# Criterion I

# Curricular Aspects

RCMAS

RAJAGIRI COLLEGE OF MANAGEMENT & APPLIED SCIENCES

RAJAGIRI VALLEY P.O, KAKKANAD, KERALA 682039

An ISO 9001 : 2015 Certified Institution

Affiliated to Mahatma Gandhi University, Kottayam and Approved by AICTE

## 1.1 Curricular Planning and Implementation

**1.1.1 The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of Continuous Internal Assessment**

## Sample Course File

Submitted to

NAAC

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

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# DEPARTMENT OF COMPUTER SCIENCE

## Bachelor of Computer Application

## Programme Specific Outcome (PSO)

| PSO NO | Programme Specific Outcome |
|---|---|
| PSO 1 | Our graduates are able to understand the various parts of a computer. |
| PSO 2 | Our graduates are able to apply mathematical knowledge, algorithmic concepts and various programming languages to solve problems logically. |
| PSO 3 | Our graduates are able to design and create software's to address real world issues which satisfies industrial demands. |

**About the Course:**

The present course will provide basic concepts of computer architecture and organization that can help the students to have a clear view as to how a computer system works. Central Processing Unit(CPU) is the brain of the computer,all types of data processing operations and all the important functions of a computer are performed by the CPU.Students able to understand the organization and working concepts of CPU through this course.Memory plays an important role in computer architecture.The present course also deals with detailed explanation of memory hierarchy. In addition to this,aspirants can learn about the operational concepts of parallel processing,pipelining and vector processing . This course is mainly divided into 5 modules.

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| | | | | | | |
|---|---|---|---|---|---|---|
| Course Code | CA2CRT04 | | | | | |
| Course Title | Computer Organization and Architecture | | | | | |
| Department | Computer Science | | | | | |
| Programme | Bachelor of Computer Application | | | | | |
| Semester | 2 | | | | | |
| Course Type | Core | | | | | |
| Credit | 4 | Hrs/Week | 4 | Total Hours | 72 | |

| CO No. | Expected Course Outcomes<br>Upon completion of this course students will be able to: | Cognitive Level | PO, PSO No. |
|---|---|---|---|
| CO1 | Explain the fundamental organization and architecture of computer system. | U | PSO1 |
| CO2 | Explain CPU architecture, instruction execution stages and addressing mode, memory organization and mapping techniques | U | PSO1 |
| CO3 | Illustrate the concept of pipelining and parallel processing. | U | PSO1 |

**Cognitive Level: R- Remember, U-Understanding, Ap-Apply, An-Analyze, E-Evaluate, C-Create**

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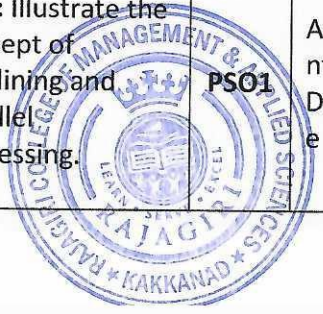
| Hours/ Unit/ Mule | Topics for Student Preparation (INPUT) | Procedure (Process) | Learning Outcome (OUTPUT) After studying this course, the students should able to | PO/ PSO | Assessment through |
|---|---|---|---|---|---|
| **Module 1 BASIC COMPUTER ORGANIZATION AND DESIGN**: Basic computer organization and design - Operational concepts, Instruction codes, Computer Registers, Computer Instructions, Memory locations and addresses, Instruction cycle, Timing and control, Bus organization. | Basic operational concepts of computer instructions,memory and registers | **Lecture Peer Teaching** | **CO1**: Explain the fundamental organization and architecture of computer system. | **PSO1** | Descriptive Test |
| **Module 2: CENTRAL PROCESSING UNIT**: Central Processing Unit- General Register Organization, Stack Organization, Addressing modes, Instruction Classification, Program control. | General awareness regarding the working of CPU | **Lecture Discussion Peer Teaching** | **CO2**: Explain CPU architecture, instruction execution stages and addressing mode, memory organization and mapping techniques | **PSO1** | Descriptive TestAssignment |
| **Module 3: MEMORY ORGANIZATION**: Memory Organization – Memory Hierarchy, Main Memory, Organization of RAM, SRAM, DRAM, Read Only Memory-ROMPROM, EROM,EEPROM, Auxiliary memory, Cache memory, Virtual Memory, Memory mapping Techniques | Knowledge of computer memory and its classification | **Lecture Video Powerpoint Presentation** | **CO2**: Explain CPU architecture, instruction execution stages and addressing mode, memory organization and mapping techniques | **PSO1** | Descriptive Test Seminar Assignment |
| **Module 4 PARALLEL COMPUTER STRUCTURES**: Parallel Computer Structures- Introduction to parallel processing, Pipeline computers, Multi processing systems, Architectural classification scheme-SISD, SIMD, MISD, MIMD. | Basic ideas of Parallel processing and its architectural classification | **Lecture Discussion** | **CO3:** Illustrate the concept of pipelining and parallel processing. | **PSO1** | Descriptive Test Seminar Assignment |
| **Module 5 PIPELINING AND VECTOR PROCESSING**: Pipelining and Vector processing-Introduction to pipelining, Instruction and Arithmetic pipelines (design) Vector processing, Array Processors. | Basic overview of Pipelining and its types | **Lecture Discussion Peer Teaching** | **CO3:** Illustrate the concept of pipelining and parallel processing. | **PSO1** | Assignment Descriptive Test |



