



# SWARNANDHRA COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous)

Narsapur, West Godavari District, A.P. 534280

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Period/Week	Academic Year	Course Commencement Date
20EC7E09	Television Systems and Design(R-20)	VII	ECE	5	2024-25	09-06-2025

#### COURSE OUTCOMES:

At the end of the TV Engineering Course student can able to

CO1.	Demonstrate the TV Pictures, Composite Video Signal.	(K3)
CO2.	Explain the working of Monochrome Television Transmitter, Receiver, Picture and Camera tubes.(K3)	
CO3.	Illustrate the various Color Television systems with a greater emphasis on PAL system.	(K4)
CO4.	Examine the advanced topics in Television systems and Video Engineering.	(K4)

Unit No.	Out Comes/ Bloom's Level	Topics No	Topics/Activity	Number of periods	Text Book/ Reference	Delivery Method
1	CO1: Define the TV Pictures, Composite Video Signal(K3)	UNIT-I: INTRODUCTION			T1,T2	Chalk & Talk, PPT, Active Learning & Tutorial.
		1.1	TV Transmitters	1		
		1.2	TV Receivers	1		
		1.3	Synchronization	1		
		1.4	Geometric form and aspect ratio,	1		
		1.5	Image continuity, interlaced,	1		
		1.6	picture resolution	1		
		1.7	Composite video signal	1		
		1.8	Horizontal and Vertical sync scanning sequence	1		
		1.9	Color signal generation and Encoding	1		
		1.10	Perception of brightness and colors	1		
		1.11	Additive color mixing	1		
		1.12	Video signals for colors	1		
		1.13	Luminance signal, color difference signals,	1		
		1.14	Encoding of color difference signals, formation of chrominance signals	1		
			Class Test	1		
				15		

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2	CO2: Explain the working of Monochrome Television Transmitter, Receivers, Picture Tubes and Camera tubes. (K3)	UNIT-II: TV SIGNAL TRANSMISSION AND PROPAGATION			T1, T2	Chalk & Talk, PPT, Active Learning & Tutorial.	
		2.1	Picture Signal Transmission	1			
		2.2	Positive and Negative Modulation	1			
		2.3	VSB Transmission	1			
		2.4	Sound Signal Transmission	1			
		2.5	Standard Channel BW	1			
		2.6	TV Transmitter	1			
		2.7	TV signal propagation & interference	1			
		2.8	TV broadcast channels and transmission Antennas	1			
			Class Test	1			
			09				
3	CO2: Explain the working of Monochrome Television Transmitter, Receiver, Picture Tubes and Camera tubes. (K3)	UNIT-III: TV CAMERAS & PICTURE TUBES			T1, T2	Chalk and Talk, PPT and Tutorial	
		3.1	Camera Tube Types, Vidicon	2			
		3.2	Silicon Diode Array Vidicon	1			
		3.3	Monochrome TV Camera	1			
		3.4	Color Camera	1			
		3.5	CCD Image Sensors	1			
		3.6	Monochromatic Picture Tube	1			
		3.7	Electrostatic Focusing	1			
		3.8	Beam Deflection	1			
		3.9	Picture tube characteristics and specifications	1			
			3.10	Color picture tubes	1		
			3.11	TV Standards	1		
				Class Test	1		
			13				
4	CO3: Describe various Color Television systems with a greater emphasis on PAL system. (K4)	UNIT- IV: COLOUR TELEVISION SYSTEMS			T1, T2,T3	Chalk & Talk, Smart Class, PPT Tutorial, & Case Study	
		4.1	NTSC Colour TV system	1			
		4.2	NTSC Colour Receiver	1			
		4.3	Limitations of NTSC System	1			
		4.4	PAL Colour TV system	1			
		4.5	Cancellation of phase errors	1			
		4.6	PAL-D Colour System	1			
		4.7	PAL Coder	1			
		4.8	Chromo signal amplifier separation of U and V signals	1			
		4.9	Colour Burst Separation	1			
		4.10	Burst phase Discriminator	1			
		4.11	Ident and Colour killer circuits	1			
		4.12	U and V demodulators	1			
		4.13	Merits and Demerits of the PAL System	1			
		4.14	SECAM system and merits & demerits of SECAM system	1			



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				15			
5	CO4: Interpret the advanced topics in Television Systems and Video Engineering. (K4)	UNIT- V :ADVANCED TELEVISION SYSTEMS			T2, T4	Chalk & Talk, Smart Class, PPT Tutorial, & Case Study	
		5.1	Satellite TV Technology, Cable TV				2
		5.2	Tele Text Broadcast Receiver				1
		5.3	Digital Television				1
		5.4	Transmission and Reception				1
		5.5	Projection Television				1
		5.6	Displays in TV Receivers				1
		5.7	LED (Light Emitting Diode)				1
		5.8	LCD (Liquid Crystal Display)				1
		5.9	Organic Light Emitting Diode (OLED)				1
		5.10	QLED (Quantum-Dot Light Emitting Diode)				1
		5.11	IGZO (Indium Gallium Zinc Oxide).				1
	Class Test		1				
				13			
TOTAL				65			
Text Books:							
S.No							
1	R.R.Gulati, Modern Television Practice, Principles, Technology and Service, New Age International Publication, 2002.						
2	A.M.Dhake, Television and Video Engineering, 2 <sup>nd</sup> edition, Tata Mc Graw-Hill, 1995.						
3	R.R.Gulati, Monochrome and Color TV, New Age International Publication, 2002.						
4	R.G.Gupta, Television Engineering and Video systems, Tata Mc Graw-Hill, 2006.						
Reference Books:							
1	S. P. Bali, Color Television Theory and Practice, TMH, 1994.						
2	B. Grob and C.E.Herndon, Basic Television and Video Systems, McGraw-Hill, 1999.						
Web Details:							
1	<a href="http://www.nptel.ac.in">www.nptel.ac.in</a>						
2	<a href="http://www.slideshare.net">www.slideshare.net</a>						
3	<a href="https://youtu.be/Z-1lw3CpPVj0">https://youtu.be/Z-1lw3CpPVj0</a>						
4	<a href="https://www.youtube.com/channel/UCSk8Ys0LqZF8sjeOUCnFN3Q">https://www.youtube.com/channel/UCSk8Ys0LqZF8sjeOUCnFN3Q</a>						
		Name		Signature with Date			
i.	Faculty	Mr.Ch.K.L.Rao.					
ii.	Course Coordinator	Mr.Ch.K.L.Rao.					
iii.	Module Coordinator	Dr.D.Sekhar.					
iv.	Programme Coordinator	Dr.B.S.Rao.					

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