

# Gujarat Technological University

## MAM (Masters in Applied Management)– Dual degree Programme

### Semester I

**Subject Code:4110503**

**Subject Name: Business Mathematics**

#### 1. Course Objective:

1. To understand the concepts of ratio , proportion and percentage.
2. To understand the concept and application of profit and loss in business.
3. To use the concept of EMI.
4. To understand the concept of stock exchange and to calculate Dividend.
5. To understand applications of matrices in business.
6. To understand useful functions in business and economics.

**2. Course Duration: The course duration is of 50 sessions of 60 minutes each, i.e. 50 hours.**

#### 3. Course Contents:

Module No:	Module Content	No. of Sessions	Marks (70 external exam)
I	Ratio, Proportion and Percentage : Ratio- Definition, Continued Ratio, Inverse Ratio : Proportion, Continued Proportion, Direct Proportion, Inverse Proportion : Variation, Inverse Variation, Joint Variation :Percentage - Meaning and Computations of Percentages.	10	14
II	Profit And Loss : Terms and Formulae: Trade discount, Cash discount, Problems involving cost price, Selling Price, Trade discount and Cash Discount. :Introduction to Commission and brokerage, Problems on Commission and brokerage.	10	14
III	Interest : Simple Interest :Compound interest ( reducing balance & Flat Interest rate of interest): Equated Monthly Installments(EMI) Problems	10	14
IV	Matrices And Determinants (upto order 3 only ) : Multivariable data :Definition of a Matrix, Types of Matrices, Algebra of Matrices, Determinants, Adjoint of a Matrix, Inverse of a Matrix via adjoint Matrix : Homogeneous System of Linear equations : Condition for Uniqueness for the homogeneous system, Solution of Non-homogeneous System of	10	14

	Linear equations (not more than three variables). Condition for existence and uniqueness of solution, Solution using inverse of the coefficient matrix,		
V	Functions : To identify and define the relationships that exist among business variables : Introduction, Definition of function, constants, variables, continuous real variable : Domain or interval : Types of functions, one valued function, Explicit function, Algebraic functions: Polynomial functions, Absolute value function, Inverse function, Rational and Irrational function, Monotone function, Even and odd function,	10	14

#### 4. Teaching Methods:

The course will use the following pedagogical tools:

- (a) Lectures
- (b) Problem Solving.
- (c) Assignments

#### 5. Evaluation:

The evaluation of participants will be on continuous basis comprising of the following Elements:

A	Projects/ Assignments/ Quizzes/ Class participation etc	Weightage 20% (Internal Assessment- 20 Marks)
B	Two Internal Examinations	Weightage 10 % (Internal Assessment-10 Marks)
C	End –Semester Examination	Weightage 70% (External Assessment-70 Marks)

#### 6. Reference Books:

- Mathematics for Business – Raghava Chary
- Business Mathematics by V. K. Kapoor - Sultan chand& sons, Delhi
- Business Mathematics by Bari - New Literature publishing company, Mumbai

#### 7. Session Plan:

Session Nos.	Topics to be covered
1-2	Introduction to Business Mathematics Human Skills,
3-4	Ratio, Proportion and Percentage
5-6	Ratio- Definition, Continued Ratio, Inverse Ratio
7-8	Proportion, Continued Proportion, Direct Proportion, Inverse Proportion

9-10	Variation, Inverse Variation, Joint Variation : Percentage - Meaning and Computations of Percentages
11-13	Profit And Loss : Terms and Formulae : Problems
14-117	Trade discount, Cash discount, Problems involving cost price, Selling Price, Trade discount and Cash Discount
18-20	Introduction to Commission and brokerage, Problems on Commission and brokerage.
21-23	Interest : Simple Interest
24-26	Compound interest ( reducing balance & Flat Interest rate of interest)
27-30	Equated Monthly Installments(EMI) Problems
31-32	Multivariable data: Definition of a Matrix, Types of Matrices, Algebra of Matrices, Determinants, Adjoint of a Matrix, Inverse of a Matrix via adjoint Matrix
33-34	Homogeneous System of Linear equations
35-36	Matrices And Determinants (upto order 3 only )
37-40	Condition for Uniqueness for the homogeneous system, Solution of Non-homogeneous System of Linear equations (not more than three variables). Condition for existence and uniqueness of solution, Solution using inverse of the coefficient matrix,
41-43	Functions : To identify and define the relationships that exist among business variables :Introduction, Definition of function, constants, variables, continuous real variable :
44-46	Types of functions, one valued function, Explicit function, Algebraic functions
47-50	Polynomial functions, Absolute value function, Inverse function, Rational and Irrational function, Monotone function, Even and odd function,