4K L University
Department of Management
Course Handout for 2016 II Year MBA PROGRAM
A.Y.2017-18, IV Semester

Course Name : Business Analytics in Finance

Course Code : **15MBF265**

L-T-P structure : 2-0-2

Course Credits : 3

Course Coordinator : **Dr.K.Hema Divya**

Course Instructors : **Dr.K.Hema Divya**
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Course Teaching Associates : **NIL**

Course Objective: This course aims at analyzing the financial data of an organization with the help of statistical tool R This Course ensures providing timely financial information that enables students to make better decisions, take action, and correct problems before they affect the company's financial performance.

Course Rationale: The course is designed for the second semester students of the second year MBA program. The scope of financial analytics is to help student the importance of decision making in finance

Course Outcomes (CO):

CO No:	CO	SO	BTL
1	To Understand the types of financial data and application of various functions in Excel.	a	2
2	To apply the statistical tests and analyze the financial data	a	4
3	To apply Quant mod package in R and analyze the stock market data	a	4
4	To apply R and analyze the credit risk analysis of banks	a	4

COURSE OUTCOME INDICATORS (COI):

CO No.	COI-1	COI-2	COI-3
1	To develop an understanding on different types of financial data	To understand the significance of financial analytics	To apply various functions in excel and commands in R
2	To understand descriptive and inferential statistics for financial data in R	To apply descriptive and inferential statistics for financial data in R	To analyze descriptive and inferential statistics for financial data in R
3	To apply descriptive statistics ,returns calculation and graphical techniques for stock market data	To analyze technical indicators using quant mod package in R	
4	To understand logistic, factor and cluster analysis	To apply logistic, factor and cluster analysis	To analyze logistic, factor and cluster analysis

SYLLABUS (As approved by BoS):

Business Statistics and Application – Financial Data Types – Financial Statements, Stock Market data, Economic Data. Financial Data Business Decision Making, Financial Analytics – Introduction, Financial Statements, Stock Market Data, Credit Risk Modelling, Fraud Modeling .Introduction Excel Data Analysis tool Pak, Conditional Formatting & Data Validation. Introduction to R, Basic Syntax, Functions and Commands. Charting Techniques in Excel & R.

Financial Data – Descriptive Statistics – Measures of Central Tendency, Measures of Dispersion and Measures of Relationship, Skewness, Kurtosis, Percentile, Quantile, Standard Error. Inferential Statistics – Hypothesis Testing – One Sample t test, Two Sample t test, Paired Sample t test, Chi Square Tests. Multiple Linear Regression Analysis of Financial Data. Using Both Excel & R

Stock Market Data Analysis using R – Time series Analysis – creating time series, trend in time series, Decomposition, ARIMA. Technical Analysis using Quant mod package in R. Importing Stock Price Data, Graphing techniques, Returns Calculation – Daily, Weekly, Monthly & Annual, Descriptive Statistics of Returns, Technical Indicators like Support Resistance Levels, Momentum Indicators, Volume Indicators, trend Indicators.

Credit Risk Modelling using Logistic Regression in R – Credit Default Data Analysis, Fitting Model & predicting the probabilities, checking accuracy. Segmentation of the Financial Customer Data using Cluster Analysis. Factor Analysis of Bank Data.

BoS Approved Text books:

1. An Introduction to Analysis of Financial Data with R by Rvey S. Tsay, Wiley Publications
2. George Daroczi , Michael Puhle , Marton Michaletzsky Zsolt Tulassay, Kata Varadi and Agnes Vidovics Dancs, Introduction to R for Quantitative Finance, Packt Publishing,

BoS Approved Reference Books: NIL

Other Books, References:

1. R in Action by Robert Kobocoff, First Edition
2. Business Analytics by James. R. Evans, Pearson second edition

Deviations (if any) from BoS approved syllabus and the topics planned: No

COURSE DELIVERY PLAN:

