

General information	Title and code of subject, number of credits	ETR 620 Electronic defense system- 8 ECTS credits	
	Department	Physics and Electronics	
	Program	Master	
	Academic semester	2021 Fall	
	Lecturer	PhD, Associate professor, Hasanov Elchin	
	E-mail:	elgafgas@yahoo.com	
	Phone number:	+994 50 5287740	
	Lecture room/Schedule	11 Mehseti Street, AZ1096 Baku, Azerbaijan (Neftchilar campus), room	
	Consultations	II, 15:00 – 16:00	
	Office hours	Sunday 10-00	
Prerequisites			
Course language	English		
Type of the subject	Major		
Textbooks and additional materials	<p>Textbooks: Hugh D.Young, Roger A.Freedman <i>University Physics. Pearson International Edition.P.1551</i></p> <ol style="list-style-type: none"> J. Beresford ITP 325: Ethical Hacking and Systems Defense 2018 Filippo Herri Introduction to Electronic Defense Systems 3rd Edition/ 2020 		
Teaching methods	Lecture	+	
	Group discussions at seminars	+	
Assessment	Components	Date/ Deadline	Percent (%)
	Tests	During the semester	5
	Active participation	At each lesson	10
	Quizzes	During the semester	15
	Attendance	During the semester	5
	Midterm exam		30
	Final exam		35
	Final		100
Course description	<p>. Protection engineering concerned with the design and operation of "protection schemes".</p> <p>- Protection schemes are specialized control systems that monitor the power system, detecting faults or abnormal conditions and then initiate correct action.</p> <p>- In this course the power system is considered as all the plant and equipment necessary to generate, transmit, distribute and utilize the electric power.</p> <p>The principal electrical system faults are short circuits and overloads. Short circuits may be caused in many ways, including failure of insulation due to excessive heat or moisture, mechanical damage to electrical distribution equipment, and failure of utilization equipment as a result of overloading or other abuse</p>		
Course objectives	The course gives the student basic knowledge in radio electronics. The system perspective is addressed both in the context of traditional radio and today's wireless		

	<p>communication systems.</p> <p>The objectives of the course is that the student will learn operation principles of radio systems and their fundamental limitation</p> <p>Short circuits may occur between two-phase conductors, between all phases of a poly-phase system, or between one or more phase conductors and ground. The short circuit may be solid (or bolted) or welded, in which case the short circuit is permanent and has relatively low impedance.</p>		
Learning outcomes	<ul style="list-style-type: none"> - explain the principles of radio transmission and reception - explain the existing physical and technical limitations of a radio system - analyze the functionality of radio transmitters and receivers - calculate basic radio specifications in terms of power, gain, noise and frequency for basic modulation schemes - explain differences between traditional radio and today's digital radio systems 		
Rules (Educational policy and behavior)	<p>Lesson organization</p> <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 mins 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>Attendance</p> <p>Participation of students at all classis 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, are not allowed to take the exam.</p> <p>Tests</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>Exams</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>Violation of the rules of the exams</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>The rule for completing the course</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>Rules of conduct for Students</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>		
Week	Dates (planned)	Subject topics	Textbook/ Assignments
<i>1</i>	<i>02/10/21</i>	<p>Electromagnetic interference</p> <p>Radio-frequency interference (RFI). Coupling (electronics).</p> <p>Conducted interference</p>	[1] p.709-741

2	09/10/21	Viruses and antiviruses.	[1] p.750-773
		Computer viruses and their classification/ Methods for protecting against computer viruses.	[1] p-780-795
		Problem solving..	
3	16/10/21	Antivirus software	[1] p.800-815
		The main functions of antivirus programs. The main result of the work of antivirus programs	
		Problem solving.	
4	23/10/21	Basic methods of fighting computer viruses	[1] p.815-838
		The main characteristics of viruses. Rezydent virus. Replikator. Stels viruses.	
		Problem solving.	
5	30/10/21	Visual virus statistics	
		Troyan viruses / Rutkit. SQL Slammer/Sapphire. Sasser. Conficker	
		Problem solving.	
6	06/11/21	Macro viruses and viruses in Word Excel	[1] p.846-872
		Macro.Word family. Methods of protection and macro viruses. Java viruses	
		Problem solving.	
7	13/11/21	File viruses	[1]p.881-900,
		Polimorf viruses. Network viruses. Satellite viruses.	
		Problem solving	
8	20/11/21	viruses and marketing	[1] p.957-984
		Chief jurnal informations. Ad viruses.	
		Problem solving.	

9		Mid term exam	
10	27/11/21	Virtual controller Remote control with PC.	[1] p.916-947
		Problem solving	
11	04/12/21	Spyware Types of spyware. Top spyware. Types of spyware	[4]p. 73-96
		Problem solving	
12	11/12/21	Electronic warfare The electromagnetic environment. Electronic attack. Electronic protection.	[1] p.1061-1085
		Problem solving	
13	18/12/21	Electronic warfare support Signals intelligence. Frequency, bandwidth, modulation, and polarization.	[3]p.555-611
		Problem solving.	
14	25/12/21	Cyberwarfare Cyberattack. Security hacker. Cracker	[1] page 9-6
		. Problem solving	[1] page 10-6
15	28/12/21	Electronic harassment Electromagnetic torture. Targeted individuals False claims of stalking, "gang stalking" and delusions of persecution	[1] page 11-6

