

**SEMESTER VII**  
**EC1707 ADVANCED COMMUNICATION LABORATORY**

**LIST OF EXPERIMENTS**

**LIST OF OPTICAL EXPERIMENTS :**

1. Measurement of bending and fiber attenuation losses.
2. Numerical Aperture calculation of Fiber.
3. DC Characteristics of LED and PIN Photo diode.

**LIST OF WIRELESS COMMUNICATION EXPERIMENTS :**

1. Wireless Channel Simulation including fading and Doppler effects
2. Simulation of Channel Estimation, Synchronization & Equalization techniques
3. Analyzing Impact of Pulse Shaping and Matched Filtering using Software Defined Radios
4. OFDM Signal Transmission and Reception using Software Defined Radios

**LIST OF MICROWAVE EXPERIMENTS :**

1. Reflex Klystron Characteristics
2. S matrix characterization of E, H and hybrid TEEs
3. Radiation Pattern Measurement of Horn Antenna
4. VSWR and Impedance Measurement
5. Characterization of Directional Couplers, Isolators, Circulators
6. Gunn Diode Characteristics
7. Microwave IC – Filter Characteristics

### **LIST OF EQUIPMENT**

<b>Sl.No.</b>	<b>Description of Equipment</b>
1.	Trainer kit for carrying out LED and PIN diode characteristics, Digital multi meter, optical power meter
2.	Trainer kit for determining the mode characteristics, losses in optical fiber
3.	Trainer kit for analyzing Analog and Digital link performance, 2 Mbps PRBS Data source, 10 MHz signal generator, 20 MHz Digital storage Oscilloscope
4.	Kit for measuring Numerical aperture and Attenuation of fiber
5.	Advanced Optical fiber trainer kit for PC to PC communication, BER Measurement, Pulse broadening
6.	MM/SM Glass and plastic fiber patch chords with ST/SC/E2000 connectors
7.	LEDs with ST / SC / E2000 receptacles – 650/ 850 nm
8.	PIN PDs with ST / SC / E2000 receptacles – 650 / 850 nm
9.	Digital Communications Teaching Bundle (LabVIEW/MATLAB/Equivalent software tools)
10.	Transmit/receive pair of NI USRP-2920 transceivers (50 MHz to 2.2 GHz)