Session No	CO	COI	Topic (s)	Teaching-Learning Methods	Evaluation Components
1	1	1	Financial Data -Types of financial data	Classroom Discussion-Interaction	Test I & End Semester Exam
2	1	1	Significance of business analytics	Classroom Discussion-Interaction	Test I & End Semester Exam
3	1	1	Financial Analytics	Group Discussion	Test I & End Semester Exam
4	1	1	Excel data Analysis tool pack	Lab-Simulation	Test I & End Semester Exam
5	1	2	Conditional and Data validation	Lab-Simulation	Test I & End Semester Exam
6	1	2	Introduction to R	Lab-Simulation	Test I & End Semester Exam
7	1	2	Types of datasets in R	Lab-Simulation	Test I & End Semester Exam
8	1	2	Functions and Commands in R	Lab-Simulation	Test I & End Semester Exam
9	1	3	Charting techniques in R	Lab-Simulation	Test I & End Semester Exam
10	1	3	Charting techniques in R	Lab-Simulation	Test I & End Semester

					Exam
11	1	3	Charting techniques in Excel	Lab-Simulation	Test I & End Semester Exam
12	1	3	Charting techniques in Excel	Lab-Simulation	Test I & End Semester Exam
13	1		Chart Presentations	Active Learning	Active Learning
14	1		Chart Presentations	Active Learning	Active Learning
15	2	1	Descriptive statistics	Classroom Discussion-Interaction	Test II & End Semester Exam
16	2	1	Inferential Statistics	Classroom Discussion-Interaction	Test II & End Semester Exam
17	2	1	Types of statistical tests	Lab-Simulation	Test II & End Semester Exam
18	2	1	Normal Distribution	Classroom Discussion-Interaction	Test II & End Semester Exam
19	2	2	Correlation and Multiple coorelation in excel	Classroom Discussion-Interaction	Test II & End Semester Exam
20	2	2	Correlation and Multiple coorelation in R	Lab-Simulation	Test II & End Semester Exam
21	2	2	One Sample T Test on Financial Data in R	Lab-Simulation	Test II & End Semester Exam
22	2	2	Two Sample T Test on Financial Data in R	Lab-Simulation	Test II & End Semester Exam
23	2	2	One Paired T test & Chisquare	Lab-Simulation	Test II & End Semester Exam
24	2	3	Linear Regression on financial data in excel and Model Fitting	Lab-Simulation	Test II & End Semester Exam
25	2	3	Analysing the Model	Classroom Discussion-Interaction	Test II & End Semester Exam
26	2	3	Linear Regression on financial data in excel and Model Fitting	Lab-Simulation	Test II & End Semester Exam
27	2	3	Multiple Regression on financial data in excel and Model Fitting	Lab-Simulation	Test II & End Semester Exam
28	2	3	Analysing the Model	Classroom Discussion-Interaction	Test III & End Semester Exam
29	2	3	Multiple Regression on financial data in excel and Model Fitting	Lab-Simulation	Test III & End Semester Exam
30	2		Assignment	Active Learning	Active Learning
31	2		Assignment	Active Learning	Active Learning
32	2		Assignment	Active Learning	Active Learning
33	3	1	Importing Stock Price Data in R and Returns Calculation in R – Daily, Weekly, Monthly & Annual	Lab-Simulation	Test III & End Semester Exam
34	3	1	Time series Analysis –Creating TS	Lab-Simulation	Test III & End Semester Exam
35	3	1	TSA- Trend	Lab-Simulation	Test III & End Semester Exam
36	3	1	Time series Analysis -Decomposition	Classroom Discussion	Test III & End Semester Exam
37	3	1	ARIMA model	Classroom Discussion	Test III & End Semester Exam

