Course Format

Advanced Embedded Linux Development

with **Dan Walkes**

University of Colorado **Boulder**

Learning objectives:

Prerequisites and expectations

Assignments and build environments

Books

Prerequisites and Expectations

- I expect some working knowledge of:
  - C Programming
  - Makefiles
- Ideally you'd have some knowledge of:
  - Linux command line
  - Shell scripting

Assignments and Build Environment

- A Linux build environment will be required for all assignments.
  - This can be a virtual machine or actual Linux hardware.
  - See Assignment 1 instructions for version in use.
- Option 1: Use VirtualBox on Windows or MacOS
  - Install a Ubuntu VM with at least 4GB of RAM and 100GB of disk space
  - Requires ~8GB of RAM and 100GB of host disk space
  - Some students use a USB 3.0 HDD/SSD for VM images

Assignments and Build Environment

- Option 2: Use a dedicated Linux laptop
  - Find one with at least 8GB of RAM and 100GB of disk space.
  - Doesn’t need to be expensive: think pawn shops and ebay.
  - It’s a good idea to google <hardware model> Ubuntu to see if you can find people stating it’s supported.
- Option 3: Use a cloud hosted runner

Assignments / Project and git

- We will make extensive use of git in this course.
  - You will use git to turn in all assignments through Github Classroom.
- Assignments may start with git merge.
- You may see merge issues/errors. When you do:
  - Use an internet search! Lots of help is available online
  - Use appropriate help channels

Books

- Linux System Programming, 2nd Edition (LSP)
  - How your software programs will interact with the kernel.
  - Processes, Threading, POSIX
- Mastering Embedded Linux Programming, 2nd Edition (MELP)
  - Practical aspects of building Embedded Systems
- Linux Device Drivers 3rd Edition (LDD)
  - Theory and practice related to Linux Device Driver development.