**Maulana Abul Kalam Azad University of Technology, West Bengal**
**(Formerly known as West Bengal University of Technology)**
**Syllabus of** B.Sc. in Data Science

**Effective from academic session 2023-2024**

**Model curriculum structure for 4-year B.Sc. in Data Science, MAKAUT WB**

| Sem | Major (Offline) | Minor (Blended Mode) | Inter Disciplinary (Offline) | Ability Enhancement (Offline) | Skill Enhancement (Online /Sessional) | Common Value added Course (SESSIONAL) | TOTAL CREDITS |
|---|---|---|---|---|---|---|---|
| I | 2 sub x 5 credits<br>*BDS101 : Basic Mathematics & Statistics (5)*<br>*BDS102 & 192:Introduction to Computing & Programming with C (3+2)* | (1 sub x 3 credits)<br>Principles Of Management | Any one from GE baskets Basket A or D (3 credits) | AECC 101- English and Professional Communication | SEC 181- Life Skills & Personality Development (2 credits) | VAC 181A/B/C- Yoga/ Health & Wellness/ Sports (2 credits) | **22** |
| II | 2 sub x 5 credits<br>*BDS201 & 291: DBMS (3+2)*<br>*BDS202 & 292: DSA (3+2)* | (1 sub x 3 credits)<br>Organization Behaviour/Business Ethics & Corporate Governance | Any one from GE baskets Basket B or E (3 credits) | AECC 201- Modern Indian Languages and Literature (2 credits) | SEC 201- IT Skills (2 credits) | VAC 281A/B/C/D- Critical Thinking / NSS/ Mental Health/ Environmental Studies (2 credits) | **22** |
| III | 2 sub x 5 credits<br>*BDS301: Statistics for Data Sc - 1 (5)*<br>*BDS302 & 392: AI & ML - 1 (3+2)* | (1 sub x 4 credits)<br>Principles of Marketing/Business & Sustainability | Any one from GE baskets Basket C or F(3 credits) | AECC 301- The Constitution, Human Rights and Law (2 credits) | SEC 301- Understanding basics of Cyber Security (2 credits) | | **21** |
| IV | 2 sub x 4 credits<br>*BDS401: Statistics for Data Sc - 2 (4)*<br>*BDS402 & 492: AI & ML - 2 (2+2)*<br><br>1 sub x 5 credits<br>*BDS403 & 493: Python for Data* | Human resource management /Corporate Social Responsibility (CSR)<br>(4 credits) | | AECC 401A Society Culture and Human Behavior (2 credits) | | | **23** |

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| | *Science (3+2)* | Sales and distribution management /E-Commerce (4 credits) | | | | | |
| V | 2 sub x 5 credits<br>*BDS501: Discrete Mathematics (5)*<br><br>*BDS502 & 592: Natural Language Processing (3+2)* | Financial management<br>(4 credits)<br><br>Entrepreneurship<br>(4 credits) | | | FYBMS 581<br>Internship (4 credits) | | **22** |
| VI | 2 sub x 5 credits<br>*BDS601 & 691: Big Data Analysis (3+2)*<br>*BDS602 & 692: Time Series Analysis (3+2)*<br>1 sub x 4 credits<br>*BDS603 & 693: Data Visualization (2+2)* | Customer relationship management<br>(4 credits)<br><br>Career planning and management/Managing Workplace Diversity (4 credits) | | | | | **22** |
| VII | 2 sub x 5 credits<br>*BDS701 & 791: Data Warehousing & Data Warehousing Lab (3+2)*<br><br>*BDS702 & 792: Deep Learning (3+2)* | Consumer behaviour / Exploring Business | | | | | **22** |

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| | 1 sub x 4 credits<br>*BDS703: Optimization Techniques (4)* | Opportunity (4 credits)<br><br>Strategic management/ Intellectual Property Rights (4 credits) | | | | | |
| VIII | 2 sub x 5 credits<br><br>*BDS801 & 891: Generative AI & Generative AI Lab (3+2)*<br><br>*BDS802 & 892: Text & Speech Analytics and Text & Speech Analytics Lab (3+2)* | | | | FYBDS 881A: Capstone Project<br>FYBDS 881B: Research project (12 credits) | | **22** |
| | **19 sub - 91 credits** | **11 sub – 42 credits** | **3 sub – 09 credits** | **4 sub – 08 credits** | **3 sub & Int & Proj - 22 credits** | **2 sub – 4 credits** | **176** |