RISC-V Fundamentals (LFD210)

Learn everything you need to know about RISC-V, the open-source instruction set architecture that is predicted to become ubiquitous as it paves the way for the next 50 years of computing design and innovation. Knowing RISC-V and its associated software development skills makes anyone pursuing a career in tech stand out. This course will enhance your skills and knowledge, opening up new career opportunities in virtually every computing field. You will also be well-prepared to contribute to the growing open RISC-V community and help shape the future of computing. This course along with real world experience and study will provide the skills and knowledge also tested by the Linux Foundation's RISC-V Foundational Associate (RVFA) exam.

Duration: 2 Days

Prerequisites for this course

It is recommended that students taking this course have:

- Basic experience in computer architecture
- Basic experience with any assembly language
- Experience with the C programming language
- Some exposure to basic Operating System elements like paging, multithreading, synchronization, and cache coherence

Outline for this course

Chapter 1 – Course Introduction

Chapter 2 – RISC-V Overview

Chapter 3 – Introduction to RISC-V Instruction Set

Chapter 4 – Understanding Instruction Formats and Pseudoinstructions

Chapter 5 – The Modularity of RISC-V as an ISA

Chapter 6 – Privileges and the Memory Model

Chapter 7 – Assembly Language for RISC-V

Chapter 8 – Writing and Debugging RISC-V Assembly Code

Chapter 9 – High-Level Languages for RISC-V: C Programming

Chapter 10 – The GNU C Compiler for RISC-V

Chapter 11 – Clang and LLVM for RISC-V