

DEPARTMENT OF MANAGEMENT, KOCHI
Forecasting and Visualization Analytics
MBA 2017 – 2019 Batch
Trimester V
COURSE OUTLINE & SESSION PLAN

Course Code: BA014E

Credits :3

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COURSE OBJECTIVE

Course Objectives:

Today we discuss the various categories of forecasting methods that are available to businesses. Forecasting methods can be either objective (using quantitative approaches) or subjective (using more intuitive or qualitative approaches), depending on what data is available and the distance into the future for which a forecast is desired. Forecasting approaches will typically be more objective for nearer term forecasting horizons and for events where there is plenty of quantitative data available. More distant time periods, or events with a lack of historical quantitative data will often call for more subjective approaches.

Objective forecasting approaches are quantitative in nature and lend themselves well to an abundance of data. There are three categories of objective forecasting methods: time series, causal/econometric, and artificial intelligence.

Subjective forecasts are more qualitative. These approaches rely most heavily on judgment and educated guesses, since there is little data available for forecasting. This is especially the case in long-range forecasting.

LEARNING OUTCOMES

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

- Visualize time series data
- Understand the different components of time series data
- Specify appropriate metrics to assess forecasting models
- Adjust for seasonality
- Account for auto correlation
- Distinguish real trend and patterns from random behaviour

[Type text]

Course Outcomes

Learning Goals/ Course Outcomes	Critical and integrative Thinking	Effective written and oral communication	Societal and Environmental Awareness	Ethical Reasoning	Leadership
CO1: Knowledge	3	0	0	2	2
CO2: Attitude	3	0	0	2	2
CO3: Skill sets	3	1	0	1	2

Course contributes mostly to: Employability/ Skill Development

Course Pedagogy

The pedagogy for this course would comprise of lectures, group presentations, and hands on training to different tools.

Session Plan

Session	Topic	Textbook Chapter
1	Introduction to Forecasting	TB:1
2	Time Series	TB:2
3-4 5-6	Performance Evaluation Overview of Forecasting Methods	TB:3 TB:4
7-8	Smoothing Techniques	TB:5
9-10	Trend and Seasonality	TB:6
11-12	Improving Forecasts	TB:7
13	Forecasting Binary Outcomes	TB:8
14	Neural Networks for Forecasting	TB:9
15	Presentation of Forecasts	TB:10
16-19	Visualizing Patterns over Time and Space	R1-4,8
20-21	Visualizing Relationships	R1-6

[Type text]

22-24	Effective Storytelling with Data	R2-7,8

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

TB Practical Time Series Forecasting with R: A Hands-On Guide [2nd Edition], by Galit Shmueli, Kenneth C. Lichtendahl Jr., Axelrod Schnall Publishers, 2016.

R1 Visualize This: The Flowing Guide to Design, Visualization, and Statistics by Nathan Yau, Wiley India, 2014

R2 Storytelling with Data: A Data Visualization Guide for Business Professionals by Cole Nussbaumer Knaflic, Wiley, 2015.

PERFORMANCE EVALUATION

The final grade in this course will be based on your demonstrated performance in 5 main evaluation components, with the following weights:

Assignments	20%
Presentation	20%
Project	20 %
End trimester Examination	30 %
Viva	10%