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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for IT 451 OPEN SOURCE OPERATING SYSTEMS (LINUX)** |

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| --- | --- |
| **Course Name:** | OPEN SOURCE OPERATING SYSTEMS (LINUX) |
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| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 451 | 2 | 7 | 2 | 2 | 3 |  |

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| **Name of Lecturer(s)-Academic Title:** | Polla Fattah - |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | 09am-12pm Sunday, 09am-01pm Tuesday  |
| **Contact:** | Email:pollaeng@gmail.com Tel:00000000000  |
| **Teacher's academic profile:** | Data mining, Machine Learning, Statistics, Software Engineering, Computer Programming BSc Degree in Software Engineering. MSc Degree Information Technology. PhD research on classification of individual’s behavior in time series data  |
| **Course Objectives:** | Effectively use a variety of tools for Linux application development. To give practical experience in using Linux system calls and library routines. Maintaining administrative tasks using bash scripts |
| **Course Description (Course overview):** | This subject introduces students to Unix, Linux and the Internet. Students will learn the core utilities to work productively in a Linux environment. Students will do this work using the shell, at the same time learn to configure their login accounts, manipulate data stored in files, effectively use Linux commands and utilities, and write simple shell scripts. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 2 | 8-12/10/2017 | Introduction to the course, getting ready for using linux, |
| **2** | 2 | 15-19/10/2017 | Linux installation issues. Introduction to Open Source and Operating Systems, the History of UNIX and GNU–Linux |
|  |  |  |  |
| **3** | 2 | 22-26/10/2017 | Software installation, update and upgrade, Office productivity and Linux applications, installation of Libre Office, Okular (pdf), Gimp. |
| **4** | 2 | 29/10-2/11/2017 | User and Permission Management, users groups, File and directory access permissions, managing files and directories using (mkdir, cp, mv, less, cat, ls, rm) |
|  |  |  |  |
| **5** | 2 | 5-9/11/2017 | Programs and Processes, Execution of programs, Client and Server software, Properties of processes, process management |
| **6** | 2 | 12-16/11/2017 | Shell scripting, variables, loops, conditions and pipes |
|  |  |  |  |
| **7** | 2 | 19-23/11/2017 | Midterm Exam |
| **8** | 2 | 26-30/11/2017 | Secure Remote Administration Tools: ssh and scp |
|  |  |  |  |
| **9** | 2 | 3-7/12/2017 | Web development tools, installation and simple administration of Apache Tomcat and MySQL |
| **10** | 2 | 10-14/12/2017 | Partitions, LVM and RAID |
|  |  |  |  |
| **11** | 2 | 17-21/12/2017 | Useful administration tools |
| **12** | 2 | 24-28/12/2017 | ? |
|  |  |  |  |
| **13** | 2 | 31/12/2017-4/1/2018 | Basic Networking, monitoring networks |
| **14** | 2 | 7-11/1/2018 | Webmin |
|  |  |  |  |
| **15** | 2 | 14-18/1/2018 | Final Exam |
| **16** | 2 | 21-25/1/2018 | Final Exam |
|  |  |  |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

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| --- | --- |
|  |  |
| **1** | Administrate Linux operating system |
| **2** | Manage users, files and their permissions |
| **3** | Configure and mount partitions |
| **4** | Troubleshoot filesystem issues |
| **5** | Automate tasks using bask script and cron jobs |

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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 | I |
| **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 |  |
| **6** | An ability to use current techniques, skills, and tools necessary for computing practice | P |
| **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 |  |
| **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 | I |
| **11** | An ability to identify and evaluate organizational requirements and current and emerging technologies | I |
| **12** | An ability to select, design, integrate and administer IT-based solutions into the organizational environment | I |

 |
| **Prerequisites (Course Reading List and References):** | This class is designed for people who have little or no prior experience with Linux or Unix. So, the student is expected to have experience of basic computer usage. |
| **Student's obligation (Special Requirements):** | 80% attendance is required. No chewing in classes. Complete every homework on time. Subscribe to Edmodo ffxp2w and follow its announcements. |
| **Weekly Laboratory/Practice Plan:** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topics** |
| 1 | 2 | 8-12/10/2017 | Introduction to the course, getting ready for using linux, |
| 2 | 2 | 15-19/10/2017 | Linux installation issues. Introduction to Open Source and Operating Systems, the History of UNIX and GNU–Linux |
|  |  |  |  |
| 3 | 2 | 22-26/10/2017 | Software installation, update and upgrade, Office productivity and Linux applications, installation of Libre Office, Okular (pdf), Gimp. |
| 4 | 2 | 29/10-2/11/2017 | User and Permission Management, users groups, File and directory access permissions, managing files and directories using (mkdir, cp, mv, less, cat, ls, rm) |
|  |  |  |  |
| 5 | 2 | 5-9/11/2017 | Programs and Processes, Execution of programs, Client and Server software, Properties of processes, process management |
| 6 | 2 | 12-16/11/2017 | Shell scripting, variables, loops, conditions and pipes + Quiz 20 Minutes |
|  |  |  |  |
| 7 | 2 | 19-23/11/2017 | Midterm Exam |
| 8 | 2 | 26-30/11/2017 | Secure Remote Administration Tools: ssh and scp |
|  |  |  |  |
| 9 | 2 | 3-7/12/2017 | Web development tools, installation and simple administration of Apache Tomcat and MySQL |
| 10 | 2 | 10-14/12/2017 | Partitions, LVM and RAID |
|  |  |  |  |
| 11 | 2 | 17-21/12/2017 | Useful administration tools |
| 12 | 2 | 24-28/12/2017 | Linux system recovery + Quiz 20 Minutes |
|  |  |  |  |
| 13 | 2 | 31/12/2017-4/1/2018 | Basic Networking, monitoring networks |
| 14 | 2 | 7-11/1/2018 | Webmin |
|  |  |  |  |
| 15 | 2 | 14-18/1/2018 | Final Exam |
| 16 | 2 | 21-25/1/2018 | Final Exam |
|  |  |  |  |

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| **Course Book/Textbook:** | Linux Essentials (2nd Ed.), Christine Bresnahan and Richard Blum,2014. |
| **Other Course Materials/References:** | Ubuntu Unleashed 2014 Edition, Matthew Helmke, Andrew & Paul Hudson, Pearson, 2014 |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Case Studies |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Attendance | 1 | 10 |
| Quiz | 2 | 5 |
| Homework | 1 | 10 |
| Midterm Exam(s) | 1 | 20 |
| Lab/Practical Exam(s) | 1 | 10 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Fill in the Blanks, Multiple Choices, Short Answers, Matching |  |  |

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

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| --- | --- | --- | --- |
| **Activities** | **Quantity** | **Duration (Hour)** | **Total Work Load** |
| Course Duration (Including the exam week: 16x Total course hours) | 16 | 4 | 64 |
| Hours for off-the-classroom study (Pre-study, practice) | 16 | 3 | 48 |
| Assignments Mid-terms | 1 | 4 | 4 |
| Final examination | 1 | 8 | 8 |
| Other | 16 | 2 | 32 |
| **Total Workload** | **156** |
| **ECTS Credit (Total workload/25)** | **6.24** |

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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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