

PunyashlokAhilyadeviHolkarSolapurUniversity,Solapur



Name of the Faculty: Commerce and Management

CHOICE BASED CREDIT SYSTEM

Syllabus: Business Mathematics Paper I & II (GE- I)

Name of the Course: B.Com.I (Sem-I & II)

(Syllabus to be implemented from w.e.f. June 2022)

Medium of instruction: English

Structure of the course paper:

Course	Title	Theory Lectures Per Week	Total Periods of Teaching in a Semester	Duration Of University Exam	For University Exam		For Internal Exam		Total Marks	
					Max Marks	Min Marks	Max Marks	Min Marks	Max Marks	Min Marks
B.Com.I Sem-I and Sem-II	Business Mathematics	04	60 (15 Weeks)	1½ Hrs	40	16	10	4	50	20

Equivalent Subject for Old Syllabus

Semester	Name of the Old Paper	Name of the New Paper
I	Business Mathematics	Business Mathematics
II	Business Mathematics	Business Mathematics

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

STRUCTURE OF B. Com. PROGRAMME UNDER CBCS PATTERN:

June 2022 under the Faculty of Commerce & Management

Implemented from the Academic year 2022-23

STRUCTURE OF B Com PROGRAMME UNDER CBCS PATTERN: June 2022												
Under Faculty of Commerce & Management												
Semester I							Semester II					
	Subject Code	Subjects	Credits	UA	CA	Total Marks	Subject Code	Subjects	Credits	UA	CA	Total Marks
1	CC 1	Financial Accounting Paper-I	4.00	40	10	50	CC 1	Financial Accounting Paper-II	4.00	40	10	50
2	CC 2	Business Micro Economics Paper-I	4.00	40	10	50	CC 2	Business Micro Economics Paper-II	4.00	40	10	50
3	GE1	Business Mathematics/Insurance/Commercial Geography Paper -I	4.00	40	10	50	GE1	Business Mathematics /Insurance/Commercial Geography-Paper -II	4.00	40	10	50
4	GE2	Principles Of Marketing/Hindi /Marathi/Urdu/Kannada/ NCC Studies Paper -I	4.00	40	10	50	GE2	Principles Of Marketing/Hindi /Marathi/Urdu/Kannada/NCC Studies - Paper -II	4.00	40	10	50
5	AECC1	English Communication -Paper -I	4.00	40	10	50	AECC1	English Communication - Paper -II	4.00	40	10	50
6	AECC 2	Principles Of Business Management -Paper -I	4.00	40	10	50	AECC 2	Principles Of Business Management -Paper -II	4.00	40	10	50
							AECC 3	Democracy, Elections and Good Governance	NC	40	10	50
			24			300			24			300

CC: Core Course: All courses (subjects) are compulsory, GE: Generic Elective.
 AECC: Ability Enhancement Compulsory Course: All courses (subjects) are compulsory.
 AECC 3: Non-Credit Self Study Course For Sem II: Democracy, Elections and Good Governance

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

B.Com.-I(Semester- I)Syllabus

Business Mathematics

(w. e.f. June2022)

Course Out comes/Objectives

- CO1 **FamiliarizewiththebasicconceptsofBusinessMathematicsandahandsonp
racticeofthevarious mathematicaltoolsandtechniques.**
- CO2 **Boostquantitativethinkinganddevelopnumericalabilities.**
- CO3 **Acquaintingstudentswiththeemergingissuesinbusiness,tradeandco
mmerce regardinganalyzingbusinessfacts.**
- CO4 **Enablethemtoimprovetheirlogicalreasoningabilityandinterpreta-
tionofvariousbusinessresults.**
- CO5 **DescribetheconceptofAnnuityanditstypes.**
- CO6 **Introduce determinants as well as matrices and study
theirapplicationsinreal life.**
- CO7 **UnderstandLinear Programming Program and use them to
takeeffectivedecisions.**
- CO8 **Get the knowledge of preliminaries of ratio,
ProportionandProgression.**

Unit No.	Topic	Subtopics	Periods
1	Mathematics of Finance	Interest concept and Principal, rate of interest – nominal, effective and continuous – their interrelationships, period, Maturity value, Simple Interest, Compound interest, Present value, simple examples. Time value of money, Compounding and discounting of a sum using different types of rates. Annuity, Types of annuities- Immediate annuity, annuity due, perpetuity. Present value of annuity, Equated Monthly Installments (EMI) using reducing and flat interest system. Simple problems on immediate Annuity and annuity due with $n \leq 4$.	15

2	Determinants and Matrices	Definition of second & Third order Determinant, calculation of values of determinants up to third order, Solution of system of linear equations by Cramer's rule, Properties of determinants (without proof). Simple examples. Definition of a Matrix, , Algebra of matrices, Equality of Matrices, Transpose of matrix, Adjoint of matrix, Inverse of matrix (by Adjoint method), Solution of a system of linear equations having unique solution and involving not more than three variables (by Adjoint Method). Special types of matrices, Applications of matrices to business and economic problems	15
3	Linear Programming Problem (L.P.P.)	Mathematical formulation of L.P.P. upto 2 variables, Graphical method of solution of L.P.P., Commercial examples. Cases having no solution, Multiple solution, Unbounded solution.	15
4	Ratio, Proportion, Logarithms, Progression	Ratio, Proportion, Rule of three, Rule of five. Definition of A.P. & G.P., To find T_n & S_n , Simple practical commercial problems.	15

