COURSE: Information Security				
CODE: CENG477	**SEMESTER:** FALL OR SPRING			
LANGUAGE: ENGLISH	**TYPE:** CORE			
PRE-REQUISITES: - **CO-REQUISITES:**	**THEORY**	**PRACTICAL**	**CREDIT**	**ECTS**
WEEKLY HOURS:	3	0	3	5

CONTENT OF THE COURSE:

This course provides solid background in cryptography and data integrity. Besides, it introduces security properties, models, and threats. In addition, it gives an overview of some cryptographic protocols. Basic principles of risk management and security policy are also covered. Cisco security lab sessions will be done for selected topics.

OBJECTIVE OF THE COURSE:

To enable the students to
1. acquire knowledge and skills necessary in system and information security.
2. know the basic needs to secure computer system and networks.

WEEKLY SCHEDULE	
Week	**Topics**
1	Basics of Information Security and Human aspects (Confidentiality, Integrity, Availability)
2	Basic encryption and decryption
3	Secure encryption system part 1
4	Secure encryption system part 2
5	Protocols and practices in using encryption
6	Virus and malicious code
7	Data Integrity and Digital Signature
8	Operating system and database security
9	**Mid Examination Week**
10	Security in networks and distributed systems
11	Security Risk management as an Organization
12	Administering security
13	Legal and ethical issues in computer security
14	Preparation for the Final Exam: Repeating the chapters. Solving exercises

TEXTBOOK:

Pfleeger, C.P., & Pfleeger, S. L. (2007). *Security In Computing* (4th ed.). New Jersey: Prentice Hall.

REFERENCE BOOKS:

Stallings, W. (2006). *Cryptography & Network Security: Principles and Practices* (4th ed.).

New Jersey: Pearson.
Stallings, W. (2007). *Network Security Essentials* (3rd ed.).New Jersey: Pearson.

EVALUATION SYSTEM:

IN-TERM STUDIES	QUANTITY	PERCENTAGE (%)
Midterm Exam	1	20%
Homework	3	30%
Laboratory works	-	-
Quiz	2	10%
Final Exam	1	40%
TOTAL	**9**	**100%**
CONTRIBUTION OF INTERM STUDIES TO OVERALL GRADE	8	60%
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE	1	40%
TOTAL	**9**	**100%**

COURSE CATEGORY:	PERCENTAGE (%)
Mathematics and Basic Sciences	40%
Engineering	50%
Engineering Design	10%
Social Sciences	10%

TABLE OF ECTS / WORKLOAD:

Activities	QUANTITY	Duration (Hour)	Total Workload
Course Duration	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	6	84
Laboratory works	-	-	
Mid-term	1	2	2
Final examination	1	2	2
Homework	3	3	9
Quiz	2	0.5	1
Total Work Load			**137**
Total Work Load / 30			**4,57**
ECTS Credit of the Course			**5**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	1	1	2	2	1	0	0	1	2	1	2
LO2	2	3	2	3	2	1	0	1	1	1	2
LO3	3	3	2	2	2	1	0	1	1	1	1
LO4	2	2	2	3	2	1	0	1	2	1	2
LO5	3	3	2	2	2	1	0	1	1	1	1
	PO: Program Outcomes | LO: Learning Outcomes Values: 0: None | 1: Low | 2: Medium | 3: High										

INSTRUCTOR(S):	Asst. Prof. Dr. Mohammed Madi
FORM PREPARATION DATE:	22/05/2019

LEARNING OUTCOMES OF THE COURSE:	PROGRAM OUTCOMES:
LEARNING OUTCOMES OF THE COURSE: **LO1: Describe goals and threats in information security.** **LO2: Analyze basic cryptography and modern cryptography.** **LO3: Explain the implications and controlling malicious code.** **LO4: Apply security measures to solve real world problems.** **LO5: Explain the threats and control for network environment.**	**PO1:** Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems. **PO2:** Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose. **PO3:** Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose. **PO4:** Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in engineering practice; ability to employ information technologies effectively. **PO5:** Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex engineering problems or discipline specific research questions. **PO6:** Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually. **PO7:** Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language; ability to write effective reports and comprehend written reports, prepare design and production reports, make effective presentations, and give and receive clear and intelligible instructions. **PO8:** Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself. **PO9:** Consciousness to behave according to ethical principles and professional and ethical responsibility; knowledge on standards used in engineering practice. **PO10:** Knowledge about business life practices such as project management, risk management, and change management; awareness in entrepreneurship, innovation; knowledge about sustainable development. **PO11:** Knowledge about the global and social effects of engineering practices on health, environment, and safety, and contemporary issues of the century reflected into the field of engineering; awareness of the legal consequences of engineering solutions.