COURSE INFORMATON					
Course Title	*Code*	*Semester*	*L+P Hour*	*Credits*	*ECTS*
DATA COMM. AND COMPUTER NETWORKS	CSE 571	1,2	3 + 0	3	10

Prerequisites	

Language of Instruction	English
Course Level	Graduate Degree
Course Type	Compulsory
Course Coordinator	
Instructors	Tacha Serif
Assistants	
Goals	The aim of this course is to provide students with the latest Internet technologies knowledge and abilities to design and implement client and server side web programs using modern development environments.
Content	Data transmission basics, multiplexing, analog and digital transmission, transmission media, computer communications architecture, data communications networks, ISO OSI reference model, switching techniques, LAN protocols, data link layer, framing, flow control, error control, sliding window protocols. High speed networking, network layer services and protocols, routing, internetworking, transport services, open systems, TCP/IP protocol suite, presentation and application layers

Learning Outcomes	Program Outcomes	Teaching Methods	Assessment Methods
1. Basic knowledge of networking components; ability to identify and compare modern networking structures based on their speed, medium type and topology	1,6	1,2	A,C,D
2. Ability to identify and decribe urban area access network topologies (PPP, dial-up, xDSL, Cable). Also understanding of protocols, client/server model, Application layer services (telnet, FTP, DNS, HTTP, SMTP).	3,4,6	1,2,3	A,B,C,D

3.	Ability to understand, analize and derive solutions for Transport layer services – Reliable and Non-reliable Data Transfer, TCP and UDP protocols	1,6	1,2,3	A,B
4.	Ability to analize and implement new IP/Network solutions using IP protocol foundations, IP addressing, routing and forwarding knowledge from the Netoworking layer.	1,6	1,2,3	B,D
5.	Knowledge and ability to identify and compare Data Link Layer services, Ethernet, Token Rings, error detection and correction techniques and ARP.	1,6	1,2,3	A,B,D
6.	Knowledge and ability to implement network applications using various computer programming languages and modern application development techniques.	3,4,6	1,2,3	B,D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Lab
Assessment Methods:	A: Testing, B: Experiment, C: Homework, D: Term Project

COURSE CONTENT		
Week	**Topics**	**Study Materials**
1	INTRODUCTION TO COMPUTER NETWORKS	
2	APPLICATION LAYER	
3	APPLICATION LAYER: PROTOCOLS	
4	TRANSPORT LAYER: TRANSPORT SERVICES	
5	TRANSPORT LAYER: RELIABLE DATA TRANSFER	
6	TRANSPORT LAYER: TRANSPORT PROTOCOLS	
7	MIDTERM EXAM I	
8	NETWORK LAYER:ADDRESSING	
9	NETWORK LAYER: ROUTING & FORWARDING	
10	DATA LINK LAYER: SERVICES	
11	DATA LINK LAYER: ERROR CHECKING AND CORRECTION	
12	DATA LINK LAYER: MAC	

| 13 | MIDTERM EXAM II |
| 14 | PHYSICAL LAYER |

RECOMMENDED SOURCES

Textbook	COMPUTER NETWORKING, BY J. F. KUROSE & K.W. ROSS (6TH EDITION)
	COMPUTER NETWORKS, BY ANDREW S. TANENBAUM (5TH EDITION)
	INTERNETWORKING WITH TCP/IP: PRINCIPLES, PROTOCOLS AND ARCHITECTURE, BY DOUGLAS E. COMER, ISBN: 0130183806
Additional Resources	Lecture Notes: http://cse.yeditepe.edu.tr/v2/en/academic/course-pages Lab material: http://cse.yeditepe.edu.tr/v2/en/academic/course-pages

MATERIAL SHARING

Documents	
Assignments	
Exams	

ASSESSMENT

IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	2	43
Quizzes	2	7
Assignment	6	21
Term Project	2	29
Total		**100**
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		30
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		70
Total		**100**

| COURSE CATEGORY | Expertise/Field Courses |

COURSE'S CONTRIBUTION TO PROGRAM

No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Knowledge in the advanced computer architecture field		X			
2	Knowledge in advanced system design for computer engineering			X		
3	Knowledge in the theoretical topics of computer science			X		
4	Ability to comprehend, analyse and critique academic publications and conduct scholarly research at the frontiers of computer engineering		X			
5	Ability and knowledge in the fields of Next-Generation and contemporary computer networks					X

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 16x Total course hours)	14	3	42
Hours for off-the-classroom study (Pre-study, practice)	14	5	70
Mid-terms	2	3	6
Homework	6	8	48
Term Project	2	40	80
Final examination	1	3	3
Total Work Load			249
Total Work Load / 25 (h)			9.96
ECTS Credit of the Course			10