



Tolani College of Commerce (Autonomous)

तोलानी वाणिज्य महाविद्यालय (स्वायत्त)

Knowledge is Supreme

(Sponsored and Managed by Tolani Education Society, Mumbai - 400 021)
(Recognised Linguistic (Sindhi) Minority Institution, Affiliated to University of Mumbai)

Re-Accredited (3rd Cycle) by N.A.A.C. with 'A' Grade (CGPA 3.03)

150-151, SHER-E-PUNJAB SOCIETY,
GURU GOBIND SINGH ROAD,
ANDHERI (EAST), MUMBAI-400 093.

Tel. : (022) 6153 5455
Fax : (022) 6153 5456
E-mail : tcc@tolani.edu
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Name of the Department/ Programme	Department of Business Mathematics 1) Bachelor of Commerce Programme						
Name of the Course	Open Elective Courses (OE): Business Mathematics – II						
Semester	II						
Number of Credits	2						
Number of lectures	30						
Lecture Duration	60 minutes per lecture						
Distribution of marks	<table border="1"><tr><td>CE</td><td>20</td><td>SEE</td><td>30</td><td>Total</td><td>50</td></tr></table>	CE	20	SEE	30	Total	50
CE	20	SEE	30	Total	50		

Learning Objectives of the Course

Sr. No	Objectives
1	To understand the basic concepts of derivatives, correlation, regression
2	To learn the definitions of the terms used Index Numbers
3	To understand the applications of derivatives in Commerce and Economics, correlation, regression and time series

Learning Outcomes of the Course

Sr. No	Outcomes
1	Understand the foundations of mathematics and statistics
2	Be able to perform basic computations in higher mathematics.
3	Develop and maintain problem-solving skills



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Module Number	Syllabus in Details	Number of Lectures
I	Derivatives and their applications: Derivative as rate measure, Derivative of x^n , e^x , a^x , $\log x$, Rules of Derivatives, Scalar multiplication, sum, difference, product, quotient (statements only), Simple problems, Second order derivatives. Applications: Marginal Cost, Marginal Revenue, Elasticity of demand, Maxima and minima for functions in Economics and Commerce.	10
II	Correlation: Meaning, types of correlation, determination of correlation, scatter diagram, Karl Pearson's method of correlation coefficient (excluding Bivariate Frequency Distribution Table) and Spearman's Rank Correlation Coefficient Regression: Meaning, Concept of Regression Equations, Slope of Regression Line and its interpretation of Regression Coefficients (excluding Bivariate Frequency Distribution Table) Relationship Between Coefficient of Correlation and Regression Coefficients, Finding the Equations of Regression Lines by Method of Least Squares.	10
III	Time Series Concepts and Components of Time Series Representation of Trend by Freehand Curve Method, Estimation of Trend using Moving Average Method and Least Square Method (Linear Trend only), Estimation of Seasonal Component using Simple Arithmetic Mean for Additive Model only (For Trend Free Data only) Concept of Forecasting using Least Square Method. Index Numbers: Concept and usage of Index Numbers, Types of Index Numbers, Aggregate And Relative Index Numbers, Laspeyer's, Paasche's, Dorbisch and Bowley's, Marshall and Edgeworth's and Fisher's Ideal Index Numbers, Cost of Living Index Numbers, Concept of Real Income	10



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Reference Books:

- 2) Business Mathematics By D. C. Sancheti and V. K. Kapoor, Sultan Chand & Sons,
- 3) Mathematics for Business Economics: By J. D. Gupta, P. K. Gupta and Man Mohan, Tata Mc- Graw Hill Publishing Co. Ltd
- 4) Quantitative Methods-Part-I By S. Saha and S. Mukerji, New Central Book Agency,
- 5) Statistical Methods - S.G. Gupta
- 6) Statistics for Management - Lovin R. Rubin D.S.
- 7) Business Mathematics & Statistics: B Aggarwal, Ane Book Pvt. Limited

Scheme of Evaluation Pattern

Table 1A: Scheme of Continuous Evaluation (CE)

Scheme of Evaluation Pattern

Sub-components	Maximum Marks	Conditions for passing
1) Written assignment	10	a) A learner must be present for each of the sub-components. b) The subtotal of both sub-components must be minimum 08 marks
2) MCQ Based Test	10	
Total	20	



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**Table 1B: Scheme of Semester End Examination (SEE) Evaluation
Question Paper Pattern for Semester End Examination (SEE)**

Maximum Marks:30

Minimum Marks to Pass:12

Duration:1 Hour

Note: All questions are compulsory. Each question has an internal choice.

Question Number	Nature of Questions	Maximum Marks	
1)	Attempt any 2 of the following: (From Module I)	10	
	a)		
	b)		
	c)		
2)	Attempt any 2 of the following: (From Module II)	10	
	a)		
	b)		
	c)		
3)	Attempt any 2 of the following: (From Module III)	10	
	a)		
	b)		
	c)		