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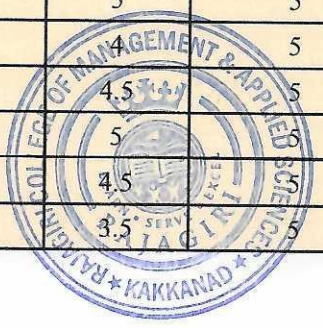
# EVALUATION MAPPING

| Index Sheet (Mandatory) | | | | |
|---|---|---|---|---|
| **Academic Year** | 2023-24 | | | |
| **Semester** | 2 | | | |
| **Name of the subject** | CA2CRT04 : Computer Organization And Architecture | | | |
| **Course Outcome** | | CO1 | CO2 | CO3 |
| **Roll No** | **Student** | **IAT1** | **IAT2** | **Assignment** |
| BCA231301 | ABHIJITH P NAIR | 3 | 4 | 5 |
| BCA231302 | AGGIE MARIA ELDO | 5 | 5 | 5 |
| BCA231303 | AKHILA T R | 2.5 | 3 | 5 |
| BCA231304 | ALAN ANTONY JOY | 3.5 | 3.5 | 5 |
| BCA231305 | ALFRED GISON | 4 | 3.5 | 5 |
| BCA231306 | ALIXA JOHNSON | 4.5 | 4 | 5 |
| BCA231307 | ALIZA ELIZABETH SANTHOSH | 4 | 3.5 | 5 |
| BCA231308 | AMAANA ANAS | 2 | 3.5 | 5 |
| BCA231309 | AMRA FATHIMA R | 4.5 | 4 | 5 |
| BCA231310 | ANANYA ELIZABETH ARUN | 5 | 4.5 | 5 |
| BCA231311 | ANASWARA E S | 5 | 5 | 5 |
| BCA231312 | ANGEL MARIYA C J | 5 | 4.5 | 5 |
| BCA231313 | ANGELINA GEO | 3.5 | 4 | 5 |
| BCA231314 | ANGELINA MARY JOSEPH | 2 | 3 | 5 |
| BCA231315 | ANN ELDHO MATHEW | 4 | 4 | 5 |
| BCA231316 | ANN TREESSA BINU | 4 | 4 | 5 |
| BCA231317 | ANNA JIYA JOSEPH | 5 | 5 | 5 |
| BCA231318 | ARUN V S | 5 | 4.5 | 5 |
| BCA231319 | ATHLIN TONY | 2.5 | 2 | 5 |
| BCA231320 | ATHULYA P S | 5 | 4.5 | 5 |
| BCA231321 | AURIA THERESA JIJO | 5 | 2 | 5 |
| BCA231322 | CLARIBEL PEREIRA | 5 | 3.5 | 5 |
| BCA231323 | COLWIN TP | 3.5 | 3 | 5 |
| BCA231324 | DEYON THANKACHAN | 3.5 | 3.5 | 5 |
| BCA231325 | DONAL JOSE | 3.5 | 3.5 | 5 |
| BCA231326 | GAURY S NAIR | 3.5 | 3.5 | 5 |
| BCA231327 | GAUTHAM NAIR | 4.5 | 4 | 5 |
| BCA231329 | HARI PRIYA J | 5 | 5 | 5 |
| BCA231330 | HRISHIKESH GOPAL | 3 | 4 | 5 |
| BCA231331 | IRINE MICHEAL | 5 | 4.5 | 5 |
| BCA231332 | JEEVAN MARTIN | 4.5 | 5 | 5 |
| BCA231333 | JOEL GEORGE MAMMAN | 4.5 | 4.5 | 5 |
| BCA231334 | JOEL JOSE | 3.5 | 3.5 | 5 |



