EECS16A Lab

Welcome! We’ll be starting at 8:10 PM.
Today’s Agenda

- Quick Poll
- About Us
- About Lab: Policies & Overview
- Jupyter Notebook
- Python Bootcamp
About Us!
TA Name - Lab TA

- Year, major
- Fun
- Facts
- Interests
ASE Name - Lab ASE

- Year, major
- Fun
- Facts
- Interests
About Lab!
IMPORTANT: LAB CAPACITY

● Only students enrolled in this lab section should be present here

● If you lie about being enrolled in this section, you will be REMOVED from the course
  ○ Please be ready to show either CalCentral enrollment or an email confirming a switch.
IMPORTANT: COVID Protocols

- Masks are always recommended
- Masks + Wipes + Sanitizers should be available at the TA desk
- Students will be required to wipe down their station before the start of every section
- **Food and Drink are never allowed in the lab.** This is especially true this semester. Students and staff should go outside (either Cory courtyard or out of the building) for food or water.
- Please DO NOT COME TO LAB if you’re UNWELL!
Semester Outline

- Imaging Module
- Touchscreen Module
- Acoustic Positioning Module
Policies

- Labs for this class are not open section, **you must go to your assigned lab section**.
- Credit for each lab is based on completion and checkoff with a lab TA/ASE during your assigned lab section.
- In a checkoff, you will demonstrate your work from portions of the lab and answer conceptual questions related to the lab. You should aim to get checked off by the end of your lab section.
Policies

- If (and only if) you attend your lab section for the whole duration but do not finish in time, you may get checked off at the beginning of your next lab section before starting the following lab.
## Lab Grade

<table>
<thead>
<tr>
<th>Number of Labs Missed</th>
<th>What happens?</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>You get full lab credit - 45/45</td>
</tr>
<tr>
<td>1</td>
<td>You get almost full lab credit - 44/45</td>
</tr>
<tr>
<td>2</td>
<td>You get most lab credit - 42/45</td>
</tr>
<tr>
<td>3</td>
<td>You get half lab credit - 23/45</td>
</tr>
<tr>
<td>4</td>
<td>You Fail the class - final letter grade: F</td>
</tr>
</tbody>
</table>
Buffer Labs

- During buffer lab periods, you may get checked off for only one missed lab that occurred during that lab module.
- No other labs can be checked off.
- The eligible labs for makeup for each buffer lab period are indicated on the course schedule.
Buffer Labs

- Some lab sections are “buffer labs.” These are held during a 2 days-long period at the end of each lab module in which no new labs begin.
- Students must sign up for a buffer lab before attending. Please note that not all regularly scheduled lab sections will be run as buffer lab sections.
- If you have already completed all labs for a particular lab module, you do not need to attend the buffer lab for that module.
- No other labs can be checked off.
Bootcamp Time!
Jupyter Notebook

A web-based interactive computational environment

- Document containing an **ordered list** of input/output cells
- Can contain code, text, mathematics, plots and rich media
- .ipynb file extension
- But what does this look like?
Jupyter Notebook

- **Ordered list of input & output**

```python
# Example
x = 16
if x >
    print()
else:
    print()
```

```python
# Example
x = 16
if x >
    print()
elif x
    print()
else:
    print()
```
Jupyter Notebook

- **Ordered list of input & output**
- Control/Command + Enter to run current block
- Shift + Enter to run and move forward
Jupyter Notebook

- **Ordered list of input & output**

  ```python
  In [ ]: a = True
  ```

  ```python
  In [ ]: if a:
    print("hello")
  else:
    print("goodbye")
  ```

  ```python
  In [ ]: a = False
  ```

- **Order matters!**
Jupyter Notebook

- **Ordered list of input & output**

  ```python
  In [1]: a = True
  
  In [2]: if a:
     ...:     print("hello")
     ...: else:
     ...:     print("goodbye")
  
  hello
  
  In [3]: a = False
  ```

- **Order matters!**
Jupyter Notebook

- **Ordered list of input & output**

- **Order matters!**

```python
In [1]: a = True

In [4]: if a:
   print("hello")
else:
   print("goodbye")

goodbye

In [3]: a = False
```
Jupyter Notebook

- **Ordered** list of input & output
- Asterisk means it’s still running or it is queued up to run
Jupyter Notebook

- Text/Markdown
- Control/Command + Enter to format current block
- Shift + Enter to format current block and move forward

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  * [Arrays](#arrays)
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  * [Useful Functions](#funcs)
* [Miscellaneous Functions](#misc)
* [Questions](#qs)
Action Item: Instructional Accounts

- To use the computers at the lab stations, you will need to login using your instructional account.
- Create an EE16A account by logging into acropolis with your CalNet ID.
- Click “Create an Account” for EE16A and wait for the page to create an account.
- You will be presented with an ee16a account and a password and prompted with an option to send the account information to an email. Please email this account information to yourself.
Action Item: Instructional Accounts

- On a Windows computer, you can change your password by hitting Control + Alt + Delete and selecting “Change Password”. Follow the prompt to permanently change your password.
- If you ever forget the password that you set, you can reset it by going to acropolis and resetting the password associated with that account.
Running Jupyter Online

- You can run Jupyter notebooks by downloading the .zip file from the course website.
- Extract-all, open Anaconda, cd to the Jupyter notebook folder then type “jupyter notebook”
Running Jupyter Online

- Select the corresponding lab folder in the directory
- Click on the .ipynb file to launch the notebook in another tab
- P.S. Remember to hit logout to make sure your work is saved to the cloud
Running Jupyter Online

- Select the corresponding lab folder in the directory
- Click on the .ipynb file to launch the notebook in another tab
- P.S. Remember to hit logout to make sure your work is saved to the cloud
Python Bootcamp

● Review Python
  ○ List comprehension

● Introduction to NumPy - scientific computing in Python
  ○ NumPy functions: np.linspace, np.eye, np.transpose, np.linalg.inv, np.dot
  ○ NumPy objects: arrays, matrices
  ○ NumPy array slicing, array reshaping
  ○ All the tools you will need for future labs
Checking-off Today

- No graded check-off for Python Bootcamp
- Work on Python Bootcamp
- Follow the directions linked at bottom of the lab
  - Fill out Google form
- During checkoff:
  - Introduce yourself: name, major, year, hobbies
  - Open the Python Bootcamp
  - Demonstrate how to run a code block
  - Find this presentation on the website