O Level Computer Studies 7010
Unit 9: Operating Systems

Recommended Prior Knowledge
In order to understand the role of an operating system, students should have had practical experience of using at least one operating system.

Context
The facilities of operating systems are introduced here, followed by an appreciation of the diversity of the range of operating systems.

Outline
The aim of this section is to examine the concepts of operating systems.

AO	Learning outcomes	Suggested Teaching activities	Learning resources
5.2	Operating system facilities	• Introduce the idea of system software as different from applications software • Introduce the general tasks of an operating system (refer to comments below to enhance op system tasks) • Role of the operating system in file management • Discuss the fact that microprocessors in devices such as refrigerators, microwave ovens, etc. don't require an operating system since they only carry out simple, pre-determined instructions. (Also refer to comments in the following sections)	http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module6/task1.htm introduction to operating systems http://www.ictgcse.com/sub_projects/ictgcse_th_operatingSystems.htm another introduction to operating systems http://www.teach-ict.com/gcse/software/opsystems/gcse_sw_opsyst.htm teaching resources including websites an quizzes L+W 14.1 and 14.2
	The nature of batch, online, multi-access, real-time transaction processing, multitasking, network and process-control operating systems;	Introduce the different types of processing system taking care to ensure that students understand the differences between them. Take special care with the difference between real-time transaction processing and real-time process control. [1]	http://www.ewart.org.uk/it/op_sys/os_types.htm description of batch operating system and some short questions http://www.theteacher99.btinternet.co.uk/theteacher/gcs

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[1] A real-time transaction processing system is an online system in which individual, discrete transactions are processed as they occur; an airline booking system and an online stock control system are typical examples. This use of the term real time differs from its use in a real-time process-control system, in which physical quantities are continuously monitored and processed sufficiently rapidly to be capable of influencing the sources of data.

AO	Learning outcomes	Suggested Teaching activities	Learning resources
			e/newgcse/module6/task6.htm real-time process control
			http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module6/task7.htm real-time transaction processing
			http://www.ictgcse.com/sub_projects/ictgcse_th_NetOperatingSystems.htm network operating systems
			L+W 14.3
	The form of interface between the operating system and the user; use of command line and use of graphical user interfaces;	Graphical interfaces have been used in unit 6, review this and introduce the idea of a command line interface. Discuss the main differences between command line interfaces and graphical user interfaces (as found in a Windows environment). Point out the advantages and disadvantages of both types of user interface.	http://www.psionica.co.uk/gcseict/operate.htm introduction to operating systems including the type of interface http://www.theteacher99.btinternet.co.uk/theteacher/gcse/newgcse/module6/task11.htm more about types of interface L+W 14.4
	Management of files; file directories;	Practical use of file directories including sub-directories, copying, moving, listing and printing file utilities	L+W 14.5
	Peripheral device control; use of buffers; interrupts and interrupt priorities; polling; handshaking; check sums	Introduce two methods of peripheral control using interrupts or polling. Introduce the idea of using buffers and handshaking during transfer of data to and from peripherals.	http://www.atarimagazines.com/compute/issue149/60_Interrupts_made_easy.php article on interrupts and polling (probably more useful for the teacher) L+W 14.6 L+W 14.6 extension work