

PART A: Introduction			
Program: Certificate		Class: BCA	Year: I Year
Session: 2021-22			
1.	Course Code	S1-BCAC19	
2.	Course Title	Computational Mathematics	
3.	Course Type (Core Course/Elective/Generic Elective/ Vocational)	Elective	
4.	Pre-Requisite (if any)	Students must have basic analytical aptitude.	
5.	Course Learning Outcomes (CLO)	<p>On successful completion of the course the students shall be able to:</p> <ol style="list-style-type: none"> 1. Implement trigonometric solutions for measurements in real world scenarios 2. Implement matrices and simultaneous equations to solve complex problems 3. Use statistical tools efficiently 4. Use Mathematical Logic and predicate calculus for solving problems 5. Apply the concepts of set theory for finding solutions to set related problems 	
6.	Credit Value	Theory - 6 Credits	
7.	Total Marks	Max. Marks: 25+75	Min. Passing Marks: 33
PART B: Content of the Course			
No. of Lectures (in hours per week): 3 lectures Per week			
Total No. of Lectures: 90 Hrs.			
Unit	Topics		No. of Lectures
I	Trigonometry: Angles & their Measurement, Values of Trigonometric Ratios, Height and Distances. Elementary Matrices and types of matrices.		18
II	Equations: Simultaneous linear equations, Methods of Solving Simultaneous equations, Quadratic equations.		18
III	Statistics: Frequency Distribution, Measure of Central Tendency: Mean, Mode, Median, Measures of variation: Mean deviation Standard Deviation,		18
IV	Mathematical Logic: Statements and notations, Connectives: Negation, Conjunction, And Disjunction. Statement formulas and truth tables. Tautologies, Tautological implications, contradiction contingency		18
V	Set Theory: Basic concepts of set theory, notation, inclusion and equality of sets, the power set, types of sets, operations on set, Venn diagrams.		18

PART C: Learning Resources

Textbooks, Reference Books, Other Resources

Suggested Readings**Text Books:**

1. Business Mathematics S.M.SHUKLA, Sahitya Bhawan Publications.
2. Business Mathematics D C Agrawal, Sree Sai Prakashan.
3. S. K. Sarkar: A Text Book of Discrete Mathematics, S Chand, 2005.
4. A text book of Discrete Mathematics,9/E ,Sarkar S.K, S.Chand New Delhi,2016
5. मध्य प्रदेश हिन्दी ग्रंथ अकादमी से प्रकाशित विषय से संबंधित पुस्तकें।

Reference Books:

1. Fundamental of Statistics ELHANCE & ELHANCE,Kitab Mahal Publication.
2. Mathematical Statistics,8/E RAY and .SHARMA,Ram Prasad and Sons.
3. Business Mathematics, J,K Singh, Himalaya Publishing House 2017
4. Business Mathematics, 9/E, Sancheti and Kapoor , Sultan Chand & Sons ,2014
5. Discrete Mathematics structures with application to computer science”, Indian Edition, J. P. Tremblay, R Manohar, McGraw Hill Education 2017
6. “Discrete Mathematical”,2/E, J.K Sharma, Macmillan publication, 2005

Suggestive digital platform web links<https://freevideolectures.com/university/iit-roorkee/><https://www.highereducation.mp.gov.in/?page=xhziQmpZwkylQo2b%2Fy5G7w%3D%3D><https://epathshala.ncert.org.in/>**Suggested equivalent online courses**

S.No.	Course Title	Duration	Provider
1	Algebra and Trigonometry	15 weeks	Swayam
2	Mathematics	8 weeks	Mitopen Courseware

Related Online Contents |MOOC, SWAYAM, NPTEL, Websites etc.**PART D: Assessment and Evaluation**

Internal Assessment : Continuous Comprehensive Evaluation (CCE) : 25 Marks
Shall be based on allotted assignments and Class Tests. The marks shall be as follows:

External Assessment: University Exam (UE) :75 Marks
Time :02.00 Hours

Assessment and presentation of assignment	4 Marks	Section (A) : Three Very Short Questions (50 Words Each) OR Nine MCQ Questions	03 x 03 = 09 Marks OR 09 x 01 = 9 Marks
Class Test I (Objective Questions)	5 Marks		
Class Test II (Descriptive Questions)	8 Marks	Section (B) : Four Short Questions (200 Words Each)	04 x 09 = 36 Marks
Class Test III (Objective and Descriptive Questions)	8 Marks	Section (C): Two Long Questions (500 Words Each)	02 x 15 = 30 Marks
Total	25 Marks	Total	75 Marks

Any remarks/suggestions:

