**BHARATHIAR UNIVERSITY::COIMBATORE 641 046**

**B. Sc. Artificial Intelligence and Data Science (CBCS PATTERN)**

(*For the students admitted from the academic year* ***2022-2023*** *and onwards*)

**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: Fundamentals of Computer Programming | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core 2: Data Structures | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 1: Computer Programming Lab | 3 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 1: Linear Algebra | 5 | 3 | 50 | 50 | 100 | 4 |
| IV | Environmental Studies\* | 2 | 3 | - | 50 | 50 | 2 |
|  | **\*\*\*Add-on Courses - Naan Mudhalvan Scheme: IT Courses -Infosys Springboard** |  |  |  |  |  |  |
|  | **Total** | **30** |  | **275** | **325** | **600** | **24** |
|  | **Semester II** | | | | | | |
| I | Language – II | 6 | 3 | 50 | 50 | 100 | 4 |
| II | English – II | 4 | 3 | 25 | 25 | 50 | 4 |
| III | Core 3: Introduction to Python Programming | 5 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 2: Python Programming Lab | 3 | 3 | 25 | 25 | 50 | 2 |
| III | Core Lab 3: Internet Basics Lab | 3 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 2: Optimization Techniques | 5 | 3 | 50 | 50 | 100 | 3 |
| IV | Value Education – Human Rights\* | 2 | 3 | - | 50 | 50 | 2 |
|  | NaanMuthalvan - Skill Course  Effective English  http://kb.naanmudhalvan.in/images/c/c7/Cambridge\_Course\_Details.pdf | 2 | 3 | 25 | 25 | 50 | 2 |
|  | **Total** | **30** |  | **250** | **300** | **550** | **23** |
|  | **Semester III** | | | | | | |
| I | Language – III | 4 | 3 | 50 | 50 | 100 | 4 |
| II | English – III | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core 4: Internet Programming | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core 5: Foundation of Artificial Intelligence | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 4: Internet Programming Lab | 4 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 3: Operating System Design | 5 | 3 | 50 | 50 | 100 | 4 |
| III | Skill based Subject 1: Data Analytics | 3 | 3 | 30 | 45 | 75 | 2 |
| IV | Tamil\*\* / Advanced Tamil\* (OR) Non-  major elective - I (Yoga for Human Excellence)\* / Women’s Rights\* | 2 | 3 | - | 50 | 50 | 2 |
|  | **Naan Mudhalvan Scheme : programming essential for employability** | **2** | **3** | **25** | **75** | **100** | **2** |
|  | **Total** | **32** |  | **330** | **445** | **775** | **28** |
|  | **Semester IV** | | | | | | |
| I | Language – IV | 4 | 3 | 50 | 50 | 100 | 4 |
| II | English - IV | 4 | 3 | 25 | 25 | 50 | 4 |
| III | Core 6: Cognitive Science and Analysis | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core 7: Database Design and Management | 4 | 3 | 50 | 50 | 100 | 4 |
| III | Core Lab 5: Database Lab | 3 | 3 | 25 | 25 | 50 | 2 |
| III | Allied 4: Data and Information Security | 5 | 3 | 50 | 50 | 100 | 3 |
| III | Skill based Subject 2 Lab : Capstone Project Work Phase I | 2 | 3 | 25 | 25 | 50 | 2 |
| IV | Tamil\*\*/Advanced Tamil\* (OR) Non- major elective -II (General Awareness\*) | 2 | 3 | - | 50 | 50 | 2 |
|  | NaanMuthalvan – Skill Course  Office Fundamentals - Lab  http://kb.naanmudhalvan.in/Bharathiar\_University\_(BU | **2** |  | **25** | **25** | **50** | 2 |
|  | **Total** | **30** |  | **300** | **350** | **650** | **27** |

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|  | **Semester V** | | | | | | | | | | | | |
| III | Core 8: Ethics of Artificial Intelligence | 6 | | 3 | | 50 | | 50 | | 100 | | 4 | |
| III | Core 9: Fundamentals of Data Science | 6 | | 3 | | 50 | | 50 | | 100 | | 4 | |
| III | Core Lab 6: Data Science Lab | 6 | | 3 | | 25 | | 25 | | 50 | | 4 | |
| III | Elective – I: Big Data Analytics / Cyber Security / Deep Learning | 6 | | 3 | | 50 | | 50 | | 100 | | 4 | |
| III | Skill based Subject 3 Lab : Capstone Project Work Phase II | 6 | | 3 | | 30 | | 45 | | 75 | | 2 | |
|  | **Naan Mudhalvan Scheme: cloud and IT essential foremployability** | 2 | | 3 | | 25 | | 75 | | 100 | | 2 | |
|  | **Total** | **30** | |  | | **230** | | **275** | | **525** | | **20** | |
|  | **Semester VI** | | | | | | | | | | | | |
| III | Core 10: Robotic Process Automation | | 5 | | 3 | | 50 | | 50 | | 100 | | 4 |
| III | Core 11: Project Work Lab %% | | 6 | | - | | 40 | | 60 | | 100 | | 4 |
| III | Core Practical –VII : Programming in UI Path Automation Lab | | 4 | | 3 | | 25 | | 25 | | 50 | | 2 |
| III | Elective – II : Ethical Hacking / Digital Forensics Science / Natural Language Processing | | 5 | | 3 | | 50 | | 50 | | 100 | | 3 |
| III | Elective – III : Internet of Things / Data Visualization / Social Network Analysis | | 5 | | 3 | | 50 | | 50 | | 100 | | 3 |
| III | Skill Based Subject 4 : Machine Learning | | 3 | | 3 | | 25 | | 25 | | 50 | | 2 |
| V | Extension Activities\*\* | | - | | - | | 50 | | - | | 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_Google.pdf>  (or) Android APP Development **$**<http://kb.naanmudhalvan.in/images/0/08/Android_App_Dev.pdf> | | 2 | | 3 | | 25 | | 25 | | 50 | | 2 |
|  | **Total** | | **30** | |  | | **315** | | **285** | | **600** | | **22** |
|  | **Grand Total** | |  | |  | | **1700** | | **2000** | | **3700** | | **144** |

\* No Continuous Internal Assessment (CIA). Only University Examinations.

\*\* No Unive\*\*\* Certificate Mandatory (No CIA and CEE) - Add-On Courses: Naan Mudhalvan Scheme : [www.naanmudhalvan.tn.gov.in](http://www.naanmudhalvan.tn.gov.in)

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| **S. No** | **Semester** | **Name of the course** | **Offered by** | **Link** |
| 1 | I | English | Cambridge | [www.naanmudhalvan.tn.gov.in](http://www.naanmudhalvan.tn.gov.in) |
| 2 | II | Business English | STEP | [www.naanmudhalvan.tn.gov.in](http://www.naanmudhalvan.tn.gov.in) |
| 3 | III | IT Courses | Infosys springboard | <https://infosysspringboard.ausnz.onwingspan.com/> |
| 4 | IV | Entrepreneurship Skills | TANSIM | [www.naanmudhalvan.tn.gov.in](http://www.naanmudhalvan.tn.gov.in) |
| 5 | V | IT Courses | Infosys - springboard | <https://infosysspringboard.ausnz.onwingspan.com/> |
| 6 | VI | Life Skills | Mahindra Pride | [www.naanmudhalvan.tn.gov.in](http://www.naanmudhalvan.tn.gov.in) |

rsity Examinations. Only Continuous Internal Assessment (CIA).