38	3	2	Descriptive Statistics of Returns in excel and R	Lab-Simulation	Test III & End Semester Exam
39	3	2	Support and resistance levels in R	Lab-Simulation	Test III & End Semester Exam
40	3	2	Momentum Indicators in R	Classroom Discussion-Interaction	Test III & End Semester Exam
41	3	2	Momentum Indicators in R	Lab-Simulation	Test III & End Semester Exam
42	3	2	Volume Indicators in R	Classroom Discussion-Interaction	Test III & End Semester Exam
43	3	2	Volume Indicators in R	Lab-Simulation	Test III & End Semester Exam
44	3	2	Trend Indicators in R	Classroom Discussion-Interaction	Test III & End Semester Exam
45	3	2	Graphical Analysis of key indicators in R	Classroom Discussion-Interaction	Test III & End Semester Exam
46	3	2	Graphical Analysis of key indicators in R	Lab-Simulation	Test III & End Semester Exam
47	3		Lab Assignment	Lab-Simulation	Active Learning
48	3		Lab Assignment	Lab-Simulation	Active Learning
49	3		Lab Assignment	Lab-Simulation	Active Learning
50	4	1	Credit Default Data Analysis	Classroom Discussion-Interaction	Active Learning
51	4	1	Fitting Model & predicting the probabilities	Lab-Simulation	End Semester
52	4	2	Fitting Model & predicting the probabilities	Lab-Simulation	End Semester
53	4	1	Segmentation of the Financial Customer Data using Cluster Analysis	Classroom Discussion-Interaction	End Semester
54	4	2	Segmentation of the Financial Customer Data using Cluster Analysis	Lab-Simulation	End Semester
55	4	2	Segmentation of the Financial Customer Data using Cluster Analysis	Lab-Simulation	End Semester
56	4	1	Factor Analysis of Bank Data.	Classroom Discussion-Interaction	End Semester
57	4	2	Factor Analysis of Bank Data.	Lab-Simulation	End Semester
58	4		Lab Assignment	Lab-Simulation	Active Learning
59	4		Lab Assignment	Lab-Simulation	Active Learning
60	4		Lab Assignment	Lab-Simulation	Active Learning

Session wise Teaching – Learning Plan

Session Number: 1

Session Outcome: At the end of the session, the student will be able to know about

1. Definition of financial data
2. Types of Financial Data
3. Differences among various types of data

Time(min)	Topic	BTL	Teaching – Learning Method

10	Definition	1	Lecture
10	Financial data		
25	Types of Financial Data	1	Classroom discussion-Interaction
05	Summary		Activity

Session Number: 2

Session Outcome: At the end of the session, the student will be able to understand

1. Business Analytics
2. Difference between Business Analytics and other various analytics
3. How Business Analytics is used in decision making

Time(min)	Topic	BTL	Teaching – Learning Method
05	Revision the previous session		Lecture
10	Definition of Business Analytics	1	Classroom discussion-Interaction
15	Difference between Business Analytics and other various analytics		GD
15	How Business Analytics is used in decision making		Questioning
05	Summary		Activity

Session Number: 3

Session Outcome: At the end of the session, the student will be able understand

1. Definition of financial Analytics
2. Examples of financial Analytics
3. Significance of financial analytics in creating value to organization

Time(min)	Topic	BTL	Teaching – Learning Method
10	Definition of financial Analytics		Questioning - recall
10	Examples of financial Analytics		Discussion-Interaction
25	Significance of financial analytics in creating value to organization		GD
05	Summary		Activity

Session Number: 4

Session Outcome: At the end of the session, the student will be able to know

1. Excel and its features
2. Various components of data analysis tool

Time(min)	Topic	BTL	Teaching – Learning Method
10	Excel and its use in financial data		
35	Various components of data analysis tool	1	Lab – Demonstration
05	Summary		Activity

Session Number: 5

Session Outcome: At the end of the session, the student will be able to

1. Understand the conditional formatting
2. Certain exercises on its application

Time(min)	Topic	BTL	Teaching – Learning Method
20	Conditional Formatting	2	Interaction
25	Conditional Formatting - exercises	2	Lab – Demonstration
05	Summary		Activity

Session Number: 6

Session Outcome: At the end of the session, the student will be able to know how to

1. know about the R and its significance

2.how its being different from other statistical tools

Time(min)	Topic	BTL	Teaching – Learning Method
20	Introduction to R and its significance	2	Interaction
20	how it's being different from other statistical tools	2	Discussion
05	Summary		Activity

