Course Code: EXC 701

Subject Name: EMBEDDED SYSTEM DESIGN

Academic Term: *JULY 2018-NOVEMBER 2018*

Course Outcomes:

Upon completion of this course, students will be able to:

EXC 701.1: Decide the appropriate components based on their specifications to design optimal systems.

EXC 701.2: Develop applications using Embedded C programming concepts.

EXC 701.3 Apply the principles of   concurrent processing in the design of Real-time constrained Embedded systems using RTOS like µCOS-II

EXC 701.4: Compare various ARM-v7 based microcontrollers with respect to architectural features and specifications.

Mapping of CO with PO/PSO:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
EXC 701.1	1	3	3		3				2	1	2	
EXC 701.2			2	3	3							
EXC 701.3			3	3	3							
EXC 701.4	3	3	3						3	2	2	

	PSO1	PSO2
EXC701.1	3	3
EXC701.2	3	1
EXC701.3	3	1
EXC701.4	-	1

Mapping of CO with PO with Justification

EXC701.1	PO1	Apply the knowledge of various components and their electrical specifications
	PO2	Identify and analyze complex problems to select the appropriate components

	PO3	Design solutions for complex engineering problems and design system components for Embedded system
EXC 701.2	**PO3**	Design software solutions for complex engineering problems
	PO5	Create, select, and apply appropriate techniques using modern tools like KEIL compiler and RTOS μCOS/II
EXC 701.3	**PO1**	Apply the principles of concurrent processing to design real time constrained systems
	PO3	Design software to ensure that tasks meet their deadlines
	PO5	Use modern tools like the μCOS-II and μvision KEIL IDE to develop Embedded software
EXC 701.4	**PO1**	Apply the concepts related to microcontrollers to compare ARM v7 based cores
	PO12	This can lead to preparation and ability to engage in independent and life-long learning

Contribution to outcomes will be achieved through content delivery:
Modes of Content Delivery:

Modes of delivery

Modes of Delivery	Brief description of content delivered	Attained COs	Attained POs
Class room lectures	1.Fundamentals of Embedded System 2.Embedded Serial Communication 3.Embedded Hardware and Design 4.Embedded Software, Firmware Concepts and Design 5.Simulation, Testing and Debugging Methodology and Tools 6.Embedded System Design	EXC701.1, EXC701.2 EXC701.3 EXC701.4	PO1,PO2,PO3, PO5,PO12
Laboratory work	Embedded Software, Firmware Concepts and Design	EXC701.2 EXC701.3	PO1,PO3, PO5
Seminars	Case Studies	EXC701.1, EXC701.2 EXC701.3	PO1,PO2,PO3, PO5,PO12

CO Assessment Tool

Course Outcomes	Direct Method (80%)							Indirect Method (20%)
	Assignments		Tests		Laboratory Work	Seminars	End Semester Examination	Course Exit Survey
	1	2	1	2				
EXC701.1	10%	-	10%	10%	10%	10%	50%	100%
EXC701.2	20%	-	-	-	30%	-	50%	100%
EXC701.3	10%	10%	10%	10%	10%	-	50%	100%
EXC701.4	-	20%	-	20%	10%	-	50%	100%

Rubrics for assessing Course Outcome CO1, CO2 and CO3 with each assessment tool:

Rubrics			
Assignment	Timeline	Completeness	Level of Depth
Laboratory	Timeline	Level of understanding	Originality
Case Studies	Level of understanding		Presentation

Submitted By	Approved By	
Dr. Sapna Prabhu	ii) Prof. K. Narayanan	Sign:
Sign:	ii) Dr. Sapna Prabhu	Sign:
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	iv) Prof. Monica Khanore	Sign:
Date of Submission:	Date of Approval:	
Remarks by PAC (if any)		