LIST OF PROJECTS FOR ELE 436 COURSE:

1) FM modulation of speech:
   - To modulate and demodulate speech using Frequency Modulation technique.

2) QAM and QPSK:
   - Understanding QAM in digital communications as a generator of a quadrature phase shift keyed signal. Demodulation of QPSK.

3) Spread Spectrum – DSSS and CDMA:
   - Demonstration of some of the principles of a direct sequence spread spectrum (DSSS) system.

4) PCM TDM:
   - Creation of a time division multiplexed pulse code modulated PCM-TDM signal by interlacing two PCM signals. Demultiplexing of same.

5) Armstrong’s phase modulator and FM demodulation with PLL:
   - Modeling Armstrong’s modulator, quadrature phase adjustment, deviation calibration, introduction of the amplitude limiter, introduction to the PLL as an FM demodulator.
**Project Guidelines:**

1) 3 students in one group.

2) Select a project from the above list and report it to the TA’s.

3) Each group must complete the project in 2-3 lab sessions and hand in the reports to the TA’s before 11th December.

4) Students can refer to the TIMS experiment manual to get an idea about the project.

5) Each student has to hand in a final project report to Dr. Kumaresan. The report should contain,

   a) Aim

   b) Theory behind the project.

      The student has to show enough evidence that he/she completely understood the theory behind the project.

   c) Experimental procedure

   d) Conclusion