

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)

6TH SEMESTER

BSCDA-601: OPTIONAL SUBJECT (ANY ONE)

Objectives To enable the students to: <ul style="list-style-type: none">• Understand the Practical aspects and case studies of the topic the they select	
Units	Course Content
1.	Social Media and Web Analytics
2.	Advanced Business Intelligence
3.	Big Data Analytics
4.	Information driven Entrepreneurship and Enterprise
Option 1: SOCIAL MEDIA AND WEB ANALYTICS What is Web Analytics Getting started with Google Analytics, how it works, accounts, profiles and users Navigating Google Analytics, Traffic sources, Content, Visitors Web Analytics in e-Commerce, Actionable Insights Web Analytics tools, making better decisions and summing up Social Media Analytics Social CRM and Analytics Option 2:	

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ADVANCED BUSINESS INTELLIGENCE

Business Intelligence

Effective and timely decisions – Data, information and knowledge – Role of mathematical models – Business intelligence architectures: Cycle of a business intelligence analysis – Enabling factors in business intelligence projects – Development of a business intelligence system – Ethics and business intelligence

Knowledge Delivery:

The business intelligence user types, Standard reports, Interactive Analysis and Ad Hoc Querying, Parameterized Reports and Self-Service Reporting, dimensional analysis, Alerts/Notifications, Visualization: Charts, Graphs, Widgets, Scorecards and Dashboards, Geographic Visualization, Integrated Analytics, Considerations: Optimizing the Presentation for the Right Message

Efficiency:

The business intelligence user types, Standard reports, Interactive Analysis and Ad Hoc Querying, Parameterized Reports and Self-Service Reporting, dimensional analysis, Alerts/Notifications, Visualization: Charts, Graphs, Widgets, Scorecards and Dashboards, Geographic Visualization, Integrated Analytics, Considerations: Optimizing the Presentation for the Right Message

Business Intelligence Applications:

Marketing models – Logistic and Production models – Case studies

Future of Business Intelligence: Future of business intelligence – Emerging Technologies,

Machine Learning, Predicting the Future, BI Search & Text Analytics – Advanced

Visualization – Rich Report

Option 3:

BIG DATA ANALYTICS

1. Overview of Big Data: This includes topics such as history of big data, its elements, career related knowledge, advantages, disadvantages and similar topics.
2. Using Big Data in Businesses: This module should focus on the application perspective of Big Data covering topics such as using big data in marketing, analytics, retail, hospitality,

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consumer good, defense etc.

3. Technologies for Handling Big Data: Big Data is primarily characterized by Hadoop. This module cover topics such as Introduction to Hadoop, functioning of Hadoop, Cloud computing (features, advantages, applications) etc.

4. Understanding Hadoop Ecosystem: This includes learning about Hadoop and its ecosystem which includes HDFS, Map Reduce, YARN, HBase, Hive, Pig, Sqoop, Zookeeper, Flume, Oozie etc.

5. Dig Deep to understand the fundamental of Map Reduce and HBase: This module should cover the entire framework of Map Reduce and uses of map reduce.

6. Understanding Big Data Technology Foundations: This module covers the big data stack i.e. data source layer, ingestion layer, source layer, security layer, visualization layer, visualization approaches etc.

7. Databases and Data Warehouses: This module should cover all about databases, polygot persistence and their related introductory knowledge

8. Using Hadoop to store data: This includes an entire module of HDFS, HBase and their respective ways to store and manage data along with their commands.

Option 4:

INFORMATION DRIVEN ENTREPRENEURSHIP AND ENTERPRISE

Understanding the Enterprise

Technology venture

Funding and promotion of the Enterprise

Technology Entrepreneurship and Innovation

Enterprise Strategy and operations

References

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BBARE-602: MAJOR PROJECT & VIVA VOCI

Objectives To enable the students to: <ul style="list-style-type: none">• Prepare a major project on thrusting areas of Data Science and Analytics in real/dummy work scenario. While preparing this project, students would be able to collect primary and secondary data, analysis and statistical representation of data with appropriate research methodology and use the latest softwares and tools.	
Units	Course Content
1.	Guidelines for Preparation of Major Project: <ol style="list-style-type: none">1. Introduction2. Objectives of the Study3. Review of Literature4. Hypothesis5. Research Methodology6. Conceptual Studies7. Empirical Studies8. Data analysis Observation and Findings with Statistical tools and Softwares9. Recommendation10. Conclusion11. Bibliography Reference
References <ul style="list-style-type: none">• Research Methodology by R.S. Kothari	