DEREE COLLEGE SYLLABUS FOR:

ITC 2193 OPERATING SYSTEMS CONCEPTS   **3/0/3**
(Updated Fall 2021)   **UK LEVEL: 4**
                                                     UK CREDITS: 15

PREREQUISITES:	ITC1070 Information Technology Fundamentals
COREQUISITES:	None.
CATALOG DESCRIPTION:	Operating system structures; functions and techniques; Performance; avoidance of deadlock and security issues. Management of Operating System resources and processes.
RATIONALE:	The course provides a clear understanding of the fundamental concepts underlying an operating system and relates these to its function, design and evolution. It describes different operating system structural components and demonstrates how they interact to provide a range of user services and resource management.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Demonstrate understanding of major operating system components and designs, as well as computing environments. 2. Utilize an operating system to perform computer management tasks and functions. 3. Explain the main principles, techniques and components used for process management tasks.. 4. Identify security risks in operating systems and the role of operating systems in establishing security.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: • Classroom lectures, discussions, laboratory practical sessions. • Office hours: Students are encouraged to make full use of the office hours of their instructor, where they can ask questions and go over lecture material. • Use of the Blackboard Learning platform, where instructors post lecture notes, assignment instructions, timely announcements, as well as additional resources.
ASSESSMENT:	**Summative:**

1st assessment: Coursework case problems	**30%**
2nd assessment: Portfolio of student work and oral assessment	**10%**
Final assessment: Final Exam combination of short essay questions and case problems	**60%**

Formative:

In-class and take-home short essay questions and case problems.	**0%**

The formative assessments aim to prepare students for the summative assessments and expose them to teamwork.
The 1st summative assessment tests the LOs 1, 2.

	The 2nd summative assessment tests the LOs 1-4. The final summative assessment tests the LOs 1-4. *The final grade for this module will be determined by averaging all summative assessment grades, based on predetermined weights for each assessment. If students pass the **final summative assessment,** which tests all Learning Outcomes for this module, and the average grade for the module is 40 or above, students are not required to resit any failed assessments.*
INDICATIVE READING:	**REQUIRED READING:** 1. Silberschatz A., Galvin P., Gagne G. (2014). *Operating System Concepts,* (9th edition), Wiley 2. Instructor's notes. **RECOMMENDED READING:** 1. Doeppner T. W. (2010). Operating Systems In Depth: Design and Programming, (1st ed.), Wiley 2. Elmasri R. (2010). Operating Systems: A Spiral Approach, (1st ed.), McGraw-Hill 3. McHoes A. et al. (2010). Understanding Operating Systems, 6th ed., Course Technology. 4. Stallings W. (2008). Operating Systems: Internals and Design Principles, (6th ed.), Prentice Hall. 5. Stuart B. (2008). Principles of Operating Systems: Design and Applications, 1st ed., Course Technology. 6. Tanenbaum A. S. (2007). Modern Operating Systems, 3rd ed., Prentice Hall.
INDICATIVE MATERIAL: *(e.g. audiovisual, digital material, etc.)*	**REQUIRED MATERIAL:** N/A **RECOMMENDED MATERIAL:** N/A
COMMUNICATION REQUIREMENTS:	Daily access to the course's site on the College's Blackboard CMS. Effective communication using proper written and oral English.
SOFTWARE REQUIREMENTS:	A POSIX-UNIX or Linux Server and MS-Windows. Java 1.5 JVM, GNU C.
WWW RESOURCES:	• OS white papers • https://www.bitpipe.com/tlist/Operating-Systems.html • http://www.unix.org/whitepapers/ • Linux (http://www.linux.org/info/) • Windows 10 http://www.microsoft.com/en-us/windows/features • Mac OS X (http://www.apple.com/osx/)
INDICATIVE CONTENT:	1. Operating Systems basics 2. Operating Systems Structures 3. Desktop, Mobile, Server Operating Systems & Computing Environments 4. File System Interface 5. File System Implementation 6. Mass-storage Organization 7. Process Management 8. Thread Management 9. Process Scheduling 10. Memory Management 11. Virtual Memory

	12. Device Management 13. Protection 14. Security