GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Master of Engineering

Level: PG

Branch: Electronics & Communication Engineering

Course / Subject Code:ME01004011

Course / Subject Name : Embedded System Design

w. e. f. Academic Year:	2024-25
Semester:	1st Semester
Category of the Course:	PCC

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE(E)	PA (M)	PA (V)	PA (I)	
3	0	2	4	70	30	30	20	150

Course Content:

Sr. No.	Content	Total Hrs.	Weight
1	Embedded Micro controller Cores, Embedded Memories, SRAM, DRAM Controllers.	11	20%
2	Embedded System Design Aspects : Interfacing between analog and digital sections, signal conditioning, Interfacing with external systems, User interfacing.	10	20%
3	Software aspects of Embedded Systems : Real time programming languages & operating systems for Embedded Systems, Embedded programming in C/C++, Scheduler, Multitasking, Threading concepts and implementation Serial Communication Interface: UART, SCI applications, Modern Serial Interface Standards, Modems, SPI, I2C, USB, Introduction to JTAG Port	12	30%
4	Case study of Embedded Applications.	12	30%
	TOTAL	**45**	**100%**

Course Outcome:

Student should be able to

- Understand embedded system elements like memory, core, DRAM controller etc.
- Understand design aspect of embedded system.
- Understand concept of multitasking, threading, scheduler in embedded system.
- Design and develop software code for various interface.

Reference Books:

- J. W. Valvo, Embedded Micro computer system, Brooks/Cole.
- K. J. Ayala, the 8051 Microcontroller, Pernam Intl.
- Jack Ganssle. The art of designing Embedded Systems.
- SDaniel W. Lewis, Fundamentals of Embedded Software.

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