Lab meetings: Friday 8:40am - 11:20am
Nguyen Engineering Building 3505

Instructor: Dr. Shyam Pandula
e-mail: spandula@gmu.edu

Course Objective:
• This course aims at providing students with hand-on experience in analog and digital communication systems.

Course website: http://blackboard.gmu.edu
• Log into Blackboard using your GMU email account credentials.
• Lab experiments, announcements, and other course materials will be posted on Blackboard.

Textbook References:

Prerequisites:
• ECE334 Linear Electronics Lab
• ECE460 Communication and Information Theory

Grading:
• Attendance and lab demonstration - 10%
  – Attendance to the lab sessions is mandatory. Students must complete and successfully present all the experiments in order to pass the course.
  – Successful attendance to the lab comprises of being there on time, being prepared and actively participating to the experiments.
• Lab reports - 50%
  – Lab reports constitute a major component of the course. They should demonstrate an understanding of the background, and a clear and critical presentation of the procedure followed
and the results obtained. "Critical" means questioning what was done and why such results were obtained.

– Lab reports should be typed. The format of the reports will be provided by the lab instructor.

– Lab reports are due at the beginning of the class the week after the experiment was completed; there will be a 10% penalty for every day delay after that. In case of a documented medical emergency that doesn't allow you to submit the report on time, please notify the instructor.

  • Midterm exam - 20%
  • Final exam - 20%

**Student disability:** If you are a student with a disability and you need academic accommodations please see me and contact the Office of Disability Services (ODS) at 703.993.2474. All academic accommodations must be arranged through that office. Students must inform the instructor at the beginning of the semester, and the specific accommodation will be arranged through ODS.

**Academic Integrity:** GMU is an Honor Code university. Please see the University Catalog for a full description of the code and the honor committee process.

**Honor Code:** To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.
Course Schedule:

<table>
<thead>
<tr>
<th>Week 1:</th>
<th>01/27 Introduction and Overview</th>
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| Week 2: | 02/03 Experiment 1  
|         | Spectrum Analysis and Frequency Transfer Function |
| Week 3: | 02/10 Experiment 2  
|         | Amplitude Modulation and Demodulation |
| Week 4: | 02/17 Experiment 3  
|         | DSB-SC Balanced Modulator |
| Week 5: | 02/24 Experiment 4  
|         | Frequency Modulation |
| Week 6: | 03/03 Experiment 5  
|         | Phase-Locked Loops |
| Week 7: | 03/10 Review |
| Week 8: | 03/17 Spring Break |
| Week 9: | 03/24 Midterm Examination |
| Week 10: | 03/31 Experiment 6  
|         | Modeling and Simulation of Analog Communication Systems by using Simulink |
| Week 11: | 04/07 Experiment 7  
|         | Baseband Communications - A/D & D/A Conversion; Nyquist Pulse Shaping |
| Week 12: | 04/14 Experiment 8  
|         | Digital Amplitude Modulations - PAM, ASK, and QAM |
| Week 13: | 04/21 Experiment 9  
|         | Digital Phase Modulations - BPSK, DPSK, and CPM |
| Week 14: | 04/28 Experiment 10  
|         | Digital Frequency Modulations - FSK and MSK |
| Week 15: | 05/05 Review |
| Weeks 16/17: | 05/12 Final Exam. |