SHARDA UNIVERSITY
Beyond Boundaries
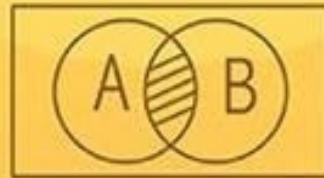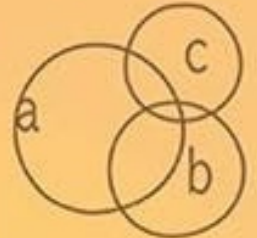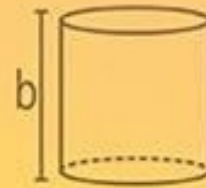
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SHARDA SCHOOL OF
ENGINEERING &
SCIENCES
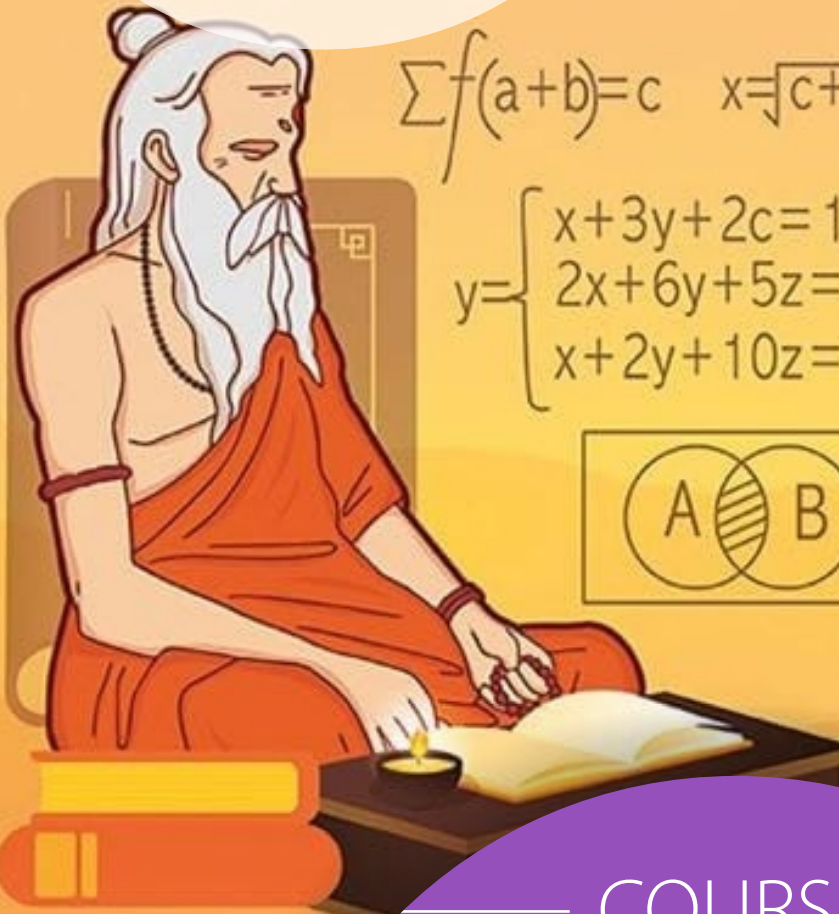
— COURSE —

Vedic Mathematics: Simplifying Complex Calculation (NV34017)

VALUE ADDED
COURSE BROCHURE-30 HRS
2025-26

ABOUT THE UNIVERSITY

Sharda University is a leading Educational institution based out of Greater Noida, Delhi NCR. A venture of the renowned Sharda Group of Institutions (SGI), The University has established itself as a high quality education provider with prime focus on holistic learning and imbibing competitive abilities in students.

The University is approved by UGC and prides itself in being the only multi-discipline campus in the NCR, spread over 63 acres and equipped with world class facilities.

Sharda University promises to become one of the India's leading universities with an acknowledged reputation for excellence in research and teaching. With its outstanding faculty, world class teaching standards, and innovative academic programs, Sharda intends to set a new benchmark in the Indian education system.

SSES combines the strengths of engineering and basic sciences to create a dynamic environment that fosters innovation and technical excellence along with a sense of social responsibility. With high-ranked programmes in engineering and robust offerings in pure and applied sciences, the school provides a comprehensive and future-ready education. The school has a legacy of excellence in the fields of Physics, Chemistry, Biochemistry, Mathematics, Data Science and Environmental Sciences.

ABOUT SCHOOL

The Sharda School of Engineering and Sciences (SSES) provides a vibrant academic ecosystem that integrates engineering and scientific education with real-world relevance, research excellence and interdisciplinary learning. It serves as a platform where students are empowered to explore, innovate and build impactful careers across a wide spectrum of disciplines.

