

Course Code	Course Name	Teaching Scheme			Credits Assigned			
		Theory	Practical	Tutorial	Theory	TW/Practical	Tutorial	Total
ETC 604	Television Engineering	04	--	--	04	--	--	04

Course Code	Course Name	Examination Scheme								
		Theory Marks					Term Work	Practical	Oral	Total
		Internal assessment			End Sem. Exam					
		Test 1	Test 2	Ave. Of Test 1 and Test 2						
ETC 604	Television Engineering	20	20	20	80	-	-	-	100	

Pre requisite : ETC 502 Analog Communication

Course Objective:

- To introduce the basics of picture transmission and reception.
- To become well conversant with new development in video engineering.
- To introduce most latest and revolutionary ideas in the field of digital TV, HDTV, WDTV.

Course outcome: The students will be able to

- Describe and differentiate working principles of latest digital TV, HDTV, WDTV.
- Understand, use and working principles of latest display like LCD, LED, Plasma and large plat panel monitors

Module No.		Topics	Hrs.
1		Fundamentals of Analog T V system	10
	1.1	Transmitter and receiver- block diagram approach, interlaced scanning, composite video signal, VSB transmission and reception (CCIR-B standards)	
	1.2	Camera tubes: basic principle ,Vidicon and Image orthicon	
2		Color T V	10
	2.1	Compatibility considerations, Color theory, chromaticity diagram, generation of color TV signals, luminance signal, chrominance signal, frequency interleaving process, color subcarrier frequency.	
3	2.2	NTSC system- transmitter and receiver, PAL system- transmitter and receiver	12
		Fundamental Concept of Digital Video	
	3.1	Digitization, pixel array, scanning notation, viewing distance and angle, aspect ratio, frame rate and refresh rate.	
	3.2	Raster scanning, scan line waveform, interlace, scanning standards.	
	3.3	Sync structure, data rate, linearity, bandwidth and data rate, resolution, luma, color difference coding, chroma sub sampling	
4	3.4	Component digital video, composite video	6
		Advanced TV systems	
	4.1	Digital video and audio signals	
	4.2	MAC signal, D2-MAC/packet signal, MAC decoding and interfacing, advantages of MAC signal	
5	4.3	Direct-to-home TV(DTH)	8
		High definition televisions	
	5.1	High definition TV systems, HDTV standards and compatibility, resolution and working.	
	5.2	Wide dimensions high definition TV	
	5.3	Standards of wide dimensions HDTV	
6	5.4	MUSE system	6
		Displays	
	6.1	Principle, working, advantages and disadvantages of Plasma, LED,LCD	
Total			52

Recommended Books:

1. Gulati R.R, “*Monochrome and Color Television,*” Wiley Eastern Limited publication.
2. R.G.Gupta , “*Television and Video Engineering*”, Tata Mc Graw Hill publication.
3. Dhake A.M, “*Television and Video Engineering*”, Tata McGraw Hill publication.
4. Keith Jack, “*Video Demystified*”, 4e, , Elsevier
5. Charles Poynton, “*San Francisco, Digital video and HDTV, Algorithms And Interfaces,*” Morgan Kaufmann publishers, 2003.
6. Stan Prentiss, “*High Definition TV*”, second edition, , Tata McGraw Hill publication

Internal Assessment (IA):

Two tests must be conducted which should cover at least 80% of syllabus. The average marks of two tests should be considered as final IA marks

End Semester Examination:

1. Question paper will comprise of 6 questions, each of 20 marks.
2. Total 4 questions need to be solved.
- 3: Question No.1 will be compulsory and based on entire syllabus wherein sub questions for 2 to 5 marks will be asked.
- 4: Remaining questions will be selected from all the modules.