COURSE TITLE	**BUSINESS MATHEMATICS IN SERVICE INDUSTRIES**
COURSE CODE	**04AH0206**
COURSE CREDITS	**2**

Course Outcomes: After completion of this course, student will be able to:

1. Apply the concepts of Permutations by utilizing the appropriate formulas for calculating permutations of different and similar items, as well as in restricted permutation scenarios.
2. Demonstrate proficiency in Combinations by employing the combination formulas to determine combinations of items taken some or all at a time, and solving problems involving restricted combinations.
3. Analyse and solve Arithmetic Progression problems, including determining the nth term and sum of n terms in arithmetic sequences, with a clear understanding of the underlying principles.
4. Calculate Geometric Progressions by identifying the elements of geometric sequences, understanding geometric progression formulas, and recognizing the relationship between terms in the sequence.
5. Compare and contrast Arithmetic Mean (AM) and Geometric Mean (GM) with practical examples, showcasing an understanding of how these means relate to arithmetic and geometric progressions in mathematical sequences.

Pre-requisite of course:NONE

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
2	0	0	50	30	20	0	0

Contents : Unit	Topics	Contact Hours
1	**Permutations and Combinations** Permutations: Exploring the concept of permutations, its meaning, formula, and real-world applications., Differentiating Permutations of Various Items and Similar Items: Understanding how permutations differ when items are distinct or identical., Restricted Permutations: Studying permutations under specific constraints or restrictions., Combinations: Understanding the concept of combinations, its meaning, formula, and practical usage., Combinations of Items taken Some or All at a Time: Exploring combinations when selecting items in subsets or combinations with repetition., Example-based Practice on Permutations and Combinations: Solving example problems to reinforce understanding and application of permutations and combinations concepts.	15

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Contents : Unit	Topics	Contact Hours
2	**Arithmetic and Geometric Progression** Sequence and Series Introduction: Understanding sequences and series as fundamental concepts in mathematics., Arithmetic Progression: Defining arithmetic progression, nth term, sum of n terms with proof, and applications., Geometric Progression Basics and Formulas: Exploring the basics of geometric progression and key formulas associated with it., Understanding the Relationship between Arithmetic Mean (AM) and Geometric Mean (GM): Studying the connection between arithmetic mean and geometric mean in sequences., Practical Examples Demonstrating Arithmetic and Geometric Progressions: Solving practical problems to illustrate arithmetic and geometric progressions in real-life scenarios.	15
Total Hours		**30**

Textbook :

1 Business Mathematics and Statistics, Andre Francis, Cengage Learning EMEA, 2016

2 Business Statistics , Gupta, Sultan Chand & Sons, 2019

References:

1 Business Mathematics, Business Mathematics, A.P. Verma, Asian Books, 2011

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
20.00	30.00	25.00	15.00	10.00	0.00

Instructional Method:

1 THEORY

Supplementary Resources:

1 https://www.slideshare.net/slideshow/basic-business-math-study-notes-v01/29409861

2 https://mpbou.edu.in/uploads/files/BUSINESS_MATHS.pdf

3 https://icmai.in/upload/Students/Syllabus2016/Foundation/Paper-4-16092021.pdf

4 https://www.teachmint.com/tfile/studymaterial/b-com/businessmathematics/businessmathematicspdf/2b5878a8-80e2-4a4d-b705-b255d5f01cd5

5 https://edurev.in/t/123341/-%28Class-11%29

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Supplementary Resources:

6 https://www.scribd.com/document/556326713/BUSINESS-MATHEMATICS-NOTES

7 https://www.khanacademy.org/math/statistics-probability/counting-permutations-and-combinations?utm_source

8 https://www.newcastle.edu.au/__data/assets/pdf_file/0004/819139/Permutations-and-Combinations.pdf?utm_source

9 https://www.khanacademy.org/math/statistics-probability/counting-permutations-and-combinations?utm_sourc

10 https://www.ncert.nic.in/pdf/publication/exemplarproblem/classXI/mathematics/keep207.pdf?utm_source=chatgpt.com