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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for IT 327 OPERATING SYSTEMS** |

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| **Course Name:** | OPERATING SYSTEMS |
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| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 327 | 2 | 7 | 3 | - | 3 |  |

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| **Name of Lecturer(s)-Academic Title:** | Alaa Ghazi - |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | 9 AM to 5 PM  |
| **Contact:** | Email:alaa.ghazi@ishik.edu.iq Tel:Tel  |
| **Teacher's academic profile:** | M. Sc. in Computer Engineering B. Sc. in Electronic and Communications Engineering  |
| **Course Objectives:** | The main objectives of this course are: • Learn the basic functionality & operations performed by an Operating System. • Study the major components of an Operating System and the concept behind processes and scheduling. • Study multiprogramming, multi-threading and the role of multi-processor systems. • Study memory management techniques including paging & virtual memory. |
| **Course Description (Course overview):** | The Operating Systems (OS) course is considered as one of the essential undergraduate subjects for any computer science related study. This course considers information technology students and offers the basic foundations of OS concepts and functionality without going deep into advanced OS subjects. The OS provides an established, convenient, and efficient interface between user programs and the bare hardware of the computer on which they run. The OS subject became more important lately the majority of modern devices including mobile phones, tablets, smart TVs, cars, etc. and other types of gadgets are equipped with software that is basically an OS. This course replaced the former IT 331 (Operating Systems I) and have some changes in terms of contents and order of content delivery. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 3 | 8-12/10/2017 | Introduce subject’s syllabus |
| **2** | 3 | 15-19/10/2017 | Introduction to OS |
|  |  |  |  |
| **3** | 3 | 22-26/10/2017 | OS Structures |
| **4** | 3 | 29/10-2/11/2017 | Processes & Threads |
|  |  |  |  |
| **5** | 3 | 5-9/11/2017 | Process Synchronization |
| **6** | 3 | 12-16/11/2017 | CPU Scheduling and Deadlocks |
|  |  |  |  |
| **7** | 3 | 19-23/11/2017 | Midterm Exam |
| **8** | 3 | 26-30/11/2017 | Main Memory |
|  |  |  |  |
| **9** | 3 | 3-7/12/2017 | Virtual Memory |
| **10** | 3 | 10-14/12/2017 | Mass-Storage Systems |
|  |  |  |  |
| **11** | 3 | 17-21/12/2017 | File-System Interface |
| **12** | 3 | 24-28/12/2017 | ? |
|  |  |  |  |
| **13** | 3 | 31/12/2017-4/1/2018 | I/O Systems |
| **14** | 3 | 7-11/1/2018 | Review |
|  |  |  |  |
| **15** | 3 | 14-18/1/2018 | Final Exam |
| **16** | 3 | 21-25/1/2018 | Final Exam |
|  |  |  |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

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| --- | --- |
|  |  |
| **1** | Understand the basic functionality & operations performed by an Operating System. |
| **2** | Understand the idea of multiprogramming and the role of multi-processor systems. |
| **3** | Have an idea about memory management and the role of OS. |
| **4** | To be able to analyze and evaluate root cause of System abnormal activity |
| **5** | System crash troubleshooting |

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| **COURSE'S CONTRIBUTION TO PROGRAM OUTCOMES**(Blank : no contribution, I: Introduction, P: Profecient, A: Advanced )

|  |  |  |
| --- | --- | --- |
|  | **Program Learning Outcomes** | **Cont.** |
| **1** | An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution | I |
| **2** | An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs |  |
| **3** | An ability to function effectively on teams to accomplish a common goal |  |
| **4** | An understanding of professional, ethical, legal, security, social, and economic issues and responsibilities | I |
| **5** | An ability to analyze the local and global impact of computing on individuals, organizations, and society | I |
| **6** | An ability to use current techniques, skills, and tools necessary for computing practice |  |
| **7** | An ability to use and apply current technical concepts and practices in the core information technologies of human computer interaction, information management, programming, networking, web systems and technologies |  |
| **8** | An ability to identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems | I |
| **9** | An ability to effectively integrate IT-based solutions into the user environment |  |
| **10** | An ability apply problem solving skills, core IT concepts, best practices and standards to information technologies | A |
| **11** | An ability to identify and evaluate organizational requirements and current and emerging technologies | A |
| **12** | An ability to select, design, integrate and administer IT-based solutions into the organizational environment | A |

 |
| **Prerequisites (Course Reading List and References):** | None |
| **Student's obligation (Special Requirements):** | Attendance, taking quizzes & exams, participation |
| **Course Book/Textbook:** | Operating System Concepts (9th Edition) Abraham Silberschatz (Yale University), Peter B. Galvin (Pluribus Networks), Greg Gagne (Westminster College), Wiley 2012. |
| **Other Course Materials/References:** | None |
| **Teaching Methods (Forms of Teaching):** | Lectures, Excersises, Presentation, Assignments, Demonstration |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Attendance |  |  |
| Participation | 1 | 10 |
| Quiz | 1 | 10 |
| Homework | 1 | 10 |
| Midterm Exam(s) | 1 | 30 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, True-False, Fill in the Blanks, Multiple Choices, Short Answers |  |  |

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| **Extra Notes:** |
| **ECTS (ALLOCATED BASED ON STUDENT) WORKLOAD**

|  |  |  |  |
| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) |  |  | 0 |
| Hours for off-the-classroom study (Pre-study, practice) |  |  | 0 |
| Assignments Mid-terms |  |  | 0 |
| Final examination |  |  | 0 |
| Other |  |  | 0 |
| **Total Workload** | **0** |
| **ECTS Credit (Total workload/25)** | **0** |

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**Peer review**

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| --- | --- | --- |
| Signature: | Signature: | Signature: |
| Name: | Name: | Name: |
| Lecturer                                                                       | Head of Department                                                         | Dean |

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