

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WB
(Formerly West Bengal University of Technology)

Syllabus for B. Sc. in Data Science
(Effective for Academic session 2019-20)

COURSE STRUTURE

| Year | Semester | Paper Code | Paper Name | Credit | Distribution of Credits | | |
|------|-----------------------|-------------|--|-----------|-------------------------|---|---|
| | | | | | L | T | P |
| 1st | 1 st | BSCDA- 101 | English | 4 | 3 | 1 | |
| | | BSCDA - 102 | Discrete Mathematics | 4 | 3 | 1 | |
| | | BSCDA - 103 | Introduction to Statistical theory and methods | 4 | 3 | 1 | |
| | | BSCDA -104 | Foundation of Computer Science | 4 | 3 | 1 | |
| | | BSCDA - 105 | Database Management System | 4 | 2 | 1 | 1 |
| | Total Credits | | | 20 | | | |
| | 2nd | BSCDA - 201 | Soft-Skill for Business | 4 | 2 | 1 | 1 |
| | | BSCDA - 202 | Introduction to Statistics and Probability | 4 | 3 | 1 | |
| | | BSCDA - 203 | Introduction to Programming using Python | 4 | 2 | | 2 |
| | | BSCDA -204 | Linear Mathematics | 4 | 3 | 1 | |
| | | BSCDA - 205 | Advanced MS Excel | 4 | 2 | 1 | 1 |
| | Total Credits | | | 20 | | | |

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|------|----------|----------------------|--|-----------|-------------------------|---|---|
| | | | | | L | T | P |
| 2nd | 3rd | BSCDA 301 | Data Structures and Algorithms | 4 | 2 | 1 | 1 |
| | | BSCDA 302 | Data Warehousing and Mining | 4 | 2 | 1 | 1 |
| | | BSCDA 303 | Statistical theory of Hypothesis testing | 4 | 3 | 1 | 1 |
| | | BSCDA 304 | Data visualization using Business Intelligence | 4 | 2 | 1 | 1 |
| | | BSCDA 305 | Web Foundation | 4 | 3 | 1 | |
| | | Total Credits | | 20 | | | |
| | | | | | | | |
| | 4th | BSCDA -401 | Data visualization and data driven decision making | 4 | 2 | 1 | 1 |
| | | BSCDA - 402 | Statistical Analysis using SPSS | 4 | 3 | 1 | |
| | | BSCDA - 403 | Introduction to Regression Analysis | 4 | 2 | | 2 |
| | | BSCDA - 404 | Generalized Linear Models | 4 | 3 | 1 | |
| | | BSCDA - 405 | Project- 1 | 4 | 1 | | 3 |
| | | Total Credits | | 20 | | | |

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|------|-----------------|----------------------|--|-----------|-------------------------|---|----|
| | | | | | L | T | P |
| 3rd | 5 th | BSCDA -501 | Advanced Programming in Python | 4 | 1 | 1 | 2 |
| | | BSCDA -502 | Data Security | 4 | 2 | 1 | 1 |
| | | BSCDA -503 | Time Series | 4 | 2 | 1 | 1 |
| | | BSCDA -504 | Web Intelligence | 4 | 2 | 1 | 1 |
| | | BSCDA -505 | Introduction to Artificial Intelligence and Machine Learning | 4 | 2 | 1 | 1 |
| | | Total Credits | | 20 | | | |
| | | | | | | | |
| | 6 th | BSCDA -601 | Optional Subject | 4 | 2 | 1 | 1 |
| | | BSCDA -602 | Major Project & Viva Voci | 16 | | | 16 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | Total Credits | | 20 | | | |

Optional Subjects (any one):

- **Social Media and Web Analytics**
- **Advanced Business Intelligence**
- **Big Data Analytics**
- **Information driven Entrepreneurship and Enterprise**