

**DEPARTMENT OF ELECTRONICS**  
**MSc Electronics**

**ELE 509 - CONSUMER ELECTRONICS (Open Elective)**

**Course Outcomes:**

1. Study the working principles of different microphones and discuss the merits and demerits.
2. Study the construction and working of different types of loudspeakers.
3. Elementary level study of television (TV) system, principles of color TV, LED and LCD TV.
4. Principle and working of Microwave Oven, automatic washing machine, photostat machine, digital camera and smartphones

**Unit I**

Audio Systems: Microphones and Loudspeakers: Carbon, Moving Coil, Cordless microphone, Direct radiating and horn loudspeaker, Multi-speaker System  
Sound Recording: Magnetic Recording, Digital Recording, optical Recording (CD system and DVD)

**12 Hours**

**Unit II**

Television Technology: principles of Monochrome TV: Elements of TV Communication System, Scanning and its need, Need of Synchronizing and blanking pulses, VSB, Picture Tube, principles of Colour Television: Primary, Secondary colours, Concept of Mixing, Colour Triangle, NTSC, PAL, SECAM  
LCD and LED Television: Basic Principle and working of LCD & LED TV  
Cable Television: Working of Cable TV, DTH

**12 Hours**

**Unit III**

Consumer Appliances (principle and working) : Microwave Oven, Automatic Washing Machine, Photostat machine, Digital Camera, Smart Phone.

**12 Hours**

**Books:**

- 1) Audio and Video Systems by R G Gupta, Tata McGraw Hill Education Pvt. Ltd, New Delhi
- 2) Consumer Electronics by Deepak Arora, Eagle Prakashan, Jalandhar.