**SCHOOL OF COMPUTER ENGINEERING**

# M.TECH (DATA SCIENCE)

### Program Structure (Applicable to 2025 admission onwards)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **YEAR** | **FIRST SEMESTER** | | | | | | **SECOND SEMESTER** | | | | | |
| **SUB CODE** | **SUBJECT NAME** | **L** | **T** | **P** | **C** | **SUB CODE** | **SUBJECT NAME** | **L** | **T** | **P** | **C** |
| **I** | MAT\_5129 | MATHEMATICAL FOUNDATIONS FOR  DATA SCIENCE | 3 | 1 | 0 | 4 | DSE\_5211 | ARTIFICIAL INTELLIGENCE | 3 | 1 | 0 | 4 |
| DSE\_5111 | DATA STRUCTURES AND ALGORITHMS | 4 | 0 | 0 | 4 | DSE\_5212 | DEEP LEARNING | 3 | 1 | 0 | 4 |
| DSE\_5112 | DATABASE TECHNOLOGIES | 3 | 0 | 0 | 3 | DSE\_\*\*\*\* | PROGRAM ELECTIVE I | 3 | 0 | 0 | 3 |
| DSE\_5113 | DATA ANALYTICS &  VISUALIZATION | 3 | 0 | 0 | 3 | DSE\_\*\*\*\* | PROGRAM ELECTIVE II | 3 | 0 | 0 | 3 |
| DSE\_5114 | MACHINE LEARNING | 3 | 0 | 0 | 3 | DSE\_\*\*\*\* | PROGRAM ELECTIVE III | 4 | 0 | 0 | 4 |
| HUM\_5051 | RESEARCH METHODOLOGY &  TECHNICAL COMMUNICATION\* | 1 | 0 | 3 | - | \*\*\* \*\*\*\* | OPEN ELECTIVE | 3 | 0 | 0 | 3 |
| DSE\_5141 | DATA STRUCTURES AND ALGORITHMS  LAB\*\* | 0 | 0 | 3 | 2 | HUM\_5051 | RESEARCH METHODOLOGY &  TECHNICAL COMMUNICATION\* | - | - | - | 2 |
| DSE\_5142 | DATABASE TECHNOLOGIES LAB \*\* | 0 | 0 | 3 | 2 | DSE\_5241 | AI AND DL LAB\*\* | 0 | 0 | 3 | 2 |
| DSE\_5143 | DATA ANALYTICS & VISUALIZATION  LAB\*\* | 0 | 0 | 3 | 2 | DSE\_5242 | DATA SCIENCE CAPSTONE PROJECT\*\* | 0 | 0 | 3 | 2 |
| **TOTAL** | | **17** | **1** | **12** | **23** |  |  | **19** | **2** | **6** | **27** |
|  | **THIRD AND FOURTH SEMESTER** | | | | | | | | | | | |
| **II** | DSE\_6091 | PROJECT WORK & INDUSTRIAL TRAINING | | | | | | | **0** | **0** | **0** | **30** |

\*TAUGHT IN BOTH SEMESTERS AND EVALUATED AND CREDITED IN THE SECOND SEMESTER

\*\*LAB 3 Hrs/WEEK WITH A PROVISION FOR MINI PROJECT/ASSIGMENTS

|  |  |  |  |
| --- | --- | --- | --- |
| **PROGRAM ELECTIVES** | | **OPEN ELECTIVES** | |
| **COURSE CODE** | **COURSE TITLE** | **COURSE CODE** | **COURSE TITLE** |
|  | **PROGRAM ELECTIVE - I** | DSE\_5301 | ENTERPRISE DATA ARCHITECTURE |
| DSE\_5401 | BIG DATA ANALYTICS | DSE\_5302 | BUSINESS INTELLIGENCE |
| DSE\_5402 | SOFT COMPUTING |  |  |
| DSE\_5403 | COMPUTER NETWORK ANALYSIS |  |  |
| DSE\_\*\*\*\* | CLOUD AND EDGE COMPUTING |  |  |
| DSE\_\*\*\*\* | FEDERATED LEARNING |  |  |
|  | **PROGRAM ELECTIVE - II** |  |  |
| DSE\_5404 | OPTIMIZATION TECHNIQUES FOR ANALYTICS |  |  |
| DSE\_5405 | DATA PRIVACY AND SECURITY |  |  |
| DSE\_5406 | PATTERN RECOGNITION & APPLICATIONS |  |  |
| DSE\_\*\*\*\* | SEMANTIC WEB TECHNOLOGIES |  |  |
| DSE\_\*\*\*\* | APPLIED NATURAL LANGUAGE PROCESSING |  |  |
|  | **PROGRAM ELECTIVE - III** |  |  |
| DSE\_5407 | GRAPH ANALYSIS |  |  |
| DSE\_5408 | COMPUTER VISION |  |  |
| DSE\_\*\*\*\* | TIME SERIES ANALYSIS AND FORECASTING |  |  |
| DSE\_\*\*\*\* | KNOWLEDGE AND DATA ENGINEERING |  |  |
| DSE\_\*\*\*\* | INFORMATION RETERIEVAL SYSTEMS |  |  |
| DSE\_\*\*\*\* | DECISION INTELLIGENCE |  |  |