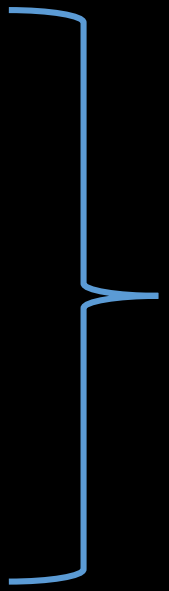
Course 1 Introduction

Embedded Software Essentials

Platform Components

- Host Machine
- Development Environments
- Compiler Toolchain
- Development Kits
- Version Control



Components of an Embedded Software Development Platform

Hands on with each of these concepts!

Module Overview

- Module 1: Embedded System Development Components
- Module 2: Compilation with GCC and GNU Make
- Module 3: Memory Types, Segments and Management

Module Overview

- Module 1: Embedded System Development Components
  - Embedded Systems Overview
    - Environment
    - Hardware
    - Software
  - C-Programming Review
  - Software Configuration Management (SCM)
  - Version Control

Module Overview

- Module 2: Compilation with GCC and GNU Make
  - Building Software
  - GCC Toolchain
  - GNU Make
  - Analyzing Compiled Code

Module Overview

- Module 3: Memory Types, Segments and Management
  - Memory Systems
  - Software to Hardware Memory Interface
  - Writing Code for Different Program Segments

Course Prerequisites

- Not an introductory course to C-Programming or Electrical Engineering

- You will be expected to know:
  - How to program with C
  - Basic Electrical Engineering Concepts
    - Current, Voltage, Power
    - Electrical Elements (resistors, capacitors, etc)
  - Basic Computer Architecture
    - How to interpret Assembly Languages
    - How to write Assembly

Learning Outcomes

- *At the end of this course, you will be able to…*

  - Define the components of an embedded system
  - Implement software configuration management including development environments, Git version control, GNU's Compiler Collection and GNU Make
  - Develop both portable and architecture specific software for embedded systems in C-programming