Course Objective: To introduce fundamentals of embedded systems and programming fundamentals and microcontroller, concepts of program development using digital circuits and systems.

S. NO	Course Outcomes (CO)
CO1	To introduce fundamentals of 16 and 32 bit Microcontrollers, assembly language programming.
CO2	Interfacing of different interrupt driven peripherals
CO3	To understand in detail Real Time Operating Systems,
CO4	To understand Bus architecture, Digital Signal Processors and System On-Chip.

S. NO	Contents	Contact Hours
UNIT 1	Introduction Evolution of embedded systems &their applications, architectural diversity for embedded system development.	**8**

UNIT 2	Techniques and tools for embedded software development Embedded Programming principles, Instruction Set Architectures for embedded software development: arithmetic and logical, program control, string instructions, special or privileged instructions.	**10**
UNIT 3	Interrupt system, Input-output programming, Memory management, Using High level languages for embedded programming, structured and Object Oriented Programming.	**8**
UNIT 4	Re-configurable FPGA for embedded computing R-FPGA and hardware software development, issues in Reconfigurable computing, placement and scheduling techniques.	**8**
UNIT 5	Design of digital systems on FPGAs, fault tolerant design on FPGAs, Re-targetable assembling and compilation. Applications Specific applications,Emerging trends	**8**
	TOTAL	**42**

REFERENCES

S.No.	**Name of Books/Authors/Publishers**	**Year of Publication /**