



COURSE / MODULE / BLOCK DETAILS

ACADEMIC YEAR / SEMESTER

Offered by: Faculty of Engineering			
Course Title: INFORMATION NETWORKS		Course Org. Title: INFORMATION NETWORKS	
Course Level: Bachelor's Degree		Course Code: MTH 3502	
Language of Instruction: English		Form Submitting/Renewal Date 14/02/2023	
Weekly Course Hours: 2		Course Coordinator: PROF.DR. YALÇIN ÇEBİ	
Theory	Application	Laboratory	National Credit: 2
2	0	0	ECTS Credit: 4



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Offered to:	Course Status: Compulsory/Elective
Name of the Department:	
Metallurgical and Materials Engineering	Technical Elective
Textile Engineering	Technical Elective
Civil Engineering	Technical Elective
Mining Engineering	Technical Elective
Electrical and Electronics Engineering	Technical Elective
Computer Engineering	Technical Elective
Environmental Engineering	Technical Elective
Civil Engineering (Evening)	Technical Elective
Industrial Engineering	Technical Elective

Wire: +90 (232) 301 72 15

Fax: +90 (232) 301 72 10

Access: eng.deu.edu.tr

Address: D.E.Ü. Tınaztepe Yerleşkesi Müh. Fak. Dekanlığı AdaE-mail: muhendislik.personel@deu



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Instructor/s:

PROF.DR. YALÇIN

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Course Objective:

To learn about the structure, operation and algorithms of GSM Technologies and to learn about new developments such as 5G in this technologically rapidly advancing field.

Learning Outcomes:

- 1 Understanding Radio Network network structure and usage
- 2 Understanding the Fixed Network structure
- 3 Gaining transmission network planning and implementation skills
- 4 Having information about fiber infrastructure and usage areas
- 5 Understanding Radio Link planning and use in the live network
- 6 Understanding 5G features, why they are needed, and their uses

Learning and Teaching Strategies:

Lecture
Presentation
Homework

Assessment Methods:

Name	Code	Calculation formula
MIDTERM EXAM	MTE	
PROJECT	PRJ	
FINAL EXAM	FIN	
FINAL COURSE GRADE	FCG	$MTE * 025 + PRJ * 025 + FIN * 050$
RESIT	RST	
FINAL COURSE GRADE (RESIT)	FCGR	$MTE * 025 + PRJ * 025 + RST * 050$

Further Notes about Assessment Methods:

Year-round work will be evaluated by a midterm exam and project/homework activities. An assignment will be given during the course. The reports prepared on the assignments will be presented to the class by the students in the last week of the semester. The



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final exam will cover all course topics.

Assessment Criteria:

All of the learning outcomes will be evaluated with the homework given during the term. The 1st, 2nd and 4th learning outcomes will be evaluated in the midterm exam, and the 1st, 2nd, 3rd, 4th, 5th and 6th learning outcomes will be evaluated in the final exam.

Textbook(s)/References/Materials:

Wayne, Tomasi, Advanced Electronic Communications Systems, 6e, Pearson Publishing, ISBN: 9781292027357, 2013.

Course Policies and Rules:

It is compulsory to attend 70% of the theoretical courses

Contact Details for the Instructor:

Prof.Dr. Yalçın ÇEBİ
Dokuz Eylul University
Engineering Faculty
Dept. of Computer Engineering
Tınaztepe Campus
35390 Buca/İZMİR
Tel: (232) 301 74 07
e-mail: yalcin.cebi@deu.edu.tr

Office Hours:

Tuesday 10:00-12:00



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Course Outline:		
Week	Topics:	Notes:
1	Radio Network Mobile Network Structure	
2	Radio Network GSM Frequencies and Spectrum Distributions	
3	Radio Network Cell Planning and Coverage Structure	
4	Radio Network Antennas, Active and Passive Elements, Homework Explanation	
5	Radio Network 5G Technology	
6	Fixed Network Fiber Optic Infrastructure and Applications	
7	Fixed Network Passive Equipment	
8	Midterm Exam	
9	Fixed Network DWDM Technology and Application Areas	
10	Transmission Network Transmission Network Structure	
11	Transmission Network Radio Link & Fiber Technology	
12	Transmission Network Radio Link Frequency Distribution	
13	Transmission Network Basic Network Topologies	
14	Project Presentations	



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ECTS Table

Course Activities	Number	Duration (hour)	Total Work Load (hour)
In Class Activities			
Lectures	12	2	24
Student Presentations	1	2	2

Exams

Midterm	1	2	2
Final	1	2	2

Out of Class activities

Preparations before/after weekly lectures	12	1	12
Preparation for midterm exam	1	10	10
Preparation for final exam	1	15	15
Preparing assignments	1	30	30
Total Work Load (hour)			97
ECTS Credits of the Course= Total Work Load (hour) / 25			4