Welcome to CSE 2100

Practical Computer Hardware
and Software Systems

Contact Information

- Name: Dr. Shawn Gieser
- Email: shawn.gieser@uta.edu
- Office: ERB 557
- Office Hours: Monday 3:00-4:30 & Tuesday 1:00-2:30
- GTA information coming soon

What is this course about?

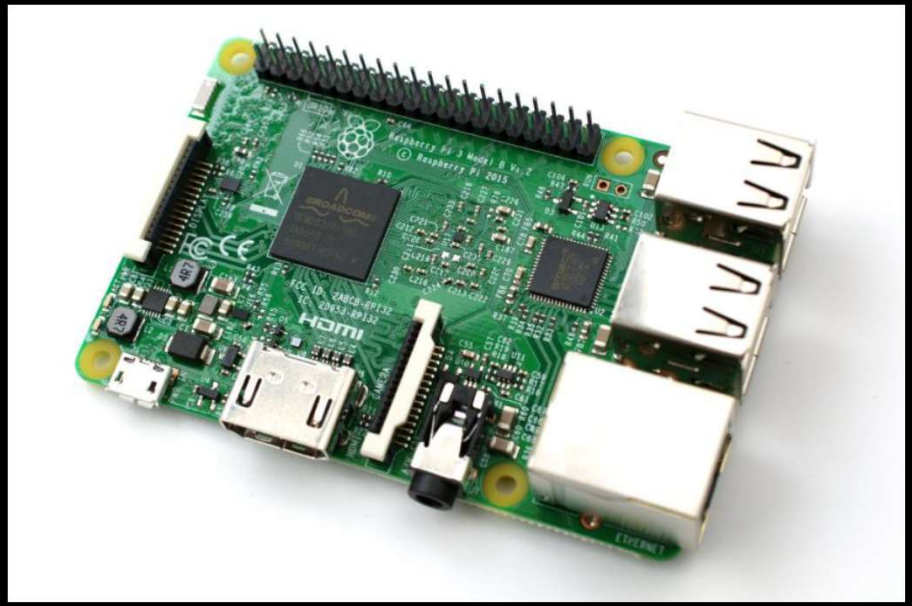
- practical (adjective)-***"of or concerned with the actual doing or use of something rather than with theory and ideas."***
- This course is about developing practical skills that will help you succeed in future course work, individual projects, and collaboration.
- A wide variety of topics are covered
  - Basic Linux usage
  - ARM SoCs(Raspberry Pi 3)
  - Microcontroller development (Arduino)
  - Practical electronics (voltage divider, pullup/pulldown resistors, bypass caps, etc.)
  - Source version control (Git)
  - Documentation tools (LaTeX, Doxygen)
  - Build tools (Cmake, make)
  - Troubleshooting (Wireshark, serial terminals, etc.)

Why do I have to take this course?

- You are not here to be a PROGRAMMER, you are here to be an ENGINEER
- Engineers must be versatile
  - The more skills you know, the more opportunities you will have
- Engineers must be able to adapt
  - You will rarely have mastery over all of the skills that you need to solve complicated problems at the beginning. You will have to figure things out along the way.
- Engineers must be up to date
  - The way that we work is always changing. Everyone should be familiar with popular, modern tools.

Required Materials

- Raspberry Pi 3 Model B
- 5V output power supply to power the Pi
  - Has a micro USB input
- 16 GB SD or more Micro SD Card
  - The “Hard Drive”



Recommended Materials

- Recommended Kit: https://www.amazon.com/CanaKit-Raspberry-Complete-Starter-Kit/dp/B01C6Q2GSY/ref=sr_1_2?s=pc&ie=UTF8&qid=1472613630&sr=1-2-spons&keywords=raspberry+pi+3&psc=1
- RasPi Case – can be printed at fab lab
- HDMI Cable, Monitor, Keyboard, Mouse
  - To work from home
- SD Card Reader/Writer (adapter)
- Heatsinks
- Ethernet Cable
- Teensy 3.2 microcontroller
- Breadboard and jumper wires

How will this class work?

- Like most lab courses, the GTA handles 90% of the load.
- You may have a lab partner
  - Will be required for some labs, so might as well get one now
- Each lab has a video to accompany it – Watch it before coming
  - You can even do some of it before coming
- Complete in lab work then get checked off by GTA
- Complete lab report at home and submit via blackboard

Grading

- In lab work – 50% of grade
- Each lab requires certain tasks to be completed
- You will be “checked off” when you successfully demo each task
- If you do not attend a lab session, you do not get credit
- If you do not complete the full lab, you do not get credit

- Lab Report – 50% of grade
- Write-ups are due one week after you complete a lab
- Templates are provided via the class github
- Make sure you turn in the lab report to the correct submission, or else you will not get credit

Schedule

Week	Dates	Topic
Week 0	Jan 17 - Jan 18	Orientation
Week 1	Jan 24 - Jan 25	Initial Raspian Set up
Week 2	Jan 31 - Feb 1	Basic Unix Commands
Week 3	Feb 7 - Feb 8	Git Version Control
Week 4	Feb 14 - Feb 15	Introduction to Tinkercad
Week 5	Feb 21 - Feb 22	Arduino IDE and Introduction to Teensy
Week 6	Feb 28 - Mar 1	USB Serial Communication
Week 7	Mar 7 - Mar 8	Teensy A2D and PWM
Week 8	Mar 14 - Mar 15	Spring Break - No Lab
Week 9	Mar 21 - Mar 22	Previous week continued or make up labs
Week 10	Mar 28 - Mar 29	Cmake Revisited and GUIs
Week 11	Apr 4 - Apr 5	GUI for a Teensy Controlled LED and Potentiometer
Week 12	Apr 11 - Apr 12	Previous week continued or make up labs
Week 13	Apr 18 - Apr 19	Doxygen
Week 14	Apr 25 - Apr 26	Make up Labs
Week 15	May 2 -3	Make up Labs
Week 16	Finals Week	Canceled - No Final

2 Week Grade Grievance Policy

- Once a grade gets posted, you will have 2 weeks to contact whoever graded it. (For this class, the GTA grades everything)

- If the GTA is not contacted within two weeks, the grade is final and will not be changed.

Date	Last Edited by	Value
Nov 5, 2017 1:43:26 PM	Varun Kanal	Attempt Grade **96.42**

MyMav Error

- This class was designed to be a 2 hour class
- Davis Hall thinks it's 3 hour class

- CLASS WILL ONLY LAST 2 HOURS

- Starting next week, start time of lab may change.
- GTA will pick a start time that still gives you 2 hours.

More Information

- Blackboard
  - Course Announcements
  - Assignment Submission
  - Links
- YouTube
  - https://www.youtube.com/playlist?list=PLhnnmdfbQtxGBUHDEYfAjoB1x-Z347WO5
- GitHub
  - http://www.github.com/cmcmurrough/cse2100