

<b>SYLLABUS</b>			
<b>General information</b>	<b>Title and code of subject, number of credits</b>	<b>ETR 237 - Communication Systems (6 ECTS credits)</b>	
	<b>Department</b>	Physics and Electronics	
	<b>Program</b>	Bachelor	
	<b>Academic semester</b>	2020 Spring	
	<b>Lecturer</b>	MSc, Alim Huseynov	
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	<b>Phone number:</b>	+99455 425 3599	
	<b>Lecture room/Schedule</b>	11 Mehseti Street, AZ1096 Baku, Azerbaijan (Neftchilar campus), room	
<b>Prerequisites</b>	PHSC 112 – Physics 2		
<b>Course language</b>	English		
<b>Type of the subject</b>	Major		
<b>Textbooks and additional materials</b>	Textbooks:		
	<ol style="list-style-type: none"> <li>1. Principles Of Electronic Communication Systems, Fourth Edition - Louis E. Frenzel Jr, 2014</li> <li>2. Data Communications and Networking, Fourth Edition - Behrouz A.Forouzan, 2007</li> </ol>		
<b>Teaching methods</b>	Lecture		x
	Group discussions at seminars		x
<b>Assessment</b>	Components	Date/ Deadline	Percent (%)
	Assignment and quizzes	During the semester	10
	Active participation	At each lesson	5
	Individual research papers and presentations	At the end of the semester	10
	Attendance		5
	Midterm exam		30
	Final exam		40
	Final		100
<b>Course description</b>	<p>This course introduces fundamental concepts of Communication systems. Communication systems are most important for infrastructures. This course provides a comprehensive treatment of Communication systems engineering and discusses the technological applications. It demonstrates how system components interact and details the relationship between the system and its environment, to discuss the systems aspects such as techniques enabling equipment. Topics in the course include: Analog Communications: Linear Modulation and Demodulation, AM &amp; FM, Digital Communication Techniques, Multiplexing and Demultiplexing, Radio Transmitters and Communication Receivers, Digital Data Transmission, Fundamentals of Networking, Local-Area Networks, and Ethernet, Transmission Media, Antennas and Wave Propagation, Optical Communication etc.</p>		
<b>Course objectives</b>	<p>Understand general concepts and technology of communication systems, its application and practical implementation in real life and industry. Students will get not only a firm grounding in the fundamentals but also an essential understanding of the real world components, circuits, equipment, and systems in everyday use.</p>		
<b>Learning outcomes</b>	<p>What students should know by the end of the course:</p> <ol style="list-style-type: none"> <li>1. Independently understand basic Communication system technology.</li> <li>2. Recognize the principles of modulation</li> <li>3. Understanding fundamental concepts for communication systems</li> </ol>		
<b>Rules (Educational policy and behavior)</b>	<b>Lesson organization</b>		
	<p>General information on the subject will be provided for the students during lectures. Student's knowledge on the previous topics will be evaluated and new topic will be explained by means of visual aids during seminars. Student's knowledge level will be tested orally and in written forms before midterm and final exams. Submission of the individual works by the end of course is obligatory.</p> <p><b>Attendance</b></p> <p>Participation of students at all classes is important. Students should inform dean's office about missing lessons for particular reasons (illness, family issues and etc.). Students, missing more than 25% of lessons,</p>		

	<p>are not allowed to take the exam.</p> <p><b>Tests</b></p> <p>Those students who have informed the teacher and the dean’s office about missing the test in advance for particular reasons, are allowed to take the test next week.</p> <p><b>Exams</b></p> <p>All the issues related to the participation and admission to the exam are regulated by the faculty dean.</p> <p>Topics of midterm and final exams are provided for the students before the exams. The questions of midterm exam are not repeated in the final exam.</p> <p><b>Violation of the rules of the exams</b></p> <p>Disrupting the test and taking copy during midterm and final exams is forbidden. Test papers of the student who do not follow these rules are canceled and the students are expelled from the test by getting 0 (zero).</p> <p><b>The rule for completing the course</b></p> <p>In accordance with the University rules the overall success rate to complete the course should be 60% or above. The students who failed the exam would be to take this subject next semester or next year.</p> <p><b>Rules of conduct for Students</b></p> <p>Disruption of the lesson and not following ethical norms during the lesson, as well as conduction of the discussions by the students without permission and using mobile phones is forbidden.</p>
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Week	Dates (planned)	Subject topics	Textbook/ Assignments
1.	15-02-20	Introduction to Communication systems. Electronic Fundamentals for Communications	[1] p. 1-92 [2] p. 3-101
		Discussion of questions in textbooks.	
2.	22-02-20	Analog Communications: Linear Modulation and Demodulation, AM & FM	[1] p. 92-192 [2] p. 141-191
		Discussion of questions in textbooks.	
3.	29-02-20	Digital Communication Techniques	[1] p. 192-236 [2] p. 101-141
		Quiz 1	
4.	07-03-20	Multiplexing and Demultiplexing	[1] p. 347-374 [2] p.161-191
		Discussion of questions in textbooks.	
5.	14-03-20	Radio Transmitters and Communication Receivers.	[1] p.236-347
		Discussion of questions in textbooks.	
6.	28-03-20	Digital Data Transmission	[1] p.374-434
		Quiz 2	
7.	04-04-20	Fundamentals of Networking, Local-Area Networks, and Ethernet	[1] p.434-462 [2] p.395-421
		Discussion of questions in textbooks.	
8.	11-04-20	Mid term exam	
9.	18-04-20	Transmission Media	[1] p.462-504 [2] p.191-213
		Discussion of questions in textbooks.	
10.	25-04-20	Antennas and Wave Propagation	[1] p.504-556
		Quiz3	
11.	02-05-20	Microwave and Millimeter-Wave Communication	[1] p. 588-655
		Discussion of questions in textbooks.	
12.	09-05-20	Telecommunication Systems	[1] p. 695-726
		Discussion of questions in textbooks.	
13.	16-05-20	Optical Communication	[1] p. 726-775
		Quiz 4	
14.	23-05-20	Cell Phone Technologies	[1] p.775-815

			[2] p. 467-491
		Discussion of questions in textbooks.	
15.	30-05-20	Sattellite Communication	[1] p.655-695 [2] p. 467-491
		Discussion of questions in textbooks.	
		Final Exam	

