

EECE 545 DIGITAL COMMUNICATION SYSTEM

EECE 477 COMMUNICATION SYSTEM II

Syllabus - Fall 2009

- **Instructor:** Dr. Xiaohua(Edward) Li, Associate Professor of Electrical Engineering
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Office hours: M, W 1:30-2:30 PM or by appointment.
Course website (Blackboard): <http://blackboard.binghamton.edu/>
- **Course Location and Time:** EBJ15, TR 10:05-11:30 AM
- **Textbook:**
Bernard Sklar, *Digital Communications, Fundamentals and Applications*, Second Edition, Prentice Hall, 2001.
- **References:**
 1. J. Proakis and M. Salehi, *Contemporary Communication Systems Using MATLAB*, Bookware Companion Series, PWS Publishing, 1998.
 2. J. Proakis and M. Salehi, *Digital Communications*, 5th ed. McGraw Hill, 2008.
- **Course Description:**
 1. Principles and techniques of digital modulation, transmission, coding and spread spectrum. Applications of modern digital communications.
 2. Project SAM: develop a soft-acoustic modem
- **Prerequisites:**
EECE301 and EECE377 (or equivalent undergraduate-level digital signal processing and analog communication systems). Basic concepts of linear systems, transforms and probability theory are required.
- **Grade:**
 1. Homework(about 6): 10%
 2. Exam 1 (*Oct. 15*. Chapters 1,2,3,4): 30%
 3. Exam 2 (*Dec. 3*. Chapters 6,7,12): 35%
 4. Project: 25% (EECE545: SAM. EECE477: MATLAB simulations).
- **Topics:**

Weeks	Textbook Chapters	Project SAM
1	Chapter 1. Introduction and background	EECE545 Phase I
2-5	Chapter 2-3. Baseband modulation/demodulation	
6-7	Chapter 4. Passband modulation/demodulation	
8-9	Chapter 12. Spread spectrum	EECE545 Phase II
10-15	Chapter 6-7. Channel coding	