



**University of Engineering and Management**  
**Institute of Engineering & Management, Salt Lake Campus**



**Syllabus for BBA in Business Analytics Admission Batch 2023**

BBA BA 2nd Year Course Structure: 2023-2027 session – 3rd Semester (Under the University of Engineering & Management Kolkata)									
Sl. No.	Type of Course	Course Code	Course Name	L	T	P	S	Total Contact Hours	Credit Points
<b>THEORY</b>									
1	MC	BBABB301	Introduction to Financial Accounting	3	1	0	0	4	4
2	MC	BBABB302	Marketing Management	3	1	0	0	6	4
3	MC	BBABB303	Human Resources Management	3	1	0	0	4	4
4	MC	BBABA304	Introduction to Data Science	3	1	0	0	4	4
5	Core courses (CC)	BBABB305	Business Research Methods	3	1	0	0	4	4
6	Ability Enhancement (AE)	BBAESP301	General Studies & Current Affairs- III	2	0	0	0	2	2
<b>SESSIONAL</b>									
7	Skill Enhancement (SE)	BBASDP381	Competitive Aptitude Training - III	2	0	0	0	2	1
8	Skill Enhancement (SE)	BBABB382	Project on Entrepreneurship	1	0	0	0	1	2
9	CC	BBABA383	Fundamentals of Python Programming	3	1	0	0	4	4
<b>Mandatory Industry and Value Added Courses (IVC)</b>									
10	Mandatory Industry and Value Added Courses (IVC)	IFC	Industry & Foreign Certification	0	0	0	0	Min 3 certificates	0
11	Mandatory Industry and Value Added Courses (IVC)	MAR381	Mandatory Additional Requirements	0	0	0	0	75 points for 3 year/100 points for 4 year	0

12	Mandatory Industry and Value Added Courses (IVC)	MOOCs	At least 1 MOOCs course from Swayam Platform	0	0	0	0	15 credits need to be earned in 3 year program/20 credits need to be earned in 4 year program	0
<b>Total</b>									<b>29</b>

**Subject Name: Introduction to Financial Accounting Credit: 4**

**Lecture Hours: 40**

**Subject Code:- BBABB301**

[Study Material](#)

[MIT Opencourseware](#)

[NPTEL](#)

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**COURSE OBJECTIVES:**

1. To help the students to develop cognizance of the importance of financial accountancy.
- 2.To enable students to read financial statements effectively and aid in decision making process as an investor.
- 3.To provide the students to analyze financial statements and develop course of action related to financial policies.
- 4.To enable students to make them understand how the financial instruments work in the market and how they aid in the development of a business.

**COURSE OUTCOMES:**

CO 1: Students will be able to comprehend the importance of accounting and its need in everyday life.

CO 2: Students will develop an understanding on determination of business income and importance of Accounting Standards.

CO 3: Students will be involved in the preparation of financial statements, and will be able to decipher results out of them.

CO 4:Students will be well aware of the functions, rules and regulations of the financial sector.

<b>Mod ulenu mber</b>	<b>Topic</b>	<b>Sub - topi cs</b>	<b>MappingwithIndustrya nd InternationalAcademia</b>	<b>Text Book as per syllabu s with chapte r Nos.</b>	<b>Lectur eHour s</b>	<b>CorrespondingLabAssign ment</b>
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1	<b>Introduction to Financial Accounting</b>	<p>Meaning and scope of accounting, the users of financial accounting information and their needs; accounting principles: Accounting concepts and conventions, GAAP, accounting transaction, accounting equation, journal, rules of debit and credit, ledger, trial balance.</p> <p>Introduction, Objectives of accounting Standards, advantages of accounting standards, accounting standards in India and IFRS.</p>	<p><i>InternationalAcademia: <a href="http://MIT.Edu">MIT.Edu</a></i></p> <p><i>Industry Mapping: Recording of transactions; recognizing credit and cash transactions</i></p>	Financial Accounting (A Basu, S Datta) <b>Ch- 1 and 2</b>	10	1.CaseStudyonbasic accounting
2	<b>Cash Book and BRS</b>	<p>Double column cash book and triple column cash book</p> <p>Meaning, importance of BRS, reasons for difference and procedure for reconciliation.</p>	<p><i>InternationalAcademia: <a href="http://MIT.Edu">MIT.Edu</a></i></p> <p><i>Industry Mapping:Charging Depreciation (in connection to fixed assets)</i></p>	Financial Accounting (A Basu, S Datta) <b>Ch- 2</b>	10	<p>2.Practical Examples from Industry: How depreciation is charged.</p> <p>Case Study: The Wells Fargo Banking Scandal</p> <p>By: Luann J. Lynch, Cameron Cutro</p> <p>Link: <a href="https://hbsp.harvard.edu/product/UV7267-PDF-ENG">https://hbsp.harvard.edu/product/UV7267-PDF-ENG</a></p>

