

<b>Department of Electrical Engineering</b>				
<b>Communication Systems (63572)</b>				
<b>Total Credits</b>	<b>3</b>			
<b>major elective</b>				
<b>Prerequisites</b>	P1 : Digital Communications (63471)			
<b>Course Contents</b>				
This course discusses some telecommunication systems like, television and satellite systems. It covers the TV principles, transmission circuits, frequency ranges and specifications, video transmission and storage and color systems. It also covers the orbital systems, Link budget of a satellite system.				
<b>Intended Learning Outcomes (ILO's)</b>			<b>Student Outcomes (SO's)</b>	<b>Contribution</b>
1	Classify some communication systems		B E	10 %
2	Analyze the TV operating mechanism		A E	20 %
3	Student will be able to demonstrate ,understand and analyze image/video processing methods transmission and storage and international related standards		A C H	25 %
4	Arrange satellite communication systems		A H J	25 %
5	Prepare related researches		D G I J	20 %
<b>Textbook and/ or References</b>				
Digital Communications, Glover & Grant, 2nd edition, Printice Hall, 2004. Electronic communications systems, W. Tomasi, Printice Hall, 1996.				
<b>Assessment Criteria</b>		<b>Percent (%)</b>		
First Exam		20 %		
Second Exam		15 %		
Projects		15 %		
Final Exam		50 %		
<b>Course Plan</b>				
<b>Week</b>	<b>Topic</b>			
1	Introduction and basic concepts.			
2	The TV system(encoding techniques)			
3	Image representation(RGB, ICQ, YUV)			
4	TV receiver			
5	Digital video(full and reduced size)			
6	Some compression techniques(RLE)			
7	Joint Picture Expert Group(JPEG)			
8	JPEG (continuation)			
9	Midterm exam 1			
10	Introducing some image compression techniques(MPEG, H.261, H263)			
11	Introduction to satellite systems(GOE, HIHEO, LEO)			
12	Satellite frequency bands.			
13	Earth station look angle and satellite range(Azimuth and elevation angle)			
14	Signal power loss			
15	Midterm 2			
16	Footprints, reuse probability of error			