Note

1. Use of soundless calculators are allowed.
2. Graph papers are allowed to use.
3. More stress should be given on commercial

applications Reference books:

- Mathematics for Business Studies-J.K.Thukral, Mayur Publications
- Business Mathematics, J.K.Singh Himalaya Publishing House.
- Business Mathematics-
Veena G.R. (New age international Publishers, New Delhi).
- Essence of Business Mathematics—
R.K.Rajput, Discovery Publication House, New Delhi
- Business Mathematics-Kapoor V.K., Sancheti D.C.
- Business Mathematics -Dr.Amarnath Dikshit & Dr.Jinendra Kumar Jain.
- Business Mathematics -V.K.Kapoor (Sultan Chand & sons, Delhi.)
- Business Mathematics-Bari (New Literature publishing company, Mumbai.)
- Commercial Arithmetic-
P.S.Chiplunkar and C.G.Kulkarni (Narendra Prakashan.)
- Mathematics in Commerce and Economics -Qazi Zameerudding and V. K.Khanna,
- Mathematics for Business and Social Sciences. Mizrahi and John Sullivan. Wiley and Sons.
- Applied Mathematics. Budnick, P. McGraw Hill Publishing Co.
- Business Mathematics and Statistics, N. D. Vohra, McGraw Hill Education (India) Pvt Ltd.
- Elements of Calculus-Bhagvat and Pawate

- **BusinessMathematics—G.V.Kumbhojkar**

Punyashlok Ahilyadevi Holkar Solapur University, Solapur

B.Com.-
I (Semester I) Syllabus Business
Mathematics
(w. e.f. Winter 2022)

- CO1 **Understand the terms like constant, variable, interval, function.**
- CO2 **Acquainting students with the functions related to business & economics.**
- CO3 **Critically study existence of mathematical relation between two variables regarding to problems of business using Newton's formula.**
- CO4 **Enlighten abilities to apply the mathematical concepts to real life problems in Commerce, Economics, Management and Social sciences.**
- CO5 **Understand the mathematical tools in Decision making at Strategic & Tactical Level.**

Syllabus

Unit No.	Topic	Subtopics	Periods
1	Function of Real Variable	Constant, Variable, Interval, Function, Illustrative examples on value of a function. Functions related to business & economics, Cost Function, Demand Function, Revenue function, Profit function, Break-even point. Determination of form of a function using Newton's Interpolation formula for unequal interval. Standard functions, Definition of Even, Odd, Linear, Quadratic, Exponential, Logarithmic, Inverse, Explicit, Implicit, Parametric, Composite, Increasing & Decreasing functions. Graph of a function.	15
2	Limit of a function	Concept of limit, Theorems on limits (without proof), Simple examples on evaluation of limits – Direct type, Factorization, Simplification, Rationalization, Infinity type, a^x type.	15

3	Differentiation	Definition, derivative using first Principle. Rules of Differentiation, Derivatives of simple algebraic functions. Derivative of composite, Parametric, Inverse, Exponential, Logarithmic, Implicit functions, Simple Examples.	15
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		Second Order Derivative (involving one variable)Maxima & Minima. Commercial Applications ofDerivative–Marginal Cost function, Average Cost function.Marginal Average Costfunction. Minimum AverageCost. Marginal Revenue function, MaximumRevenue,Maximum Profit,PriceElasticityofDemand.Numerical examples.	
4	Integration	Definitions, Standard forms, Integration bysubstitution, by parts, by use partial fractions.Illustrativeexamples.Definite integrals – Properties (without proof),Simple examples.Applications of integration tobusiness– DeterminationofCost,Revenue,Profit,Demand function, Consumer Surplus, ProducerSurplus,Rate ofsales.Numerical examples.	15

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- Business Mathematics and Statistics, N. D. Vohra, McGraw Hill Education (India) Pvt Ltd.
- Elements of Calculus- Bhagvat and Pawate
- Business Mathematics– G.V. Kumbhojkar

	Punyashlok Ahilyadevi Holkar Solapur University, Solapur Faculty of Commerce & Management Nature of Question Paper for CBCS Pattern B. Com. (Part-I, II & III) & B. B. A.- (Part- I, II& III)	
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Time:-2 hrs.

Total Marks –40

Q. 1	Multiple Choice Questions (One Mark Each)	08
	1) ----- (a) (b) (c) (d) 2) 3) 4) 5) 6) 7) 8)	
Q.2	Explain the following concepts.	04
	1) 2)	
Q.3	Write Short note/Short Problem/Short Answer (Any two)	06
	1) 2) 3)	
Q.4	Long Answer Question/Problem	10
	1)	
Q.5	Answer <u>any one</u> of the following. (Long Answer/Problem)	12
	1) 2)	

College Can conduct Internal Examination of 10 marks as under (Any One)

- 1) Class Assignment
- 2) Home Assignment
- 3) Tutorial
- 4) Unit Test
- 5) Seminar
- 6) PPT Presentation
- 7) Project Report