

ESE528 - Communication Systems (Core Course)

Syllabus

This course provides a general overview of communication theory and addresses fundamental concepts in this field. After a review of signals and systems representations, various continuous and digital modulation schemes are analyzed. Spread spectrum systems and their application to multiuser communications are also addressed. Advanced communication systems are described and general concepts of wide and local area networks are introduced. Fall, 3 credits, grading ABCF.

TEXTBOOK:

- A. Bruce Carlson and Paul B. Crilly, Communication Systems, 5th ed, McGrawHill (2010)
ISBN: 978-0-07-338040-7

GRADING POLICY:

Mid-term	40%
Final	40%
Projects	20%

Topics:

- 1 Representation of Signals and Systems
- 2 Signal Transmission and Filtering
- 3 Linear CW Modulation
- 4 Angle modulation
- 5 Sampling and Pulse Modulation
- 6 Analog Communication Systems
- 7 Probability Theory and Random Processes
- 8 Noise in CW modulation Systems
- 9 Digitization Techniques for Analog Messages and Computer Networks
- 10 Spread Spectrum Systems

LEARNING OUTCOMES:

Understanding and proficiency in the following concepts:

- ✓ Frequency representation of analog signals
- ✓ Analog modulation techniques
- ✓ Analog demodulation techniques

NOTICE

If you have any condition, such as a physical or mental disability, which will make it difficult for you to carry out the work as I have outlined it or which will require extra time on examinations, please contact the staff in the Disabled Student Services office (DSS) and notify me in the first two weeks of the course.