DEPARTMENT OF ELECTRONICS AND COMMUNICATONS ENGINEERING

Skill Development Program

Course Objectives

- Develop proficiency in programmable logic design and analysis.
- Increase understanding of real-time operating systems.
- Explore the latest embedded technologies.
- Utilize EDA tools to optimize embedded system designs.

Course outcomes

After completing each module the student should be able to:

S.No	Course outcomes
CO-1	Demonstrate the knowledge of Fundamentals of Digital Electronics and computer architecture and organization that address a real time scenario.
CO-2	Development of small scale projects on ARM processor family.
CO-3	Select and apply appropriate Embedded firmware design tools to Increases understanding of the essential embedded language.
CO-4	To address issues as to why the usage of Real-Time Operating Systems becomes more important for many applications and Gain a comprehensive understanding of Field Programmable Gate Arrays (FPGAs) architectures.
CO-5	Develop the understanding of how to use embedded & wireless hardware and programming skills to realize an IoT application.
CO-6	To have professional skills and team work to implement an integrate complex systems on a single chip and interface to various peripherals.

Programme Structure

- 6 modules (1st to 6th Sem) – 6 Semesters
- Each module is of 30 Hrs
- 5 days in a semester
- 5 to 6 Hrs per day
- Certification at 3 levels
    - ✓ Foundation(1st and 2nd Module)
    - ✓ Intermediate(1st to 4th Module)
    - ✓ Advanced(1st to 6th Module)

Modules and Mapping with PO

Module	Module Name	Hrs	Credits	Program Outcomes
M1	Fundamentals of Computer architecture and Electronics	30	2	P11
M2	Embedded Controllers	30	2	PO9,PO10
M3	Embedded Programming Using C	30	2	PO5
M4	RTOS/VHDL and Verilog -FPGA	30	2	PO6,PO7
M5	Sensors and Actuators-IoT	30	2	PO9,PO10
M6	System on Chip	30	2	PO8,PO9,PO12

Evaluating SDP Modules

The evaluation of SDP is done for all 6 modules and by the end of every modules the evaluation of the modules can be categorized by the evaluator under four categories.

- Real-time projects/Mini Projects
- Quiz
- Programming
- Hardware/software debugging

Grading for certification

The certification for the modules is evaluated and given to the Candidates under the following table. The Candidates should at least clear each module with a minimum grade of 'C' to get certified .After meeting the stipulated requirements; each candidate would be certified as a "professional" to be called as a Embedded system Designer.

Score	Grade
>90	S
80-90	A
70-79	B
60-69	C

Table for Grading SDP and certification

Program outcomes

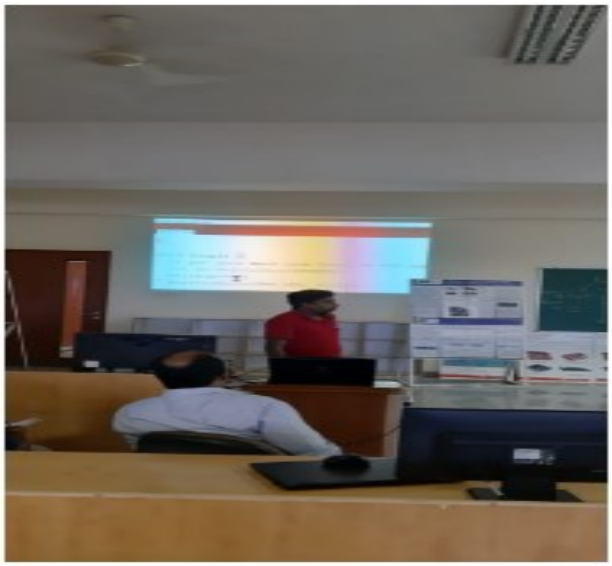
PO1 - knowledge	**PO2 -** analysis	**PO3 –** Design	**PO4** - Conduct problems
PO5 - Modern tool	**PO6 -** The engineer and society	**PO7 -** Environment and sustainability	**PO8 –** Ethics
PO9 - Individual and team work	**PO10 –** Communication	**PO11** Project management and finance	**PO12 - -** Life-long learning

CO/PO Mapping

Course outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1											H	
CO2									H	H		
CO3					H							
CO4						H	H					
CO5									H	H		
CO6								H	H			H
PO Target value					3	3	3	3	3	3	3	3

Activities under Skill Development Program

SDP modules conducted in the department od ECE



Internet of Things (IoT) Applications held on 23rd of November 2021

Certification under Skill Development Program