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The academic programmes at SSES span undergraduate, postgraduate and doctoral levels and are aligned with the latest technology and scientific advancements in alliance with the NEP 2020. The school is deeply involved in academic research, industry collaboration, and consultancy projects—providing students with an exposure to both theoretical knowledge and practical applications.

ABOUT COURSE

"Vedic Mathematics" is a system of reasoning and mathematical working based on ancient Indian teachings called Veda. Vedic Mathematics forms part of Jyotish Shastra which is one of the six parts of Vedangas. It is a magical tool to reduce scratch work and finger counting, increases concentration and reducing silly mistakes. Vedic Mathematics introduces the wonderful applications to Arithmetical computations, theory of numbers, special multiplications, squaring, square root and Division.

Course Schedule

Week	Content
1.	Contribution of Indian Mathematicians
2.	Introduction -Fast methods for calculation
3.	Vedic Maths using sutras-1
4.	Vedic Maths using sutras-2
5.	Square and cube root using sutras

RESOURCE PERSON

Faculty Name: Dr. Nidhi Sahni
Department: Department of Mathematics and Data Science, SSES Sharda University

Dr. Nidhi Sahni did her M. Sc., Ph.D in mathematics from DDU Gorakhpur University Gorakhpur. Her area of research is special functions and she has worked as a junior research fellow in a major research project during Ph.D. Dr. Nidhi Sahni is associated with Sharda University from September 2014 and she has more than 15 years of teaching experience.

School: SSBSR **Programme: UG** **Branch: B.Sc. Mathematics, B.Sc. Data Science & Analytics**		**Batch : 2025-28** **Current Academic Year: 2025-26** **Semester : II**

1. Course Code	NV34017
2. Course Title	Vedic Mathematics: Simplifying Complex Calculation
3. Credits	Audit Course
4. Contact Hours	30 Hours
Course Type	Value added course
5. Course Objective	**1.** To introduce the fundamental concepts of Vedic Mathematics. **2.** To increases concentration and helps in reducing silly mistakes. **3.** To appreciate the mathematical advancements of Ancient India.
6. Course Outcomes	CO1: The student will be able to appreciate ancient Indian Mathematics and its contribution to the world. CO2: The student will be able to understand the need of conceptual knowledge over procedural processes. CO3: The student will be able to know how to use sutras in multiplication. CO4: The student will be able to develop conceptual knowledge of mathematical concepts of division. CO5: The student will be able to develop conceptual knowledge of mathematical concepts of squaring. CO6: The student will be able to know how to find square of a number using reverse squaring method and general method of square root.
7. Course Description	This is an introductory course that provides an in-depth understanding of Vedic Mathematics. This course introduces the wonderful applications of Vedic Mathematics to Arithmetical computations, theory of numbers, special multiplications, squaring, square root and division.

8. Outline syllabus			CO Mapping
Unit 1	**Contribution of Indian Mathematicians**		
A	Introduction of Bharti Krishna Tirtha, Brahmagupta		CO1
B	Srinivasa Ramanujan, Varahmihir, Aryabhata I, II		CO1
C	Neelkanth Somayya, Bhaskara I, II, Lilavati		CO1
Unit 2	**Introduction -Fast methods for calculation**		
A	Multiply 2 digit, 3 digit , 4 digit & 5 digit number by 11		CO2
B	Multiply 2 digit, 3 digit , 4 digit & 5 digit number by 111		CO2
C	Square of any 2 digit & 3 digit number ending with 5		CO2
D	Special multiplication using vedic maths(unit digit sum 10)		CO2
Unit 3	**Vedic Maths using sutras-1**		
A	Multiply with 9999… series		CO3
B	Smart way to multiply by 5,25,125		CO3
C	Nikhilam Sutra- multiplication method as per opted base		CO3
D	Tiryak Sutra- multiplication on particular pattern		CO3
E	Duplex method- (Dvandva yoga)- for squaring of numbers		CO3
F	Anurupya Sutra- For cube		CO3
Unit 4	**Vedic Maths using sutras-2**		
A	Dharjanka Sutra- Division Trick – without opted base		CO4
B	Mihhlm Sutra – Divison using opted base		CO4
C	Division Trick – without opted base		CO4
Unit 5	**Square and cube root using sutras**		
A	Simple equation		CO5
B	Simultaneous equation – Pravarthi sutra		CO5,CO6
C	Square root of exact square & cube root		CO5,CO6
Mode of Examination	Assignment/Quiz/Viva		
Text Book	**1.** Dr. Anil Kumar Teotia Fundamentals and Applications of Vedic Mathematics, Published by SCERT New Delhi, 2014.		
Other Reference	**1.** Vedic Mathematics Made easy by Dhaval Bhatia		