3	<b>Depreciation and Provision</b>	<p>Concept of Depreciation, causes and factors of depreciation, concept of depletion and amortization, depreciation accounting- SLM and DBM (excluding change in method of depreciation)</p> <p>Provisions and Reserves- Concepts and accounting</p>	<p><i>International Standards</i> <u><a href="#">MIT.Edu</a></u></p> <p><i>Industry Mapping: Learning the importance of Accounting Standards. Recognizing revenue and capital transactions.</i></p>	Financial Accounting (A Basu, S Datta) <b>Ch- 6</b>	10	<p>3. Case Study on financial scams that took place before (Indian and Abroad)- Satyam Computers, Enron Scandal.</p> <p>Case Study: Barclays and the LIBOR Scandal</p> <p>By: Clayton S. Rose and Aldo Sesia</p> <p>Link: <a href="https://www.hs-bi.ac.at/faculty/Pages/item.aspx?num=43888">https://www.hs-bi.ac.at/faculty/Pages/item.aspx?num=43888</a></p>
4	<b>Final Accounts: Preparation of Financial Statements</b>	<p>Introduction, importance and relevance of final accounts, meaning of gross profit/ net profit/ assets and liabilities. Preparation of Trading Account, Profit and Loss Account and Balance Sheet.</p>	<p><i>International Standards</i> : <u><a href="#">MIT.Edu</a></u></p> <p><i>Industry Mapping: Learning the need of preparing financial statements.</i></p>	Financial Accounting (A Basu, S Datta) <b>Ch- 12</b>	10	<p>4. Developing comments on financial condition of companies from their annual reports, decision making on investments in companies, with the help of published annual reports.</p>

\*Submitted by Dinabandhu Saha, IEM Ashram campus\*

TEXTBOOK: 1. Financial Accounting by Prof. Amitabha Basu, Sibasish Dutta, TeeDee Publications

REFERENCE BOOKS:

1. Financial Accounting I, Hanif Mukherjee, Tata McGraw Hill.

**CO-PO Mapping:**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	3			1	2	3		1		
CO2	2					3				
CO3	2			2						
CO4	3					2		2		

1=Low(Slight) 2=Moderate(Medium) 3=Substantial(High)

**PO & PI Mapping:**

<b>PO 1 :Students will develop the capability to assess alternate managerial choices and come up with optimal solutions.</b>	
<b>Competency</b>	<b>Indicators</b>
1.1 Demonstrate competencies in Business Construction Model & Decision-Making Model	1.1.1. Ability to take up analytical approach for problem solving, 1.1.2. Ability to take into consideration minute details and factors that influence a business.
1.2 Demonstrate competencies in evaluation of each of the alternatives	1.2.1 Ability to weigh the pros and cons of each of the alternatives or options available to a functional area of a business.
<b>PO 4 :Communications skills will be enhanced in Synchronization with the functioning of the business analytics algorithms</b>	
<b>Competency</b>	<b>Indicators</b>

4.1 To demonstrate the ability to make effective communication	4.1.1 Ability to choose appropriate words while making verbal communication
4.2 To demonstrate the ability to pursue stakeholders and enhancing the convincing skills	4.1.2 To be able to select proper language and words when making written communication
<b>PO5 :: Students will develop the capability of functioning efficiently within the teams</b>	
<b>Competency</b>	<b>Indicators</b>
5.1 To be able to demonstrate the importance of adjustment and the importance of concentrating other group members' opinion.	5.1.1 The ability to apply the behavioral science when functioning within the group.
<b>PO 6: Students will be able to integrate functional areas of management for planning, implementation and control of business decisions</b>	
<b>Competency</b>	<b>Indicators</b>
6.1 Demonstration of the ability to identify gaps in a business strategy, and to be able to close the gaps.	6.1.1. Continuation of Professional development and observational skills,
6.2 Demonstrate the identification of changing trends in a business and operation of the functional areas accordingly.	6.1.2. Using rational approach towards an issue. 6.2.1. Ability to study the changes in preferences of customers 6.2.2. Study in the changes in political space & professional environment.
<b>PO 8: Students will develop the capability to demonstrate increased level of sensitivity towards areas that require ethical and moral addressing during the course of business.</b>	
<b>Competency</b>	<b>Indicators</b>
8.1 To demonstrate the ability to identify that there is a moral dilemma in professional space. 8.2 Demonstration of the ability to solve the moral dilemma in professional space.	8.1.1. The ability to identify the confusion or the dilemma that is inexistence. 8.2.1. Ability to select the best path that will serve to a big interest of the stakeholders and the society.

**Subject Name: Marketing Management**

**Credit: 4**

**Lecture Hours: 40**

**Subject Code: BBABB302**

**[Study Material](#)**

**[COURSERA](#)**

**[MIT Opencourseware](#)**

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**COURSE OBJECTIVES:**

1. To understand the relevance of marketing concepts and its impact on environmental change while designing marketing plans & strategies for practices.
2. To illustrate the functionality and application of elements of Marketing Mix and selling propositions for specific product offerings and pricing objectives.
3. To apply knowledge in creating strategies for integrated marketing communication and distribution network.
4. To develop marketing strategies based on segmentation, target marketing, positioning by examining consumer behavior and sustainability.

**COURSE OUTCOMES:**

CO 1: Students will learn the basic & fundamental concepts of Marketing and will also be able to outline key marketing concepts and its application to coordinate the various marketing environment variables and interpret them for designing marketing strategy for business firms.

