G.A. FUTURE EDUCORE PVT. LTD

Diploma in Vedic Mathematics (DIVM)

Name of the course	Diploma in Vedic Mathematics
Total Credits	40
Practical Training Credits	16
Theory Credits	24
Total Hours	600
Total Duration	1 Year
Total Semesters	2
Number of Subjects	10
Number of Projects	2

Semester-1

Course Code	Course Name	Total Credits	Teaching hrs per week	Internal Assessment	TEE Theory	Total Marks
DIVM 101	Vedic Maths History, Sutras & Sub Sutras	1	1	20	80	100
DIVM 102	Vedic Arithmetic-I	2	2	20	80	100
DIVM 103	Vedic Algebra-I	2	2	20	80	100
DIVM 104	Teaching & Learning of Vedic Mathematics	3	3	20	80	100
DIVM 105	Basics of Computer	3	3	20	80	100
SLM*		2	0	0	0	0
ViVA + Project						100

Semester-2

Course Code	Course Name	Total Credits	Teaching hrs per week	Internal Assessment	TEE Theory	Total Marks
DIVM 201	Enterpreneurship and Human Communication	1	1	20	80	100
DIVM 202	Vedic Arithmetic-II	2	2	20	80	100
DIVM 203	Vedic Algebra-II	2	2	20	80	100
DIVM 204	Vedic Geometry	2	2	20	80	100
DIVM 205	Vedic Trigonometry	2	2	20	80	100
SLM*		2				
Viva+Project						100
Practical Training		16				

SLM* : Self Learning Material

Semester-1
Syllabus
Course Code : DIVM 101
Course Name : Vedic Maths History, Sutras and Sub-Sutras

Course Objectives

1. Understand the historical context and significance of Vedic Mathematics, including its origin and development within ancient Indian culture.

2. Explore the fundamental principles and concepts of Vedic Mathematics. Such as Sutras and Sub-Sutras and their role in solving mathematical problems.

3. Develop a comprehensive understanding of the various Sutras and Sub-Sutras used in Vedic Mathematics, including their applications and advantages over conventional method.

4. Analyse and compare Vedic Mathematical methods with conventional techniques to appreciate the efficiency and versatility of Vedic Mathematics.

Unit-1	Introduction of Vedic Maths
Unit-2	History of Vedic Maths
Unit-3	Benefits of Vedic Maths
Unit-4	Detailed explanation of all the 16 Sutras
Unit-5	Detailed explanation of all the 13 Sub-Sutras
Unit-6	Upcoming Sub-Sutras which are not listed
Unit-7	Biography of Indian Mathematicians
Unit-8	Properties of Anks
Unit-9	Magical Techniques

Course Outcomes

1. Demonstrate a comprehensive understanding of the historical context and significance of Vedic Mathematics, including its origin and development within ancient Indian culture.

2. Apply the fundamental principles and concepts of Vedic Mathematics, such as Sutras and Sub-Sutras, to solve mathematical problems efficiently and accurately.

3. Utilise a wide range of Sutras and Sub-Sutras in Vedic Mathematics to perform mental calculations and simplify Arithmetic operations with speed and precision.

4. Compare and contrast Vedic Mathematical techniques with conventional methods, recognising the advantages and limitations of each approach.

5. Analyse and interpret historical texts and resources related to Vedic Mathematics, identifying key Sutras and Sub-Sutras and their practical applications.

Semester-1
Syllabus
Course Code : DIVM 102
Course Name : Vedic Arithmetic-I

Course Objectives

1. Understand the basic principles and concepts of Vedic Arithmetic, including the unique Sutras and Sub-Sutras used in Vedic era.

2. Develop proficiency in mental calculations by applying Vedic Arithmetic techniques for Addition, Subtraction, Multiplication and division.

3. Learn and apply specific Vedic Sutras, such as "Nikhilam Sutra" for multiplication and "Urdhava-Tiryagbhyam" for addition and subtraction, to solve Arithmetic problems efficiently.

4. Improve speed and accuracy in performing Arithmetic calculations using Vedic techniques, leading to enhanced computational skills.

5. Explore and practice Vedic Methods for solving problems involving large numbers and multi-digit Arithmetic operations.

