

Master of Science (MSc) in Business Analytics

Programme Objectives

- This programme equips learner with the ability to analyze complex business data, using statistical methods, analytical and business Intelligence tools to extract meaningful insights.
- Learner develops skills in data visualization, descriptive analytics, predictive and prescriptive analytics
- The learner receives hands-on training and develops proficiency in programming languages and business intelligence software commonly used in business analytics, such as Python, R, SQL, Power Bi, SaS, QlikView, Weka, Talend, and various other data visualization tools.
- This programme enhances learner's understanding on core business concepts, including marketing, finance, operations, and supply chain management, to contextualize analytical findings.
- Skills development on techniques for building predictive models and using machine learning algorithms to forecast business trends are being achieved through learning this programme.
- The programme fosters critical thinking and problem-solving skills that enable learner to tackle real-world business challenges using data analytics.
- This programme promotes students to pursue applied research in the advance field of Innovative Technologies

Total Number of Credits: 270

Duration of the Programme: 2 Years

Entry Requirements for the Programme

- An undergraduate degree or equivalent from a recognised higher education institution or alternative qualifications acceptable to the Amity Institute of Higher Education.
- AIHE may also consider applications for mature students meeting its own strict Rules and Regulations taking the appropriate minimum basic qualification into account by adhering to the mature student's policy of AIHE.

Modules**Year: 1****Semester: 1****Module Code: IT421****Module Name: PYTHON PROGRAMMING****Credits: 20****Module Brief:**

The student will be able to demonstrate the ability to program using Python language by mastering the learning outcomes including python variables, data types and operators, data Structures in Python. The learner gets trained in coding and practical execution of functions and dictionaries, Loops and their executions, and analyzing data streams using Python. Database connectivity is practically demonstrated to the learner. The learner is taught exceptions and Error handling, Python standard libraries and packages for data analysis. Basic Portfolio analysis using Python and visualizing the data are demonstrated. Research papers pertaining to the module syllabus are referred to impart better learning by students.

Year: 1**Semester: 1****Module Code: IT461****Module Name: BUSINESS INTELLIGENCE****Credits: 20****Module Brief:**

By learning this module, the student will be able to demonstrate the role of Business Analyst and Data Science in business. Learner will develop an understanding of the concepts of data management and data mining techniques. Use of Machine Learning, its need, and significance are explained in this module. Applications of business analysis are discussed in this module with relevant case studies. The learner is made to understand the basic concept of Data Science Project Life Cycle

Year: 1**Semester: 1****Module Code: MGT412****Module Name: BUSINESS RESEARCH METHODS****Credits: 20****Module Brief:**

The module will build the foundation for research. The students will learn to compare and contrast the new knowledge, formulate and design research methodology to critically define the management problem and investigate the cause. Hence the student would become acquainted with the scientific research methodology and reporting in dynamic business domain. They would also become analytically skillful.

Year: 1**Semester: 2****Module Code: IT422**

Module Name: R STUDIO FOR DATA SCIENCES**Credits: 20****Module Brief:**

This module equips the students with learning outcomes on importing, performing data cleaning, managing and structuring data files for use in business Analytics. Learner will be trained to apply analytical knowledge, visualize the data, perform statistical data analysis, multivariate analysis, cluster analysis, critically evaluate and interpret the data and perform predictive analytics through the use of R programming language. The module aims to provide hands-on experience on text mining and Web mining using R, thereby developing data mining skills.

Year: 1**Semester: 2****Module Code: IT471****Module Name: STATISTICAL BUSINESS ANALYTICS****Credits: 20****Module Brief:**

This module aims to train students on descriptive statistics, probability concepts and its usage in business applications, hypothesis testing concepts and inferential statistics. On successful completion of this module the student will be able to demonstrate skills development in business statistical analysis. Practical applications of descriptive and inferential statistics concepts and their uses for business analytics is critically discussed in this module using case scenario and business case studies. Research papers are referred to impart better learning by students.

Year: 1**Semester: 2****Module Code: IT472****Module Name: BUSINESS ANALYTICS TOOLS AND TECHNIQUES****Credits: 20****Module Brief:**

This module equips students with skills to analyze, evaluate and demonstrate business analytics tools and techniques, and data visualization techniques. The module equips students with knowledge and hand-on training on Hadoop Ecosystem, Yarn, Tableau user interface, data connection, data exploration and Data Analytics, Power BI user interface data connection, data exploration and Data Analytics.

Year: 1**Semester: 3****Module Code: IT573****Module Name: DATA MINING AND ANALYTICS****Credits: 20****Module Brief:**

By learning this module, the learner will be able to develop skills in data preprocessing, data warehousing, data mining, social media mining and analytics, text mining, finance data analysis. Further, the module imparts hands-on experience in the use of Rapid Miner software tool for

Data Mining, use of Weka tool and use of Python jupyter notebook for data mining. This module also aims to impart hands-on training on SQL querying for data mining purposes.

Year: 1

Semester: 3

Module Code: IT591

Module Name: GOVERNANCE, RISKS & COMPLIANCE

Credits: 20

Module Brief:

The module aims to impart knowledge to students on relevant laws and regulations, recognizing their significance for dealing with key ethical issues surrounding the creation, storage and dissemination of, and access to information, using ICTs (information and communication technologies), in the context of a globalized 'information society'. The most common cyber security threats and vulnerabilities encountered by organizations are being discussed through handling of case studies in the module. By learning this module, the student can develop an understanding of technologies and methods to protect an organization against these threats and vulnerabilities and learn to consider what might be the most ethical and professional response to such situations.

Year: 1

Semester: 3

Module Code: IT533

Module Name: CLOUD COMPUTING

Credits: 20

Module Brief:

This module aims to equip students with knowledge and skills development on various cloud platforms and technologies. The module learning promotes student's ability to implement and design cloud patterns, data centre architecture using technologies. The students will be promoted to prepare cloud strategies and technical building blocks of IaaS. This module imparts hands-on experience on cloud capacity management and adopting to cloud to students.

Year: 1

Semester: 4

Module Code: IT574

Module Name: PREDICTIVE AND PRESCRIPTIVE DATA ANALYTICS

Credits: 20

Module Brief:

On successful completion of this module, the student will be able to analyze complex datasets, evaluate and demonstrate critical inferential, predictive and prescriptive analytics. This module by gathering tool chest including R, Python libraries manage to interrogate raw and derived data and equips students with skills to simulated big datasets. Students are trained in natural language processing methods, predictive modeling tools and techniques, and in the use of deep learning for predictive and prescriptive analytics.

Year: 1

Semester: 4

Module Code: IT562

Module Name: MACHINE LEARNING TECHNIQUES

Credits: 20

Module Brief:

- The student will be able to implement various supervised, semi-supervised and unsupervised learning algorithms in machine learning for data analysis, its interpretations, problem solving and predictions. Latest trends in machine learning are being discussed in this module based on case studies and published research papers. Use of dimensionality reduction and its need for handling large data frames are being emphasized.