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| | | | | |
|---|---|---|---|---|
| BCA231335 | JOEL MATHEW SHAJU | 4 | 2.5 | 5 |
| BCA231336 | JOSEPH ANTO | 4.5 | 3.5 | 5 |
| BCA231337 | JOSEPH GEORGE | 5 | 5 | 5 |
| BCA231338 | JOSHUA GEO | 4.5 | 3 | 5 |
| BCA231339 | JOSHUA MATHEW | 1.5 | 3.5 | 5 |
| BCA231340 | KRISHNA B ARAVIND | 5 | 4.5 | 5 |
| BCA231341 | MESENTA MARTIN | 5 | 4.5 | 5 |
| BCA231342 | NAVAJITH C S | 2 | 1.5 | 5 |
| BCA231343 | NIRANJAN VINOD | 2 | 3.5 | 5 |
| BCA231344 | NITHIN JOY | 1.5 | 3.5 | 5 |
| BCA231345 | NIYA JUSTIN | 2 | 1 | 5 |
| BCA231346 | NORAH VIN | 5 | 4 | 5 |
| BCA231347 | NYJEL VINOY | 3 | 2.5 | 5 |
| BCA231348 | POORNIMA UNNIKRISHNAN | 3.5 | 3 | 5 |
| BCA231349 | RASHA FEBIN K | 5 | 5 | 5 |
| BCA231350 | ROHAN MATHEW | 2 | 2.5 | 5 |
| BCA231351 | ROHAN RENJITH | 0 | 1 | 5 |
| BCA231352 | SAM ABRAHAM MATHEW | 2.5 | 3.5 | 5 |
| BCA231353 | SANA SAJU | 0 | 5 | 5 |
| BCA231354 | SHEETHAL FRANCIS CHITTILAPPILLY | 5 | 5 | 5 |
| BCA231355 | SHINTO GEORGE | 3.5 | 3 | 5 |
| BCA231356 | SIDHARTH SHAJI | 3.5 | 3.5 | 5 |
| BCA231358 | SREERAM PB | 2.5 | 3.5 | 5 |
| BCA231359 | TOMS K ELDHOSE | 3 | 2 | 5 |
| BCA231360 | ZENITTA MARY ZINO | 4.5 | 4 | 5 |
| BCA231361 | MADHAV N AJU | 1.5 | 2.5 | 5 |
| BCA231362 | LIYANA V SHAMSUDHEEN | 4.5 | 4 | 5 |
| BCA231363 | MUHAMMED ALFAD T.L | 5 | 5 | 5 |
| BCA231364 | ADHITHYAN SURESH | 4 | 3.5 | 5 |
| BCA231365 | ALAN GEORGE | 4 | 4.5 | 5 |
| BCA231367 | VIDHU KRISHNAN | 3 | 3 | 5 |
| BCA231368 | JAZIM HASHIK | 3 | 3.5 | 5 |
| BCA231369 | ARUNIMA RAJ | 5 | 5 | 5 |
| BCA231370 | MJ UDAY NANDAN | 3 | 3 | 5 |
| BCA231372 | SOORAJ S NAIK | 4 | 4.5 | 5 |

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| | IAT1 | IAT2 | Assignment |
|---|---|---|---|
| Mean | 3.68 | 3.68 | 2.65 |
| Standard Deviation | 1.27 | 0.99 | 0.62 |

| | | | |
|---|---|---|---|
| Upper limit | 4 | 4 | 4 |
| Lower Limit | 2 | 2 | 3 |

## Data to be Entered for CO to PO Mapping

| Component | CO No. | CO Attainment Level |
|---|---|---|
| IAT1 | CO1 | 3 |
| IAT2 | CO2 | 3 |
| Assignment | CO3 | 3 |

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