

KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

COIMBATORE – 641 029



CURRICULUM AND SCHEME OF EXAMINATIONS (CBCS)

(2022-2023 and onwards)

for the programme

DIPLOMA IN VEDIC MATHEMATICS

Offered by

DEPARTMENT OF MATHEMATICS

DIPLOMA IN VEDIC MATHEMATICS

Curriculum and Scheme of Examinations under CBCS for the candidates
Admitted from 2022-2023 and onwards

Semester	Subject Code	Title of the Paper	Instructional Hrs/Cycle	Exam Marks			Duration of Exam	Credits
				CIA	ESE	Total		
I	22DVM101	Core Paper I Vedic Arithmetic	2	50	50	100	2	3
	22DVM102	Core Paper II Vedic Algebra	2	50	50	100	2	3
II	22DVM203	Core Paper III Vedic Geometry	2	50	50	100	2	3
	22DVM2Z1	Project – Viva voce	2	50	50	100	-	3
Total			8	-	-	400	-	12

CBCS – Choice Based Credit System

CIA – Continuous Internal Assessment

ESE – End of Semester Examinations

*- Duration of Examination is scheduled for 2 Hours to enhance speedy calculation

Components of Continuous Internal Assessment (50 Marks)

Components		Marks	Total
Theory			
CIA I	75	(75+75) converted to 30	50
CIA II	75		
Problem based Assignment**		10	
Attendance		5	
Others*		5	
Project			
Review		45	50
Regularity		5	

* Class Participation, Case Studies Presentation, Field Work, Field Survey, Group Discussion, Term Paper, Workshop/Conference Participation. Presentation of Papers in Conferences, Quiz, Report/Content writing. Etc.

** Two Assignments to be given. (Each 5 marks).

BLOOM'S TAXONOMY BASED ASSESSMENT PATTERN

K1- Remembering, K2 - Understanding, K3- Applying, K4-Analyzing K5-Evaluating

Theory Examination

i) CIA I & II and ESE: 75 Marks

Knowledge Level	Section	Marks	Description	Total
K1 – K2 Q1 to 20	A (Answer all)	20 x 1 = 20	MCQ-10/ Fill ups-5/ One word-5	75**
K2 – K5 Q21 to 28	B (5 out of 8)	5 x 5= 25	Short Answers	
K2 – K5 Q29 to 33	C (3 out of 5)	3 x 10 = 30	Descriptive / Detailed	

ESE Project Viva Voce:

Knowledge Level	Section	Marks	Total
K3	Project Report	35	50
K4		Viva voce	
K5			

Programme Code: VM02		Diploma in Vedic Mathematics		
Course Code: 22DVM101		Core Paper I Vedic Arithmetic		
Batch 2022-2023	Semester I	Hours/Cycle 2	Total Hours 30	Credits 2

Course Objectives

1. To get the knowledge of ancient arithmetic calculations.
2. To Understand the concepts of Nikhilam sutras
3. To Solve the square root problems using Ekadhiken sutram

Course Outcomes (CO)

K1 to K5	CO1	Remembering the basic 16 sutras and 13 sub sutras
	CO2	Applying the Nikhilam sutras for arithmetic calculations
	CO3	Analyzing certain sutras in vedic arithmetic
	CO4	Evaluating the concept of vedic arithmetic with modern mathematics
	CO5	Exploring the Vedic sutras in arithmetic.

Syllabus

UNIT – I

History of Vedic Mathematics – salient features of Vedic Mathematics – formulae – 16 sutras, 13 sub sutras – terms and operations. High speed addition by using the concept of computing the whole and from left to right – super fast subtraction by Nikhilam sutras from basis 100,1000,10,000.