CO 2: Students will be able to understand the suitable product, pricing, place, and promotion strategies for a firm to achieve the marketing objectives of the firm. and the importance of integrated marketing communication and distribution strategies to achieve organizational goal.

CO 3: Students will be able to develop the ability to implement marketing knowledge and skills relevant to the corporate world.

CO 4: Students will be able to develop and design effective marketing strategies for business firms by applying key marketing theories,



frameworks, and tools to solve marketing problems.

M o d u l e n u m b e r	Topic	Sub-topics	Text Book as per Syllabus	Mapping with Industry and International Academia	Lecture Hours	Corresponding Lab Assignment
1.	<b>Fundamentals of Marketing &amp; its Environment</b>	<p><b>Unit I: Introduction to Marketing</b> Nature and scope of marketing; Importance of marketing; Marketing concepts – traditional and modern; Selling vs. marketing; Functions and Evolution of Marketing; Marketing mix, customer value and satisfaction.</p> <p><b>Unit II: Marketing environment:</b> Macro and Micro Environment and its significance to marketing; SWOT Analysis; PESTEL Analysis, Concept of SBU, BCG Matrix, Porter’s Five Force Model for Industry Analysis, Product-Market Grid</p>	<p>Chapters – 1,2,3 ( <a href="#"><u>Principles of Marketing, Philip Kotler, Gary Armstrong, Prafulla Agnihotri</u></a>, 17th Edition</p>	<p><i>International Academia: <a href="#"><u>MIT.Edu</u></a></i></p> <p><i>Industry Mapping: Marketing Mix, SWOT analysis, PEST analysis, BCG Matrix, Porter’s Five Force Model for Industry analysis</i></p>	10	1. Case studies on the concepts of basics of marketing and marketing environment

2	<b>Managing Marketing Mix</b>	<p><b>Product</b> – Concept of product, Classification of products, Product Mix; New product development – Meaning &amp; steps; Product life cycle – concept, stages &amp; strategies involved in PLC, FMCG &amp; FMCD Products</p> <p><b>Price</b> – Meaning – Objectives of pricing – Factors influencing pricing decisions – Methods of pricing and pricing strategies.</p> <p><b>Promotion</b> – Objectives &amp; methods of promotion; Optimum promotion mix; Objectives &amp; characteristics of promotion mix elements, Relative merits and limitations of promotion mix elements</p> <p><b>Place</b> – Concept, role &amp; types of distribution channels; Factors affecting choice of a distribution channel; Role of Intermediaries; Distribution Channel Management – VMS &amp; HMS; Channel Conflict, Reverse supply chain concept</p>	<p>Chapters – 8,9,10,11,12,14,15  <u>(Principles of Marketing, Philip Kotler, Gary Armstrong, Prafulla Agnihotri), 17th Edition</u></p>	<p><i>International Academia: <a href="http://MIT.Edu">MIT.Edu</a></i></p> <p><i>Industry Mapping:</i></p> <p><i>Product Life Cycle, Pricing Strategies, Promotional Mix Elements, Distribution channels and Intermediaries</i></p>	10	2. Case Studies on Product, Price, Place and Promotion
3	<b>Market Segmentation, Targeting &amp; Positioning for Competitive Advantage</b>	<p><b>Market segmentation</b> – concepts and importance; Bases for market segmentation;  <b>Target Marketing:</b> Mass Marketing, Segment Marketing, Niche Marketing, Micro Marketing and Customization  <b>Positioning</b> – Concept &amp; importance of Positioning strategies</p>	<p>Chapters – 7  <u>(Principles of Marketing, Philip Kotler, Gary Armstrong, Prafulla Agnihotri), 17th Edition</u></p>	<p><i>International Standards <a href="http://MIT.Edu">MIT.Edu</a></i></p> <p><i>Industry Mapping: Segmentation of markets, Targeting strategies, Positioning of products/services</i></p>	10	3. Case Studies on Market Segmentation, Target Marketing and Positioning

4	<b>Consumer Behaviour and Branding</b>	<p><b>Unit I:</b>  Meaning of Consumer Behaviour; Factors influencing Consumer behaviour; Buying decision process and its stages; Customer Value -Customer satisfaction. Changing profile of consumers; B2B and B2C Marketing; Basics of Service Marketing; PSPC Model</p> <p><b>Unit II:</b>  Meaning &amp; importance of Brands, Types of Brands, Brand Equity, Branding Strategies; Packaging – role and functions</p>	Chapters – 5,8 <u><a href="#">(Principles of Marketing, Philip Kotler, Gary Armstrong, Prafulla Agnihotri), 17th Edition</a></u>	<i>International Standards</i> <u><a href="#">MIT.Edu</a></u>  <i>Industry Mapping:</i>  <i>Consumer purchase decisions, Buying decision process, Brand Equity</i>	10	4. Case Study on Consumer Behaviour and Branding of products/ services by firms
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*\*Submitted by Prof. Joysri Datta, IEM Saltlake Campus; Prof. Sananda Halder, IEM Saltlake Campus \**

**TEXTBOOK:** [Principles of Marketing, Philip Kotler, Gary Armstrong, Prafulla Agnihotri \(17<sup>th</sup> Edition\)](#)

**REFERENCE BOOK:** [Marketing Management, Tapan K Panda, 3<sup>rd</sup> Edition](#)

**Subject Name: Human Resource Management**

**Credit: 4**

**Lecture Hours: 40**

**Subject Code: BBABB303**

[Study Material](#)

[MIT Open course ware](#)

[NPTEL](#)

[LinkedIn Learning](#)

**COURSE OBJECTIVES:**

1. The functions, systems, policies, and applications of Human Resource Management in organizations.
2. An overview of theoretical foundations of key areas associated with HR development in the organizations,
3. HR skills and their ability to assess the constraints and opportunities associated with managing employee's indifferent socio-economic and political context.

