DEPARTMENT OF MANAGEMENT, KOCHI
COURSE OUTLINE & SESSION PLAN

Course Name	**Data Mining for Business Analytics**
Course Code	**BA006 E**
Term	**IV**
Name of Course Facilitator	**Dr. Dhanya M**
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Business Analytics (BA) mostly focuses on the future and entails a predictive or prescriptive flavor – 'What will happen? Why did it happen? What is the best possible outcome?' BA integrates data mining, statistical analysis and involves explanatory and predictive modeling. The term BA is closely related to the broader area of Data Science, a multi-disciplinary field based on statistics, machine learning and computer science, which is used to create predictive models. Today, BA is considered as one of the most potent competitive tools deployed by organizations for data-driven intelligent decision making to improve overall business performance. BA solutions help organizations identify the customers who are likely to respond to a promotion; identify customers who are likely to switch from your product/service so as to offer timely interventions to reduce churn, accelerate product innovation, optimize supply chains and finds increasing application across all industry segments and functional areas.

Course Objectives:

- The course seeks to introduce you to modern data mining methods that provide useful insights to a large spectrum of managerial problems.
- The course aims at informing the kinds of business problems that can be solved using data mining methods as well as how to solve these problems.

Learning Outcomes

Upon completion of this course, students will be able to complete the following key tasks:

Knowledge Level	• Nature and impact of Business Analytics (BA) upon organizations • State-of-the-art methods, algorithms, and applications in BA • Process of making informed and insightful decisions using BA technologies and tools.
Skill Level:	• To translate a business problem into an appropriate analytics problem for applying an analytics solution • To analyze data for identifying potential relationships that could further the understanding of the business problem

- To identify and select potential techniques for solving the problem and build and deploy effective models to address the business problem.

Course objectives and Outcomes

LG / CO	Critical and integrative Thinking	Effective written and oral communication	Societal and Environmental Awareness	Ethical Reasoning	Leadership
CO1: Knowledge	3	0	0	2	2
CO2: Skill sets	3	0	0	2	2
CO3: Solving problems	3	0	0	2	3

Course contributes mostly to: Employability/ Skill Development

Teaching Methods

The classroom activity will consist of lectures, class-room discussions and hands-on exercises. The hands-on exercises, assignments and course project shall be based on the R programming language.

Expectation from the Students:

The students are expected to prepare well in advance from the relevant references assigned before attending the sessions to make the classroom activity more meaningful and fruitful. Each student is expected to possess a copy of the prescribed textbook.

SESSIONS PLAN

Session	Topic	Resource- TB/R : Chapter
1	Introduction to Analytics	TB: 1; R1: 1
2	Data Mining: An Overview	TB: 2; R1: 2,
3-5	Data Exploration	TB: 3,4; R1:2,3
6	Dimension Reduction	TB: 4; R1:4
7 – 8	Performance Evaluation	TB:5, R1: 15 - 18
9-10	Linear Regression	TB: 6; R1: 8 – 9
11-12	Classification Methods	TB:7-8; R1: 10, 14
13	Decision Trees	TB: 9; R1: 11
14	Logistic Regression	TB: 10; R1: 13
15	Artificial Neural Networks	TB: 11; R1: 12
16	Discriminant Analysis	TB: 12
17-18	Clustering	TB: 15; R1: 19-22
19-20	Association Mining	TB: 14; R1: 23-24
21-22	Time series Forecasting	R1: 16-18
23-24	Ensemble Methods	TB: 13, R1:25

Evaluation Scheme:

Component	Weightage (in %)
Assignments	20
Term paper	15
Course Project	20
End-term exam	35
Viva	10

Course Materials and Readings (TB - Textbook, R# – Reference)

TB "Data Mining for Business Intelligence", by Galit Shmueli, Nitin Patel, and Peter Bruce, Wiley India Pvt Ltd, 2008.

R1 Data Mining and Predictive Analytics, 2ed by Daniel T. Larose, Chantal D. Larose, Wiley, 2015.