DEPARTMENT OF MANAGEMENT STUDIES
NATIONAL INSTITUTE OF TECHNOLOGY
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COURSE PLAN – PART I

Course Title	**BASIC DATA ANALYTICS**		
Course Code	MB 821	**No. of Credits**	**2**
Course Code of Pre-requisite subject(s)	NIL		
Session	July '23 – Oct '23	**Section**	
Name of Faculty	Dr. M. Punniyamoorthy	**Department**	**MBA**
Email	punniya@nitt.edu	**Telephone No.**	0431 250 3032
Name of Course Coordinator(s) (if, applicable)	NIL		
Course Type		**Core course**	IV **Elective course**

SYLLABUS

Unit I Multiple Regression
Assumptions for General Linear Regression Model, Ordinary Least Square (OLS) Approach – measures of fit, statistical inferences – Hypothesis testing and interval estimation- Data cleaning – Out influential observations-

Unit II
Dummy regressions and conjoint analysis, multi collinearity, Logistic regression- Grouped Data-Weighted Least square (WLS), Individual Data-Newton Raphson method- Error rate estimation.

Unit III Discriminant Analysis – I
Introduction, the Two Group problem – Variable contribution – The case of discrete – Variables

Unit IV Discriminant Analysis – II
The K groups problem, Error rate estimate in multiple groups, Interpretation of multiple discriminant analysis solution- step wise selection of variables

UNIT V Factor Analysis
The basic model, Extraction of factors – Principal factor – maximum likelihood method, factor rotation – orthogonal, oblique rotations, Factor score, interpretations of factor analysis solutions.

COURSE OBJECTIVES
To help the students enrich their knowledge on analytical tools and techniques. The course is application based. SPSS or SAS package will be used for applications and analysis part.

COURSE OUTCOMES (CO)	
Course Outcomes	**Aligned Programme Outcomes (PO)**
• Understand the fundamental concepts of data analytics and its role in decision-making. • Describe the data analytics process, including data collection, cleaning, exploration, analysis, and visualization. • Identify different types of data (categorical, numerical, etc.) and understand their characteristics. • Apply basic data preprocessing techniques such as handling missing values and dealing with outliers.	1, 3, 4
• Utilize data visualization tools and techniques to effectively communicate insights from data. • Perform basic hypothesis testing and understand concepts like p-values, significance levels, and null hypotheses. • Gain hands-on experience with a programming language like Python or R for data analysis tasks. • Apply basic machine learning concepts such as classification and regression to solve predictive analytics problems.	2, 4, 5
• Interpret and communicate the results of data analysis to both technical and non-technical audiences. • Develop a foundational understanding of data analytics tools and platforms available in the industry. • Work on practical projects that involve real-world datasets to reinforce learning and problem-solving skills. • Collaborate effectively in a team environment on data analysis projects.	3, 4, 5

COURSE TEACHING AND LEARNING ACTIVITIES			
Sl.No.	**Week**	**Topic**	**Mode of Delivery**
1.	3rd week of July 2023 **Class – 1st week** **(3 Contact Hours)**	**Multiple Regression** Assumptions for General Linear Regression Model, Ordinary Least Square (OLS) Approach – measures of fit,	Lecture - Power PointPresentation
2.	**Class- 2nd week** **(3 Contact Hours)**	statistical inferences – Hypothesis testing and interval estimation- Data cleaning – Outliers and influential observations-	Lecture - Power PointPresentation
3.	**Class- 3rd week** **(3 Contact Hours)**	Dummy regressions and conjoint analysis, multi-collinearity,	Lecture - Power PointPresentation
4.	**Class- 4th week** **(3Contact Hours)**	Logistic regression- Grouped Data-Weighted Least square (WLS),	Lecture - Power PointPresentation

5.	Class- 5th week (3 Contact Hours)	Individual Data-Newton Raphson method- Error rate estimation.	Lecture - Power PointPresentation
6.	Class- 6th week (3 Contact Hours)	**Discriminant Analysis** Introduction, the Two Group problem – Variable contribution – The case of discrete - Variables	Lecture - Power PointPresentation
7.	7th week	**Cycle Test for IV Trimester / MBA scheduled**	
9.	Class- 8th week (3 Contact Hours)	The K groups problem, Error rate estimate in multiple groups, Interpretation of multiple discriminant analysis solution- step wise selection of variables	Lecture - Power PointPresentation
10.	Class – 9th week (3 Contact Hours)	The basic model, Extraction of factors – Principal factor – maximum likelihood method.	Lecture - Power PointPresentation
	Class - 10th week (3 Contact Hours)	Factor rotation – orthogonal, oblique rotations.	Lecture - Power Point Presentation
	Class – 11th week (3 Contact Hours)	Factor score, interpretations of factor analysis solutions.	Lecture - Power PointPresentation

Sl. No.	Mode of Assessment	Week / Date	Remarks	% Weightage
1.	Cycle Test	7th week -2023	Class room evaluation – Individual assessment	25%
2.	Seminar	8th week to 12th week – 2023	Classroom assessment - Group	10%
3.	Assignment, Tutorial	9th week –2023	Classroom assessment - Individual	15%
4	End Semester Exam	12th week		50%

Note:
1. Attending all the assessments (Assessment 1 to 4) is MANDATORY for every student.
2. Every student is expected to score minimum 40% to pass the course. Otherwise the student would be declared fail and 'F' grade will be awarded.

COURSE EXIT SURVEY

- Feedbacks are collected before final examination through MIS or any other standard format followed by the institute
- Students, through their Class Representatives, may give their feedback at any time to the course faculty which will be duly addressed.

The students may also give their feedback during Class Committee Meeting.

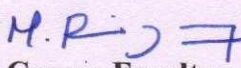**ATTENDANCE POLICY** (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.

- A maximum of 10% shall be allowed under On Duty (OD) category.

- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

ACADEMIC DISHONESTY & PLAGIARISM

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.

- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.

- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.

- The above policy against academic dishonesty shall be applicable for all the programmes.

ADDITIONAL INFORMATION, IF ANY

FOR APPROVAL

Course Faculty **Dr. M. Punniyamoorthy**	**CC- Chairperson**	**HOD**