Session Number: 7

Session Outcome: At the end of the session, the student will be able to

1. Understand different types of data in R
2. Analyze the differences among different types of data

Time(min)	Topic	BTL	Teaching – Learning Method
10	Revision the previous session		Quiz
15	Types of data in R	2	Lecture
20	Analyze the differences among different types of data	2	Activity - Teams
05	Summary		Activity

Session Number: 8

Session Outcome: At the end of the session, the student will be able to

1. Understand writing a function in R
2. Understand various commands in R

Time(min)	Topic	BTL	Teaching – Learning Method
10	Revision the previous session		Quiz
10	Functions in R	2	Lecture
25	Commands in R	2	Lecture
05	Summary		Activity

Session Number: 9

Session Outcome: At the end of the session, the student will be able to

1. Understand different types of charts in Excel

2. Apply various charts for different types of data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand different types of charts in Excel	2	Lecture
30	various charts for different types of data	2	demonstration
05	Summary		

Session Number: 10

Session Outcome: At the end of the session, the student will be able to

1. Apply various charts for different types of data

Time(min)	Topic	BTL	Teaching – Learning Method
45	Apply various charts for different types of data	2	Activity
05	Summary		

Session Number: 11

Session Outcome: At the end of the session, the student will be able to

1. Understand different types of charts in R
2. Apply various charts for different types of R with functions and commands

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand different types of charts in R	2	Lecture
30	Apply various charts for different types of R with functions and commands	2	Demonstration
05	Summary		

Session Number: 12

Session Outcome: At the end of the session, the student will be able to

1. Understand different types of charts in R
2. Apply various charts for different types of R with functions and commands

Time(min)	Topic	BTL	Teaching – Learning Method

45	Apply various charts for different types of R with functions and commands	2	Activity
05	Summary		

Session Number: 13

Session Outcome: At the end of the session, the student will be

1. Making chart presentations on Excel and R

Time(min)	Topic	BTL	Teaching – Learning Method
45	Making chart presentations on Excel and R	2	Evaluation
05	Summary		

Session Number: 14

Session Outcome: At the end of the session, the student will be

1. Making chart presentations on Excel and R

Time(min)	Topic	BTL	Teaching – Learning Method
45	Making chart presentations on Excel and R	2	Evaluation
05	Summary		

Session Number: 15

Session Outcome: At the end of the session, the student will be able to

1. Understand the Descriptive statistics for various data types
2. Apply and analyze the Descriptive statistics for various data types

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the Descriptive statistics for various data types	2	Lecture
30	Apply and analyze the Descriptive statistics for various data types	2	demonstration
05	Summary		Interaction

Session Number: 16

Session Outcome: At the end of the session, the student will be able to1

1. Understand the inferential statistics
2. Hypothesis testing

Time(min)	Topic	BTL	Teaching – Learning Method
10	Inferential statistics	2	Interaction
25	Hypothesis testing	2	Lab
10	Example	2	Interaction
05	Summary		Interaction

Session Number: 17

Session Outcome: At the end of the session, the student will be able to

1. Understand the various tests for financial data
2. Type of test to be applied for various data

Time(min)	Topic	BTL	Teaching – Learning Method
20	Understand the various tests for financial data	2	Interaction
25	Type of test to be applied for various data	2	Lab
05	Summary	2	Interaction

Session Number: 18

Session Outcome: At the end of the session, the student will be able to

1. Significance of Normal Distribution
2. Application of how to check normal distribution for a data

Time(min)	Topic	BTL	Teaching – Learning Method
10	Significance of Normal Distribution	2	Interaction
25	Application of how to check normal distribution for a data	2	lab
10	Exercises	3	Interaction
05	Summary		Interaction

Session Number: 19

Session Outcome: At the end of the session, the student will be able to
1. Understand correlation and multiple correlation
2. Apply and analyse the correlation and multiple correlation on financial data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand correlation and multiple correlation	2	Interaction
15	Apply the correlation and multiple correlation on financial data in excel	3	lab
15	Analyze the correlation and multiple correlation on financial data excel	2	Interaction
05	Summary		Interaction

