Value Addition Course
Vedic Mathematics - I

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

Course Objectives:

- Foster love for maths and remove its fear through Vedic Mathematics
- Enhance computation skills in students through Vedic Mathematics
- Develop logical and analytical thinking
- Promote joyful learning of mathematics
- Discuss the rich heritage of mathematical temper of Ancient India

Learning Outcomes:

- Overcome the fear of maths
- Improved critical thinking
- Familiarity with the mathematical underpinnings and techniques
- Ability to do basic maths faster and with ease.
- Appreciate the Mathematical advancements of Ancient India.

Syllabus of *Vedic Mathematics - I*

Unit I: Vedic Maths**- High Speed Addition and Subtraction**	Sessions/Lectures
- Vedic Maths: History of Vedic Maths and its Features - Vedic Maths formulae: *Sutras* and *Upsutras* - Addition in Vedic Maths: Without carrying, Dot Method - Subtraction in Vedic Maths: *Nikhilam Navatashcaramam Dashatah* (All from 9 last from 10) - Fraction –Addition and Subtraction	**5**
Unit II: Vedic Math **- Miracle Multiplication and Excellent Division**	

• Multiplication in Vedic Maths: Base Method (any two numbers upto three digits) • Multiplication by *Urdhva Tiryak Sutra* • Miracle multiplication: Any three-digit number by series of 1's and 9's • Division by *Urdhva Tiryak Sutra* (Vinculum method)	4
Unit III: Vedic Maths-Lightening Squares and Rapid Cubes	
• Squares of any two-digit numbers: Base method • Square of numbers ending in 5: *Ekadhikena Purvena Sutra* • Easy square roots: *Dwandwa Yoga* (duplex) *Sutra* • Square root of 2: *Baudhayana Shulbasutra* • Cubing: *Yavadunam Sutra*	3
Unit IV: Vedic Maths-Enlighten Algebra and Geometry	
• Factoring Quadratic equation: *Anurupyena, Adyamadyenantyamantya Sutra* • Concept of *Baudhayana* (Pythagoras) Theorem • Circling a square: *Baudhayana Shulbasutra* • Concept of pi: *Baudhayana Shulbasutra* • Concept angle (θ) 0°, 30°, 45°, 60° and 90°: *Baudhayana* number	3

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 are required to visit nearby retail shops/local vendors to purchase stationery/vegetables/bread and butter and use tricks of Vedic maths of addition and subtraction to calculate the amount to pay and receive the difference.
   • 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
   • The Essential of Vedic Mathematics, Rajesh Kumar Thakur, *Rupa Publications*, New Delhi 2019.
   • Vedic Mathematics Made Easy, Dahaval Bathia, *Jaico Publishing*, New Delhi 2011
   • Vedic Mathematics: Sixteen Simple Mathematical formulae from the Vedas, Jagadguru Swami Sri Bharati Krishna Trithaji, *Motilal Banarasidas,* New Delhi 2015.
   • Learn Vedic Speed Mathematics Systematically, Chaitnaya A. Patil 2018.

Suggested Readings
- A Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, Wiley Eastern Limited, New Delhi
- Enjoy Vedic Mathematics, S M Chauthaiwale, R Kollaru, The Art of Living, Bangalore
- Magical World of Mathematics, VG Unkalkar, Vandana publishers, Bangalore

Assessment Methods*
Internal Assessment: 25%
End Semester Theory Exam: 25%
Practical: 50%
*Subject to directions from the Examination Branch/University of Delhi from time to time

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