

**Course Outcomes & CO-PO-PSO Mapping and Justification**

Subject	Microcontroller and Embedded Systems Lab	18CSL48
<b>COURSE OUTCOMES:</b>		
CO No.	On completion of this course, students will be able to:	Cognitive Level
18CSL48.1	Explain ARM7 instruction set and gain the knowledge how assembly language works.	L2 Understand
18CSL48.2	Develop and implement the program written in ARM7 assembly language instructions.	L3 Apply
18CSL48.3	Analyze the functioning of hardware devices and interfacing them into ARM7 Processor.	L4 Design
18CSL48.4	Conduct and Test on an ARM7TDMI/LPC2148 evaluation board using evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler	L4 Design

**CO-PO-PSO MAPPING**

CO No.	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
18CSL48.1	1	1	1	-	1	-	-	-	-	-	-	2	-	-	2
18CSL48.2	2	1	1	-	1	-	-	-	-	-	-	2	-	-	2
18CSL48.3	2	2	2	-	1	-	-	-	-	-	-	2	-	-	2
18CSL48.4	2	1	1	-	1	-	-	-	-	-	-	2	-	-	2
<b>Avg. Mapping</b>	<b>1.8</b>	<b>1.3</b>	<b>1.3</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2.0</b>	<b>-</b>	<b>-</b>	<b>2.0</b>

**CO-PO-PSO JUSTIFICATION**

<b>CO No.</b>	<b>PO/PSO</b>	<b>CL</b>	<b>Justification</b>
18CSL48.1	PO1	1	Understand the fundamentals ARM7 instruction set and apply the same to solve engineering problem.
	PO2	1	Identify the existing instructions in ARM7 instruction set and able to solve the problem.
	PO3	1	Able to design variety of solution to solve problem using ARM7 assembly code
	PO5	1	Able adapt evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler
	PO12	2	Apply the knowledge of ARM7 instruction set to design a better solution.
	PSO3	2	Understand the ARM7 instructions and able write a program at low level
18CSL48.2	PO1	2	Able to apply the fundamentals of ARM7 instruction set to solve a problem related ARM7 assembly code.
	PO2	1	Identify the existing instructions in ARM7 instruction set to write assembly code.
	PO3	1	Able to design variety of solution to solve problem using ARM7 assembly code
	PO5	1	Able adapt evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler
	PO12	2	Apply the knowledge of ARM7 instruction set to design a better solution
	PSO3	2	Able to write a program for variety of problems using ARM7 processor
18CSL48.3	PO1	2	Understand the fundamentals interfacing of hardware devices and apply the same to interface the hardware devices.
	PO2	2	Identify the existing interface instructions in ARM7 instruction set and use the same to interface the hardware devices.
	PO3	2	Able to design variety of solution to interface the hardware devices to ARM7 processor.
	PO5	1	Able adapt evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler
	PO12	2	Apply the knowledge of ARM7 instruction set to design a better solution for interfacing hardware devices.
	PSO3	2	Able to write a program to interface hardware devices with ARM7 processor
18CSL48.4	PO1	2	Understand the fundamentals ARM7 instruction set and apply the same to solve problem related to embedded systems.

	PO2	1	Identify the existing instructions in ARM7 instructions set to solve the problem related embedded systems.
	PO3	1	Able to design variety of solution to solve problem related embedded systems using ARM assembly code
	PO5	1	Able adapt evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler
	PO12	2	Apply the knowledge of ARM instruction set to design better embedded systems
	PSO3	2	Able to verify the program on an ARM7TDMI/LPC2148 evaluation board using evaluation version of Embedded 'C' & Keil Uvision-4 tool/compiler

**Prepared by**

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