INTRODUCTION TO BUSINESS ANALYTICS

Programme(s) in which it is offered: BBA

Course Category: Core	**Schedule of Offering**: Even
Course Credit Structure: 6	**Course Code: MGT2216**
Total Number of Hours: 6	**Contact Hours Per Week:6**
Lecture: 5 Credits, 75Hours	**Tutorial:** 1Credits, 15 Hours
Practical: 0 Credits,0 Hours	**Medium of Instruction: English**
Date of Revision:	**Skill Focus:** Employability
Short Name of the Course: ITBA	**Course Stream** *(Only for Minor Courses)*:
Grading Method: Pass/Fail	**Repeatable:** Credit
Course Level: Beginner	

Course Description

This course is a core course for BBA students. The total credit of the course is 6.

Course Introduction

This course is designed to introduce the students about the basic concepts in Business Analytics. Business Analytics is a dynamic field that combines data analysis, statistical methods, and business intelligence to extract valuable insights from data and drive informed decision-making. In this course, the fundamental concepts and techniques that form the backbone of analytical decision-making in the business world is discussed.

Course Objective

This course aims to

- Develop a thorough understanding of the core concepts of business analytics, including its historical context, the distinctions between Data Scientist, Data Engineer, and Business Analyst roles, and the career prospects in the field of Business Analytics.
- Equip students with the skills to effectively collect, manage, and analyze data, emphasizing the importance of data quality and addressing challenges such as missing or incomplete data. Understand the Data
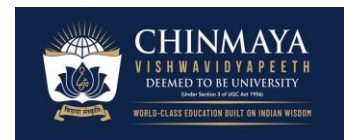
Science Project Life Cycle, from business requirements to optimization, and apply data visualization and classification techniques.

- Enable students to apply analytical techniques in diverse business domains such as Retail, Marketing, Finance, Healthcare, and Supply Chain. Understand the origins and tasks of Data Mining, including OLAP and multidimensional data analysis, and gain insight into the basics of Association Analysis and Cluster Analysis. Additionally, comprehend the historical evolution and distinctions between AI, Statistics, Data Mining, Data Analytics, and Data Science, along with the practical application of Machine Learning frameworks.

Course Outcome

After successful completion of this course, the students will be able to

CO1. Define and explain the core concepts of business analytics, including the historical evolution of data analysis.

CO2. Understand the importance of data quality and the Data Science Project Life Cycle, from business requirements to optimization.

CO3. Understand Data Mining and OLAP.

CO4. Differentiate between Supervised, Unsupervised, and Reinforcement Learning, and understand the frameworks used for building Machine Learning systems.

CO5. Explore real-world applications of business analytics in different domains such as Retail, Marketing, Finance, Healthcare, and Supply Chain.

PO-CO Mapping

PO-CO Mapping Matrix

CO/PO Mapping	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✓								
CO2	✓	✓							
CO3		✓							
CO4				✓					
CO5		✓							

Prerequisites and other constraints

There are no formal pre-requisites. Programming experience or knowledge is not required.

Pedagogy

This course will run in lecture mode. The lectures will focus on both theory and the application of the theory. There will be assignments supporting the learning.

Suggested Reading:

Text Books:

1. Essentials of Business Analytics: An Introduction to the methodology and its application, Bhimasankaram Pochiraju, SridharSeshadri, Springer

2. Introduction to Machine Learning with Python: A Guide for Data Scientists 1st Edition, by Andreas C. Müller, Sarah Guido, O'Reilly

3. Introduction to Data Science, Laura Igual Santi Seguí, Springer

Reference Book:

1. Introduction to Data Mining, Pang-Ning Tan, Michael Steinbach, Vipin Kumar, Pearson Education India

2. An Introduction to Business Analytics, Ger Koole, Lulu.com, 2019

Evaluation Pattern

Evaluation Matrix

	Component Type	Weightage Percentage	Total Marks	Tentative Dates	Course Outcome Mapping
Continuous Internal Assessment (CIA) Components*	Assignment / Presentation/ Quiz	10	10		
	Mid Term Examination	20	20		
	CIA Marks	30	30		
ESE		70	70		
Total		**100**	**100**		

 * The assignments involved in CIA will be subject to plagiarism checks. A submission with unexplained similarities exceeding 30% for Undergraduate courses, 20% for Postgraduate courses and 10% for PhD courses will be reverted for resubmission. The final submission
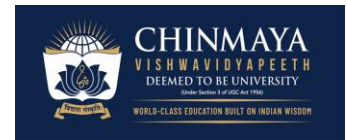
is subject to score penalization as defined by the course instructor at the start of the course, with a clear communication of the same to all the registered candidates.

Note:

1. Course Outcome mapping of this matrix should match with the PO-CO Matrix.
2. The component type is based on the course and the instructor.
3. The Weightage Percentage for the internal components should be calculated based on the total CIA marks.

Module Sessions

Module I: Introduction: What is business analytics? Historical Overview of data analysis, Data Scientist vs. Data Engineer vs. Business Analyst, Career in Business Analytics, What is data science, Why Data Science, Applications for data science, Data Scientists Roles and Responsibility.

Activities:

1. Assignment
2. Quiz

Module II: Data: Data Collection, Data Management, Big Data Management, Organization/sources of data, Importance of data quality, Dealing with missing or incomplete data, Data Visualization, Data Classification Data Science Project Life Cycle: Business Requirement, Data Acquisition, Data Preparation, Hypothesis and Modeling, Evaluation and Interpretation, Deployment, Operations, Optimization.

Activities:

1. Assignment
2. Quiz

Module III: Introduction to Data Mining, The origins of Data Mining, Data Mining Tasks, OLAP and Multidimensional data analysis, Basic concept of Association Analysis and Cluster Analysis.
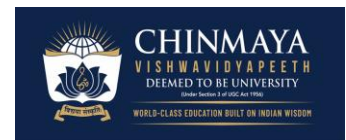
Activities:

1. Assignment
2. Quiz

Module IV: Introduction to Machine Learning: History and Evolution, AI Evolution, Statistics Vs Data Mining Vs, Data Analytics Vs, Data Science, Supervised Learning,

Unsupervised Learning, Reinforcement Learning, Frameworks for building Machine Learning Systems.

Activities:

1. Assignment
2. Quiz

Module V: Application of Business Analysis: Retail Analytics, Marketing Analytics, Financial Analytics, Healthcare Analytics, Supply Chain Analytics.

Activities:

1. Assignment
2. Quiz
3. Presentation