

# PG Program in Embedded Systems for EV Applications

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-----Start-----

Hi, thanks for showing interest in our PG Certification Program in Embedded Systems for EV Applications Program. It was great talking to you. Here are the details regarding the course.

## **\*Duration of the course\***

Part time: 12 months

Full time: 6 months

## **In this program, you will learn the below course**

1. Introduction to Hybrid Electric Vehicle using MATLAB and Simulink
2. Embedded Linux on ARM
3. AVR Bare Metal Programming
4. ARM Cortex MCU Programming
5. RTOS on ARM
6. Linux Driver Development
7. Software Verification and Validation and System Testing for Model-Based Development
8. Fundamentals of Embedded Systems
9. Introduction to Battery Technology for Electric Vehicle
10. Device Drivers and Serial Communication Protocols
11. Embedded C Essentials
12. Simulink for Mechanical & Electrical Engineers
13. Software Verification and Validation and System Testing for Hand Code

**#Co-Branded Certificate with MathWorks-** Students who complete Mathworks training (optional) and clear the assessment test will get the Skill-Lync certificate co-branded with MathWorks.

## **\*Projects\***

1. Modeling of Electric Vehicle Using DC Motor Drive
2. Design of Electric Powertrain
3. Implementation of Complementary Filter Application
4. Implementation of Character device
5. DC Motor Control Using L293 Driver
6. Interfacing HC-SR04 Ultrasonic Sensor with Atmega328p
7. Implement a fully functional Queue in C language using Linked lists.
8. Integrate the given sensors to the Dev Board
9. Developing a full-featured char driver as a loaded module
10. Design and development of a web-based temperature control system using Beagle bone
11. TFT Cluster Speedometer Display
12. Coolant Temperature Meter SWC Development

13. Interfacing a 16\*2 LCD with 2 Arduino's using (I2C) Communication Protocol
14. Measuring the Distance of an Object Using Ultrasonic Sensor
15. Mechanical Design of Battery Pack
16. Thermal Modeling of Battery Pack
17. Modeling & testing of battery management system with Simulink
18. Write a Driver for I2C and Use the USB Logic Analyzer to Analyze the I2C Frames
19. Write a CAN Driver for STM32 Controller and Analyze the CAN Data Frames
20. User Interfaces for Working with "Sets"
21. Finite State Machine for Aircraft Landing Gear System
22. Simulation of All-Terrain Vehicle
23. Static Code Review Analysis
24. Dynamic Analysis – White Box Testing

#### **\*Software\***

1. Simulink\*\*
2. MATLAB\*\*
3. C Programming
4. Embedded Linux
5. AVR ATmega328
6. Arm Cortex M4 - STM32
7. STM32CubeIDE
8. FreeRTOS
9. Mbed Simulator
10. CAN Protocol
11. LDRA Design Suite
12. SimulIDE
13. Microchip Studio

\*\*Licensed version of MATLAB and Simulink provided for 6 months.

#### **Hardware Table**

S.N o	ITEM NAME	Buying Option
1	STM32 Nucleo-64 development board with STM32F334R8	<a href="https://www.digikey.in/en/products/detail/stmicroelectronics/NUCLEO-F334R8/4835707?s=N4lgTCBcDaIHIFcDGAAbApgewAQDEDEMeALAEoAcIAugL5A">https://www.digikey.in/en/products/detail/stmicroelectronics/NUCLEO-F334R8/4835707?s=N4lgTCBcDaIHIFcDGAAbApgewAQDEDEMeALAEoAcIAugL5A</a>
2	USB Logic Analyze 24M 8CH, MCU ARM FPGA DSP Debug Tool	<a href="https://www.electroniccomp.com/usb-logic-analyze-24m-8ch-mcu-arm-fpga-dsp-debug-tool?gclid=CjwKCAjw_L6LBhBbEiwA4c46ulYj5o_5pCE8-IIlXQj5hzwzXGze0zRneaJa0gi0f8TJYMaK5gKF4QxoCfBQQAvD_BwE">https://www.electroniccomp.com/usb-logic-analyze-24m-8ch-mcu-arm-fpga-dsp-debug-tool?gclid=CjwKCAjw_L6LBhBbEiwA4c46ulYj5o_5pCE8-IIlXQj5hzwzXGze0zRneaJa0gi0f8TJYMaK5gKF4QxoCfBQQAvD_BwE</a>
3	Official Arduino	<a href="https://www.electroniccomp.com/official-arduino-sensor-kit?search=Arduino%20sensor%20ki">https://www.electroniccomp.com/official-arduino-sensor-kit?search=Arduino%20sensor%20ki</a>

	Sensor Kit	
4	Stepper Motor	<a href="https://www.electronicshobby.com/stepper-motor-5v-unipolar-india?search=stepper">https://www.electronicshobby.com/stepper-motor-5v-unipolar-india?search=stepper</a>
5	ULN2003 Stepper Motor Driver	<a href="https://www.electronicshobby.com/uln2003-stepper-motor-driver-board">https://www.electronicshobby.com/uln2003-stepper-motor-driver-board</a>
6	Beagle Bone Black (optional for Skill-center course)	<a href="https://www.electronicshobby.com/beaglebone-black-rev-c?gclid=CjwKCAiAtouOBhA6EiwA2nLKHxmRbylsPY-sDb8Zx037h18jF0vz55_K1i3kYlkugLMzC0RYxac4-RoC6NAQAvD_BwE">https://www.electronicshobby.com/beaglebone-black-rev-c?gclid=CjwKCAiAtouOBhA6EiwA2nLKHxmRbylsPY-sDb8Zx037h18jF0vz55_K1i3kYlkugLMzC0RYxac4-RoC6NAQAvD_BwE</a>

**\*Demo videos\***

**PG Certification Program in Embedded Systems for EV Applications**

<https://youtu.be/V2FsQ2J9KP0>

**Embedded C**

<https://youtu.be/-bZaqU0qTHY>

**Fundamentals of Embedded Systems**

<https://youtu.be/DNY6TImHsk8>

**Software Verification and Validation and System Testing for Hand Code**

[https://youtu.be/5e\\_egVme2fQ](https://youtu.be/5e_egVme2fQ)

**Simulink for Mechanical & Electrical Engineers**

<https://youtu.be/E0clpeAR78s>

**Introduction to Hybrid Electric Vehicle using MATLAB and Simulink**

<https://youtu.be/r77CR0psncl>

**Introduction to Hybrid Electric Vehicle using MATLAB and Simulink - Part 2**

<https://youtu.be/4EvfydX6zHM>

**Introduction to Battery Technology for Electric Vehicle**

<https://youtu.be/tpDyT29BunQ>

**Software Verification and Validation and System Testing for Model-Based Development**

<https://youtu.be/BE9S8PUE2p4>

**\*Description of course content\***

<https://skill-lync.com/electrical-engineering-courses/pg-certification-embedded-systems>

**\*Success stories\***

Check out the Placements of our customers at [Skill Lync Success Stories.pdf](#) and also hear what they say about our courses at <http://bit.ly/skill-lync-google-reviews>. Visit the Project Portfolios of students placed in reputed companies after taking Skill-Lync courses-

[Sarthak's skill-lync Profile : Skill-Lync](#)

[alagu's skill-lync Profile : Skill-Lync](#)

[Shubham's skill-lync Profile : Skill-Lync](#)

**Enroll right away to write your own story, and pursue your dreams with Skill-Lync!**

For more information, visit [www.skill-lync.com](http://www.skill-lync.com)

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