MUJ Faculty of Engineering

MUJ Faculty of Engineering: BTech Computer Science & Engineering (Data Science) (160 Credits)

New Curriculum Semester-wise Schema

Proposed DRAFT List of Courses offered in: Bachelor of Technology, Computer Science & Engineering (Data Science). The nomenclature and syllabi of all courses will be finalized in later Board of Studies. This list is provided only for planning purposes and to give prospective students an idea of the types of courses that will be available in the New Curriculum

Proposed List of Courses offered by the Department of Data Science and Engineering for the program of Computer Science and Engineering (Data Science)

Proposed Department Core Courses

1. DS2102 Object Oriented programming
2. DS2103Data Structures
3. DS2104Computer System Architecture
4. DS2201 Relational Database Management System
5. DS2202 Operating Systems
6. DS3101 Design and Analysis of Algorithm
7. DS3102 Software Engineering
8. DS3203 Big Data Analytics

Proposed Flexi- Courses

1. FC1: DS 2210 Data Mining
   FC1: DS 2211 Healthcare Data Analytics and Cognitive Intelligence
2. FC2: DS 3103 AI and Machine Learning
   FC2: DS 3104 Data Analytics and Visualization
3. FC3: DS 3202 Deep Learning
   FC3: DS 3203 Reinforcement Learning

Proposed Department Program Electives (PE 1)

1. DS 2240 Computer Vision
2. DS 2241 Theory of Computation
3. DS 2242 Software Testing and Assurance
4. DS 2243 Data Communication and Network

Program Electives (PE 2)

1. DS 3140 Digital Image Processing
2. DS 3141 Graph Theory
3. DS 3142 Knowledge Driven Development
4. DS 3143 Cryptography and Network Security

Program Electives (PE 3)

1. DS 3144 Advanced Image Processing
2. DS 3145 Graph Data Visualization
3. DS 3146 Advanced Software Engineering
4. DS 3147 Blockchain and Distributed Ledger Technologies

Program Electives (PE 4)

1. DS 3240 Information Storage and Management
2. DS 3241 Social Network Analysis
3. DS 3242 Secure Software Engineering
4. DS 3243 Data Forensics

Program Electives (PE 5)

1. DS 3244 Advanced Soft Computing Techniques
2. DS 3245 Compiler Design
3. DS 3246 Object-Oriented Design and Patterns
4. DS 3247 Introduction to IoT
5. DS 32xx Capstone Project I (Image Processing I) / (Graph Analysis) / (Software Engineering I)/ (Cyber Security I)

Program Electives (PE 6)

1. DS 4140 Supply Chain Management
2. DS 4141 Fundamental of Business Analytics
3. DS 4142 Digital Marketing
4. DS 4143 Time Series Analysis
5. DS 41xx Capstone Project II (Image Processing II) / (Graph Analysis II) / (Software Engineering II)/ (Cyber Security II)

Program Electives (PE 7)

1. DS 4144 Web Technologies
2. DS 4145 AWS
3. DS 4146 Quantum Computing
4. DS 4147 Software Defined Networking

Program Electives (PE 8)

1. DS 4148 Information Retrieval

2. DS 4149 Natural language Processing
3. DS 4150 Cyber Security and Forensics
4. DS 4151 Nature Inspired Optimization Algorithm

Focus Areas offered by Department of Data Science and Engineering

Focus Area 1: Medical Image Data Processing

1. DS 2240 Computer Vision (PE_1)
2. DS 3140 Digital Image Processing (PE_2)
3. DS 3144 Advanced Image Processing (PE_3)
4. DS 3240 Information Storage and Management (PE_4)
5. DS xxxx Capstone Project I (Image Processing I)
6. DS xxxx Capstone Project II (Image Processing II)

Focus Area 2: Graph Data Analysis

1. DS 2241 Theory of Computation (PE_1)
2. DS 3141 Graph Theory (PE_2)
3. DS 3145 Graph Data Visualization (PE_3)
4. DS 3241 Social Network Analysis (PE_4)
5. DS xxxx Capstone Project I (Graph Analysis I)
6. DS xxxx Capstone Project II (Graph Analysis II)

Focus Area 3: Software Engineering and Development

1. DS 2242 Software Testing and Assurance (PE_1)
2. DS 3142 Knowledge Driven Development (PE_2)
3. DS 3146 Advanced Software Engineering (PE_3)
4. DS 3242 Secure Software Engineering (PE_4)
5. DS xxxx Capstone Project I (Software Engineering I)
6. DS xxxx Capstone Project II (Software Engineering II)

Focus Area 4: Cyber Security

1. DS2240 Data Communications and Networks
2. DS 3143 Cryptography And Network Security
3. DS 3147 Blockchain And Distributed Ledger Technology
4. DS 3243 Data Forensics
5. DS xxxx Capstone Project I (Cyber Security I)
6. DS xxxx Capstone Project II (Cyber Security II)

Proposed Department University Electives

1. Introduction Software Engineering
2. Introduction to Data Security
3. Introduction to Python
4. Introduction to Data Science
5. Introduction to Data Visualization Techniques
6. Introduction of Data Structures
7. Introduction to Machine Learning