

Value Addition Course

Vedic Mathematics - IV

Course Title and Code	Credits	Credit Distribution of the Course			Eligibility Criteria	Prerequisite of the Course
		Lecture	Tutorial	Practical/ Practice		
Vedic Mathematics- IV	02	1	0	1	Pass in Class 12th	Vedic Mathematics-III

Course Objectives:

- Foster the love for mathematics by creating a positive attitude through Vedic and Ancient Indian Mathematics
- Enhance conceptual as well as reduce its fear through Vedic Mathematics
- Understand application of triangular array of numbers with *Meru Prastar*
- To become computational proficiency in differential and integral calculus
- Appreciate the rigour in mathematics conceptual understanding that existing in ancient India

Learning Outcomes:

- Improved critical as well as logical thinking
- Familiarity with the mathematical procedures of Pingala's *Meru Prastar*
- Ability to perform differentiation and integration of expressions faster with ease.
- Appreciate the Mathematical advancements of Ancient India.

Syllabus of Vedic Mathematics - IV

Unit I: Contribution of Indian Mathematicians	Sessions/Lectures
• Pingala • Mahavira • Narayan Pandit • Jyesthadeva • Parmeshvaran • Madhavan	3
Unit II: Wonder World of Indian Mathematics- <i>Meru Prastar</i>	
• Pingal's binary number system, • Different types of <i>Meru Prastar</i> (including Pascal triangle) • Applications of <i>Meru Prastar</i>	4
Unit III: Lightening Complex numbers	

• Introduction of Complex number • Baudhayan form of Complex • Addition & Subtraction of Complex Number • Multiplication of Complex numbers	4
Unit IV: Enlighten Calculus	
• Introduction to differentiation • Application of derivatives • Introduction to Integration • Application of Integration	4

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical/ Practice Component (15 sessions of 2 hours each= 30 hours)

The students are expected to demonstrate the application of Vedic Maths: *Sutra* and *Upsutra*

- Conduct workshops under the supervision of the course teacher to spread awareness on the utility of Vedic Mathematics.
- Students may share their experience with the class teacher in the form of audio-video presentations of 15 minutes.
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Vedic Mathematics, Swami Bharati Krishna Trithaji, *Motilal Banarsidas, New Delhi.*
- The Power of Vedic Mathematics with Trigonometry, *Atul Gupta, Jaico Publishing house.*
- Studies in Indian Mathematics and Astronomy, Aditya Kolachana, K. Mahesh, K. Ramasubramanian, *Springer, Singapore*
- Elements of Vedic Mathematics, Udayan S. Patankar, Sunil M. Patankar, TTU Press.
- Vedic Mathematics For All Ages, Vandana Singhal, *Motilal Banarsidas Publishers.*
- Vedic Geometry Course, S. K. Kapoor, *Lotus Press*

Suggested Readings

- A Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, *Wiley Eastern Limited, New Delhi*
- Essential of Vedic Mathematics, Rajesh Kumar Thakur, *Rupa Publications, New Delhi*
- Learning Vedic Mathematics, S. K. Kapoor, *Lotus Press Publications*
- Vedic Mathematics Made Easy, Dahaval Bathia, *Jaico Publishing, New Delhi*

Assessment Method

Subject to directions from the Examination Branch/University of Delhi from time to time