**COURSE OUTCOMES:**

CO 1: Demonstrate a clear understanding of human resource management concepts and principles.

CO 2: Develop and apply the necessary skills for addressing HR-related issues, including employee performance management and job design.

CO 3: Plan and implement effective human resource strategies, utilizing forecasting and job analysis techniques.

CO 4: Evaluate and integrate new trends in HRM to handle employee issues and make informed business decisions.

<b>Module No.</b>	<b>Topic</b>	<b>Sub-topics</b>	<b>Mapping with Industry and International Academia</b>	<b>Lecture Hours</b>	<b>Corresponding Lab Assignment</b>	<b>Text Book Chapter No.</b>
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1	<b>Basic Concept of HRM</b>	Nature of HRM, Scope of HRM, Objective of HRM, Importance of HRM, Systems approach to HRM, HRM and Competitive Advantage, Strategic HRM, Traditional Vs Strategic HRM, Case Study	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Aligning HR practices with business strategies, Leveraging HRM to enhance organizational performance.</p>	10	Case Study on concepts to understand the strategic application of HRM principles.	Chapter 1 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
2	<b>History of HRM</b>	History of Personnel/Human Resource Management, Evolution of the Concept of HRM, Personnel Function in Changing Scenario, Traditional Vs Emerging HR Practices, HRM Line and Staff Aspect, Case Study	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Understanding the transformation from traditional to modern HRM, Differentiating between line and staff aspects in HR functions</p>	18	Case Study on concepts focused on the evolution and changing roles in HRM	Chapter 2 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
3	<b>Human Resource Planning-I</b>	Concept of Human Resource Planning or HRP, Objectives of HRP, Importance of HRP, Process of HRP, Case Study	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Developing strategies for effective human resource planning, Understanding the stages and implementation of HRP</p>	10	Case Study on scenario to apply HRP concepts and develop a strategic HR plan	Chapter 5 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)

4	<b>Human Resource Planning-II</b>	Trend Analysis, Work Load Analysis, Job Analysis, Manpower Inventory Analysis, Staffing Table, Replacement Chart, Practical Problem Solving	<p><i>International Academia:</i> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><i>Industry Mapping:</i> Utilizing trend and workload analysis for HR forecasting, Managing manpower inventory and staffing needs</p>	10	Case Study on concepts of analytical methods like trend analysis and job analysis.	Chapter 5 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
5	<b>Recruitment</b>	Definition of Recruitment, Sources of Recruitment, Methods of Recruitment, Recruitment: Indian Experiences, Case Study	<p><i>International Academia:</i> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><i>Industry Mapping:</i> Exploring various sources and methods of recruitment, Understanding the recruitment landscape in India.</p>	10	Case Study on concepts of recruitment strategies and their effectiveness in a given organization.	Chapter 6 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
6	<b>Selection</b>	Definition of Selection, Process of Selection: Selection Test, Types of Selection Test, Selection Interviews, Types of Interviews, Application Blank, Case Study	<p><i>International Academia:</i> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><i>Industry Mapping:</i> Exploring different selection tests and interview methods, implementing effective selection techniques to hire the right talent</p>	10	Case Study on concepts of selection process of a company, focusing on selection tests and	Chapter 7 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)

					interview methods	
7	<b>Training and Development</b>	Concept of Training, Need of Training, Training Vs Development, Training Methods, Case Study	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Methods and importance of training and development, Differentiating between training and development activities</p>		Case Study on concepts of developing a training plan based on the training needs of organization	Chapter 9 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
8	<b>Performance Appraisal</b>	Performance Appraisal – Concept, Objectives, Methods, Essential Characteristics of an Effective Appraisal, Potential Appraisal, Case Study	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Various techniques for evaluating employee performance, Characteristics of successful performance appraisal systems</p>		Case Study on concepts of designing a performance appraisal system for organization.	Chapter 15 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
9	<b>Compensation and Pay Structure in India</b>	Definition and Concept of Compensation, Nature of Compensation, Objective of Compensation, Components of Pay Structure in India, Concept of Wage, Characteristics of Wage Payments, Methods of Wage Payment	<p><b>International Academia:</b> <a href="http://MIT.Edu">MIT.Edu</a></p> <p><b>Industry Mapping:</b> Components and objectives of pay structures in India, Different methods of wage payment and their implications</p>		Case Study on concepts of compensation and pay structure of company or industry	Chapter 16 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)

