

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.

Fall, 3 credits, grading ABCF.

TEXTBOOK:

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

GRADING POLICY:

Mid-term	40%
Final	40%
Projects	20% [MATLAB assignments]

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 Spread spectrum systems

LEARNING OUTCOMES:

Understanding and proficiency in the following concepts:

- ✓ Frequency representation of analog signals
- ✓ Analog modulation techniques
- ✓ Analog demodulation techniques
- ✓ Communication system design

SPECIAL PROVISIONS FOR ONLINE OFFERING:

- Lectures will be delivered using SBU's Zoom account at the scheduled time.
- You will require a reliable internet connection with both audio and video connection to the Zoom meeting.
- All course related material and lecture slides will be posted on Blackboard.
- The mid-term and Final examinations will be given at the scheduled time. During the examination period you will need to be in view of the live camera feed.
- Office hours will be held synchronously at the scheduled time.

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, or any other concerns regarding the online delivery of the course, please contact me harbans.dhadwal@stonybrook.edu.