and then don't submit them correctly, that's an awful waste of time.

Don't rush the submission part of the labs and assignments!

It's the only bit your lecturer experiences of the effort you put into your work.

Do not ask me to correct your CA assessments in advance via email. This means that I will not answer questions like *"Is this exercise correct?"*

Preparing for and doing the exam

- The exam will follow the same structure of the past exams.

- There is an example of the exam paper on Brightspace. Plus, you can see the past exams on the student intranet so you can know in advance what to expect.

- Be ready for both an in-person and an online exam. The format will depend on the covid situation. This involves familiarise yourself with the software tools & materials that you will be using in case the exam will be held online.

- Check these tips for preparing to an online/open-book exam, in particular check out the **policy on plagiarism**. This is considered an academic offence and can have serious consequences.

References

Modern Operating Systems – 4th Edition – Andrew Tanenbaum, Herbert Bos

Operating Systems- Internals and Design Principles - 9th Edition - William Stallings

Understanding Operating Systems - 8th Edition – Ann McIver Mchoes, Ida Flynn

Contact me

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Questions?