10	<b>Grievance Management and Introduction to Industrial Relations</b>	Concept Grievance, Model Grievance Procedure, Discipline: Three Interpretations, Approaches to Discipline, Disciplinary Action, Concept of Industrial Relations, Objective of Industrial Relations, Approaches to Industrial Relations, Significance of Industrial Relations, Case Study	<i><b>International Academia:</b></i> <a href="http://MIT.Edu">MIT.Edu</a>  <i><b>Industry Mapping:</b></i> Effective procedures for managing employee grievances, Approaches, and significance of maintaining good industrial relations		Case Study on concepts of grievance management procedure and evaluate its effectiveness in an organizational context	Chapter 22 (Human Resource Management Text and Cases: V.S.P. Rao, Excel Books)
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*\*Submitted by Prof. Dr. Saikat Chakrabarti, Prof. Manali Chowdhury & Prof. Priyanka Singh\**

TEXTBOOK: 1. [Organizational Behaviour, 14th Edition, K. Aswathapa, Himalaya Publication](#)

TEXTBOOK: 2. [Human Resource Management Text and Cases: V.S.P. Rao, Excel Books](#)

#### REFERENCE BOOKS:

1. C.S. Venkata Ratnam & B.K. Srivastava: Personnel Management and Industrial Relations, Tata McGraw Hill.
2. E.A. Ramaswamy: Managing Human Resources, Oxford University Press
3. M.S. Saiyadain: Human Resource Management, Tata McGraw Hill

#### CO-POMapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
<b>BBA202CO1</b>	3	3	3	2				



<b>BBA202CO2</b>		2				2	3	
<b>BBA202CO3</b>			2	2		3		
<b>BBA202CO4</b>		3	3			2	3	

**1=Low (Slight)**

**2=Moderate (Medium)**

**3=Substantial (High)**

**PO & PI Mapping:**

<b>PO1:</b> Students will develop the capability to assess alternate managerial choices and come up with optimal solutions.	
<b>Competency</b>	<b>Indicators</b>
1.1. Demonstrate competencies in Business Construction Model & Decision- Making Model	1.1.1. Ability to take up analytical approach for problem solving,
	1.1.2. Ability to take into consideration minute details and factors that influences a business.
1.2. Demonstrate competencies in evaluation of each of the alternatives	1.2.1 Ability to weigh the pros and cons of each of the alternatives or options available to a functional area of a business.
<b>PO2:</b> Students will be able to apply their conceptual understanding of marketing, finance and human resources in the real world.	
<b>Competency</b>	<b>Indicators</b>
2.1. Demonstrate an ability to identify an area that requires problem solving.	2.1.1. Ability to contribute towards problem solving methods.
	2.1.2. Understanding a problem or issues belong to which of the specialized areas- Finance, HR or marketing.
2.2 Demonstrate an ability to assess the business environment and understand their impact on the	2.2.1. To be able to identify the different factors that influences the business.

business.

**PO3:** Students will develop decision making skills with the help of analytical and critical thinking ability.

**Competency**

**Indicators**

3.1. To be able to demonstrate the different aspects that can get influenced by the decision taken within the business.

3.1.1. Capability of implementation of a decision after proper assessment.

3.1.2. Follow up the changes that are occurring due to the implementation (situation analysis methods can be of use)

3.2. To be able to demonstrate the optimal solution or close to an optimal solution to a given managerial problem.

3.2.1 Reaching to a solution and evaluating it after observing the changes (Case study method can be implemented)

**PO4:** Communication skills will be enhanced in Synchronization with the functioning of the business analytics algorithms.

**Competency**

**Indicators**

4.1. To Demonstrate the ability to make effective business communication.

4.1.1. Ability to choose appropriate words when making verbal communication,

4.1.2. To be able to select proper language and words when making written communication.

4.2. To Demonstrate the ability to pursue stakeholders and enhancing the convincing skills.

4.2.1. Ability to present oneself groomed properly and uses formal gestures with appropriate body language.

**PO6:** Students will be able to integrate functional areas of management for planning, implementation, and control of business decisions.

**Competency**

**Indicators**

6.1. Demonstration of the ability to identify gaps in a business strategy, and to be able to close these gaps.

6.1.1. Continuation of Professional development and observation skills,

6.1.2. Using rational approach towards an issue.

6.2.1. Ability to study the changes in preferences of customers and

6.2 Demonstrate the identification of changing trends in a business and operation of the functional areas accordingly.	6.2.2. Study in the changes in political & technological environment.
<b>PO7:</b> Students will develop deployable skills parallel to the chosen functional/ specialized area.	
<b>Competency</b>	<b>Indicators</b>
7.1. Demonstrating the ability to identify the nature of a problem appearing during business.	7.1.1. Acknowledgement of the existence of a problem.
	7.1.2. Deciding the overall nature of the problem and its minor details.
7.2. Demonstrating the ability to apply the learned skill set as when required.	7.2.1. Ability to implement the required knowhow as when necessity arises.