UNIT – II

Multiplication: Ekadhikenpurven sutram – Eknunenpurven sutram - vinculum sutram –Nikhilam Navtashchraman Dashtaha sutram

UNIT – III

Meaning of Ekadhiken sutram and its applications in finding squaring of numbers ending in 5 – squares of Anurupeyana sutram – squares by Yavdunam thavadunikritya vargamcha yojyet sutram – squaring by Dwandvayoga sutram – squaring numbers nearest 50 – square roots of perfect square – general method of square roots – cubes by Anurupeyana sutram.

UNIT – IV

Decimals and fractions – division by Nikhilam sutram – division of $1/19$, $1/29$ by ekadhikenpurven sutram - division by paravartya sutram – division by anurupeyana sutram – division of polynomials – factors of general second degree equation by lopsthapanabhayam sutram.

UNIT – V

Contribution of Indian Mathematicians in light of Arithmetic – Aryabhatta – Brahmagupta – Mahaveeracharya – Bharti Krishna Tirtha.

Teaching Methods

Chalk and Talk/Seminar/Quiz/Discussion/Power Point Presentations/Assignments

RECOMMENDED BOOKS FOR STUDY

1. Vedic Mathematics, Jagadguru Sankaracarya Swami Sri Bharati Krsna Tirthaji Maharaja, Motilal Banarsidass Publishers, New Delhi.
2. Vedic Ganita: Vihangama Drishti-1, Shiksha Sanskriti Utthan Nyas, New Delhi.
3. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.
4. Leelavati, Chokhambha Vidya Bhavan, Varanasi.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	S	S	H	M	M
CO2	H	M	S	S	H
CO3	M	H	M	S	S
CO4	S	S	H	M	H
CO5	S	H	M	S	H

S-Strong; H-High; M-Medium; L-Low

Programme Code: VM02		Diploma in Vedic Mathematics		
Course Code: 22DVM102		Core Paper II Vedic Algebra		
Batch 2022-2023	Semester I	Hours/Cycle 2	Total Hours 30	Credits 2

Course Objectives

1. To get the knowledge of ancient algebraic calculations.
2. To Understand the concepts of Urdhvatiragbhyam sutram
3. To Solve the factorization problems using Urdhvatiragbhyam sutram

Course Outcomes (CO)

K1 to K5	CO1	Remembering the basic 16 sutras and 13 sub sutras
	CO2	Applying Urdhvatiragbhyam sutram for algebraic calculations
	CO3	Analyzing certain sutras in vedic algebra
	CO4	Evaluating the concept of vedic algebra with modern mathematics
	CO5	Exploring the Vedic sutras in Algebra.

Syllabus

UNIT – I

Multiplication: Quadratic expressions of single variable – Urdhvatiragbhyam sutram – combined operations

UNIT – II

Division and factorization : Linear expression of single variable - Quadratic expressions of single variable.

UNIT – III

LCM AND HCF

UNIT – IV

Solution of Linear Simultaneous Equations

UNIT – V

Contribution of Indian Mathematicians in light of Algebra – Varahmihir – Bhaskaracharya – Neelkanth Somayya – Bharti Krishna Tirtha.

Teaching Methods

Chalk and Talk/Seminar/Quiz/Discussion/Power Point Presentations/Assignments

RECOMMENDED BOOKS FOR STUDY

1. Vedic Mathematics, Jagadguru Sankaracarya Swami Sri Bharati Krsna Tirthaji Maharaja, Motilal Banarsidass Publishers, New Delhi.
2. Vedic Ganita: Vihangama Drishti-1, Shiksha Sanskriti Utthan Nyas, New Delhi.
3. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.
4. Beejganitam, Chokhambha Vidya Bhavan, Varanasi.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	S	S	H	M	M
CO2	H	M	S	S	H
CO3	M	H	M	S	S
CO4	S	S	H	M	H
CO5	S	M	S	M	H

S-Strong; H-High; M-Medium; L-Low

Programme Code: VM02		Diploma in Vedic Mathematics		
Course Code: 22DVM203		Core Paper III Vedic Geometry		
Batch 2022-2023	Semester II	Hours/Cycle 2	Total Hours 30	Credits 2

Course Objectives

1. To get the knowledge of Bhaudhayana Number
2. To Understand the concepts of sutras in geometry
3. To Solve the complex square root problems using sutras in geometry

Course Outcomes (CO)

K1 to K5	CO1	Remembering the basic concept of Bhaudhayana Number
	CO2	Applying the ancient sutras for solving geometric problems
	CO3	Analyzing certain sutras in vedic geometry
	CO4	Evaluating the concept of vedic geometry with modern mathematics
	CO5	Exploring the Vedic sutras in Geometry.

