Preliminary ESE 547 Syllabus for Fall 2011
Instructor: John Murray

1   Text

The required textbook is:

Mitra, S.J., "Digital Signal Processing: A Computer-Based Approach", 4th ed., 2011, McGraw-Hill

ISBN: 978-0-07-338049-0 (may be part of 978-0-07-736676-6).

2   Website

The class website address is:

`www.ece.sunysb.edu/~ese547`

3   Schedule

3.1   Class

Class will be on Mondays each week from August 29th to December 5th, **except for September 5th**, when there will be no class. Classes will start at 3:50pm and end at 6:50 pm in room 3017, Humanities, and will have a 20-minute break.

3.2   Tests

There will be one midterm test which will be held in class on October 24th, and a comprehensive final on Monday, December 19th from 5:15pm to 7:45pm (period 4).

3.3   Office Hours

Phone	Hours	Office	email
632-8413	3:30 - 5:30 p.m. Tuesday	253 Light Eng.	John.Murray@sunysb.edu
	3:30 - 5:30 p.m. Wednesday	253 Light Eng.	

4   Course Outline

The following topics will be covered:

1. Discrete-Time Signals and Systems

2. Discrete-Time Fourier Transform

3. Z-transform

4. Sampling and restoration

5. Signal flow-graphs and filter structures

6. FIR filter design

7. IIR filter design

8. DFT and FFT.

9. Lattice form filters.

   This corresponds roughly to (parts of) chapters 2, 3, 6 and 7, 4, 8, 10, 9, 5 and 11, and more of 7 and 8 in the text. Some additional material on signal flow graphs and state-variable description of digital filters will also be covered. The coverage in the text is very comprehensive, and we will be covering only selected sections from each of these chapters.
   In addition to the ordinary theoretical homework, there will be MATLAB-based assignments which will complement the class-work. It will therefore be useful for students to have access to MATLAB (at least the student edition) either on a campus computing facility or privately. Alternatively, the free software packages `Gnu Octave` or `Scilab` may be useful.

5   Grading

There will be one mid-semester test and a final, each counting for 50% of the overall grade. In addition to counting for 50% of the grade, the final will also be divided into two parts, the first of which will function as a makeup for the mid-semester test. If the final is missed, a makeup will be allowed only for the most serious reasons; written evidence of the reasons for missing the final will be required.

6   Other Remarks

The standard reference for graduate-level DSP is:
   Oppenheim, A. V., and Schafer, R.W., "Discrete-Time Signal Processing", Prentice-Hall, 1989, Englewood Cliffs, NJ. ISBN: 0-13-216292-x

For additional reading, the following books are also recommended:
   Kuc, "Introduction to Digital Signal Processing", McGraw-Hill, 1988
   Stearns and Hush, "Digital Signal Analysis", Prentice-Hall, 1990
   DeFatta, Lucas, and Hodgkiss, "Digital Signal Processing: a System Design Approach", Wiley, 1988.
   Cavicchi, T.J., "Digital Signal Processing", Wiley, 2000, New York, NY. ISBN: 0-471-124729

7   Disability

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services at (631) 632-6748 or at their website: http://studentaffairs.stonybrook.edu/dss/.

They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the following website:
http://www.sunysb.edu/ehs/fire/disabilities.shtml

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at :
http://www.stonybrook.edu/uaa/academicjudiciary/

8   Conduct

The University at Stony Brook expects students to maintain standards of personal integrity that are in harmony with the educational goals of the institution; to observe national, state, and local laws and University regulations; and to respect the rights, privileges, and property of other people. Faculty are required to report disruptive behavior that interrupts facultys ability to teach, the safety of the learning environment, and/or students ability to learn, to Judicial Affairs.