Virtual Reference Collection: Open Course Ware (OCW) - [Library for All Open Course Ware Links](#)

**Subject Name: Introduction to Data Science**

**Credit: 4**

**Lecture Hours: 48**

**Subject Code: BBABA304**

[Study Material](#)

[MIT Opencourseware](#)

[NPTEL](#)

[LinkedIn Learning](#)

**COURSE OBJECTIVES:**

1. Understanding Fundamental Concepts
2. Proficiency in Data Analysis Tools
3. Application of Statistical Methods
4. Practical Experience with Real-world Data

**COURSE OUTCOMES:**

CO 1: Understanding the necessity and application of data and data science

CO 2: Understanding data collection strategies and preprocessing concepts

CO 3: Ability to understand exploratory data analysis techniques and sampling methods

CO 4: Ability to derive hypothesis testing & ANOVA

Module number	Topic	Sub-topics	Mapping with Industry and International Academia	Textbook as per syllabus	Lecture Hours	Corresponding Lab/Case Study Assignment
1	<b>Data Science and its concept</b>	<p>1. <b>Data Science</b> – What is Data science?, Application, basic components, data science tools, real life usage, challenges &amp; careers in data science</p> <p>2. <b>Data</b> – what is data?; types of data, quantitative vs qualitative data, interval vs ratio</p>	<p><i>International Academia:</i> <b>MITOpenCourse</b></p> <p><i>Industry Mapping:</i> Building fundamental knowledge regarding Data science &amp; its components</p>	<p>1. <b>Study Material:</b> Module – 1</p> <p>2. <b>Machine Learning</b> by Dutt, Chandramouli &amp; Das, Pearson <b>Chapter - 2</b></p>	12	Case study on data science opportunities & report writing
2	<b>Data collection &amp; pre-processing</b>	<p>1. <b>Collection Strategy</b> – Primary vs secondary data collection, questionnaire method, bias</p> <p>2. <b>Data preprocessing</b> – Messy data, data cleaning, Feature encoding, transformation</p>	<p><i>International Academia:</i> <b>MITOpenCourse</b></p> <p><i>Industry Mapping:</i> Data collection techniques and its challenges, building questionnaire</p>	<p>1. <b>Statistical Methods</b> by N.G.Das, McGrawHill: <b>Chapter – 1; Study Material :</b> Module – 2</p> <p>2. <b>Machine Learning</b> by Dutt, Chandramouli &amp; Das, Pearson <b>Chapter – 2, 4 (Upto section 4.2); Study material: Module – 2</b></p>	12	<p>1. Case study on data collection &amp; its challenges</p> <p>2. Forming questionnaire</p>

3	<b>Explorator y Data Analysis (EDA) &amp; Sampling Techniques</b>	<ol style="list-style-type: none"> <li><b>Univariate &amp; Bivariate data analysis</b> – Central tendency, Dispersion, Correlation</li> <li><b>Sampling Theory</b> – Random &amp; Non-random sampling, methods, standard error</li> </ol>	<p><i>International Standards:</i> <b>MITOpenCourse</b></p> <p><i>Industry Mapping:</i> Data analysis techniques and its foundation</p>	<ol style="list-style-type: none"> <li><b>Statistical Methods</b> by N.G.Das, McGrawHill: <b>Chapter – 9 (Upto Section 9.10);</b></li> <li><b>Statistical Methods</b> by N.G.Das, McGrawHill: <b>Chapter – 19; Study Material :</b> Module – 3</li> </ol>	12	Hands on EDA using Microsoft Excel
4	<b>Testing of Hypothesis &amp; ANOVA</b>	<ol style="list-style-type: none"> <li><b>Estimation &amp; Hypothesis</b> – Theory of Estimation, Test of significance for large &amp; small samples.</li> <li><b>Introduction to Analysis of Variance (ANOVA)</b> – one way &amp; two way classified data, method of computation.</li> </ol>	<p><i>International Standards:</i> <b>MITOpenCourse</b></p> <p><i>Industry Mapping:</i> Crucial statistical testing methods and its interpretation</p>	<b>Statistical Methods</b> by N.G.Das, McGrawHill: <b>Chapter – 14,15</b>	12	Hands on Application using Microsoft Excel

*\*Submitted by Sreeparna Guha, IEM Saltlake campus*

TEXTBOOK: 1. Statistical Methods – N.G.Das, McGaw Hill [McGraw Hill Education \(India\) Pvt Ltd \(mheducation.com\)](http://McGraw Hill Education (India) Pvt Ltd (mheducation.com))

2. Machine Learning – S. Dutt, S. Chandramouli, A.K.Das, Pearson [Machine Learning - Subramanian Chandramouli, Saikat Dutt, Amita Dāśa - Google Books](http://Machine Learning - Subramanian Chandramouli, Saikat Dutt, Amita Dāśa - Google Books)

REFERENCE BOOKS:

1. Managerial Statistics – Roychowdhury & Bhattacharya, U.N.Dhur Publication.
2. Doing Data Science – R.Schutt & C.O’Neil, O’Reilly Publication.

**Subject Name: Business Research Methods**

**Credit: 4**

**Lecture Hours: 40**

**Subject Code: BBABB305**

Relevant Links:

**[Study Material](#)**

**MIT OpenCourseWare:** [Lecture Videos](#) | [Statistics for Applications](#) | [Mathematics](#) | [MIT OpenCourseWare](#)

**NPTEL:** <https://onlinecourses.nptel.ac.in/>

**LinkedIn Learning:** [Statistics Foundations 1: The Basics Online Class](#) | [LinkedIn Learning, formerly Lynda.com](#)

**Course Objectives:**

1. To familiarize students with basic of research and the research process.
2. To help students in conducting research work and making research reports.
3. To identify various sources of information for literature review and data collection.
4. To write a research report and thesis & research proposal

**Course Outcome:**

- CO 1: Ability to understand root notion and significance of Research methods & literature  
CO 2: Understand different approaches of research & ethics  
CO 3: Ability to learn Different Sampling Techniques  
CO 4: Ability to learn & apply analysis techniques in research.

