SEMESTER	***DEPARTMENT***	***COURSE TITLE***
Sixth	*Telecommunications Engineering*	*Digital Communications Lab.*
COURSE CODE	***HOURS*** 3	***COURSE SPECIFICATIONS***
ET608	***UNITS*** 1	*Practical Content*

1. ***Sampling theorems:***
   - Sample & Hold circuit.
   - Speech, audio, and video sampling.
   - Sampling rate and aliasing measurements.
   - Reconstructing signals from their samples.
2. ***Pulse Modulation (PAM, PWM, and PPM):***
   - Generation, test, and demodulation of a PAM signal.
   - Generation, test, and demodulation of a PWM signal.
   - Generation, test, and demodulation of a PPM signal.
3. ***PCM:***
   - Generation and test of a PCM signal.
   - Reconstruction and test of a PCM signal.
   - Coding efficiency.
   - System capacity.
4. ***Time Division Multiplexing (TDM):***
   - Build and test a PAM time division multiplexer and dmultiplexer.
   - Build and test a PCM time division multiplexer and dmultiplexer.
5. ***ASK, FSK, and PSK:***
   - Clock generation and regeneration.
   - Data Formatting (NRZ, RZ, and Manchester coding).
   - Production and detection of ASK signal.
   - Production and detection (using tuned circuit and PLL) of FSK signal.
   - FSK with RZ data.
   - Production and detection of PSK signal.

6. Information rate:

- Bit error rate.
- Error detection.
- Error correction.

References:

1. George Kennedy and Bernard Davis. ***Electronic Communication Systems***, McGraw-Hill Book Company, Inc.
2. Paul H. Young. ***Electronic Communications Techniques***, Prentice Hall.
3. A. Carlson, Paul Crilly, and Janet Rutledge. ***Communication Systems***, McGraw-Hill Book Company, Inc.