Shri Vaishnav Vidyapeeth Vishwavidyalaya
Master of Technology (Digital Communication)

SUBJECT CODE	Category	SUBJECT NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	L	T	P	CREDITS
MTDC123	EC	Embedded Systems	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical;   **C** - Credit;
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:
1. Introduction of the real time systems.
2. Computing required for the real time embedded systems.
3. Communication required for the real time embedded systems.
4. Present an overview of the real time embedded systems in practice.

Course Outcomes:
Students shall be able:
1. To present the mathematical model of the system.
2. To develop real time algorithm for task scheduling.
3. To understand the working of real time operating systems and real time database.
4. To work on design and development of protocols related to real time communication.

Syllabus:

UNIT I
Review of 8-Bit and 16-bit microprocessor, support chips and interfacing techniques, single chip micro-computers, architecture, program and data memory, ports, input Output interfacing and programming.

UNIT II
Single chip micro controllers- INTEL 8051/ 8751, MOTOROLA 68HC0/68HC11 architecture, instruction set and programming, Memory mapping, addressing modes, Registers, expanded modes. Interrupt handling timing and serial I / O.

UNIT III
Software development Modular approach, integrated software development environment, Object oriented interfacing and programming, Recursion and debugging.

UNIT IV
ATMEL 89C51 / 52 and PIC micro-Controllers: Case studies. Design and Application of MicroController in Data acquisition, Embedded controllers and Process control.

UNIT V
DSP Processor architecture and sample design using TI – DSP.

Text Books:
1. Majidi & Majidi, "Embedded Systems, 8051.

References:
1. John P. Peatman, "Design with Micro-Controllers",TMH.
2. Jonathan W. Valvano, "Embedded Micro-Computers System. Real time Interfacing", Thomson learning.

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Indore

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