# M. Sc. Data Science & Big Data Analytics (First Year)  w.e.f. 2019-2020
## Trimester – I

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs | | | Credits | | Assessment, Marks ** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-1101 | Data Warehousing & Data Mining | Core | 3 | 1 | | 3 | | 50 | | 50 | 100 |
| 2 | MIT-WPU-MBD-1102 | Mathematics for Machine Learning | Core | 4 | | | 3 | | 50 | | 50 | 100 |
| 3 | MIT-WPU-MBD-1103 | Statistics & Optimization for Machine Learning | Core | 4 | | | 3 | | 50 | | 50 | 100 |
| 4 | MIT-WPU-MBD-1104 | Big Data Architecture & Ecosystem - Hadoop | Core | 3 | 1 | | 3 | | 50 | | 50 | 100 |
| 5 | MIT-WPU-MBD-1105 | Lab on Python & R Programming | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 6 | MIT-WPU-MBD-1106 | Lab on Hadoop (HDFS,MR) | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 7 | WPC 1 | World famous philosophers, Sages/Saints and Great Kings | SEC | 3 | | | 2 | | 50 | | 50 | 100 |
| | | Total : | | 17 | 02 | 08 | 14 | 04 | 250 | 100 | 350 | 700 |

**Type: Core**

**Weekly Teaching Hours:27**
**Total Credits Trimester I:18**

**\*\*Assessment Marks are valid only if Attendance criteria are met**

\*CCA: Class Continuous Assessment
\*LCA: Laboratory Continuous Assessment

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# M. Sc. Data Science & Big Data Analytics (First Year) w.e.f. 2019-2020
## Trimester – II

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs | | | Credits | | Assessment, Marks** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-1201 | Machine Learning Algorithm-I | Core | 3 | 1 | | 3 | | 50 | | 50 | 100 |
| 2 | MIT-WPU-MBD-1202 | Lab on Data Visualization | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 3 | MIT-WPU-MBD-1203 | Lab on Machine Learning Algorithms- I | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 4 | MIT-WPU-MBD-1204 | Lab on Big Data Ecosystem Tools (Hive, HBase, PIG, Oozie, Zookeeper) | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 5 | MIT-WPU-MBD-1205 | Lab on Data Ingestion & Storage | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 6 | MIT-WPU-MBD-1206 | Professional Elective –I (Internal) | Core | 3 | | | | 2 | | 50 | 50 | 100 |
| 7 | WPC3 | Philosophy of Science & Religion/Spirituality | Core | 3 | | | 2 | | 50 | | 50 | 100 |
| | | Total : | | 09 | 01 | 16 | 5 | 10 | 100 | 250 | 350 | 700 |

**Type: Core**

**Weekly Teaching Hours: 26**

**Total Credits Trimester II:15**

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# M. Sc. Data Science & Big Data Analytics (First Year) w.e.f. 2019-2020
## Trimester – III

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs | | | Credits | | Assessment, Marks** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-1301 | Machine Learning Algorithm-II | Core | 3 | 01 | | 3 | | 50 | | 50 | 100 |
| 2 | MIT-WPU-MBD-1302 | Lab on Apache Spark & Scala | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 3 | MIT-WPU-MBD-1303 | Lab on Machine Learning Algorithms II | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 4 | MIT-WPU-MBD-1304 | Mini Project-I (Hadoop) | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 5 | MIT-WPU-MBD-1305 | Mini Project-I (Machine Learning) | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 6 | MIT-WPU-MBD-1306 | Professional Elective-II (Internal) | Core | 3 | | | 2 | | 50 | | 50 | 100 |
| 7 | WPC 2 | Study of Languages Peace in Communication & Human Dynamics | Core | 3 | | | 2 | | | 50 | 50 | 100 |
| | | Total : | | 09 | 01 | 12 | 07 | 08 | 150 | 200 | 350 | 700 |

**Type: Core**

**Weekly Teaching Hours: 22**
**Total Credits Trimester III:15**

**Total First Year M.Sc. Big Data Analytics Credits: 48**

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# M. Sc. Data Science & Big Data Analytics (Second Year) w.e.f. 2019-2020
## Trimester – IV

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs. | | | Credits | | Assessment, Marks** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th. | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-2101 | Principles Of Deep Learning | Core | 3 | 1 | | 3 | | 50 | | 50 | 100 |
| 2 | MIT-WPU-MBD-2102 | Artificial Intelligence | Core | 3 | 1 | | 3 | | 50 | | 50 | 100 |
| 3 | MIT-WPU-MBD-2103 | Mini Project -II (Hadoop & Machine Learning) | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 4 | MIT-WPU-MBD-2104 | Lab on Deep Learning | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 5 | MIT-WPU-MBD-2105 | Lab on Cloud Computing | Core | | | 4 | | 2 | | 50 | 50 | 100 |
| 6 | MIT-WPU-MBD-2106 | Open Elective-I | Open | 3 | | | 2 | | 50 | | 50 | 100 |
| 7 | MIT-WPU-MBD-2107 | Study Tour/Industrial Visit | | | | | | 2 | | | | |
| | | Total : | | 09 | 02 | 12 | 08 | 08 | 150 | 150 | 300 | 600 |

**Type: Core/ Elective**

**Weekly Teaching Hours:23**

**Total Credits Trimester IV:14+2**(Study Tour & Industrial Visit)

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# M. Sc. Data Science & Big Data Analytics (Second Year) w.e.f. 2019-2020
## Trimester – V

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs | | | Credits | | Assessment, Marks** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-2201 | Full Time Industrial Training / Project | Core | | | 25 | | 11 | | 50 | 50 | 100 |
| 2 | MIT-WPU-MBD-2202 | MOOC-I | MOOC | 3 | | | 2 | | 50 | | 50 | 100 |
| | | Total : | | 3 | | 12.5 | 02 | 11 | 50 | 50 | 100 | 200 |

**Type: Core/ Elective**

**Weekly Teaching Hours: 27**

**Total Credits Trimester V:13**

**\*\*Assessment Marks are valid only if Attendance criteria are met**

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# M. Sc. Data Science & Big Data Analytics (Second Year) w.e.f. 2019-2020
## Trimester – VI

| Sr. No. | Course Code | Name of Course | Type | Weekly Workload, Hrs. | | | Credits | | Assessment, Marks** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory | Tutorial | Lab | Th | Lab | CCA* | LCA* | End Term Test | Total |
| 1 | MIT-WPU-MBD-2301 | Full Time Industrial Training/ Project | Core | | | 25 | | 11 | | 50 | 50 | 100 |
| | MIT-WPU-MBD-2302 | MOOC-II | MOOC | 3 | | | 2 | | 50 | | 50 | 100 |
| | | Total | | 3 | | 12.5 | 02 | 12 | 50 | 50 | 100 | 200 |

**Type: Core**

**Weekly Teaching Hours: 25**

**Total Credits Trimester VI :13**

**Total Second Year M.Sc. Big Data Analytics Credits:42**

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## Elective Courses:

| | Code | Title | Code | Title | Code | Title |
|---|---|---|---|---|---|---|
| Professional Elective I | MIT-WPU-MBD-1206 | Lab on No SQL: Document-based Store (MongoDB) | MIT-WPU-MBD-1207 | Lab on No SQL: Key-Value Store (Redis) | MIT-WPU-MBD-1208 | Lab on No SQL: Column-based Store (Cassandra) |
| Professional Elective II | MIT-WPU-MBD-1306 | Data Encryption | MIT-WPU-MBD-1307 | HDFS Security (Sentry) | MIT-WPU-MBD-1308 | Secure Communication Between Hadoop Clusters |

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