COURSE PROFILE

Course Name	Code	Semester	Term	Theory+PS+Lab (hour/week)	Local Credits	ECTS
Information Security	IT307	Fall	5	3 + 0 + 0	3	7

Prerequisites	None

Course Language	English
Course Type	Required
Course Lecturer	Assist. Prof. Dr. Cüneyt Sevgi
Course Assistant	Kerem Ok
Course Objectives	This course aims to give IT people the awareness for security needs of information in organizations, tools to enhance security.
Course Learning Outcomes	Upon successful completion of the course, students will: • Have knowledge about definition of security and security related requirements and risks of organizations as well as individuals and countries • Have knowledge on the tools and methods for securing the system up to a satisfactory level • Be able to prepare security policies for organizations
Course Content	This course starts with basic discussion on the Computer & Network Security terminology. IT307 also covers the history of cryptography, the theory and practice of computer security, focusing in particular on the security aspects of the computing systems. It surveys classical cryptography and cryptographic tools used to provide security, such as shared key encryption (DES, 3DES, AES, RC4 etc.); cipher block modes of operation, cryptographic hash functions, public key encryption, key exchange, and digital signature (Diffie-Hellmann, RSA, DSS, etc.) Besides, it then briefly reviews how these tools are utilized in Public Key Infrastructure (PKI) and in the Internet protocols and applications such as PGP, SSL, TLS, and others. In the course, well-known security models and practical security evaluation techniques are also presented.

COURSE CONTENT

Week	Subjects	Related
1	Foundations of Computer Security	
2	Foundations of Computer Security	
3	The history of cryptography	
4	The history of cryptography	
5	Classical Cryptography	
6	Classical Cryptography	
7	Shared key encryption	
8	Shared key encryption	
9	Principles of Public-Key Cryptography	
10	Principles of Public-Key Cryptography	
11	Access Control Schemes	
12	Security Models	
13	Security Evaluation	
14	Network Security	

Course Textbook	Information Security Principles and Practice, 2nd Edition, Mark Stamp, John Wiley & Sons, 2011 Cryptography and Network Security: Principles and Practice, 5th Edition William Stallings
Recommended References	Computer Security, 3rd Edition, Dieter Gollmann Şifrelerin Matematiği: Kriptografi, Canan Çimen, Ersan Akyıldız, Sedat Akleylek, ODTÜ Geliştirme Vakfı Yayıncılık / Bilim ve Toplum Dizisi

Semester Requirements	Number	Percentage of Grade
Attendance/Participation		
Laboratory		
Application		
Special Course Internship (Work Placement)		
Quizzes/Studio Critics		10
Homework Assignments		7,5
Presentation		
Project	1	10
Seminar/Workshop		
Midterms/Oral Exams	1	32,5
Final/Resit Exam	1	40
Total		100

PERCENTAGE OF SEMESTER WORK		60
PERCENTAGE OF FINAL WORK		40
Total		100

Course Category	Core Courses	X
	Major Area Courses	
	Supportive Courses	
	Media and Management Skills Courses	
	Transferable Skill Courses	

COURSE'S CONTRIBUTION TO PROGRAM

#	Program Qualifications / Outcomes	* Level of Contribution				
		1	2	3	4	5
1	A foundation in mathematics and basic sciences and ability to apply acquired knowledge as they relate to the study and practice of information technology					X
2	An ability to analyze a problem, identify and define the computing requirements appropriate to its solution, to understand, select and use appropriate technology, tools, standards, protocols, building blocks, and components to solve the problem			X		
3	An ability to propose, analyze, design, develop, test and maintain an information technology system including software solutions, security model, computer and network infrastructure, information systems etc. to solve information technology problems	X				
4	An ability to analyze local and global impact of computing on individuals, organizations and society; and the ability to apply information technology techniques, skills, and tools for regular computing practices as well as to improve effectiveness of current methodologies			X		
5	An ability to effectively communicate in oral and written media with all kinds of related audiences; and prepare documentation for this purpose as required		X			
6	An understanding of professional, ethical, legal, and social issues and responsibilities of information technology profession				X	
7	A taste and breadth of knowledge across several social topics outside the immediate requirements of the information technology profession, and the ability to work within heterogeneous teams to accomplish a common goal including people from the information technology area as well as other disciplines		X			
8	An ability to engage in life-long learning and professional development for personal improvement to follow contemporary information technology issues		X			

*1 Lowest, 2 Low, 3 Average, 4 High, 5 Highest

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course Hours (Including Exams)	14	3	42
Tutorials			
Laboratory			
Application			
Special Course Internship (Work			
Field Work			
Study Hours Out of Class	14	4	56
Presentations / Seminar			
Project	1	20	20
Preparatory reading	14	4	56
Homework Assignments			
Quizzes			
Midterm Exams	1	2	2
Final / Resit Exam	1	2	2
		Total Workload	178

COURSE CATEGORY

ISCED GENERAL AREA CODES	GENERAL AREAS	ISCED BASIC AREA CODES	BASIC EDUCATIONAL AREAS	
1	Education	14	Teacher Training and Educational Sciences	0
2	Humanities and Art	21	Art	0
2	Humanities and Art	22	Humanities	0
3	Social Sciences, Management and Law	31	Social and Behavioural Sciences	0
3	Social Sciences, Management and Law	32	Journalism and Informatics	0
3	Social Sciences, Management and Law	38	Law	0
4	Science	42	Life Sciences	0
4	Science	44	Natural Sciences	0
4	Science	46	Mathematics and Statistics	50
4	Science	48	Computer	50
5	Engineering, Manufacturing and Civil	52	Engineering	0
5	Engineering, Manufacturing and Civil	54	Manufacturing and Processing	0
5	Engineering, Manufacturing and Civil	58	Architecture and Structure	0
6	Agriculture	62	Agriculture, Forestry, Livestock, Fishery	0
6	Agriculture	64	Veterinary	0
7	Medicine and Welfare	72	Medical	0
7	Medicine and Welfare	76	Social Services	0
8	Service	81	Personal Services	0
8	Service	84	Transport Services	0
8	Service	85	Environment Protection	0
8	Service	86	Security Services	0