



MODULE SPECIFICATION

Part 1: Information			
Module Title	Operating Systems		
Module Code	UFCFWK-15-2	Level	Level 5
For implementation from	2018-19		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Contributes towards			
Module type:	Standard		
Pre-requisites	Computer and Network Systems 2018-19, Programming in C 2018-19, Programming in C++ 2018-19		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>Educational Aims: See Learning Outcomes.</p> <p>Outline Syllabus: The syllabus includes:</p> <p>Operating System Organization models and structures</p> <p>History and implications of using Open Source code in operating systems. Licensing issues and their legal implications.</p> <p>Process and Object Management kernel services, interrupt handlers, scheduling. Inter-process Communication event handling, message passing, synchronous/asynchronous, shared memory.</p> <p>Concurrency and Synchronization semaphores, critical regions, monitors, message passing, multi-threaded processes.</p> <p>Memory Management Organization algorithms and policies, Virtual Memory Management.</p>

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Security Models for secure computing, access control, capability based systems, access control lists.

Virtualization. History of VMs. Variety of virtualization – full, partial, para. Emulators, simulators and virtualization. VM in languages – Java VM.

I/O Management Device driver design, Buffering and interrupt handling. File and Persistent Object Management File organization, directories and naming, index nodes, disk block management.

Network and distributed file systems Protection and Security Models for secure computing, access control, capability based systems, access control lists.

Embedded and mobile OS. Background to embedded and mobile os. Hardware and software requirements for embedded/mobile. Embedded/mobile OS.

Teaching and Learning Methods: Laboratory exercises will allow the student to gain familiarisation with the tools and techniques required for the implementation and verification of operating systems.

Students will be expected to demonstrate self-direction and originality in their learning which will be facilitated through student directed tutorials.

Scheduled learning: in the form of tutorials, demonstrations and practical classes will comprise 1/3 of the total study time for this module.

Independent learning: will constitute the remaining study time with an expectation that approximately 46 hours will be spent on self-directed study, a further 40 hours in support of the coursework and 16 hours preparation for the presentation.

Contact Hours:

Activity:

Contact: 48 hours

Assimilation and skill development: 42 hours

Undertaking coursework: 40 hours

Exam preparation: 20 hours

Total: 150 hours

Part 3: Assessment

Summative assessment is achieved through the demonstration of an innovative solution to a design problem along with submission of a logbook.

Formative assessment will be provided as oral feedback throughout the laboratory sessions particularly with respect to the design development and the log-book entries.

Final summative assessment, for more theoretical aspects of material, will be by exam.

First Sit Components	Final Assessment	Element weighting	Description
Presentation - Component B		50 %	Logbook and demonstration of final product
Examination - Component A	✓	50 %	Exam (120 minutes)

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Resit Components	Final Assessment	Element weighting	Description
Presentation - Component B		50 %	Logbook and demonstration of final product
Examination - Component A	✓	50 %	Exam (120 minutes)

Part 4: Teaching and Learning Methods																					
Learning Outcomes	On successful completion of this module students will be able to:																				
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Reading List	<p>The reading list for this module can be accessed via the following link:</p> <p>https://uwe.rl.talis.com/modules/ufcfwk-15-2.html</p>																				