**BHARATHIAR UNIVERSITY::COIMBATORE 641046**

**B. Sc. Artificial Intelligence and Machine Learning (CBCS PATTERN)**

(*For the students admitted from the academic year* ***2022-2025*** *Batch*)

**Scheme of Examination**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Part** | **Title of the Course** | **Hours / Week** | **Examination** | | | | **Credits** |
| **Duration**  **In Hours** | **Maximum Marks** | | |
| **CIA** | **CEE** | **Total** |
|  | **Semester I** | | | | | | |
| I | Language-I | 6 | 3 | 50 | 50 | 100 | 4 |
| II | English-I | 6 | 3 | 50 | 50 | 100 | 4 |
| III | Core 1:Object Oriented Programming in C++ | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core 2:Data Structures | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 1:Programming Lab–C++ | 3 | 3 | 50 | 50 | 100 | 4 |
| III | Allied 1:Discrete Mathematics | 5 | 3 | 50 | 50 | 100 | 4 |
| IV | Environmental Studies\* | 2 | 3 | - | 50 | 50 | 2 |
|  | **Total** | **30** |  | **300** | **350** | **650** | **26** |
|  | **Semester II** | | | | | | |
| I | Language–II | 6 | 3 | 50 | 50 | 100 | 4 |
| II | English–II | 4 | 3 | 25 | 25 | 50 | 2 |
|  | Naan Muthalvan –Skill Course Effective English  <http://kb.naanmudhalvan.in/images/c/c7/Cambridge_Course_Details.pdf> | 2 |  | 25 | 25 | 50 | 2 |
| III | Core 3:Java Programming | 5 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 2:Programming Lab –Java | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 3:Internet Basics Lab | 2 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 2:Applied Mathematics | 5 | 3 | 50 | 50 | 100 | 4 |
| IV | Value Education–Human Rights\* | 2 | 3 | - | 50 | 50 | 2 |
|  | **Total** | **30** |  | **275** | **325** | **600** | **24** |
|  | **Semester III** | | | | | | |
| I | Language–III | 4 | 3 | 50 | 50 | 100 | 4 |
| II | English – III | 4 | 3 | 25 | 25 | 50 | 2 |
| III | Core 4:Programming in Python | 4 | 3 | 50 | 50 | 100 | 3 |
| III | Core 5:Fuzzy logic and Neural Networks | 4 | 3 | 50 | 50 | 100 | 3 |
| III | Core Lab 4:Python Programming Lab | 3 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 3:Design and Analysis of Algorithms | 5 | 3 | 25 | 25 | 50 | 2 |
| III | Skill based Subject 1:Internet of Things | 4 | 3 | 30 | 45 | 75 | 3 |
| IV | Tamil\*\*/Advanced Tamil\*(OR) Non-major elective-I (Yoga for Human Excellence)\*/  Women’s Rights\* | 2 | 3 | - | 50 | 50 | 2 |
| IV | Naan Muthalvan –Skill Course - Programming Essentials for Employability | 2 |  | 25 | 75 | 100 | 2 |
|  | **Total** | **32** |  | **280** | **395** | **675** | **23** |
|  | **Semester IV** | | | | | | |
| I | Language–IV | 4 | 3 | 50 | 50 | 100 | 4 |
| II | English – IV | 4 | 3 | 25 | 25 | 50 | 2 |
| III | Core 6:Artificial Intelligence & Knowledge Representation | 4 | 3 | 50 | 50 | 100 | 3 |
| III | Core 7:R Programming | 4 | 3 | 50 | 50 | 100 | 3 |
| III | Core Lab 5: R Programming Lab | 3 | 3 | 25 | 25 | 50 | 2 |
|  | Naan Muthalvan-Skill Course Office Fundamentals- Lab  <http://kb.naanmudhalvan.in/Bharathiar_University_(BU)> | 2 |  | 25 | 25 | 50 | 2 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| III | Allied 4:Machine Learning–Basics | 4 | 3 | 25 | 25 | |  | | | 50 | | 2 | |
