



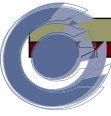
FAMU-FSU
College of Engineering






Lecture #1: Course Introduction

EEL 3003
Introduction to Electrical Engineering
Summer Semester, 2013
Instructor: Dr. Michael Frank

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Administrative Announcements

- First day of class! Two handouts today:
 - Course Syllabus
 - Prerequisite Acknowledgement Form
 - Make sure you sign it & turn it in to me before you leave
- Outline of Today's Lecture:
 - 1. Overview of Electrical Engineering
 - Some Major Subfields
 - Some Example Applications
 - ECE Senior Design Projects in 2012-13
 - 2. Go Over Syllabus
 - 3. Start First Lesson – Basic Concepts, Circuit Laws
- Today's Homework Assignment:
 - Read Ch. 1 of Textbook
 - Practice: Homework Problems 1.1-1.3.

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EEL3003L – Laboratory Sections

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| <p>□ Section 01:</p> <ul style="list-style-type: none"> ■ Day/time: <ul style="list-style-type: none"> □ Tue. 12:45 – 3:30 pm. ■ Location: <ul style="list-style-type: none"> □ A-325 ■ Instructor: <ul style="list-style-type: none"> □ Indranil Bhattacharya ■ Email: <ul style="list-style-type: none"> □ BhattIn@eng.fsu.edu | <p>□ Section 02:</p> <ul style="list-style-type: none"> ■ Day/time: <ul style="list-style-type: none"> □ Wed. 3:45 – 6:30 pm ■ Location: <ul style="list-style-type: none"> □ A-325 ■ Instructor: <ul style="list-style-type: none"> □ Soumak Mookherjee ■ Email: <ul style="list-style-type: none"> □ sm09s@my.fsu.edu |
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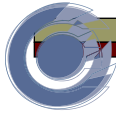


1. Overview of Electrical Engineering

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|---|---|
| <p>□ A major field of modern engineering, with many active subfields, including:</p> <ul style="list-style-type: none"> ■ Electronic devices & circuits <ul style="list-style-type: none"> □ Analog & digital ■ Solid-state circuits <ul style="list-style-type: none"> □ ASIC/VLSI design ■ Computer engineering <ul style="list-style-type: none"> □ Microprocessors & microcontrollers □ Reconfigurable logic □ Embedded systems ■ Control systems | <ul style="list-style-type: none"> ■ Electric power systems <ul style="list-style-type: none"> □ Grid technologies □ Photovoltaics □ Battery technologies ■ Electric machines <ul style="list-style-type: none"> □ Motors & generators ■ Sensors <ul style="list-style-type: none"> □ Electromechanical, etc. ■ Optoelectronics ■ Communications <ul style="list-style-type: none"> □ Wired & wireless □ Analog & digital □ Information theory |
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Examples: Senior Design Projects

- Overview slides from 2012-13 projects involving ECE students

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2. Go Over Course Syllabus

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| <ul style="list-style-type: none"> □ Core course topics: <ul style="list-style-type: none"> ■ DC Circuit Analysis ■ AC Circuit Analysis ■ Transient Analysis ■ Filters ■ AC Power ■ Operational Amplifiers ■ Semiconductors & Diodes ■ Transistors <i>etc.</i> | <ul style="list-style-type: none"> □ Additional topics as time permits: <ul style="list-style-type: none"> ■ Electric machines ■ Communications ■ Digital systems ■ Electronic instrumentation |
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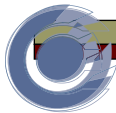


Syllabus, *cont.*

- Grading policies:
 - Grade breakdown:
 - In-class assignments: 15%
 - Quizzes based on HW: 25%
 - Midterm Exam: 30%
 - Final Exam: 30%
 - Letter grade scale:
 - $A \geq 90\% > B \geq 80\% > C \geq 70\% > D \geq 60\% > F$.
 - Absolutely **NO** curving or rounding of scores.

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Syllabus – Additional Class Policies

- Attendance is mandatory & will be taken each class.
 - More than 3 unexcused absences will result in being dropped from / failing the course.
 - Absences can only be excused via a letter signed by Associate Dean Perry.
- In-class assignments may be given without notice.
 - These will be graded, albeit sometimes leniently.
- Homework assignments are just for practice – they are not graded,
 - **BUT**, there will be a short in-class quiz based on each homework, which *will* be graded.
 - If you do not do the homework (and check your solutions), it's unlikely you can pass the quizzes.

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3. First Technical Lesson – Basic Concepts, Circuit Laws

- Review basic concepts in electrical physics:
 - The electron & its properties
 - Key basic quantities:
 - Charge
 - Current
 - Energy
 - Voltage
 - Power
 - More quantities later...
- Circuit terms/notation
 - Joins, nodes, branches
 - Icons for voltage sources, resistors, capacitors
- Basic circuit laws:
 - Power law: $P = IV$
 - Kirchhoff's Current Law
 - Kirchhoff's Voltage Law
 - Ohm's law: $V = IR$