



# BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(Autonomous under VTU)

Avalahalli, Yelahanka, Bengaluru - 560064

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### Open Course on Software Design for Embedded Controllers

(From 12-06-2023 to 16-06-2023)

#### VISION

To emerge as one of the finest Electrical & Electronics Engineering Departments facilitating the development of competent professionals, contributing to the betterment of society

#### MISSION

Create a motivating environment for learning Electrical Sciences through teaching, research, effective use of state of the art facilities and outreach activities.

#### ABOUT THE COURSE

**Software Design for Embedded Controllers** course is planned to expose the students to develop software programs for various controllers using Embedded C/C++ Programming Languages. This course covers the basics of Embedded C/C++ programming concepts, microcontroller functionalities, interfacing various sensors and actuators. The students who attend this course can able to: i. Design and Develop Software Programs for Microcontroller Systems programs using Embedded C language, ii. Analyze and rectify the errors in software programs, iii. Design and Develop programs for interfacing with sensors and

actuators, iv. Design and develop projects for any specific applications using microcontrollers.

This course is designed to provide students with a comprehensive understanding of the principles and techniques involved in the software design for Embedded Controllers used for various industrial/commercial applications. The scope and applications of the course "Software Design for Embedded Controllers" encompass a wide range of career opportunities, allowing graduates to work on different problem solving techniques and programming paradigms to solve various embedded software systems design related problems encountered in Electronic Systems and Embedded Systems companies, Robotics and Factory Automation relevant companies. Additionally, they can pursue entrepreneurship or academic paths in the field.

#### Course outcomes:

1. Develop Embedded Software Programs for controllers using C
2. Analyse and Debug the errors in Embedded software programs
3. Design and Develop Software Programs for Embedded Controllers to interface with sensors and actuators.

4. Design and Develop projects for any specific applications using Embedded Controllers.

#### Coordinators:

1. Dr Narapareddy Ramarao
  2. Mr Kattimani H D
  3. Mr Shiva Kumar
- Mobile No. 9448904355

#### Job Descriptions of companies covered with this Course:

- Design and implement software of embedded devices and systems from requirements to production and commercial deployment
- Design, develop, code, test and debug system software
- Review code and design
- Analyze and enhance efficiency, stability and scalability of system resources
- Integrate and validate new product designs
- Support software QA and optimize I/O performance
- Provide post production support
- Interface with hardware design and development
- Assess third party and open source software

**Registration Fee: Rs. 400/-**

**Venue: Academic Block A- 402**



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### Course Schedule: Open Course on Software Design for Embedded Controllers

Sl No.	Date	Topics covered		Topics covered		Topics covered	Assessment and Feedback
		8:30 to 10:30 am	10:30 to 10:50 am	10:50 to 12:50 pm	12:50 to 1:50 pm	1:50 to 4:00	4:00 to 4:30 pm
1	12.06.2023	Basic structure of Embedded software program, Data Types, Operators	TEA BREAK	Software Program structure, Different types of Embedded Controllers	LUNCH BREAK	Software Installation and running software programs	Quiz and Feedback
2	13.06.2023	Embedded Software Control Statements		Embedded Software Arrays, Functions		Sensor Interfacing, Temperature Sensor, Ultrasonic Sensor, PIR Sensor	
3	14.06.2023	Embedded Software Pointers, Strings		Embedded software Library functions		Interfacing with switches, Relays & DC Motor	
4	15.06.2023	AVR Microcontrollers		Serial Communication, Bluetooth Communication		Servo Motor, Stepper Motor	
5	16.06.2023	Software Debugging Methods		Embedded Projects Design		Embedded Projects Design	

#### Some of the best companies hiring Embedded Software Engineers:

1	Siemens Ltd
2	Bosch Ltd
3	ABB India Ltd
4	Crompton Greaves Ltd
5	AT&S India Pvt Ltd
6	Bharat Electronics Ltd
7	Sterlite Technologies Ltd
8	Omron Automation Pvt Ltd
9	Digital Circuits Pvt Ltd
10	Centum Electronics Ltd
11	Jabil Circuit India Pvt Ltd
12	Electronics Corporation of India Ltd
13	Qualcomm India Pvt Ltd
14	Honeywell Automation India Ltd
15	Precision Automation & Robotics India Ltd
16	ZTE Telecom India Pvt Ltd
17	Dixon Technologies (India) Pvt Ltd
18	V-Guard Industries Ltd

19	Schneider Electric Infrastructure Ltd
20	Antrix Corporation Ltd
21	MIC Electronics Ltd
22	Mitsubishi Electric India Pvt Ltd
23	JCT Electronics Ltd
24	Minda Industries Ltd
25	Eveready Industries India Ltd
26	Su-Kam Power Systems Ltd
27	Beetel Teletech Ltd
28	SFO Technologies Pvt Ltd
29	Base Corporation Ltd
30	ITI Ltd
31	Dixon Technologies (India) Pvt Ltd
32	Avnet Technology Solutions (India) Pvt Ltd
33	Agilent Technologies India Pvt Ltd
34	Opto Circuits (India) Ltd
35	EMCO Ltd
36	Rishabh Instruments Pvt Ltd

37	Yokogawa India Ltd
38	Shilpi Cable Technologies Ltd
39	Agilent Technologies India Pvt Ltd
40	Elin Electronics Ltd
41	Epcos India Pvt Ltd
42	NTL Electronics India Ltd
43	Okaya Power Ltd
44	Microtek International Pvt Ltd
45	Flextronics Technologies (India) Pvt Ltd
46	Micro Technologies India Ltd
47	Delta India Electronics Pvt Ltd
48	Zicom Electronic Security Systems Ltd
49	Shyam Telecom Ltd
50	Emerson Industrial Automation
51	Quad Electronics Solutions Pvt Ltd
52	Vishay Components India Pvt Ltd
53	NXP Semiconductors India Pvt Ltd
54	Fanuc India Pvt Ltd