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| **ISHIK UNIVERSITY FACULTY OF SCIENCE Department of INFORMATION TECHNOLOGY,2017-2018 Spring Course Information for** **IT 423 INFORMATION SECURITY** |

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| --- | --- |
| **Course Name:** | INFORMATION SECURITY |
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| --- | --- | --- | --- | --- | --- | --- |
| **Code** | **Course type** | **Regular Semester** | **Theoretical** | **Practical** | **Credits** | **ECTS** |
| IT 423 | 2 | 7 | 3 | - | 3 |  |

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| **Name of Lecturer(s)-Academic Title:** | Saman Mirza Abdullah - PhD. |
| **Teaching Assistant:** | - |
| **Course Language:** | English |
| **Course Type:** | Non-area Elective |
| **Office Hours** | 10:00 pm to 12:30 pm, Thursday  |
| **Contact:** | Email:saman.mirza@ishik.edu.iq Tel:+9647504487968  |
| **Teacher's academic profile:** | Obtained Ph.D. from Computer Security on 2013 in FSKTM university of Malaya-Malaysia. He is lecturer in Software Engineering department at Koya University, and head of postgraduate and scientific unit in Faculty of Engineering.  |
| **Course Objectives:** | In today’s cyber world, it is important for engineers to understand and appreciate Computer / information security as it has becomes an essential aspects of our day life. This course provides students with concepts of computer security, cryptography, digital money, secure protocols, detection and other security techniques. Upon the completion of this course, students should be able to understand, appreciate, employ, design and implement appropriate security technologies and policies to protect computers and digital information. |
| **Course Description (Course overview):** | This course will cover many aspects of computer security including cryptography, network security, application security, and web security. Topics such as intrusion detection, packet analysis, and malware will be discussed. We will also delve into unorthodox topics including privacy, forensics and anti-forensics, legal issues, and security in emerging technologies. |
| **COURSE CONTENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Hour** |               **Date**               | **Topic** |
| **1** | 3 | 4-8/2/2018 | An Overview to security and computer security |
| **2** | 3 | 11-15/2/2018 | Security Technology / Encryption Tools / Symmetric |
|  |  |  |  |
| **3** | 3 | 18-22/2/2018 | Security Technology / Encryption Tools / Public Key and Authentication |
| **4** | 3 | 25/2-1/3/2018 | Security Technology / Encryption Tools / Hash Function |
|  |  |  |  |
| **5** | 3 | 4-8/3/2018 | Security Technology / Encryption Tools / Access Control |
| **6** | 3 | 25-29/3/2018 | Security Technology / Encryption Tools / Database Security |
|  |  |  |  |
| **7** | 3 | 1-5/4/2018 | Midterm Exam |
| **8** | 3 | 8-12/4/2018 | Malicious Software |
|  |  |  |  |
| **9** | 3 | 15-19/4/2018 | Denial - of - service - attacks |
| **10** | 3 | 22-26/4/2018 | Intrusion detection System (IDS) |
|  |  |  |  |
| **11** | 3 | 29/4-3/5/2018 | Firewall and Intrusion Prevention Systems (IPS) |
| **12** | 3 | 6-10/5/2018 | Internet Protocol Security |
|  |  |  |  |
| **13** | 3 | 13-17/5/2018 | Wireless Security |
| **14** | 3 | 20-24/5/2018 | Review |
|  |  |  |  |
| **15** | 3 | 27-31/5/2015 | Final Exam |
| **16** | 3 | 3-7/6/2018 | Final Exam |
|  |  |  |  |
| **17** | 3 | 10-14/6/2018 |  |

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| **COURSE/STUDENT LEARNING OUTCOMES**

|  |  |
| --- | --- |
|  |  |
| **1** | An ability to understand fundamental notions of threat, vulnerability, attack and countermeasure, be able to identify the security goals of an information system, and point out contradictory goals and suggest compromises. |
| **2** | An ability to understand theoretical principles of the cryptography and cryptanalysis and have a technical understanding of the main cryptographic concepts and technologies available today, including symmetric and asymmetric encryption, hashing, and digital signatures |
| **3** | An ability to understand the purpose of security protocols in the networking environments |
| **4** | An ability to understand the malicious code functionalities, and identify systems’ vulnerabilities. |
| **5** | An ability to explain different authentication and access control mechanisms. |

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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 | P |
| **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 | I |
| **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 |  |
| **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 |  |
| **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 | P |

 |
| **Prerequisites (Course Reading List and References):** | Some skills on computer networks preferred |
| **Student's obligation (Special Requirements):** | Nothing |
| **Course Book/Textbook:** | COMPUTER SECURITY PRINCIPLES AND PRACTICE, Second Edition William Stallings and Lawrie Brown University of New South Wales, Australian Defence Force Academy |
| **Other Course Materials/References:** | Any other books that related to information / computer security |
| **Teaching Methods (Forms of Teaching):** | Lectures, Practical Sessions, Presentation, Project, Assignments |
| **COURSE EVALUATION CRITERIA**

|  |  |  |
| --- | --- | --- |
| **Method** | **Quantity** | **Percentage (%)** |
| Attendance | 1 | 5 |
| Quiz | 1 | 10 |
| Project | 1 | 10 |
| Midterm Exam(s) | 1 | 25 |
| Lab/Practical Exam(s) | 1 | 10 |
| Final Exam | 1 | 40 |
| **Total** | **100** |
| **Examinations:**Essay Questions, 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**

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

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