# Templates NO (10)

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| **University** | Helwan |
| **Faculty** | Computers and Artificial Intelligence |
| **Department** | Software Engineering |

#### **Course Specifications**

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| **1- Course Data** | | |
| **Code: IS 414** | **Course Name:** **Security Information System** | **Level: Three** |
| **Specialization:**  Software Engineering | **No of Learning Units:**  Lecture (2) Practical () Tutorial (1)  **Prerequisites**: |  |

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| **2- Course Objective:** | Providing students with skills that provide security protection for the components of computer systems (hardware, software, data and people in this field) from various types of attacks on computer systems. |
| **3- Intended Learning Outcomes (ILOs)** | |
| 1. **Knowledge and Understanding:** | A1 Define business needs for information security.  A2 Define risks identification, and assessment.  A3 Recognize the different algorithms of Symmetric ciphers.  A4 Define how cryptanalysis work for different encryption algorithms  A5 Explain the basics of Asymmetric ciphers. |
| 1. **Intellectual Skills:** | **B1** Categorize threats posed to information security.  **B2** Describe the importance of encryption algorithms in securing data.  **B3** Categorize the cryptography algorithms used to secure information. |
| 1. **Professional and Practical Skills:** | **C1** Demonstrate the various risk mitigation strategy options  **C2** Show how to encrypt and decrypt text message with many encryption techniques  **C3** Apply different encryption algorithms using programming language |
| 1. **General and Transferable Skills:** | **D1** Apply knowledge for continual self learning  **D2** Develop the requirement for lifelong learning. |
| **4- Course Content:** | **Week 1 :** Computer security concepts  **Week 2:** Security attacks  **Week 3:** Model for network security  **Week 4 :** Symmetric cipher models  **Week 5:** Substitution techniques  **Week 6:** Transposition techniques  **Week 7: Quiz, Midterm**  **Week 8:** Traditional block cipher structure  **Week 9:** The data encryption standard  **Week 10:** Data encryption standard example  **Week 11:** Advanced encryption standard  **Week 12:** Principals of public key cryptosystems  **Week 13:** The RSA algorithm  **Week 14: Revision**  **Week 15: Final Exam.** |
| **5- Learning and Teaching Methods:** | Lectures  Case Study  Presentations |
| **6- Learning and Teaching Methods for students with limited skills:** | Academic advising |
| **7- Students Evaluation:** | |
| 1. **Used Methods** | - Semester work  - Final written Exam |
| 1. **Schedule** | * Assessment 1: Throughout the semester * Assessment 2: End of Semester (according to faculty’s exams schedule) |
| 1. **Grades Distribution** | * Final written exam: 60 marks * Semester Work: 40 marks (20 for midterm exam+ 20 for quizzes and assignments * **Total**:100 marks |
| **List of Books and References:** | |
| 1. **Notes:** | * **course notes** |
| 1. **Mandatory Books:** | * Cryptography and network security, 6th edition |
| 1. **Suggested Books:** |  |
| 1. **Periodicals & Websites** |  |

**Course Professor: Dr. Ibrahim El desoky**

**Course Coordinator:**

**Chairman of the Scientific Department: Assoc.Prof. Amany Abdo**