EC-311A	TV ENGINEERING (ELECTIVE - I)	L	T	P	C
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COURSE OBJECTIVES:

1. To study the analysis and synthesis of TVPictures, Composite Video Signal, Receiver Picture Tubes and-Television Camera Tubes
2. To study the principles of Monochrome Television Transmitter and Receiver systems.
3. To study the advanced topics in Television systems.
4. To study the various Color Television systems with a greater emphasis on PAL

COURSE OUTCOMES:

After successful completion of the course, the students are able to

1. acquire knowledge in Fundamentals of Television, Monochrome TV transmitter and receiver, Camera tubes and colour TV display tubes, Colour TV systems and advanced colour TV systems.
2. identify the elements of Television, Monochrome TV transmitter and receiver, Camera tubes and colour TV display tubes, Colour TV systems and advanced colour TV systems.
3. interpret the essentials of colour TV and various colour TV systems.
4. acquire knowledge in fundamentals of television, Monochrome TV transmitter and receiver, Camera tubes and colour TV display tubes, Colour TV systems and advanced colour TV systems.
5. compare different display tubes and various colour TV systems.

UNIT I *Text Book - 1* **(10)**

FUNDAMENTALS OF TELEVISION : TV transmitter and receivers, synchronization, Basic factors of TV system: aspect ratio, image continuity, interlaced scanning, flicker, picture resolution, Composite video signal, Horizontal and vertical sync details, no of scanning lines, scanning sequence details.

Monochromatic Picture tube, Electrostatic focusing, Beam deflection, picture tube characteristics and specifications, monochrome TV camera.

UNIT II *Text Book - 1,2* **(12)**

MONOCHROME TV TRANSMITTER : TV transmitter - picture signal transmission, sound signal transmission, vestigial side band transmission, TV signal propagation â€“ Interference - TV transmission Antennas.

MONOCHROME TV RECEIVER : RF tuner, IF subsystem, video amplifier, sound section, sync separation and processing, deflection circuits, scanning circuits.

UNIT III *Text Book - 1,2* **(10)**

CAMERA TUBES : Basic Principles, Types: Image Orthicon, Vidicon, Plumbicon, Block diagram of broad cast TV transmitter, Block diagram of broadcast TV receiver.

Essentials of Colour Television : Compatibility â€“ colour perception- Three colour theory- luminance, hue and saturation-colour television cameras- values of luminance and colour difference signals-formation of chrominance signal.

UNIT IV *Text Book - 1,2* **(12)**

Colour TV display tubes : delta gun, precision in-line and Trinitron colour picture tubes, purity and convergence, purity and static and dynamic convergence adjustments, automatic degaussing circuit, grey scale tracking.

Colour television systems : NTSC colour TV system, limitations of NTSC system, PAL colour TV system, merits and demerits of the PAL system - SECAM colour TV system, merits and demerits of SECAM system.

UNIT V *Text Book - 1* **(10)**

Advanced Colour TV Systems - Cable TV : cable signal sources, cable signal processing, cable signal distribution - digital television - DTH, threedimensional (3D) TV.

Extended Definition television (EDTV), HDTV, LCD Television : LCD technology, LCD matrix types & operation, **Plasma Television :** conduction of charge, signal processingin plasma TV receivers.

LEARNING RESOURCES:

TEXT BOOK(s):

1. R.R. Gulati-Modern Television Practice - Principles, Technology and Service - New Age International Publication, 2009.
2. R.R. Gulati-Monochrome and Colour TV - New Age International Publication, 2002.

REFERENCE BOOK(s):

1. S. P.Bali - Colour Television Theory and Practice - TMH, 1994.
2. A.M. Dhake - Television and Video Engineering - 2nd Edition - 16th Reprint-2006

WEB RESOURCES:

1. http://nptel.iitm.ac.in/
2. http://jwfiles.net/files/6/f0bsb8og8vy3yq/Tv-Lectures_JWFILES.pdf
3. http://jwfiles.net/fiu1pa6wkw84/Tv-L...FILES.pdf.html