6. Develop mental agility and mathematical intuition through regular practice of Vedic Arithmetic methods.

7. Gain a deeper understanding of the underlying principles and pattern in Vedic Arithmetic, fostering a holistic approach to mathematical problem-solving.

Unit-1	Multiplication by 11 and its related series
Unit-2	Multiplication Base Method
Unit-3	Multiplication General Method
Unit-4	Miscellaneous Multiplication Techniques
Unit-5	Vinculum & Devinculum with its Applications
Unit-6	Division Base Method
Unit-7	Division General Method
Unit-8	Square & Square Roots

Course Outcomes

1. Perform mental calculations accurately and efficiently using Vedic Arithmetic techniques for Addition, Subtraction, Multiplication and division.

2. Apply specific Vedic Sutras, such as "Urdhava-Tiryagbhyam" for multiplication and "Nikhilam Sutra" for addition and subtraction, to solve Arithmetic problems with speed and precision.

3. Solve Arithmetic problems involving large numbers and multi-digit operations using Vedic Arithmetic methods, demonstrating and confidence.

4. Enhance computational skills and mental agility through regular practice and application of Vedic Arithmetic techniques.

Semester-1
Syllabus
Course Code : DIVM 103
Course Name : Vedic Algebra-I

Course Objectives

1. Understand the basic concepts and principles of Vedic Algebra, including its historical evolution and its application within Vedic Mathematics.

2. Develop an intense understanding of the key algebraic Sutras in Vedic Mathematics, such as "Anurupyena Sunyamanyat " and "Paravartya Yojayet" and their applications in solving algebraic problems.

3. Aquire proficiency in solving algebraic equations using Vedic Algebra techniques, applying specific Sutras and Sub- Sutras to simplify and solve equations efficiently.

4. Apply Vedic Algebra methods to solve equations and other basic algebraic problems with accuracy and speed

5. Utilise Vedic Algebra techniques to simplify algebraic expressions, factorise polynomials and solve problems involving algebraic fractions.

6. Compare and contrast Vedic Algebra techniques with traditional algebraic methods, evaluating their advantages in terms of efficiency, simplicity and versatility.

Unit-1	Algebraic Addition
Unit-2	Algebraic Subtraction
Unit-3	Algebraic Multiplication
Unit-4	Algebraic Division
Unit-5	Simple Equations-I

Course Outcomes

1. Demonstrate a thorough understanding of the foundational concepts and principles of Vedic Algebra, including its historical development and its significance within Vedic Mathematics.

2. Solve algebraic equations using Vedic Algebra techniques, applying specific Sutras and Sub-Sutras to simplify and solve equations effectively.

3. Apply Vedic Algebra methods to solve linear equations, quadratic equations and other basic algebraic problems accurately and efficiently.

4. Utilise Vedic Algebra techniques to simplify algebraic expressions, factorise polynomials and solve problems involving algebraic fractions with precision.

Semester-1
Syllabus
Course Code : DIVM 104
Course Name : Teaching & Learning of Vedic Mathematics

Course Objectives

1. Understand the key principles and pedagogical approaches for the teaching and learning of Vedic Mathematics.

2. Explore the historical and cultural context of Vedic Mathematics to gain insights into its significance and relevance in modern education.

3. Develop a comprehensive knowledge of various teaching methods and strategies for effectively introducing and explaining Vedic Mathematics concepts to learners.

4. Learn to adapt and differentiate Vedic Mathematics instructions to meet the diverse needs and learning styles of students.

5. Develop skills in creating, engaging and interactive learning experiences that promote active participation and critical thinking of learners.

6. Incorporate technology and multimedia resources effectively to enhance the teaching and learning of Vedic Mathematics.

7. Foster a positive and supportive learning environment that encourages student engagement, collaboration and self-confidence in practicing Vedic Mathematics techniques.

8. Develop assessment strategies and tools to monitor student's progress, identify misconceptions and provide constructive feedback in Vedic Mathematics.

9. Reflect on personal teaching practices and continuously seek professional development opportunities to enhance expertise in the teaching and learning of Vedic Mathematics.

