

# Communication Engineering Lab

ECE 461 – Section 201

Fall 2008

**Lab Location:** Science & Technology I, Room 2B

**Lab Hours:** Wednesdays, 10:30 am - 1:20 pm

**Lab instructor:** Hossein Ghaffari Nik

**Email:** [hghaffar@gmu.edu](mailto:hghaffar@gmu.edu) (Preferred)

**Phone:** (703) 993 – 1563

**Office Location:** Science & Technology I, Room 2E

**Office Hours:** Wednesdays, 1:30 pm - 4:30 pm

Thursdays, 12:30 pm - 1:30 pm

**Course Website:** <http://mason.gmu.edu/~hghaffar/ECE461.html>

## Lab Policies:

- The George Mason University Honor Code applies to all aspects of ECE 461.
- **You must complete and present all the experiments to pass the course.**
- Attendance at all labs is mandatory.
- Read and follow all the laboratory rules and tips mentioned on pages i-v of the lab manual.
- Each student is required to do the advance preparation before coming to the lab.
- A pop quiz may be given at the beginning of each lab to test your level of preparation.
- **Each student is allowed to pair up with only 1 partner (maximum of 2 students per group) to work on each experiment.**
- You must present your working experiment on the assigned date (or within 2 week during office hours with prior permission from the instructor) for each lab.
- A signature sheet will be provided to you that requires TA's signature for each experiment. It is your responsibility to keep and collect these signatures and turn in the signature sheet at the beginning of your final exam. This sheet will be returned to you after you finish your test.
- Only the ECE 461 TA is allowed to check your experiments for laboratory credit and signature.
- **Lab reports must be submitted by each partner in print within 1 week of the assigned date for each experiment at the beginning of the lab period.**
- **Late submission of a report will reduce its grade by 15% per week.**
- Lab reports must be legible. A sample report format will be provided to you.
- Always check the course calendar for due dates and Midterm/Final Exams.
- Midterm and Final Exams both will have 2 parts. Each test consists of a written part for theory and an experimental part to test your knowledge of hardware and equipment.

## Lab Grading:

Attendance and demonstration of all labs in appropriate time is a big determining factor in your final grades. If you have passed all your experiment demonstrations, your lab grade will be determined as follows:

Lab Demonstration & Attendance	30 %
Lab Reports	20 %
Midterm Exam	25 %
Final Exam	25 %

## Course Outline:

### Part 1 – Hardware & Theory

- Deterministic signal analysis and Spectrum analyzers
- AM transmitter
- Balanced modulator
- Diode detector
- Frequency modulation

### Part 2 – Using TMS 320

- Introduction to Code Composer Studio
- Graphing Capabilities of CCS
- Generating a sine-wave using CODEC
- ASK Transmitter
- FSK Transmitter -or- Simulink Real Time Workshop

## Tentative Calendar:

	08/27/08	Introduction - Make sure you purchase your Lab Kits ASAP.
	<b>09/01/08</b>	<b>Labor Day, university closed</b>
	09/03/08	Experiment # 1 - Deterministic Signal Analysis, Spectrum Analyzers
	<b>09/09/08</b>	<b>Last day to drop with no tuition penalty</b>
	09/10/08	Experiment # 2 - AM Transmitter
	<b>09/16/08</b>	<b>Last day to drop with a 33% tuition penalty</b>
	09/17/08	Experiment # 3 - Balanced Modulator
	09/24/08	Experiment # 4 - Diode Detector
	<b>09/26/08</b>	<b>Last day to drop with a 67% tuition penalty (Last day to drop)</b>
	10/01/08	Experiment # 5 - Frequency Modulation
>>>	<b>10/08/08</b>	<b>Midterm Exam</b>
	<b>10/13/08</b>	<b>Columbus Day recess (Monday classes/labs meet on Tuesday)</b>
	10/15/08	Experiment # 6 - Introduction to Code Composer Studio
	10/22/08	Experiment # 7 - Graphing Capabilities of CCS Time/Frequency Graphs
	10/29/08	Experiment # 8 - Output a Sine Wave through the CODEC
	11/05/08	Experiment # 9 - Amplitude Shift Keying (ASK) Transmitter
	11/12/08	Experiment # 10 - Frequency Shift Keying (FSK) Transmitter
	11/19/08	TBD
	<b>11/26/08</b>	<b>Thanksgiving recess</b>
>>>	<b>12/03/08</b>	<b>Final Exam</b>
	<b>12/06/08</b>	<b>Last day of classes</b>