SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY

Accredited by National Board of Accreditation,
AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA
Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi,
Permanent Affiliation to JNTUK, Kakinada
SEETHARAMPURAM, W.G.DT., NARSAPUR-534280, (Andhra Pradesh)

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

TEACHING PLAN

Course Code	Course Title	Semester	Branch	Contact Period /Week	Academic Year	Semester Commencement Date
20EC7E06	EMBEDDEDSYSTEMS (R20)	VII	ECE	6	2025-26	09-06-2025

COURSE OUTCOMES	After completion of the course student are able to
CO1	Understand the basic knowledge about fundamentals of Embedded Systems (K2)
CO2	Describe the various components used in Embedded systems (K1)
CO3	Understand about the PIC, AVR controllers and Processors (K2)
CO4	Use the design case study of Embedded Systems(K3)

Unit No	Out Come/Bloom s Level		Topics/Activity	Reference Text book	Contact Periods	Delivery Method
1	CO1 Acquire a basic knowledge about fundamentals of Embedded Systems (K1)		**UNIT-1**			Chalk & Talk, PPT & Tutorial.
		1.1	Introduction to Embedded Systems	T1,T2,R1	1	
		1.2	Definition of Embedded System	T1,T2,R1	1	
		1.3	Embedded Systems Vs. General Computing Systems	T1,T2,R1	1	
		1.4	History of Embedded Systems,	T1,T2,R1	1	
		1.5	Classification of Embedded Systems	T1,T2,R1	1	
		1.6	Major Application Areas,	T1,T2,R1	1	
		1.7	Purpose of Embedded Systems,	T1,T2,R1	1	
		1.8	Characteristics and Quality of Embedded Systems	T1,T2,R1	2	
		1.9	Quality Attributes of Embedded Systems,	T1,T2,R1	2	
				CLASS TEST-1	1	
				TOTAL	12	
2	CO2 Acquire a basic knowledge about various components used in Embedded systems (K1)		**UNIT-II**			Chalk & Talk,
		2.1	Typical Embedded System:	T1,T2,R1	1	
		2.2	Core of the Embedded System:	T1,T2,R1	1	
		2.3	General Purpose and Domain Specific Processors,	T1,T2,R1	1	
		2.4	ASICs, PLDs,	T1,T2,R1	1	
		2.5	Commercial Off-The-Shelf Components (COTS),.	T1,T2,R1	1	
		2.6	Memory: ROM, RAM,	T1,T2,R1	1	
		2.7	Memory according to the type of Interface,	T1,T2,R1	1	
		2.8	Memory Shadowing,	T1,T2,R1	1	
		2.9	Memory selection for Embedded Systems,	T1,T2,R1	1	

		2.10	Sensors and Actuators,	T1,T2,R1	2	PPT & Tutorial
		2.11	Communication Interface: Onboard and External Communication Interfaces	T1,T2,R1	1	
				CLASS TEST-2	1	
				TOTAL	13	
3	CO3: Understand about the PIC, AVR controllers and Processors (K2)		**UNIT-III**			Chalk & Talk, PPT & Tutorial
		3.1	Embedded Firmware	T2,R1	2	
		3.2	: Reset Circuit,	T2,R1	1	
		3.3	Brown-out Protection Circuit,	T2,R1	2	
		3.4	Oscillator Unit,	T2,R1	1	
		3.5	Real Time Clock, Watchdog Timer,	T2,R1	2	
		3.6	Embedded Firmware Design	T2,R1	2	
		3.7	Approaches and Development Languages.	T2,R1	1	
		3.8	EXAMPLE PROGRAMS	T2,R1	1	
				CLASS TEST-3	1	
				TOTAL	13	
4	CO4: Perform the design case study of Embedded Systems(K3)		**UNIT-IV**			Chalk & Talk, PPT & Tutorial
		4.1	Overview of PIC,	T2,R1	1	
		4.2	Introduction to AVR controllers	T2,R1	2	
		4.3	Explanation on AVR controllers	T2,R1	1	
		4.4	Introduction to ARM processors:	T2,R1	1	
		4.5	Explanation on ARM processors	T2,R1	1	
		4.6	Introduction to PIC family of Microcontroller.	T2,R1	1	
		4.7	Explanation on PIC family of Microcontroller.	T2,R1	1	
		4.8	. Introduction to ARM family Processors.	T2,R1	2	
		4.9	Explanation on ARM family Processors.	T2,R1	1	
				CLASS TEST-4	1	
				TOTAL	12	
5	CO4: Perform the design case study of Embedded Systems(K3)		**UNIT-V**			Chalk & Talk, PPT & Tutorial
		5.1	Design Case studies: Digital clock,	T2,R1	2	
		5.2	Design Case studies of Battery operated smartcard reader.	T2,R1	2	
		5.3	Design Case studies of Automated meter reading system	T2,R1	2	
		5.4	Design Case studies of , Digital camera	T2,R1	2	
		5.5	Design of Vending Machine	T2,R1	2	
	Content beyond Syllabus	5.6	Developing digital alarm	T2,R1	1	
				CLASS TEST-5	1	

		TOTAL	12	
		TOTAL PROPOSED NO. OF CLASSES	**62**	

Text Books:	
S.No.	**AUTHORS/BOOK TITLE/EDITION(latest)/PUBLISHER/YEAR OF PUBLICATION**
1	1. Shibu K.V, Introduction to Embedded Systems , McGraw Hill, 2017 (Unit I-V)
2	1. Raj Kamal, Embedded Systems , TMH.2018
Reference Books:	
S.No.	**AUTHORS/BOOK TITLE/EDITION(latest)/PUBLISHER/YEAR OF PUBLICATION**
1	KENNETHAYYALA. The 8051 Microcontroller , Cingarelearning India 2018
2	David E Simon, An Embedded Software Primer , Pearson Education, 2018.
Web Details	
1	www.nptel.ac.in
2	www.slideshare.net
3	https://www.youtube.com/watch?v=8-gUa7h5wzk&list=PLXnsjPD8-xuuIC5GyfL8Iy6xysO2x4eMt

		Name	Signature with Date
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