Session Number: 20
Session Outcome: At the end of the session, the student will be able to
1. Apply and analyse the correlation and multiple correlation on financial data

Time(min)	Topic	BTL	Teaching – Learning Method
25	Apply the correlation and multiple correlation on financial data in R	3	lab
20	Analyze the correlation and multiple correlation on financial data in R	2	Interaction
05	Summary		Interaction

Session Number: 21
Session Outcome: At the end of the session, the student will be able to
1. Understand the one sample T-test on financial data
2. Apply and analyze one sample T-test on financial data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the one sample T-test on financial data	2	Interaction
15	Apply a one sample T-test on financial data	3	lab
15	Analyze one sample T-test on financial data	2	Interaction
05	Summary		Interaction

Session Number: 22
Session Outcome: At the end of the session, the student will be able to
1. Understand the two sample T-test on financial data
2. Apply and analyze two sample T-test on financial data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the two sample T-test on financial data	2	Interaction
15	Apply two sample T-test on financial data	3	lab
15	Analyze two sample T-test on financial data	2	Interaction
05	Summary		Interaction

Session Number: 23
Session Outcome: At the end of the session, the student will be able to
1. Understand the chi-square test
2. Apply and analyze the chi-square test

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the chi-square test	2	Interaction
15	Apply the chi-square test	3	lab
15	analyze the chi-square test	2	Interaction
05	Summary		Interaction

Session Number: 24
Session Outcome: At the end of the session, the student will be able to
1. Understand the linear regression in excel
2. Apply and analyze linear regression on financial data in excel

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the linear regression	2	Interaction
15	Apply and analyze linear regression on financial data	3	lab

15	Analyze linear regression on financial data in excel	2	Interaction
05	Summary		Interaction

Session Number: 25

Session Outcome: At the end of the session, the student will be able to

1. Understand the linear regression in R

2. Apply and analyze linear regression on financial data in R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Revise the linear regression	2	Interaction
15	Apply and analyze linear regression on financial data	3	lab
15	Analyze linear regression on financial data in excel	2	Interaction
05	Summary		Interaction

Session Number: 26

Session Outcome: At the end of the session, the student will be able to

1. Apply and analyze linear regression on financial data in excel and R

Time(min)	Topic	BTL	Teaching – Learning Method
45	Apply and analyze linear regression on financial data	3,	lab
05	Summary		

Session Number: 27

Session Outcome: At the end of the session, the student will be able to

1. Understand the Multiple regression in excel

2. Apply and analyze multiple regression on financial data in excel

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the Multiple regression	2	Interaction
15	Apply multiple regression on financial data	4	lab
15	Analyze multiple regression on financial data in excel	2	Interaction
05	Summary		Interaction

Session Number: 28

Session Outcome: At the end of the session, the student will be able to

1. Understand the linear regression in R

2. Apply and analyze linear regression on financial data in R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Revise the multiple regression	2	Interaction
15	Apply multiple regression on financial data	4	lab
15	Analyze l multiple regression on financial data in excel	2	Interaction
05	Summary		Interaction

Session Number: 29

Session Outcome: At the end of the session, the student will be able to

1. Apply and analyze multiple regression on financial data in excel and R

Time(min)	Topic	BTL	Teaching – Learning Method
45	Apply and analyze multiple regression on financial data	4	lab
05	Summary		

Session Number: 30

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 31

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 32

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 33

Session Outcome: At the end of the session, the student will be able to

1. Understand how to import data in to R

2. how to use data in R Library

3.how to create a dataset in R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand how to import data in to R	2	Lab
15	How to use data in R Library	3	Lab
15	How to create a dataset in R	3	Lab
05	Summary		Interaction

Session Number: 34

Session Outcome: At the end of the session, the student will be able to

1. Understand the time series and its significance

2. creating time series data in R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the time series and its significance	2	Interaction
30	Creating time series data in R	3	lab
05	Summary		Interaction

