AMD XILINX

# Migrating to the Vitis Embedded Software Development IDE Workshop

EMBD VITIS (v1.0)

**Course Specification**

## Course Description

This workshop demonstrates the tools and techniques required for software design and development using the Vitis™ unified software platform.

The emphasis of this course is on:

- Reviewing the basics of using the Vitis platform
- Migrating existing SDK projects to the Vitis platform
- Developing software applications using the Vitis platform

**What's New for 2022.1**

- New module: Debugging Using Cross-Triggering
- All labs have been updated to the latest software versions

**Level** – Embedded Software 3

**Course Details**

- 2 days 4 hours each

**Course Part Number** – EMBD VITIS

**Who Should Attend?** – Existing embedded developers using AMD Xilinx SDK tools for software development

**Prerequisites**

- C or C++ programming experience, including general debugging techniques
- Conceptual understanding of embedded processing systems as it relates to the AMD Xilinx ecosystem (specifically writing and modifying scripts, user applications, and boot loader operation)

**Software Tools**

- Vitis unified software platform 2022.1

**Hardware**

- Architecture: Zynq® UltraScale+™ MPSoC
- Demo board: Zynq UltraScale+ MPSoC ZCU104 or Versal® ACAP VCK190 board

After completing this comprehensive training, you will have the necessary skills to:

- Develop and deploy an application on an AMD Xilinx embedded system using the Vitis unified software platform
- Migrate an existing SDK project to the Vitis platform

## Course Outline

- **Overview of Embedded Software Development**
  Overview of the process for building a user application. {Lecture}
- **Driving the Vitis Software Development Tool**
  Introduces the basic behaviors required to drive the Vitis tool to generate a debuggable C/C++ application. {Lecture, Lab}
- **Migrating from SDK to the Vitis Platform**
  Overview of migrating existing AMD Xilinx SDK projects to Vitis software development projects {Lecture, Demo}
- **Standalone Software Platform Development and Coding Support**
  Covers the various software components, or layers, supplied by AMD Xilinx that aid in the creation of low-level software. Also the basic services (libraries) available. {Lecture, Lab}
- **Linux Software Application Development Overview**
  Highlights important parts of the underlying Linux system as it pertains to applications. {Lecture, Lab}
- **Building a Linux Application in the Vitis IDE**
  Reviews the use of the Vitis tool for Linux software development. {Lecture}
- **System Debugger**
  Describes the basics of actually running a debugger and illustrates the most commonly used debugging commands. {Lecture, Lab}
- **Software Profiling Overview**
  Introduces the purpose and techniques for profiling a user application. {Lecture, Lab}
- **Debugging Using Cross-Triggering**
  Describes the process of debugging using cross-triggering with the Vivado logic analyzer. {Lecture}