



## **ARM Cortex-M0+ System Design**

### **Summary:**

This course is designed for those who are involved in designing systems based around the ARM Cortex-M0+ processor core. Including an introduction to the ARM product range and supporting IP, the course covers the Cortex-M0+ core architecture, programmers' model, instruction set and bus architecture. The CoreSight debug architecture is also covered as relevant to the Cortex-M0+.

### **Prerequisites:**

- Some knowledge of embedded systems
- Familiarity with digital logic and hardware/ASIC design issues
- Knowledge of programming in C
- Experience of programming in assembler is useful but not essential
- A basic awareness of ARM is useful but not essential

### **Audience:**

This course is intended for hardware design engineers who need to understand the issues involved when designing SoC's around the Cortex-M0+ processor core. It is also intended for software engineers developing for systems designed around the Cortex-M0+ core. The software development parts of this course refer to ARM development tools such as Keil MDK-ARM. However, much of this material is relevant to users of 3rd party ARM tools.

### **Length:**

3 days

### **Modules:**

- Introduction to ARM
- Cortex-M0+ Overview
- Tools Overview for ARM Microcontrollers
- ARMv6-M Programmers Model
- ARMv6-M Memory Model
- ARMv6-M Exception Handling
- ARMv6-M Compiler Hints and Tips
- CMSIS Overview
- SysTick Timer
- AMBA AHB-Lite
- Cortex-M0+ Core
- Cortex-M0+ System Interfaces
- Cortex-M0+ Integration Example
- Cortex-M0+ Power Management
- Cortex-M0+ Debug
- Cortex-M0+ Memory Protection
- Cortex-M0+ Trace
- Cortex-M0+ Implementation & Integration
- Cortex-M System Design Kit