RATIONALE: Processor Architecture is to enable students to have an understanding of designing a computer to achieve high performance considering the basic concepts processor speed, memory speed, memory capacity and interconnection data rates . The processor components such as Control unit, registers, ALU and instruction and execution unit and the study of control unit which provides control signals for operation and coordination of all processor components

Learning Outcomes: We have already covered in semester-1 till Computer Architecture and instruction set . we will consider the next topics which
The student will be able to understand:
1. Basic components of processor
2. implementation technique of microprogramming
3. parallel organization that takes place in multiple processor and vector processor

Teaching and Evaluation Scheme: The objective of evaluation is not only to measure the performance of students, but also to motivate them for better performance. Students are evaluated on the basis of internal examinations which consist of class test, quizzes, class participation, home assignments, presentation, Regular Attendance (i.e. Minimum 75%), Internal which consist of 40 (10 Term Work + 20 Sessional Exams+ 10 Attendance) marks and University examination.

Sr. No./ Subject Code	Subject Title	Teaching Scheme		Exam Scheme						
		Cr	Theory+ Tut	Theory		Practical		T.W +Sessional Marks	Total Marks	
				Hrs.	Max Marks	Hrs.	Max Marks			
BCA304	Processor Architecture & Utility	4	3+1	4	60	-	-	40	100	

Course Content:

Unit [1] : Principles of Computer Design   **[20%]**

Revision of topics of Computer Organization (block diagram, user and computer)
Software and hardware interaction layers in computer architecture, Overview of Central
Processing Unit, processor goal, design, parameters and data path organization

No. of Lectures:- [6]

Unit [2] : Memory Management Concepts   **[20%]**

Memory hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory, Associative Memory.

No. of Lectures:- [6]

Unit [3] : Introduction to Processor and electrical components   **[20%]**
 Basic electronic components, capacitor, resistor, diode, transistor, comparison of microprocessor and microcontroller, processor categories, Architecture of 8051, addressing modes of 8051,

No. of Lectures:- [8]

Unit [4] : Interfacing 8051   **[20%]**
Introduction to registers and programming instructions in 8051, Data type used, Utilization of
PORT 0-3, virtual environment in keil C for writing a program to use LED, Micro-controller
programming, time delay calculation for 8051.

                                                                    N**o. of Lectures:- [8]**

Unit [5] : passing the message to 8051   **[20%]**
Embedded System Versus General Computing system, sensors and utility of sensors(PIR,GAS,
temperature, humidity),Application areas of Embedded Systems.

                                                                    No. of Lectures:- [8]

Total No of Theory Lectures: - 36 Hrs.

Text book:
(1)   Computer Architecture and organization by B Govindrajalu (TMH)
 (2)   Embedded Systems Concepts and Application by Dr.N.NJani
Reference book
Advanced microprocessor and interfacing by Badri Ram

Instructional Strategies:

1. Building Background
2. Direct Instruction
3. Review and check of Prior knowledge
4. Integrate topics and concepts
5. Guided Practice
6. Independent Practice
7. Demonstration using technology tools
8. Provide examples to transfer learning

Teaching and Examination Scheme

UNIT	Examination Scheme %weightage	Teaching Scheme No. of Lecture
Unit-1	20	6
Unit-2	20	6
Unit-3	20	8
Unit-4	20	8
Unit-5	20	8
Total	100	36