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| **Identification** | | Title | Computer Security | |
| Department | Computer Science & Engineering | |
| Program | M.Sc. - 3 credits | |
| Semester | Fall 2017 | |
| Instructor | Seyed Amir Hossein Siahpooshha (PhD) | |
| E-mail: | [siahpooshha@gmail.com](mailto:siahpooshha@gmail.com) | |
| Classroom/hours | Neftchilar Campus, room# | |
| Pre-requisites | B.Sc. Computer Science & Engineering | |
| Language | English (intermediate level) | |
| Type | Major (Compulsory) | |
| **Course Resources** | | 1. Security in Computing, by Charles P. Pfleeger and Shari Lawrence Pfleeger  2. Network Security, by Kaufman, Perlman, and Speciner  3. Class notes | | |
| **Course Objective** | | This course looks at management issues and practical implications related to securing information systems. This course focuses on the Threat Environment, security Policy and Planning, Cryptography, Secure Networks, Access Control, Firewalls, Host Hardening, Application Security, Data Protection, Incident Response, and Networking and Review of TCP/IP. A clear theoretical understanding supports a large practical component where  students learn to audit information systems and use contemporary. | | |
| **Evaluation** | | Midterm Exam | | 40% |
| Final Exam | | 60% |
| **Weekly Lectures** | | | | |
| 1 | Introduction   * Is There a Security Problem in Computing? * Ethics | | | |
| 2 | Security Planning  Risk Analysis | | | |
| 3 | Software security: Issues   * Secure Programs * Non-malicious Program Errors | | | |
| 4 | Software security: Attacks | | | |
| 5 | Software security: Defenses and Design Principles | | | |
| 6 | Introduction to Cryptography  Modes of Operation | | | |
| 7 | Crypto: Symmetric Foundations | | | |
| 8 | Crypto: Asymmetric Foundations | | | |
| 9 | Midterm Exam | | | |
| 10 | User authentication | | | |
| 11 | * Password Managers (Conventional Passwords and Graphical Passwords) | | | |
| 12 | * Biometrics * Authentication schemes | | | |
| 13 | Network security and privacy   * Network Concepts | | | |
| 14 | * Denial of Service and Distributed Denial of Service * Firewalls | | | |
| 15 | Web security and privacy | | | |
| 16 | Final Exam - | | | |