EC-404A	APPLIED ELECTRONICS (OPEN ELECTIVE)	L T P C 4 - - 3

COURSE OBJECTIVES:

1. To understand about various modern electronic systems.
2. To provide clear explanation of the operation of all the important electronic devices and systems available.
3. To know about modern audio and video systems.
4. To know about various Telecommunication Systems.

COURSE OUTCOMES:

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

1. understand the working, types and applications of microphones and loudspeakers.
2. illustrate the features of commercial, theatre sound recording and color TV standards.
3. outline the fundamental concepts of audio and video systems based on modulation techniques.
4. understand the fundamentals of fiber optics, microprocessor and mobile radio systems.
5. use electronic ignition systems, washing machines and refrigeration systems.

UNIT I *Text Book - 1* **(12)**

Microphones : Characteristics of microphones, Types: Carbon microphones, moving coil microphones, ribbon microphones, electret microphones and wireless microphones. **Headphones :** Headphones and Headsets, Types of headphones. **Loud Speakers :** Ideal loudspeaker, Types: Crystal loudspeaker, electrostatic loudspeaker, permanent magnet loudspeaker, **High frequency loudspeakers:** Horn type tweeters, Equalizers and Mixers.

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

Commercial Sound : Recording, manual synthesizer, programmed synthesizer, public address systems, speaker matching systems, PA-system characteristics, Theatre Sound System. **Color TV standards and Systems :** Primary and secondary colors, Luminance signal, Chrominance signal, color TV camera tube, color TV picture tube, NTSC system PAL system SECAM system.

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

Audio systems, Video Systems, Remote Controls, Modulation Techniques, Carrier Systems, Telecommunication Systems: telephone receivers and handsets, signaling-CCITT NO7, modes of operation, **Switching Systems :** principle,Read relay and cross bar switching, PBX switching, stored program control.

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

Fiber Optics, Data Services, digital clocks, microprocessor, microcontroller, Mobile radio systems: wireless local loop (WLL), role of WLL, radio paging service, digital cellular block diagram, establishing a call, Fascimile (FAX).

UNIT V *Text Book - 2* **(10)**

IN-CAR Computers : Electronic ignition, electronic ignition lock system, ABS, Electronically controlled suspension (ECS), instrument pannel display, air-bag system. Washing machines: Electronic controller for washing machine, washing machine hardware, washing cycle, software and hardware development, refrigeration systems.

LEARNING RESOURCES:

TEXT BOOK(s):

S.P.Bali - Consumer Electronics-Pearson Education, ISBN: 9788131717592, first impression-2008.

REFERENCE BOOK(s):

1. Philip Herbert Hoff -Consumer Electronics for Engineers -Cambridge University Press, 1998, ISBN-10: 0521582075
2. Ronald K.Jurgen -Digital Consumer Electronics Handbook -(Editor) by McGraw Hill Professional Publishing, 1997. ISBN-10: 0070341435

WEB RESOURCES:

1. http://nptel.iitm.ac.in/courses/
2. http://www.newagepublishers.com/samplechapter/000969.pdf
3. http://www.bits-pilani.ac.in:12354/qp1-9-10/EEE_C414_851_C_2009_1.pdf