Session Number: 35

Session Outcome: At the end of the session, the student will be able to

1. Understand the trends in time series data

2. Analyze the trend in time series data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the trends in time series data	2	Interaction
30	Analyze the trend in time series data	4	lab
05	Summary		Interaction

Session Number: 36

Session Outcome: At the end of the session, the student will be able to

1. Understand the decomposition of data in timeseries

2. Apply decomposition of data in timeseries

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the decomposition of data in timeseries	2	Interaction
30	Apply decomposition of data in timeseries	3	lab
05	Summary		Interaction

Session Number: 37

Session Outcome: At the end of the session, the student will be able to

1. Understand the topic of ARIMA

2. Application of ARIMA using time series data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the topic of ARIMA	2	Interaction
30	Apply decomposition of data in timeseries	4	lab

05	Summary		Interaction

Session Number: 38

Session Outcome: At the end of the session, the student will be able to

1. Understand the calculation of returns

2. Apply and Analyzing the descriptive statistics on returns

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the topic of ARIMA	2	Interaction
30	Apply decomposition of data in time series	3	lab
05	Summary		Interaction

Session Number: 39

Session Outcome: At the end of the session, the student will be able to

1. Understand Application of support and resistance levels using R

2. Analyze the support and resistance levels in stock market using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	**Understand Application of support and resistance levels using R**	2	Interaction
30	Analyze the **support and resistance levels in stock market using R**	4	lab
05	Summary		Interaction

Session Number: 40

Session Outcome: At the end of the session, the student will be able to

1. understand application of momentum indicators using R

2. Analyze the momentum indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	understand application of momentum indicators using R	2	Interaction
30	Analyze the momentum indicators using R	4	lab
05	Summary		Interaction

Session Number: 41

Session Outcome: At the end of the session, the student will be able to

1. understand application of momentum indicators using R

2. Analyze the momentum indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	understand application of momentum indicators using R	2	Interaction
30	Analyze the momentum indicators using R	4	lab
05	Summary		Interaction

Session Number: 42

Session Outcome: At the end of the session, the student will be able to

1. understand application of volume indicators using R

2. Analyze the volume indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	understand application of volume indicators using R	2	Interaction
30	Analyze the volume indicators using R	3	lab
05	Summary		Interaction

Session Number: 43

Session Outcome: At the end of the session, the student will be able to

1. understand application of volume indicators using R

2. Analyze the volume indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	understand application of volume indicators using R	2	Interaction
30	Analyze the volume indicators using R	4	lab
05	Summary		Interaction

Session Number: 44

Session Outcome: At the end of the session, the student will be able to

1. Understand application of trend indicators using R
2. Analyze the trend indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	understand application of trend indicators using R	2	Interaction
30	Analyze the trend indicators using R	4	lab
05	Summary		Interaction

Session Number: 45

Session Outcome: At the end of the session, the student will be able to

1. Understand application of graphical indicators using R
2. Analyze the graphical indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand application of graphical indicators using R	2	Interaction
30	Analyze the graphical indicators using R	4	lab
05	Summary		Interaction

Session Number: 46

Session Outcome: At the end of the session, the student will be able to

1. Understand application of graphical indicators using R
2. Analyze the graphical indicators using R

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand application of graphical indicators using R	2	Interaction
30	Analyze the graphical indicators using R	4	lab
05	Summary		Interaction

Session Number: 47

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 48

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 49

Session Outcome: At the end of the session, the student will be able

1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 50

Session Outcome: At the end of the session, the student will be able to

1. Understand the dataset on credit default analysis
2. Run descriptive analysis

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand the dataset on credit default analysis	2	Interaction
30	Run descriptive analysis	2	lab
05	Summary		Interaction

Session Number: 51

Session Outcome: At the end of the session, the student will be able to

1. Fitting model and

2. Predicting probabilities

Time(min)	Topic	BTL	Teaching – Learning Method
15	Fitting model	2	Interaction
25	predicting probabilities	3	Lab
05	Summary		Interaction

