**Course Objectives:**

1. To make students familiar with the applications in different areas of broadcasting such as television, AM, FM, cable television, telecommunications, data communications, studio acoustics etc. through experiments and field researches
2. To presenta complete perspective of basic equipments or devices used for transmission of signals such as filters and oscillators, radio frequency power amplifiers and mixers, basic circuits of modulation and demodulation, transmitters and studio equipments
3. To study and understand the basic concepts of broadcasting and obtain the knowledge of designing a simple AM/FM transmitter
4. **Audio Principles(2 hours)**
   1. Decibel scale and units
   2. Balanced lines
   3. Principles and types of microphones
   4. Basic audio measurements and test gear
   5. Sampling theory and its application to audio signals
   6. Audio data rate reduction systems for recording and transport of audio signals including an overview of psychoacoustic techniques

1. **Television Principles(10 hours)**
   1. Concepts of Scanning
   2. Video waveform signal bandwidth
   3. Low frequency response and DC restoration
   4. Sampling theory and it’s application to the digital studio standard
   5. Effect of distortion and bit errors on picture
   6. Generation of color component signals
   7. International TV standards: Overview of different PAL standards, SECAM and NTSC, Problems of standards conversion

1. **AM Transmitter (9 hours)**

AM transmitter circuits and its modulation process

1. **FM Transmitter(4 hours)**

To know the basic FM transmitter circuits and its modulation process

1. **AM Broadcasting(3 hours)**

To know the actual set-up of devices/equipments used in AM broadcasting

1. **FM Broadcasting(4 hours)**

To know the actual set-up of devices/equipments used in FM broadcasting

1. **TV Broadcasting(4 hours)**

To know the actual set-up of devices/equipments used in TV broadcasting

1. **CATV Broadcasting(4 hours)**

To know the actual set-up of devices/equipments used in CATV broadcasting

1. **Satellite Navigation and Global Positioning System(5 hours)**
   1. Radio and Satellite navigation
   2. GPS position location principles
   3. GPS receivers and Codes
   4. Satellite signal acquisition
   5. GPS navigation message
   6. GPS signal levels
   7. Timing accuracy
   8. GPS receiver operation

**Practical:**

1. Field visit to broadcasting stations
2. Field visit to VSAT stations.

**References:**

1. Roy Blake, “Comprehensive Electronic Communication”, West Publishing Co.
2. B. Grob and Charles E. Herndon, “Basic Television and Video Systems”, McGraw-Hill.

**Evaluation Scheme:**  
The questions will cover all the chapters of the syllabus. The evaluation scheme will be as indicated in the table below:

|  |  |  |
| --- | --- | --- |
| **Chapters** | **Hours** | **Marks Distribution\*** |
| 1 | 2 | 4 |
| 2 | 10 | 18 |
| 3 | 9 | 16 |
| 4 | 4 | 7 |
| 5 | 3 | 5 |
| 6 | 4 | 7 |
| 7 | 4 | 7 |
| 8 | 4 | 7 |
| 9 | 5 | 9 |
| **Total** | **45** | **80** |

\*There could be a minor deviation in Marks distribution