

TEACHER LEVEL ATTAINMENT REPORT

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| --- | --- | --- | --- |
| Faculty Name | Prof. R.R. Shevale | A.Y | 2023-24 |
| Subject Name | Data Science and Big Data Analytics | Sub.Code | 310251 |
| Sem | VI | Class | TE |

# Teaching Scheme & Examination Scheme:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Teaching Scheme |  |  |  |  |  |  |
|  | Theory | Practical | Tutorial | In Sem | End Sem | PR |
| 4 hrs/week | - | - | ✔ | ✔ | - | - |

# Delivery Method:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Chalk & Talk | ICT Tools | Group Discussion | Industrial Visit | Expert Talk | Virtual Lab |
| ✔ | - | ✔ | - | ✔ | - |

# Program Outcomes (POs):

|  |  |
| --- | --- |
| PO Code | Description |
| PO1 | Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems. |
| PO2 | Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. |
| PO3 | Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, and cultural, societal, and environmental considerations. |
| PO4 | Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. |
| PO5 | Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. |
| PO6 | The engineer and society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. |
| PO7 | Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. |
| PO8 | Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. |
| PO9 | Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. |
| PO10 | Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large. |
| PO11 | Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to manage projects in multidisciplinary environments. |
| PO12 | Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. |

# Program Specific Outcomes (PSOs):

|  |  |
| --- | --- |
| PSO No | Description |
| PSO1 | To demonstrate mathematical and Computer Engineering fundamentals |
| PSO2 | To adapt modern computer tools and technologies to solve Computer Engineering Problems. |
| PSO3 | To apply software engineering practices and standards for project management |

# Course Outcomes (COs):

|  |  |
| --- | --- |
| CO No | Description |
| CO1 | Analyze needs and challenges for Data Science Big Data Analytics |
| CO2 | Apply statistics for Big Data Analytics |
| CO3 | Apply the lifecycle of Big Data analytics to real world problems |
| CO4 | Implement Big Data Analytics using Python programming |
| CO5 | Implement Big Data Analytics and model evaluation using algorithm. |
| CO6 | Design and implement Big Databases using the Hadoop ecosystem |

# Mapping of CO with POs:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| nan | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
| C311.1 | 2.0 | 3.0 | 2.0 | 2.0 | - | - | - | - | 1.0 | - | - | 1.0 |
| C311.2 | 2.0 | 2.0 | 1.0 | 2.0 | - | 2.0 | - | - | 1.0 | - | - | 1.0 |
| C311.3 | 2.0 | 2.0 | 2.0 | 2.0 | - | 2.0 | - | - | 1.0 | - | - | 1.0 |
| C311.4 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | - | - | - | 1.0 | - | - | 1.0 |
| C311.5 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | - | - | - | 1.0 | - | - | 1.0 |
| C311.6 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | - | - | - | 1.0 | - | - | 1.0 |
| C311 | 2.0 | 2.17 | 1.83 | 2.0 | 2.0 | 2.0 | - | - | 1.0 | - | - | 1.0 |
| PO Attainment | - | - | - | - | - | - | - | - | - | - | - | - |
| CO | - | - | - | - | - | - | - | - | - | - | - | - |
| - | - | - | - | - | - | - | - | - | - | - | - | - |
| C311 | 1.88 | 2.04 | 1.72 | 1.88 | 1.88 | 1.88 | - | - | 0.94 | - | - | 0.94 |

# Mapping of CO with PSOs:

|  |  |  |  |
| --- | --- | --- | --- |
| nan | PSO1 | PSO2 | PSO3 |
| C311.1 | 2.0 | - | - |
| C311.2 | 2.0 | - | - |
| C311.3 | 2.0 | - | - |
| C311.4 | 2.0 | - | 2.0 |
| C311.5 | 2.0 | - | - |
| C311.6 | 2.0 | - | 2.0 |
| C311 | 2.0 | - | 2.0 |
| Course | - | - | - |
| C311 | 1.88 | - | 1.88 |

## A) Direct Assessment (90%)

B) External Assessment (80%): -

# Attainment Level Vs Target Value

|  |  |
| --- | --- |
| Attainment Level | Description |
| 1 | 50% students scoring more than University Average marks or target value |
| 2 | 60% students scoring more than University Average marks or target value |
| 3 | 70% students scoring more than University Average marks or target value |

# Set Target Value

|  |  |  |
| --- | --- | --- |
| Theory | PR | Term Work |
| 49 | - | - |

## C) Internal Assessment (20%): -

## Attainment Level Vs Target Value

|  |  |
| --- | --- |
| Attainment Level | Description |
| 1 | 60% students scoring more than 60% of maximum marks |
| 2 | 70% students scoring more than 60% of maximum marks |
| 3 | 80% students scoring more than 60% of maximum marks |

## Set Target Value

|  |  |
| --- | --- |
| Unit Test | Term Work |
| 60% | 60% |

# External Assessment:

Theory (%)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
| 73.13 | 73.13 | 73.13 | 73.13 | 73.13 | 73.13 |

# Internal Assessment:

Unit Test (%)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
| 57.89 | 33.33 | 66.67 | 63.49 | 0.00 | 100.00 |

# Indirect Assessment:

Course Exit Survey (%)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| CO1 | CO2 | CO3 | CO4 | CO5 | CO6 |
| 94.15 | 92.98 | 94.74 | 91.81 | 92.40 | 91.81 |

# CO Attainment by External Assessment

|  |  |
| --- | --- |
| External Assessment Tool | CO Attainment |
| TH Exam | 3 |
| Average | 3 |

# CO Attainment by Internal Assessment

|  |  |
| --- | --- |
| Internal Assessment Tool | CO Attainment |
| Unit Test | 2 |
| Average | 2 |

# Final CO Attainment Calculation:

Direct CO attainment is computed as:

= 0.8 × CO attainment level in university examination

+ 0.2 × CO attainment level in internal assessment

= 0.8 × 3 + 0.2 × 2

= 2.80

# CO Attainment by Course Exit Survey

|  |  |
| --- | --- |
| Indirect Assessment Tool | CO Attainment |
| Course Exit Survey | 3 |

Overall CO attainment is then computed as:

= 0.9 × CO attainment level in Direct CO attainment

+ 0.1 × CO attainment level in Indirect CO attainment

Final CO Attainment = 2.82

Remarks:

**Remark:** Target is not achieved.

**Observation:** Need to take more practice of algorithms.

**Action Plan:** University questions to be solved for better understanding.

**Target Set for A.Y. 2024-25:**

|  |  |  |
| --- | --- | --- |
| Theory | Oral / Practical | Term Work |
| 50 | NA | NA |