Modules	Topic	Sub-topics	Mapping with Industry and International Academia	Text Book as per Syllabus	Total hours of teaching	Corresponding Lab Assignment
M-I:	<b>Research Methodology: An Introduction</b>	<b>Research Methodology: An Introduction:</b> Meaning of Research, Objectives of Research, Types of research, Research approaches, Significance of Research, Research Methods vs Methodology, Research Scientific method, Research process, Criteria of good Research, Problems Encountered by Researchers in India	<i>International Academia:</i> <a href="#">Lecture Videos   Statistics for Applications   MIT OpenCourseWare</a>  <i>Industry Mapping: Conducting Business Research</i>	<b>Research Methodology: Methods And Techniques - C. R. Kothari, New Age International Publishers</b>	6	Research Project
M-II:	<b>1.Collection, Editing and Presentation of Data</b>  <b>2.Frequency Distribution</b>	<b>1.Collection, Editing and Presentation of Data:</b> Introduction, Collection of Data, Scrutiny of data, Presentation of data, Textual Presentation of data, Tabular presentation of data, Diagrammatic representation of data <b>2.Frequency Distribution</b> Introduction, Classification of variables, Frequency distribution, frequency distribution of an attribute, Frequency distribution of a discrete variable,	<i>International Academia:</i> <a href="#">Lecture Videos   Statistics for Applications   MIT OpenCourseWare</a>  <i>Industry Mapping: Collection of Data &amp; Statistical Analysis</i>	<b>Managerial Statistics – S. Roychowhury and D. Bhattacharya, U. N Dhur &amp; Sons Private Ltd</b>	10	Data Collection and analysis



		<p>Frequency distribution of a continuous variable,  Diagrammatic representation of a frequency distribution,  Diagrammatic representation of a frequency distribution of an attribute,  Diagrammatic representation of a frequency distribution of a discrete variable,  Diagrammatic representation of a frequency distribution of a continuous variable,  Bivariate and multivariate frequency distributions,</p>				
<b>M-III:</b>	<p><b>1.Measures of Central Tendency (upto 4.7)</b></p> <p><b>2.Measures of Dispersion (upto 5.6)</b></p>	<p><b>1.Measures of Central Tendency:</b> Introduction, Central Tendency, Arithmetic Mean, Results on Arithmetic Mean, Merits &amp; Demerits of Arithmetic Mean, Geometric mean, Harmonic Mean, Median, Mode</p> <p><b>2.Measures of Dispersion:</b> Introduction, Dispersion, Range, Quartile Deviation, Mean Absolute Deviation, Variance and Standard Deviation,</p>	<p><i>International Academia:</i>  <a href="#">Lecture Videos   Statistics for Applications   MIT OpenCourseWare</a></p> <p><i>Industry Mapping: Collection of Data &amp; Statistical Analysis</i></p>	<p><b>Managerial Statistics – S. Roychowhury and D. Bhattacharya, U. N Dhur &amp; Sons Private Ltd</b></p> <p><b>10 BL3, BL4, BL5, BL6</b></p>	6	Data Collection and analysis
<b>M-IV</b>	<b>Sampling Techniques and Sampling Distributions (up to 4.7)</b>	<b>Sampling Techniques and Sampling Distributions:</b> Introduction, Advantages of Sampling over Census, Basic Terminology, Simple Random Sampling, Method	<p><i>International Academia:</i>  <a href="#">Lecture Videos   Statistics for Applications  </a></p>	<b>Inferential Statistics- S. Roychowhury and D. Bhattacharya, U. N Dhur &amp; Sons Private Ltd.</b>	6	Data analysis

		of Drawing a Simple Random Sample, Sampling Distribution of Sample Mean, Sampling Distribution of Sample Proportion, Stratified Sampling, Systematic sampling, Cluster Sampling, Method of Drawing a Cluster Sample	<a href="#">Mathematics   MIT OpenCourseWare</a>  <i>Industry Mapping: Collection of Data &amp; Statistical Analysis</i>			
<b>M-V</b>	<b>Test of Hypothesis (upto 6.5).</b>	Test of Hypothesis: Introduction, Basic concepts and terminology, Steps of a statistical test, Test for population mean, Case of known population standard deviation, Case of unknown population standard deviation, Test for difference in means of two independent populations	<i>International Academia:</i> <a href="#">Lecture Videos   Statistics for Applications   Mathematics   MIT OpenCourseWare</a>  <i>Industry Mapping: Collection of Data &amp; Statistical Analysis</i>	Inferential Statistics- S. Roychowhury and D. Bhattacharya, U. N Dhur & Sons Private Ltd.	6	Data analysis
<b>M-VI:</b>	<b>Correlation &amp; Regression</b>	<b>Correlation &amp; Regression:</b> Introduction, Scatter Diagram, Covariance, Correlation, Regression, Rank Correlation, Multiple Regression	<i>International Academia:</i> <a href="#">Lecture Videos   Statistics for Applications   Mathematics   MIT OpenCourseWare</a>  <i>Industry Mapping: Collection of Data &amp; Statistical Analysis</i>	Managerial Statistics - S. Roychowhury and D. Bhattacharya, U. N Dhur & Sons Private Ltd	6	Data analysis

