Instructor:
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- IEEE #: 06888382

Rooms/Time:
- Lecture/Lab:
  - Electrical Engineering Building
  - Room 205 Lecture
  - Room 207 Lab
- Schedule
  - Tuesday
  - 5:40 pm to 8:40 pm

Books:
- Lab Manual

Assignments:

Lecture:
- Read the text book assignments for lectures one week in advance.
- Hand in homework assignment questions and problems one week after assigned. These may be hand written, but must be neat and legible. No credit is given for late homework.
- All homework solutions will be posted.
Lab Reports:

- Lab dates will be announced at least one week in advance.
- Read the lab manual assignment one week in advance.
- Lab reports must be constructed *exactly* as outlined.
- Lab partners work as a team.
- Lab partners may prepare one lab report as a team or may prepare an individual lab report.
- Lab reports are due two weeks after performed.
- Lab reports must be prepared on a pc. Programs such as Microsoft Word and Excel or equivalent may be used.
- Lab reports must be neat, thorough and professional, and must be stapled together. Do not use fancy lab report covers.

Lab Report:

- **Cover Page**
  - Name of Experiment
  - Date Performed (Completed)
  - ECE464-589
  - NJIT
  - Lab Room Number
  - Lab Partner Names

- **Table of Contents**
- **Purpose**: Brief explanation of why you are conducting this experiment and what you plan to accomplish or prove.
- **Procedure**: Short, concise bullets outlining the process required to achieve your goals.
- **Theory**: Brief description of the exercised in the Lab. Site all formulas used.
- **Data**: Tables and graphs clearly displaying data. Title and scale appropriately.
- **Discussion**: Observations and problems experienced. Answer questions in Lab Manual. Must be detailed.
- **Conclusion**: Did you achieve what you set out to do? Why or why not? One paragraph.
- **Equipment List**: Actual list of equipment used, specifying device, manufacturer, model number.
- **Raw Data**: This is the actual handwritten data used during the experiment.
Rules:

- No food or drink is allowed in the lab.
- Arrive to class on time. If you plan to be late or miss a class, call me or send me an e-mail in advance.
- Turn off your cell phone prior to arrive to class. Use of cell phones in class is forbidden.

Extra Credit:

- IEEE Seminar related to class

Tests:

- Three tests will be given during the semester.
- You will be given 90 minutes to complete each test.
- A brief review will be given the week before tests.
- Calculators will be permitted.
- All tests are closed book and notes. However, a one-page (8 1/2 x 11”) formula sheet will be allowed.
- Tests will be graded and returned. At that time, the test solutions will be provided during class.

Grading:

- Lab Reports: 40 % (30 % for graduate students)
- Homework: 10 % (5 % for graduate students)
- Class Participation: 10 % (5% for graduate students)
- Attendance: 10 %
- Tests (3): 30 %
- Final Exam: 10 % (graduate students only)
- Graduate Seminars: 10 % (graduate students only)

Attendance:

- Attendance will be taken before each class.
- You will find that poor attendance will negatively impact your ability to grasp the material presented in this course.
- You will receive a grade for attendance.
- No credit will be given for lab reports if you were not present for the particular lab.
Final Exam (graduate students only—all students must attend):

- 15-minute Power Point Presentation
- 3 to 5-page typed report.
- Must have at least three sources.
- Topic related to a new technology pertaining to RF/Microwave

Graduate Student Additional Assignments:

View the seminar. Draft a 1-page summary, typed, single-spaced.

Rohde and Schwarz RF Fundamental Seminars (link will be provided)
- Part 1: Introduction to RF (due weeks 3)
- Part 2: RF Transmission Characteristics (due week 3)
- Part 3: RF Components and Measurements (due week 7)
- Part 4: Communications Systems, Signal and Noise (due week 10)
- Part 5: Digital Modulation (due week 14)
## Agenda:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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| 1    | Lecture:  
Introduction  
Review of Lab Reports  
Chapters 1 (Introduction to Electronic Communications) and 2 (Electronic Fundamentals for Communications) |
| 2    | Chapter 3 (Amplitude Modulation Fundamentals) |
| 3    | Chapter 3 continued |
| 4    | Chapter 5 (Fundamentals of Frequency Modulation) |
| 5    | Chapter 5 continued  
Test 1 |
| 6    | Chapter 7 (Digital Communication Techniques) |
| 7    | Chapter 7 continued |
| 8    | Chapters 10 (Multiplexing and Demultiplexing) and 11 (Digital Data Transmission) |
| 9    | Chapter 13 (Transmission Lines) |
| 10   | Chapter 13 continued  
Test 2 |
| 11   | Chapter 14 Antennas and Wave Propagation) |
| 12   | Chapter 14 continued |
| 13   | Chapter 10 and 11 |
| 14   | Chapter 16 (Microwave and Millimeter-Wave Communication)  
Test 3 |
| 15   | Chapter 16 continued |
| 16   | Final Exam |

## Labs:  
2 (Review of Electronic Fundamentals)  
3 (Amplitude Modulation Fundamentals)  
5 (Fundamentals of Frequency Modulation)  
6 (FM Circuits)  
9 (Communication Receivers)  
14 (Antennas and Wave Propagation)