| III | Skill based Subject 2 Lab: Capstone Project Work (Based on AI & Machine Learning) | 3 | 3 | 25 | 25 | |  | | | 50 | | 2 | |
| IV | Tamil\*\*/Advanced Tamil\*(OR)Non-  Major elective-II (General Awareness\*) | 2 | 3 | - | 50 | |  | | | 50 | | 2 | |
|  | **Total** | **30** |  | **275** | **325** | |  | | | **600** | | **22** | |
|  | | | | | | | | | | | | | |
|  | **Semester V** | | | | | | | | | | | | |
| III | Core 8:Machine Learning Techniques | 6 | 3 | 50 | | 50 | | | 100 | | | | 4 |
| III | Core 9:Deep Learning | 6 | 3 | 50 | | 50 | | | 100 | | | | 4 |
| III | Core Lab 6:Machine Learning Lab | 6 | 3 | 25 | | 25 | | | 50 | | | | 4 |
| III | Elective- I Business Data Analytics/Social Network Analysis/Software Agents | 6 | 3 | 50 | | 50 | | | 100 | | | | 4 |
| III | Skill based Subject 3:Ethical Hacking | 6 | 3 | 30 | | 45 | | | 75 | | | | 4 |
| IV | Naan Muthalvan – Skill Course – Cloud and IT Essentials for Employability | 2 |  | 25 | | 75 | | | 100 | | | | 2 |
|  | **Total** | **32** |  | **230** | | **295** | | | **525** | | | | **22** |
|  | **Semester VI** | | | | | | | | | | | | |
| III | Core 10:Natural Language Processing | 6 | 3 | 50 | | 50 | | 100 | | | 4 | | |
| III | Core Paper XI Project Work Lab%% | 4 | - | 60 | | 90 | | 150 | | | 6 | | |
| III | Core Practical –7 :Natural Language Processing Lab | 5 | 3 | 25 | | 25 | | 50 | | | 3 | | |
| III | Elective – II : Artificial Neural Networks and Fuzzy Systems/Web Application Security/Fundamentals of Robotics | 5 | 3 | 50 | | 50 | | 100 | | | 4 | | |
| III | Elective–III: Embedded Systems  /Principles of Secure Coding/Open Source Software | 5 | 3 | 50 | | 50 | | 100 | | | 4 | | |
| III | Skill Based Subject 4 Capstone Project Work Phase II (Based on AI &Machine Learning) | 3 | 3 | 25 | | 25 | | 50 | | | 2 | | |
|  | Naan Muthalvan- Skill Course Cyber Security**@**  <http://kb.naanmudhalvan.in/images/7/71/Cybersecurity.pdf>  (or)Machine Learning **#**  [http://kb.naanmudhalvan.in/images/1/19/PBL](http://kb.naanmudhalvan.in/images/1/19/PBL_Google.pdf) | 2 |  | 25 | | 25 | | 50 | | | 2 | | |
| [\_Google.pdf](http://kb.naanmudhalvan.in/images/1/19/PBL_Google.pdf)  (or)Android APP Development**$**  [http://kb.naanmudhalvan.in/images/0/08/Android](http://kb.naanmudhalvan.in/images/0/08/Android_App_Dev.pdf)  [\_App\_Dev.pdf](http://kb.naanmudhalvan.in/images/0/08/Android_App_Dev.pdf) |
| V | Extension Activities\*\* |  | - | 50 | | - | | 50 | | | 2 | | |
|  | **Total** | **30** |  | **335** | | **315** | | **650** | | | **27** | | |
|  | **Grand Total** | **184** |  | **1695** | | **2005** | | **3700** | | | **144** | | |

* \*No Continuous Internal Assessment(CIA).Only University Examinations.
* \*\*No University Examinations. Only Continuous Internal Assessment(CIA).
* **&**University semester examination (CEE) will be conducted for 50 marks (As per existing pattern

Of Examination) and it will be converted for 25 marks.

* **#** Govt –Non-Autonomous Colleges, **$** Aided–Non-Autonomous Colleges, **@**Self-Financing **(**Non–Autonomous).
* Naan Mudhalvan– skill courses-external marks will be assessed by Industry and internal will be offered by respective course