**Recommended Text Books:**

1. Kothari, C.R.: Research Methodology – Methods and Techniques, New Age International Ltd.
2. Managerial Statistics – S. Roychowhury and D. Bhattacharya, U. N Dhur & Sons Private Ltd.
3. Inferential Statistics– S. Roychowhury and D. Bhattacharya, U. N Dhur & Sons Private Ltd.

Submitted by: Dr. Bidushi Jana & Dr. Debarati Ghosh



**University of Engineering and Management**  
**Institute of Engineering & Management, Salt Lake Campus**  
**Institute of Engineering & Management, New Town Campus**  
**University of Engineering & Management, Jaipur**



## **Syllabus for BBA Admission Batch 2023**

**Subject Name: Fundamentals of Python Programming      Credit: 4      Lecture Hours: 48**

**Subject Code: BBABA383**

[Study Material](#)

[MIT Opencourseware](#)

[NPTEL](#)

[LinkedIn Learning](#)

### **COURSE OBJECTIVES:**

1. The course aims to initiate Programming necessity and proficiency.
2. The course will help students to build understanding the technique of programming language writing
3. The course is designed to build strong foundation on syntax of python programming
4. The course is designed to cover basic to intermediate level coding knowledge

## COURSE OUTCOMES:

### CO Details

- 1 Ability to understand the concept of programming language and basic syntax
- 2 Ability to write control statements & create problem solving codes.
- 3 Ability to write string, list based functions & applications
- 4 Ability to understand error & method of handling files.
5. Ability to work with python module and application in basic data processing.

Module number	Topic	Sub-topics	Text Book as per Syllabus	Mapping with Industry and International Academia	Lecture Hours	Corresponding Lab/Case Study Assignment
1	<b>Introduction to Python Programming</b>	<ol style="list-style-type: none"> <li>1. Concept of programming language; Techniques of Problem solving; What is algorithm; Applications</li> <li>2. Origin &amp; Evolution of Python; Feature &amp; Execution; Elements &amp; Data Types; Operators</li> </ol>	Python programming by Das & Patra, Glacier Press  Chapter – 2,3,4	<i>International Academia:</i> <b>MITOpenCourse</b>  <i>Industry Mapping:</i>	4	
2	<b>Control Flow, Iterators, Generators</b>	<ol style="list-style-type: none"> <li>1. Conditional Statements – if-else, if-else-if, nested conditional.</li> <li>2. Iterators</li> <li>3. Looping Statement – For-While loop, Nested Loop</li> <li>4. Control statement – Exit-break-continue-pass statement</li> </ol>	Python programming by Das & Patra, Glacier Press  Chapter - 5	<i>International Academia:</i> <b>MITOpenCourse</b>  <i>Industry Mapping:</i>	8	

3	<b>String, List-Tuple, Dictionary</b>	<ol style="list-style-type: none"> <li>1. String – Concept, basic operation, method, built-in function</li> <li>2. List-Tuple – Concept, method, operations, declarations.</li> <li>3. Dictionaries – Key &amp; value, Declaration, functions &amp; methods.</li> </ol>	<p>Python programming by Das &amp; Patra, Glacier Press</p> <p>Chapter – 6,7,8</p>	<p><b>International Standards:</b> <b>MITOpenCourse</b></p> <p><b>Industry Mapping:</b></p>	12	
4	<b>Exception &amp; File Handing</b>	<ol style="list-style-type: none"> <li>1. Errors &amp; Exception – Built-in Exception, Exception Handling, Raising Exception</li> <li>2. File Handling – Opening &amp; Closing Files, Reading Files, Writing Files, CSV Module to Read &amp; Write structured data</li> </ol>	<p>Python programming by Das &amp; Patra, Glacier Press</p> <p>Chapter – 11,12</p>	<p><b>International Standards:</b> <b>MITOpenCourse</b></p> <p><b>Industry Mapping:</b></p>	12	
5	<b>Module-Packages &amp; Data Processing</b>	<ol style="list-style-type: none"> <li>1. Python modules – Creating importing, Built-in modules</li> <li>2. Python Packages – Creating, importing packages, Popular libraries</li> <li>3. Numpy &amp; Pandas Library – Indexing, exploring, Tabular Data Analysis</li> </ol>	<p>Python programming by Das &amp; Patra, Glacier Press</p> <p>Chapter – 10,15</p>	<p><b>International Standards:</b> <b>MITOpenCourse</b></p> <p><b>Industry Mapping:</b></p>	12	

*\*Submitted by Sreeparna Guha, IEM Saltlake campus*

TEXTBOOK:

1. [Python Programming for Computer Science & Applications – Atanu Das & Rajkumar Patra, Glacier Press](#)