EE 464

Fall 2011

Digital Signal Processing

Instructor: T. R. Fischer

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Office: EE/ME Tower, Room 404. Office hours: MW 3:10-4:00 pm, Thursday 2:00-3:00 pm, or by appointment.

Text: John Proakis and Dimitris Manolakis, *Digital Signal Processing*, Prentice Hall, 4th Edition, 2007.

References:

1. Companion to Text (Not required): V. K. Ingle and J. G. Proakis, *Digital Signal Processing Using Matlab*, PWS Publishing.
2. J. G. Proakis and V. K. Ingle, *Student Manual for Digital Signal Processing with Matlab*, Pearson Prentice-Hall 2007. (This book contains complete solutions, including Matlab code, for many (most) of the problems in the DSP using Matlab companion text listed above. Note, however, that some of the problem numbers are inconsistent in the two books.)
3. A. Oppenheim and R. Schafer, *Digital Signal Processing*, Prentice Hall, 1975+.
4. *Student Edition of Matlab*, or at least a good tutorial on Matlab. (Many Matlab tutorials are available on the web. Just do a search on "Matlab tutorial," and find one that you like.) Two on-line tutorials are
   http://www.mathworks.com/access?helpdesk/help/help/tech_doc/learn_matlab/
   http://www.math.ufl.edu/help/matlab-tutorial/index.html

Course Requirements

Homework*	10%
Computer Exercises*	10%
Tests (2)	40%
Project*	15%
Final Exam	25%

Approximate Test Dates:

Test 1 – Wednesday, October 5.
Test 2 – Wednesday, November 9.
Final Exam – Thursday, December 15, 8:00 am.
Project Due Date: Wednesday, December 7.

* The homework, computer exercises, and project are the most important part of the course! This is because in doing the homework, computer exercises, and project, most of the learning takes place and the practical value of DSP becomes apparent. Only selected homework exercises will be graded.

The course will cover most of the text Chapters 1-8, Chapter 9.1-9.3, and Chapter 10, plus very limited portions of Chapters 11 and 12 (if time permits). Most of Chapters 1, 2, and much of Chapters 4, 5 are covered in the prerequisite course EE 341, and so will only be briefly reviewed in class.

Collaboration Policy: You are free to talk with other students about the homework, computer exercises, and project. This includes discussing approaches to solving problems or projects, and discussing approaches to writing Matlab code necessary to solve problems or projects. All work submitted must be your individual effort. You may use Matlab code already published (e.g., on the web, in the "Student Manual" referenced above, etc.) provided that the code is properly referenced. However, you may NOT share Matlab code with other students in the course (nor share Matlab code with other WSU students, graduate students, etc.).

Accreditation Board for Engineering and Technology (ABET) Information
The ABET course syllabus is posted on the EECS website, as is the assessment process.

Academic Integrity: The EECS academic integrity policy is on-line at
http://www.eecs.wsu.edu/eeungrad/
It is each student's responsibility to read and know the policy. The University Policy on academic integrity is on-line at
http://conduct.wsu.edu/
under the "Academic Dishonesty" link. In EE 464, students may discuss the homework and computer exercises, and work together to solve the homework and exercises. However, all of the work that is submitted must be individual effort (that is, no copying of some else's homework solution, computer program, plots, etc.). For example, you may discuss a Matlab exercise, how to approach the problem, what Matlab functions can be used, etc., but all programs should be your own effort.

Special Needs Students: Accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations needed for the course. Accommodations must be approved through the Disability Resource Center in Administration Annex 206, 335-1566.

Safety The University has extensive information on campus safety posted on-line at http://safetyplan.wsu.edu and http://oem.wsu.edu/Emergencies. Please review this material.

WSU LEARNING GOALS & OUTCOMES

Critical and Creative Thinking: Graduates will use reason, evidence, and context to increase knowledge, to reason ethically, and to innovate in imaginative ways.

Quantitative Reasoning: Graduates will solve quantitative problems from a wide variety of authentic contexts and everyday life situations.

Scientific Literacy: Graduates will have a basic understanding of major scientific concepts and processes required for personal decision-making, participation in civic affairs, economic productivity and global stewardship.

Information Literacy: Graduates will effectively identify, locate, evaluate, use responsibly and share information for the problem at hand.

Communication: Graduates will write, speak and listen to achieve intended meaning and understanding among all participants.

Diversity: Graduates will understand, respect and interact constructively with others of similar and diverse cultures, values, and perspectives.

Depth, Breadth, and Integration of Learning: Graduates will develop depth, breadth, and integration of learning for the benefit of themselves, their communities, their employers, and for society at large.