Session Number: 52

Session Outcome: At the end of the session, the student will be able to

1. Fitting model and
2. Predicting probabilities

Time(min)	Topic	BTL	Teaching – Learning Method
15	Fitting model	2	Interaction
25	predicting probabilities	3	Lab
05	Summary		Interaction

Session Number: 53

Session Outcome: At the end of the session, the student will be able to

1. Understand cluster analysis
2. segmentation of financial customer data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand cluster analysis	2	Interaction
25	segmentation of financial customer data	3	Lab
05	Summary		Interaction

Session Number: 54

Session Outcome: At the end of the session, the student will be able to

1. Understand cluster analysis
2. segmentation of financial customer data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand cluster analysis	2	Interaction
25	segmentation of financial customer data	4	Lab
05	Summary		Interaction

Session Number: 55

Session Outcome: At the end of the session, the student will be able to

1. Understand cluster analysis
2. segmentation of financial customer data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand cluster analysis	2	Interaction
25	segmentation of financial customer data	4	Lab
05	Summary		Interaction

Session Number: 56

Session Outcome: At the end of the session, the student will be able to

1. Understand factor Analysis
2. Application of factors analysis to Bank data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand factor Analysis	2	Interaction
25	Application of factors analysis to Bank data	3	Lab
05	Summary		Interaction

Session Number: 57

Session Outcome: At the end of the session, the student will be able to

1. Understand factor Analysis
2. Application of factors analysis to Bank data

Time(min)	Topic	BTL	Teaching – Learning Method
15	Understand factor Analysis	2	Interaction
25	Analyse factors analysis to Bank data	4	Lab
05	Summary		Interaction

Session Number: 58
Session Outcome: At the end of the session, the student will be able
1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 59
Session Outcome: At the end of the session, the student will be able
1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

Session Number: 60
Session Outcome: At the end of the session, the student will be able
1. To make presentations on assignments

Time(min)	Topic	BTL	Teaching – Learning Method
10	**To make presentations on assignments**		Evaluation

EVALUATION PLAN

Evaluation Component	Weightage / Marks	Date	Duration (Hours)	CO 1			CO 2			CO 3			CO 4		
COI Number				2	2	3	2	3	4	3	4	0	2	3	4
BTL				2	2	2	2	3	4	3	4	0	2	3	4
Test 1 Theory	Weightage (10%)	30th Jan to 2nd Feb 2018	90 mts	3	3	4									
	Max Marks (20)			6	6	8									
Test 2 Theory	Weightage (10 %)	5th to 8th March 2018	90 mts				3	3	4						
	Max Marks (30)						6	6	8						
Test 3	Weightage	3rd to	90 mts							5	5	0			

(Lab)	**(10%)**	**6th April 2018**														
	Max Marks (30)									**10**	**10**	**0**				
Active Learning (Lab record)	**Weightage (15%)**	**Continuous Evaluation**		**25**			**25**			**25**				**25**		
	Max Marks (15)			**15**												
Attendance	**Weight age (5%)**	**Equal weight age for all the lecture sessions (5%)**														
Semester End Exam	**Weightage (50 %)**	**25th April 2017**	**180 mts**	2	2	14	2	2	14	9	9	0	8	14	24	
	Max Marks (50)			1	1	7	1	1	7	2	7	0	4	7	12	
	Question Number			1(a)	1(b)	2	1(c)	1(d)	3	1 (e,f)	4,5	0	1 (g, h, i, j)	6,7	8	

Course Team members, Chamber Consultation Hours and Chamber Venue details:

S.No.	Name of Faculty	Chamber Consultation Day(s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty
1	Dr. K, Hema Divya	Friday	4.00 - 5.00 PM	Library Building ,4th floor	
2	Mr.Zakhir Hussian	Friday	4.00-5.00 PM	Library Building ,4th floor	

Signature of Course Coordinator **Signature of Research Group Head**

ecommended by HEAD OF DEPARTMENT:
(Dr.M Kishore Babu)

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Hari Kiran Vege,
Assoc.Dean-TLP

for **Approved By: DEAN-ACADEMICS**

(Sign with Office Seal)