

Module Title:	Operating Systems and System Integration	
Module Code:	CMT3321	
Module value:	1.5	
Duration:	30 weeks	
Class Contact Hours:	Lecture	30 hours
	Laboratory	30 hours
	Tutorial	30 hours
Assessment Scheme:	Continuous Assessment:	50%
	Examination:	50%

Module Rationale/Aims

- to provide more insight into the resource management of common operating systems;
- to introduce the major technical issues associated with the design and use of operating systems;
- to introduce the concepts of system integration;
- to introduce the hardware and software tools used to integrate various operating systems in a heterogeneous environment;
- to give students practical experience of systems integration activities.

Learning Objectives

Students will be able to:

- identify and describe the resource management techniques used in modern operating systems;
- evaluate and select the appropriate operating system for some specific applications;
- demonstrate the use of techniques in system integration;
- select and use the appropriate software and hardware tools for system integration;
- design a usable and effective operating environment for both stand-alone and networked computers.

Syllabus Keywords

computer components, memory, configuration, performance, I/O devices, secondary storage, PC systems, operating systems, process management, multitasking, scheduling, memory management, virtual memory, paging, I/O management, buffering, spooling, file management, systems integration, cross platform, remote system, performance, network, user authentication, file and printer sharing.

Textbooks/References

Stallings, W., *Computer Organisation and Architecture*, 4th edition, Prentice Hall, 1996.
Cook, B and White, N., *Computer Peripherals*, Edward Arnold, 1995.
Williams, G. R., *Windows NT & UNIX: Administration, Coexistence, Integration and Migration*, Addison Wesley, 1998.

Key Content Area

	lecture	tut/lab
1. Operating system structures	2	2
(a) Monolithic Systems		
(b) Layered Systems		
(c) Virtual Machines		
(d) Characteristics of modern operating systems		
2. Multiprogramming operating systems	8	13
(a) Process management		
(b) Memory management		
(c) Input/Output management		
(d) File management		
3. Computer System Components	5	10
(a) General Issues to be addressed for each component		
(b) Specific components and issues:		
• Video displays		
• Sound and voice		
• Hard copy input and output		
• Secondary storage		
4. Systems Integration	8	20
(a) Planning and implementation issues		
(b) Cross platform technologies for software application use		
(c) Remote system management tools		
(d) Performance issues		
5. Network Integration	7	15
(a) Configuring and using network applications		
(b) User Authentication		
(c) File and printer sharing		
(d) Internet application integration		
total:	30	60

Prerequisites/Corequisites

None/none

Exemption Criteria:

None

Teaching & Learning Strategies

General strategies on teaching and learning should be referred to Section I.