Syllabus

UNIT – I

Concept of Bhaudhayana Number (BN) – BN of an angle – Multiplication of a constant in a BN – BN of complementary angles – BN of sum and difference ($a +$ or $- b$) of an angle – BN of half angle.

UNIT – II

Trigonometry: Definitions of trigonometric ratios – trigonometric identities.

UNIT – III

Co-ordinate Geometry: Different forms of straight lines.

UNIT – IV

Complex Numbers: Multiplication, Division and Square root.

UNIT – V

Contribution of Indian Mathematicians in light of Geometry – Bhaskaracharya – Madhavan – Parmeshvaran - Baudhayana.

Teaching Methods

Chalk and Talk/Seminar/Quiz/Discussion/Power Point Presentations/Assignments

RECOMMENDED BOOKS FOR STUDY

1. Vedic Mathematics, Jagadguru Sankaracarya Swami Sri Bharati Krsna Tirthaji Maharaja, Motilal Banarsidass Publishers, New Delhi.
2. Vedic Ganita: Vihangama Drishti-1, Shiksha Sanskriti Utthan Nyas, New Delhi.
3. Bharatiya Mathematicians, Sharda Sanskrit Sansthan, Varanasi.
4. Beejganitam, Chokhambha Vidya Bhavan, Varanasi.

Mapping

PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO					
CO1	S	S	H	M	M
CO2	H	M	S	S	H
CO3	M	H	M	S	S
CO4	S	S	H	M	H
CO5	S	H	H	S	M

S-Strong; H-High; M-Medium; L-Low

22DVM2Z1

Programme Code: VM02		Diploma in Vedic Mathematics		
Course Code: 22DVM2Z1		Project - Viva voce		
Batch 2022-2023	Semester II	Hours/Cycle 2	Total Hours 30	Credits 2

Course Objectives

1. To study the basic sutras related to the practical problems.
2. To know about the ancient Bharathiya Mathematicians.
3. To share our knowledge to the young buds in the modern society

Course Outcomes

K3 - K5	CO1	Applying the basic sutras in modern Problems
	CO2	Analyzing the sub sutras with basic 13 sutras
	CO3	Deducting the unsolved problems in modern techniques
	CO4	Adopting to the ancient solving technique
	CO5	Discussing an exact result in minimum time

Students can opt anyone of the following to complete the course

1. Contributions of Indian Mathematicians
2. Ancient Bharatiya Mathematical Work (Leelavati, Sulba Sutra, Ganita Kaumudi etc., or any other Ancient Indian Text)
3. The manuscript may be a review article based upon personal observations or research article giving some new idea.
4. Candidates may deliver a lecture in any educational institute (School or College) on Vedic Mathematics and feedback from head of the institute may be submitted. Feedback must be on letter head of the institute duly signed and stamped.

Distribution of marks for option 1-3

Distribution of Marks in ESE

Dissertation	:	35
Viva voce	:	15
Total		50

Internal

Project Review	:	45
Attendance	:	5
Total		50

To be awarded jointly by the internal and external examiners

Distribution of marks for option 4

For producing the feedback letter from the head of the institution duly signed and stamped will be awarded 100 marks by the Internal Examiner.

Mapping

CO \ PSO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	H	M	S	H
CO2	H	M	H	M	S
CO3	S	H	M	H	M
CO4	S	S	H	H	M
CO5	M	S	S	H	S

S - Strong; **H**-High; **M**-Medium; **L**-Low