PET4D001 AUDIO & VIDEO ENGINEERING

Module I (10 Hours)

1. Fundamentals of Colour Television

Color TV systems, fundamentals; mixing of colours; colour perception; chromaticity diagram; NTSC, PAL, SECAM systems; colour TV transmitter; (high level, low level); colour TV receivers; remote control; Fault finding and servicing equipments like Wobbuloscope; TV Pattern Generator and Field Strength meter.

Module II (10 Hours)

1. Digital TV and Display Devices

Introduction to Digital TV; Digital TV signals and parameters; Digital TV Transmitters, MAC signals, advanced MAC signal transmission; Digital TV receivers; Basic principles of Digital Video compression techniques, MPEG Standards; Digital TV recording techniques; Display devices: LED, LCD, TFT, Plasma.

Module III (10 Hours)

2. HDTV

HDTV standards and systems, HDTV transmitter and receiver/encoder; Digital TV satellite Systems; video on demand; CCTV, CATV, direct to home TV, set top box with recording facility, conditional access system (CAS), 3D TV systems; Digital broadcasting; case study (Cricket match, Marathon, Football match).

Module IV (10 Hours)

3. Fundamentals of Audio-Video Recording Methods of sound recording & reproduction, optical recording, CD recording; audio standards, Digital Sound Recording; CD/ DVD player, MP3 player, Blue Ray DVD Players, MPEG, MP3Player.

4. Fundamentals of Acoustics

Studio acoustics and reverberation; P.A. system for auditorium; acoustic chambers; Cordless microphone system; special types of speakers & microphones; Digital Radio Receiver Satellite radio reception.

Additional Module (Terminal Examination-Internal) (10 Hours)

5. Advanced TV Systems

IP Audio and Video, IPTV systems, Mobile TV; Video transmission in 3G mobile System; IPod (MPEG4 Video player); Digital Video Recorders, Personal Video Recorders; Wi-Fi Audio /Video Transmitter and Receivers; Video Projectors, HD Video projectors; Video Intercom systems/Video door phones.

Text Books

1. Television and Video Engineering, A. M Dhake, Tata McGraw Hill, 2nd edition, 2003.
2. Video Demystified, Keith jack, Penram International Publication.
3. Audio Video Systems, R.G. Gupta, TMH Publication, 2nd edition, 2010.

Reference Books

1. Color Television Theory and Practice, S. P. Bali, Tata McGraw Hill, 1st edition, 1994.
2. Basic TV and Video Systems, Bernard Grob, Charles E Herndon, TMH, 6th edition, 1998.
3. Modern Television Practice-Principles, Technology and Servicing, R R Gulati, New Age International Publisher, 2nd edition, 2004.
4. Television Engineering: Audio and Video Systems, D.S. Bormane, Wiley Publication,2015.
5. Speech and Audio Processing, Shaila D. Apte, Wiley Publication,2012.
6. Speech and Audio Signal Processing: Processing and Perception of Speech and Music, Ben Gold, Wiley Publication, 2006.