Welcome to the Fundamentals of Mathematics for Engineers Lab

ENGR 2194
Lab Introduction
Communications

- Website:
  - Google “EEIC 2194” or type in http://eeicourses.engineering.osu.edu/
  - Contains all lab material

- Email:
  - Check your OSU email address daily for important periodic updates
  - Use only your OSU email address for any communications to instructional team
Carmen

- Online tool for some course resources
  - https://carmen.osu.edu
  - Use OSU login
  - 24/7 access

- Used to upload lab summaries
  - Dropbox feature (under “Activities”)

Electrical Lab Equipment

- Breadboard
- Resistors
- Voltmeter
- Ammeter
- Wattmeter

The horizontal holes on each side of the breadboard are connected together. Anything plugged into these five holes will be electrically connected together.

NOTE: The horizontal holes on one side of the breadboard don’t connect to the other side.

The vertical strips that run the length of the breadboard are electrically connected. These strips are usually used for power and ground connections.
MATLAB

- Arrays
- Defining Variables
- Plotting
- Commands (e.g., “disp”)
- Functions (e.g., sin/sind, cos/cosd, etc.)
- Dot Operators
Team Formation

- You will work in teams of two to four during lab.
- Teams are created using a Team-Maker tool in CATME.
- You should have received an email with a link.
- You will create a log-in password for this separate account.
- This survey needs to be completed today.
Technical Communications in the Real World

Communication, both oral and written, is extremely important in the business world. The best communicators are often the most successful people. Steve Jobs was an excellent communicator.
What is Technical Communication?

- A method of sharing information about specialized subjects
- Examples include:
  - Project contract or bid proposal
  - Assembly instructions for a toy
  - User guide for software
  - Drug prescription
  - Technical articles and publications
  - Sharing research at conferences
  - Presenting research or job status to management/clients
<table>
<thead>
<tr>
<th>High School Writing</th>
<th>Technical Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expository</td>
<td>Informative</td>
</tr>
<tr>
<td>Double spaced</td>
<td>Often Single Spaced</td>
</tr>
<tr>
<td>Essay format</td>
<td>Professional format</td>
</tr>
<tr>
<td>Descriptive</td>
<td>Concise and precise</td>
</tr>
<tr>
<td>Length requirement</td>
<td>Short is preferred</td>
</tr>
</tbody>
</table>
Key Techniques

- Technical Communication Style:
  - Use 3rd Person
  - Use Past Tense
  - Avoid Emotional Statements
  - Use Passive Voice Deliberately
  - Use Short Sentences
  - Use Bulleted and Numbered Lists
Using the Technical Communication Guide

- The *Technical Communication Guide* aids students and contains:
  
  - An introduction to technical communication
  - An explanation of the different types of written and verbal presentation assignments in the class
  - A description of helpful software tools and grammatical rules
Methods of Getting Help

- UTA Tutoring
  - Available in First-Year Engineering computer lab (HI 324)
  - Staffed Mon-Thurs 9-7, Fridays 9-3

- GTA
  - Make an appointment or stop by office hours, they’ll appreciate it!

- Instructor
  - Make an appointment or stop by office hours.
Logging In

- Press <CTRL> + <ALT> + <DELETE>

- Enter credentials
  - OSU lastname.#
  - Default Password
    - First letter of last name
      UPPER CASE
    - Student ID Number
    - ‘period’ (.)
      EX: “0012345678.b”
    - First letter of your first name lower case

Password must be at least 8 characters, with 3 of the 4 complexity categories: lower case letters, upper case letters, special symbols and numbers.
Important Takeaways

- Be sure to check the course website for preparation materials and due dates.
- Familiarize yourself with the EEIC website, Carmen, and all of your available resources
- Don’t forget – download MATLAB today
- Complete the Lab 0 HW assignment
Preview of Next Lab

- Electrical engineers commonly use:
  - Fundamental laws of electricity
  - Electrical equipment

Smartphone Circuit Board