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**100% JOB ORIENTED ADVANCE EMBEDDED COURSES**



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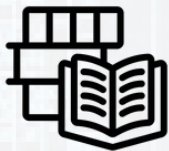
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# ABOUT US

TechnoScripts is an ISO 9001:2015 certified best training institute for advance courses in Embedded System. We are pioneer of Embedded System training in Pune development. Though we provide many different courses and training in embedded all aim at giving good practical knowledge to students as well help them in career

## OUR FEATURES



STUDY  
MATERIAL



ISO  
9001:2015  
CERTIFIED



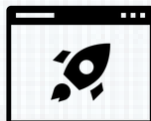
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INTERVIEW  
PREPERATION



LIVE PROJECTS



STATE OF THE ART  
LABS



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## OUR COURSES

Advance Career Track

Automotive Embedded

PG Diploma in Embedded

MATLAB Simulink

MBD Training

IOT Training

Autosar Training

LIVE PROJECTS | INTERVIEW PREPERATION | MOCK INTERVIEWS

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# COURSE SYLLABUS : STM32 MICROCONTROLLER

## **Module 1: Introduction to Embedded Systems and STM32 Platform**

- We'll start with embedded systems, learning how tiny chips run stuff like your smartwatch.
- You'll meet the STM32 ARM Cortex family, the go-to for cool projects.
- I'll show you the STM32 platform's key features, like its speed and flexibility.
- We'll talk about how STM32 chips are used in things like drones or IoT gadgets.

## **Module 2: STM32 Microcontroller Internals and Firmware Basics**

- Let's peek inside the STM32 hardware, like its memory and processor core.
- You'll learn how to write reusable C code for STM32, called firmware.
- We'll cover the Memory Protection Unit, which keeps your code safe.
- I'll explain why understanding the chip's guts makes programming way easier.

## **Module 3: Setting Up Development Tools**

- You'll set up the Integrated Development Environment, like STM32CubeIDE, to start coding.
- We'll use toolchains—compilers, debuggers, and ICSP—to build and test programs.
- I'll show you how to connect the ST-Link debugger, and yes, I forgot to plug it in once!
- You'll get comfy with the tools to write and fix your STM32 code.

## **Module 4: GPIO Programming and Input Interfacing**

- You'll learn STM32 GPIO to control pins, like turning on a light.
- We'll hook up buttons and rotary encoders, coding them to do stuff when pressed.
- Keypads are next—you'll make one trigger action, like a password system.
- I'll show you how to read digital inputs without messing up your circuit.

## **Module 5: Display Interfacing**

- We'll connect 7-segment displays to STM32, making them count up or show numbers.
- You'll wire an alphanumeric LCD to display messages, like "Hello, STM32!"
- I'll walk you through coding displays to show real-time data, like sensor readings.
- You'll avoid my rookie mistake of wiring the LCD backward—trust me, it happens!

## **Module 6: Interrupts and NVIC**

- You'll dive into STM32 interrupts, which let the chip react to events, like a button press.
- We'll explore the NVIC to set interrupt priorities, so your code doesn't crash.
- External interrupts are fun—you'll code a sensor to trigger an action fast.
- I'll explain interrupt latency, or why timing matters, with examples that stick.

## **Module 7: Timers and PWM**

- You'll set up STM32 timers to count time or trigger events, like a stopwatch.
- We'll code timers in counter mode, like for tracking button presses.
- PWM generation lets you control brightness or motor speed—super cool to see.
- You'll program watchdog timers to reset the chip if your code goes haywire.

## **Module 8: ADC, DAC, and Sensor Interfacing**

- You'll use STM32's ADC to read analog sensors, like temperature or light.
- We'll connect digital sensors too, coding them with ADC and PWM for control.
- The DAC generates analog waves, like making a buzzer play a tone.
- I'll show you how to mix sensors and DAC for projects, like a sound alert system.

## **Module 9: DMA and Serial Communication**

- You'll learn STM32 DMA to move data fast without slowing down your code.
- We'll set up serial communication to send data to other devices, like a PC.
- I'll explain how to use serial print for debugging, like seeing sensor values.
- You'll code a simple serial link, avoiding my old mistake of wrong baud rates!

## **Module 10: Advanced Timer Features**

- You'll dig deeper into STM32 timers, configuring them for complex tasks.
- We'll revisit PWM for precise control, like dimming an LED smoothly.
- You'll program watchdog timers again, ensuring your projects stay stable.
- By the end, you'll tie timers with other features for a full STM32 project.

# PLACEMENTS

We provide 100% placement support to every student enrolled for Job oriented courses. We invite top companies for campus interview at our centre as well arrange the interviews for students at company premises.

## OUR ALUMNIES ARE PLACED AT



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