

Section 1

MANE 3351

Lab Session 1

Classroom Management

Agenda

- Discuss Syllabus
- Grit
- Types of Lab

Resources

Handouts

- Lab Session 1 Slides (pdf)
- Lab Session 1 Slides (pptx)
- Lab Session 1 Marked

Assignments

- Get textbook

Types of Labs

- 1 Raspberry Pi interfacing with hardware
- 2 Arduino interfacing with hardware
- 3 Python Program within Jupyter Notebook

Raspberry Pi Lab

- You will be issued departmental Raspberry Pis that must be returned
- What is a Raspberry Pi
 - Single board computer
 - Raspberry Pi OS based on Debian Linux
 - UTRGV IS will not allow RPis on network
 - Hardware must be used initially; all labs can be completed with Raspberry Pi
 - Can be run headless

Arduino Labs

- There will be multiple labs in which circuits are built and connected to Arduinos
- Arduinos and supplies for circuits will be provided
- Arduino IDE will be used for programming
- Arduinos can be connected to Raspberry Pis, Windows or Mac computers

Jupyter Notebook Labs

- Most of the programming labs will be developed in Jupyter Notebook
- Jupyter Notebook is a Python-based application used extensively in artificial intelligence, machine learning and data science/analytics
- Jupyter Notebook is installed on the Raspberry Pis and can be installed on your personal computers

Syllabus

- Discuss laboratory portions of syllabus

Grit

- Discuss Grit and how it relates to MANE 3351
- Java Server Faces example
- Raspberry Pi OS Bookworm