UNIVERSITY OF DELHI

CNC-II/093/1(23)/2022-23/
Dated: 21.03.2023

N O T I F I C A T I O N

Sub: Amendment to Ordinance V

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

Value Addition Course (VACs)
Under UGCF-2022 listed under Appendix-II -A to the Ordinance V (2-A) of the Ordinances of the University
(With effect from academic year 2022-23)

The following two courses are being added under the Pool of Value Addition Courses, which are in progression of the courses (i) Vedic Mathematics-I and (ii) National Cadet Corps-I respectively :

1. **Vedic Mathematics-II**
2. **National Cadet Corps-II**

VAC :Vedic Mathematics - II

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

Course Objectives:

- Foster the love for mathematics by creating a positive attitude through Vedic and Ancient Indian Mathematics
- Help students appreciate ancient Indian Mathematics and its contribution to the world.
- Enhance computational proficiency by involving procedures in Linear and Matrix Algebra

- Improve geometrical thinking by understanding the basic tenets of geometry such as construction of line segments, angles, triangles and circles as used in Ancient India
- Develop conceptual knowledge of mathematical concepts
- Appreciate the need of conceptual knowledge over procedural processes

Learning Outcomes:

After completion of the course, students shall be able to

- think critically
- Find mathematical solution of algebraic expressions
- Solve system of linear equations and matrices faster and with ease.
- Appreciate the Mathematical advancements of Ancient India.

Syllabus of *Vedic Mathematics - II*

Unit I: Contribution of Indian Mathematicians	**Sessions/Lectures**
• Varahmihir • Brahmagupta • Srinivasa Ramanujan • Neelkanth Somayya • Bharti Krishna Tirtha	**3**
Unit II: **Easy Solution of linear equations**	
• Introduction of simple equation • Solutions of simple equations • Solutions of linear equations in two variables • Practical application of linear equations in two variables	**4**
Unit III: **High Speed Matrix Algebra**	
• Introduction and history of Matrices and Determinants • Matrices and Determinants of third order • Inverse of Matrices	**4**
Unit IV: **Vedic Geometry**	
• Different forms of straight lines • The Triangle • The Cyclic Quadrilateral, Squares, and the Circle • Geometrical constructions (such as *Altars*) • Transformation of simple shapes • Kalpa Sutras-*Srautha Sutras* and *Sulbha Sutras*	**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 through various *Sutras*

- 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 Essential of Vedic Mathematics, Rajesh Kumar Thakur, *Rupa Publications, New Delhi*
- Vedic Mathematics For All Ages, Vandana Singhal, *Motilal Banarsidas Publishers.*
- Elements of Vedic Mathematics, Udayan S. Patankar, Sunil M. Patankar, TTU Press.
- Vedic Mathematics: The Problem Solver, Ronak Bajaj, *Black Rose Publications*.
- Vedic Geometry Course, S. K. Kapoor, *Lotus Press*
- Gardner, Robert and J.F. Staal. *Altar of Fire*. Documentary. The Film Study Center at Harvard University, 1976

Suggested Readings

- A Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, *Wiley Eastern Limited, New Delhi*
- Magical World of Mathematics, VG Unkalkar, *Vandana publishers, Bangalore*
- Vedic Mathematics - Modern Research Methods, Tiwari P., *Cumpus Books International*
- Learning Vedic Mathematics, S. K. Kapoor, *Lotus Press Publications*
- Vedic Mathematics Made Easy, DahavalBathia, *Jaico Publishing, New Delhi*
- Vedic Mathematics New Horizons Advance Lessons, S. K. Kapoor, *Lotus Press*

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.