

The Ohio State University  
Department of Electrical & Computer Engineering

ECE 609 Spring 2007

Digital Signal Processing Laboratory

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- **Web Page**

<http://www.ece.osu.edu/~potter/ECE609>

- **Instructors:**

Ozan Koyluoglu, GTA, [koyluogo@ece.osu.edu](mailto:koyluogo@ece.osu.edu)

Lee Potter, [potter@ece.osu.edu](mailto:potter@ece.osu.edu), office hours 1:18-2:18 Mondays and by appointment

- **Goals and Structure**

The primary goal of this course is to understand the design and implementation of real-time DSP applications using a programmable digital signal processor, the Texas Instruments TMS320C5510. The course will consist of six structured laboratory exercises and a small project. Familiarity with discrete-time signal processing is assumed.

- **Text**

*Digital Signal Processign Laboratory, ECE 609*, available on-line at the course web page and under construction at <http://cnx.rice.edu/content>

On-line versions are best viewed with the *Mozilla* web browser.

- **Grading**

Lab 0 .....	5 points
Labs 1–5 .....	15 points each
Project: proposal .....	5 points
Project: simulation .....	15 points
Project: technical content and working demonstration .....	20 points
Project: report .....	15 points
Project: oral presenation .....	5 points
Total .....	140 points

Labs 1 through 5 are 15 points each, including pre-labs, lab completion, and, in some cases, a post-lab exercise. The project contributes 60 points. All assignments must be submitted to receive course credit.

- **Projects**

The last four weeks of the course are devoted to a small project to be completed by teams of two students. Emphasis in grading will be the successful completion of the proposed project. Proposals, typically two pages, should list team members, the topic, a brief description of the intended final product, and references. The project demonstration will be scheduled during week 10 or 11 of the quarter. Each team will give a brief oral presentation (e.g., powerpoint) followed by a demonstration of the completed project in action. Each project team will submit a project report including: introduction, background with literature review, technical description of the project, a results section with tests conducted, a conclusion, and an appendix with commented code.

- **Schedule**

Week	Topic
1	Lab 0. Introduction
2	Lab 1. FIR filtering
3	Lab 2. LMS adaptive filtering
4	Lab 3. IIR filtering
5	Lab 4. FFT spectrum analyzer
6	Lab 5. Compiler
7	Project development
8	Simulation demonstration due
9	Project development
10	Project presentations
Exam	[Project presentations]

Prelab exercises for labs 1–5 are due at the beginning of the weekly lab session. Post-lab exercises, as applicable, are due at the beginning of the following lab session. Project proposals are due by 10:30am, Thursday May 3. Matlab simulation of project software is due by 1:30pm May 17. Final reports are due by 10:30am, Tuesday June 5.

Students have priority during their assigned lab period. Lab open hours: schedule will be posted on the course web page.