

The University of Alabama in Huntsville
Electrical and Computer Engineering
Course Syllabus
CPE 690 01/EE 610 01
Fall 2009

- Textbook: Digital Signal Processing: A Computer-Based Approach, Sanjit M. Mitra, McGraw-Hill Publishers, 3rd Edition, 2005.
- Course Objective: The goal of the course is to take a student through the design of a system using Simulink, then convert the design to hardware using Xilinx System Generator Blocks and to software using Simulink Real Time Workshop. The generated system would be co-verified against the the original Simulink model.
- Web Page: <http://www.ece.uah.edu/~gaede/cpe690>
- Faculty Member: Dr. Rhonda Kay Gaede, Office: EB 211, Phone: 824-6573, email: gaede@ece.uah.edu
- Instructors: David Moody, david.moody@ieee.org
Ben Harding
Charles Fulks
- Office Hours: MW 2 PM – 4 PM, TR 9 AM – 10 AM, or by appointment
- Prerequisite: Undergraduate signals and sytems class such as CPE 381.
- Grading:
- | | |
|------------|------|
| Homework | 70 % |
| Final Exam | 30 % |
- Homework: NO late homework will be accepted without extenuating circumstances. Contact me as soon as a problem occurs.
- Important Dates: August 25 – Last day to add a class
September 1 – Last day to withdraw with refund
September 7 - Holiday
September 9 – Last day to apply for Pass/Fail
September 16 – Last day to change from credit to audit
October 8-10 – Fall Break
October 30 – Last day to withdraw
November 25-28 – Thanksgiving
November 30 – Last MW class
- Final Exam: Monday, December 7, 8:00 AM – 11:30 AM
- Miscellaneous: Mute your cell phones before you bring them to class.

Course Outline:

Introduction to Radar Problem, Simulink and Modeling, testing and verification,

I/Q Processing/FIR Filters

Matched Filtering

Array processing

FFT

Final Qualification Testing

Implementation as hardware, fixed point computations, implementation as system generator blocks, partitioning into multiple FPGAs

1. Numerical Representation & Quantization Effects

2. Xilinx Blockset

3. Simulation & Timing Analysis

4. Co-Simulation & ChipScope

5. multi-rate, interpolation, decimation, and other advanced capabilities.

Software implementation using real time workshop, co verification using embedded blocks or VxWorks

I promise or affirm that I will not at any time be involved in cheating, plagiarism, fabrication, misrepresentation, or any other form of academic misconduct as outlined in the UAH Student Handbook while I am enrolled as a student at UAH. I understand that violating this promise will result in penalties as severe as indefinite suspension from the University of Alabama in Huntsville.

Name (Printed)

Signature

Date