OSTIM TECHNICAL UNIVERSITY
FACULTY OF ENGINEERING
COURSE SYLLABUS FORM 2020-2021

CENG 304 Computer Networks							
Course Name	**Course Code**	**Term**	**Hour**	**Practice**	**Lab**	**Credit**	**ECTS**
Computer Networks	CENG 304	1	3	0	0	3	4

Language of the Course	English
Type of Course	Compulsory
Course Level	Undergraduate
Method of Teaching	Face-to-face, online
Instructor	
Course Learning and Teaching Techniques	Lecture, Homework, Project

Purpose of the Course

The aim of this course is to provide students with the opportunity to make detailed studies on traditional computer networks and to understand the different aspects of new generation network technologies.

Learning Outcomes

Students who successfully complete this course will;

- learn the technologies and devices used in computer networks,
- be able to apply technologies in computer networks on the devices used to create the network.
- be able to design and manage corporate network environments.
- learn new generation network technologies.
- have detailed information about Wireless Sensor Networks.
- have detailed information about Mobile Adhoc Networks.
- have detailed information about Instrumental Adhoc Networks.
- have detailed information about nanonetworks.
- be able to use communication protocols on new generation networks.
- be able to design a communication protocol on next generation networks.

Course Content

This course covers new generation network technologies such as wireless sensor networks, mobile adhoc networks, vehicle ad hoc networks, nanonets, which are the subject of computer networks. It also includes detailed topics about traditional networks. It also provides the learning of the design and installment of the network environment at corporation-level, the learning of the technologies needed for taking security measures and ensuring the usage of this technologies on the network environment. This course also aims to ensure that the technologies and methods used in new generation network technologies to be used on simulation environments. In addition, new communication methods and protocols for next generation network technologies are designed and implemented on simulation environments.

Weekly Plan and Related Preparation Studies	
Week	**Subjects**
1	Introduction to Traditional Network Concepts
2	Introduction to Corporate Network Architecture
3	Design of Corporate Network Architecture
4	Switching and Routing Protocols
5	Introduction to Enterprise Network Security
6	Corporate Network Security Design and Implementation
7	Network Security Protocols
8	Midterm
9	Wireless Sensor Networks
10	Mobile AdHoc Networks
11	Instrumental AdHoc Networks
12	NanoNetworks and In-body Communication Models
13	Project Presentations
14	Project Presentations
15	Project Presentations
16	Project Presentations

Resources (Textbook and supplementary book)
1. Advanced Computer Networks; Mayank Agarwal, Dayanand Ambawade, Deven Shah, Mahendra Mehra (Kindle Edition) 2. Next Generation Networks: Perspectives and Potentials 1st Edition, Pascal Salina

Evaluation System		
Studies	**Number**	**Contribution**
Attendence		
Lab		
Application		
Field Study		
Course Specific Internship (if applicable)		
Quizzes/Studio/Critical		
Homework		
Presentation	4	% 20
Projects	1	% 50
Report		
Seminar		
Midterm Exams/Midterm Jury	1	% 30
General Exam/Final Jury		
	Total	**% 100**
Contribution of Mid-Semester Studies to Success Grade		% 40
Contribution of End of Semester Studies to Success Grade		% 60
	Total	**% 100**

Course Category	
Basic Vocational Courses	
Specialization/Field Courses	x
Support Lessons	

Communication and Management Skills Lessons	
Transferable Skills Lessons	

Course Learning Outcomes and Program Qualifications							
No	**Program Qualifications / Outcomes**	**Contribution Level**					
		1	**2**	**3**	**4**	**5**
1	Ability to apply knowledge of mathematics, science, and engineering				x	
2	Ability to design and conduct experiments and to analyze and interpret experimental results.					
3	Ability to design a system, component, and process according to specified requirements.				x	
4	Ability to work in teams in interdisciplinary areas.				x	
5	Ability to identify, formulate and solve engineering problems.				x	
6	Identifies, defines, formulates and solves complex network problems; chooses and applies analysis and modeling methods suitable for this purpose.					x
7	Develops, selects and uses modern techniques and tools necessary for the analysis and solution of complex problems encountered in Computer and Next Generation Network applications; uses information technologies effectively.					x

ECTS/Workload Table			
Activities	**Count**	**Duration (Hours)**	**Total Workload**
Lesson hours (Including the exam week: 16 x total lesson hours)	16	3	48
Lab			
Application			
Course Specific Internship			
Field Study			
Out of Class Study Time			
Presentation/Seminar Preparation			
Projects	1	25	25
Reports			
Homeworks	4	5	20
Quizzes/Studio Critic			
Preparation Time for Midterm Exams/Midterm Jury	1	10	10
Preparation Time for the General Exam/General Jury			
Total Workload	**(AKTS 103/25 = 4,12)**		**103**