# CS241-15 Operating Systems and Computer Networks

# 23/24

Department Computer Science Level Undergraduate Level 2 Module leader Arpan Mukhopadhyay Credit value 15 Module duration 10 weeks Assessment Multiple Study location University of Warwick main campus, Coventry

# Description

# Introductory description

To introduce the fundamental concepts of modern day operating systems and computer networks.

# Module aims

To introduce the fundamental concepts of modern day operating systems and computer networks.

# **Outline syllabus**

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

50% of the module is on operating systems, and 50% is on computer networks. Topics on operating systems include functions of operating systems and computer networks, system interfaces, process management, concurrency, low level IPC, high level IPC, deadlock detection and recovery, and memory management.

Topics on networks include models of communication (TCP IP protocol stack), LANs (topologies, polling, CSMA systems, Ethernet, bridging, switching), WANs (topologies, packet / circuit

switching, routing algorithms, ), client-server systems, socket programming, network management issues (performance, security, monitoring), UDP, TCP reliable data transfer, flow control, congestion control, IP addressing, Internet routing algorithms

# Learning outcomes

By the end of the module, students should be able to:

- Understand the generic requirements, structure, operation, and administration of a modern operating system.
- - Analyse, design, and write programs at the operating systems level.
- Understand the requirements and design of modem network protocols and systems, their operation and use by applications.

## Indicative reading list

Please see Talis aspire link for most up to date list.

View reading list on Talis Aspire

## Subject specific skills

- 1. Design low level system software
- 2. Implement networking protocols
- 3. Design simple operating systems

# Transferable skills

- 1. Problem solving
- 2. System design and organisation

# Study

# Study time

#### Туре

Lectures Practical classes Private study Total

#### Required

30 sessions of 1 hour (20%) 5 sessions of 1 hour (3%) 115 hours (77%) 150 hours

# Private study description

Reading the course material Solving problems

Programming Revision

# Costs

No further costs have been identified for this module.

# Assessment

You do not need to pass all assessment components to pass the module.

Students can register for this module without taking any assessment.

# Assessment group D2

	Weighting	Study time
Coursework	20%	
200 line program		
In-person Examination	80%	
A paper which examines the course	e content and ensures lea	arning outcomes are achieved.

Answerbook Pink (12 page)

# Assessment group R1

	Weighting	Study time
In-person Examination - Resit	100%	
Resit Exam		

• Answerbook Pink (12 page)

### Feedback on assessment

Feedback on coursework via Tabula

Past exam papers for CS241

# Availability

# Courses

This module is Core for:

- UCSA-G500 Undergraduate Computer Science
  - Year 2 of G500 Computer Science
  - Year 2 of G500 Computer Science
- UCSA-G503 Undergraduate Computer Science MEng
  - Year 2 of G500 Computer Science
  - Year 2 of G503 Computer Science MEng
  - Year 2 of G503 Computer Science MEng
- Year 2 of UCSA-I1N1 Undergraduate Computer Science with Business Studies
- Year 2 of UCSA-G406 Undergraduate Computer Systems Engineering
- Year 2 of UCSA-G408 Undergraduate Computer Systems Engineering

This module is Option list B for:

- UCSA-G4G1 Undergraduate Discrete Mathematics
  - Year 2 of G4G1 Discrete Mathematics
  - Year 2 of G4G1 Discrete Mathematics
- Year 2 of UCSA-G4G3 Undergraduate Discrete Mathematics