

EC 6404 Adaptive Signal Processing
Winter 2011

Instructor: Dr. Praveen Sankaran, email: psankaran@nitc.ac.in, Office hours: open, ECE Block II, RM 301.

Class Timings: Monday 10.15 - 11.15am, Tuesday 1-2pm, Wednesday: 11.15-12.15am, Thursday: 8-9am; Location: OAB 102.

Textbooks:

1. Bernard Widrow and Samuel D. Stearns, "Adaptive Signal Processing", Person Education, 2005.
2. Simon Haykin, "Adaptive Filter Theory," Third Edition, Prentice Hall International, 2002 .
3. J. G. Proakis and D. G. Manolakis, "Digital Signal Processing", Fourth Edition, Pearson, 2007.

Grading Policy:

MTech	
Assignments/Projects	20%
Exam 1	20%
Exam 2	20%
Exam 3	40%

Letter Grading: Absolute

Topics:

1. Background and preview
2. Wiener Filters, Levinson-Durbin algorithm, Schur algorithm
3. Lattice Structures, AR, ARMA
4. Method of Steepest Descent , Least-Mean-Square Adaptive Filters, LMS/Newton algorithm
5. RLS Algorithms, RLS Lattice-Ladder algorithms
6. Random search algorithms
7. Blind deconvolution, back-propagation, radial basis function networks

Note Carefully: Homework assignments and design projects are to be the work of an individual student only. Evidence such as identical results and/or wording of sections of a report, if strong enough, will be reported and appropriate action will be taken.

As it applies here, the writing of all reports will be as individuals and the writing must be in your own words with references to any material obtained by outside sources.