COURSE UNIT TITLE : DATA COMMUNICATIONS AND COMPUTER NETWORKS

DEGREE PROGRAMMES

Third Cycle Programmes (Doctorate Degree)
Second Cycle Programmes (Master's Degree)
First Cycle Programmes (Bachelor's Degree)
Short Cycle Programmes (Associate's Degree)

Description of Individual Course Units

Course Unit Code	Course Unit Title	Type Of Course	D	U	L	ECTS
CME 3204	DATA COMMUNICATIONS AND COMPUTER NETWORKS	COMPULSORY	3	1	0	6

Offered By

Computer Engineering

Level of Course Unit

First Cycle Programmes (Bachelor's Degree)

Course Coordinator

PROFESSOR YALÇIN ÇEBI

Offered to

Computer Engineering

Course Objective

In this course, it is expected from students to have knowledge on basics of data communications and digital communication technologies; computer networking, including LAN and WAN technologies, IP principles, network architecture and protocols, basic network applications, basics of network planning, management and security

Learning Outcomes of the Course Unit

1 To understand basic principles of digital communication techniques
2 To understand basics of multiple access technologies
3 To understand basics of error correcting codes
4 To have basic knowledge about Local and Wide Area network technologies
5 To understand basics of network arhitecture, basic protocols and Internet Protocol (IP)
6 To have the ability to plan a computer network considering management and security crieria

Mode of Delivery

Face -to- Face

Prerequisites and Co-requisites

None

Recomended Optional Programme Components

None

Course Contents

Week	Subject	Description
1	Introduction to Data Communications and Computer Networks	
2	Transmission Media	
3	Analog-Digital Conversion, Transmission Modes	
4	Digital Modulation Techniques	
5	Multiplexing and Demultiplexing	

6	Error Correcting Codes (Channel Coding)
7	Midterm Exam-I
8	LAN Technologies and Network Topology
9	LAN Active Devices, WAN Technologies and Routing
10	Internetworking and IP addressing
11	Datagrams and Datagram Forwarding, UDP, ICMP, TCP and ARP
12	Midterm Exam-II
13	Network Security and Management
14	SDN, IoT and New Trends in Networking Technologies

Recomended or Required Reading

Textbook:
Comer, D. E.: Computer Networks and Internets 6/e, Pearson Ltd., ISBN: 978-1-292-06117-7, Essex, England, 2015.
References:
Stallings, William, Data and Computer Communications, Prentice Hall, ISBN:0-13-086388-2, USA, 2000
Oppenheimer, Priscilla, Top-Down Network Design, Cisco Press, ISBN 1 57870-069-8, MacMillan, USA, 1999
Tannenbaum, Andrew S., Computer Networks 3/e, Prentice Hall, ISBN 0-13-066102-3, New Jersey, 1996
Panko, Raymond, Business Data Networks and Telecommunications 5/e, Prentice Hall, ISBN 978013127 3153

Planned Learning Activities and Teaching Methods

Presentation, Lectures and Homeworks

Assessment Methods

SORTING NUMBER	SHORT CODE	LONG CODE	FORMULA
1	MTE1	MIDTERM EXAM 1	
2	MTE2	MIDTERM EXAM 2	
3	ASG	ASSIGNMENT	
4	FIN	FINAL EXAM	
5	FCG	FINAL COURSE GRADE	MTE1 * 0.15 + MTE2 * 0.15 + ASG * 0.20 + FIN * 0.50
6	RST	RESIT	
7	FCGR	FINAL COURSE GRADE (RESIT)	MTE1 * 0.15 + MTE2 * 0.15 + ASG * 0.20 + RST * 0.50

*** Resit Exam is Not Administered in Institutions Where Resit is not Applicable.

Further Notes About Assessment Methods

There will be two midterm exams and one midterm homework.
First midterm exam will be about data communications and second midterm exam will be about computer networks.
The homework will be about planning a network using a simulation tool.

Assessment Criteria

In the first midterm exam, basics of data communication, in the second midterm exam, basics of computer networks will be evaluated.
Ability of the students to understand basics of data communication, computer networking, Internet Protocol, network architecture and basics of network planning will be evaluated mainly with the midterm homework about network planning.
In the final exam, all course outcomes will be evaluated with 8-12 questions.

Language of Instruction

English

Course Policies and Rules

Attendence to the lectures is expected.
Every student should prepare formal report for the homework.

Contact Details for the Lecturer(s)

Prof.Dr.Yalçın ÇEBI
Dokuz Eylul University Engineering Faculty Department of Computer Engineering
Tınaztepe Campus 35390 Buca/IZMIR
Room: 221; Tel: (232) 301 74 07
e-mail1: yalcin.cebi@deu.edu.tr ; e-mail2: yalcin@cs.deu.edu.tr

Assist.Prof.Dr.Reyad YILMAZ
Dokuz Eylul University Engineering Faculty Department of Electrical and Electronics Engineering
Tınaztepe Campus 35390 Buca/IZMIR
Tel: (232) 301 71 72
e-mail: rayed.yilmaz@deu.edu.tr

Office Hours

Depends on the weekly plan of each semester

Work Placement(s)

None

Workload Calculation

Activities	Number	Time (hours)	Total Work Load (hours)
Lectures	13	4	52
Preparing assignments	1	40	40
Preparation for midterm exam	2	10	20
Preparation for final exam	1	25	25
Final	1	2	2
Midterm	2	2	4
TOTAL WORKLOAD (hours)			143

Contribution of Learning Outcomes to Programme Outcomes

PO/LO	PO.1	PO.2	PO.3	PO.4	PO.5	PO.6	PO.7	PO.8	PO.9	PO.10
LO.1	4	4	4	3		3	2		2	
LO.2	3	5	4	2		3	2			
LO.3	4	5	4	3	3	3	2			
LO.4	4	2	2	3		3	2			2
LO.5	4	5	4	4	4	3	2		4	2
LO.6	4	5	5	5	5	4	4	3	5	4

CONTACT INFORMATION

Dokuz Eylül Üniversitesi Cumhuriyet Bulvarı No: 144 35210 Alsancak / İZMİR
Phone: +90(232) 412 12 12 - Fax: +90 (232) 464 81 35