Unit-1	Introduction to the field of Vedic Mathematics Education
Unit-2	Key Psychological ideas & Research finding in Vedic Mathematics Education
Unit-3	Lesson Plans of Vedic Mathematics
Unit-4	Mathematics curriculum models and techniques
Unit-5	Implementing and assessing Vedic Mathematic lessons and curriculum
Unit-6	Becoming a professional Vedic Mathematic teacher

Course Outcomes

1. Demonstrate a deep understanding of the key principles and pedagogical approaches involved in the teaching and learning of Vedic Mathematics.

2. Apply effective instructional strategies and methods to introduce and explain Vedic Mathematics concepts to learners of various levels and abilities.

3. Adapt and differentiate Vedic Mathematics instructions to meet the diverse needs, learning styles and pace of individual students or groups.

4. Integrate technology and multimedia resources effectively to enhance the teaching and learning of Vedic Mathematics.

5. Create a positive and inclusive learning environment that fosters student engagement, collaboration and self- confidence in practicing Vedic Mathematics techniques.

6. Employ a variety of assessment strategies and tools to monitor student progress, identify misconceptions and provide constructive feedback in Vedic Mathematics.

Course Objectives

1. Understand the fundamental components and functions of a computer system, including hardware and software.

2. Familiarise with the basic terminology and concepts related to computers, such as operating systems, file management and data storage.

3. Develop an understanding of the history and evolution of computers, including major milestones and advancements in the field.

4. Learn the principles of computer organisaton, including input and output devices, memory and Central Processing Unit (CPU).

5. Gain proficiency in using common software applications and tools, such as word processors, spreadsheets and web browsers.

6. Develop basic computer skills, including navigating the desktop, creating and managing files and folders and performing basic system operations.

7. Understand the importance of computer security, including concepts like passwords, antivirus software and safe internet practices.

8. Learn about computer networks and their role in connecting devices and facilitating communication and data transfer.

9. Explore ethical considerations and responsible use of computers, including copyright, privacy and digital citizenship.

10. Develop problem-solving skills and troubleshooting techniques to address common computer issues and errors.

Unit-1	Introduction to Computers
Unit-2	Overview of MS-Excel
Unit-3	Overview of MS-word
Unit-4	Overview of MS-Powerpoint
Unit-5	Basic Internet Training
Unit-6	Online Teaching Aids & Platform

Course Outcomes

1. Demonstrate a comprehensive understanding of the fundamental components and functions of a computer system, including hardware and software.

2. Apply the basic terminology and concepts related to computers, such as operating systems, file management and data storage, in practical contexts.

3. Explain the history and evolution of computers, recognizing major milestones and advancements that have shaped the field.

4. Identify and describe the principles of computer organisation, including input and output devices, memory and Central Processing Unit (CPU).

5. Utilise common software applications and tools, such as word processors, spreadsheets and web browsers, to perform basic tasks and operations effectively.

6. Demonstrate proficiency in navigating the desktop, creating and managing files and folders and performing basic system operations.

7. Recognise and implement essential computer security measures, including password management, antivirus software and safe internet practices.

8. Understand the concept of computer networks and their role in connecting devices and demonstrate knowledge of basic networking concepts.

9. Discuss and apply ethical considerations and responsible use of computers, including understanding copyright laws, protecting privacy and practicing digital citizenship.

Course Objectives

1. To enable students to learn about Business Success

2. To enable students to learn about Value Creation

3. To enable students to learn about Market Penetration

4. To enable students to learn about Competitive Advantage

5. To enable students to learn about Growth and Expansion

6. To enable students to learn about Brand Building and Reputation

7. To enable students to learn about Effective Marketing and Promotion

8. To enable students to learn about Customer Engagement and Relationship Building

9. To enable students to learn about Team Collaboration and Leadership

10. To enable students to learn about Negotiation and Business Partnerships

11. To enable students to learn about Crisis Management and Conflict Resolution

Unit-1	Entrepreneurship Meaning, Importance, Characterstics and Concepts
Unit-2	Models of Entrepreneurship
Unit-3	How is Entrepreneurship different from traditional conventional business?
Unit-4	Legal issues of Business
Unit-5	Setting of Business & Planning
Unit-6	Financial and Marketing Considerations
Unit-7	HRM in Small Business
Unit-8	Women Entrepreneurship

Course Outcomes

1. Students will be able to learn about Creativity and Innovation

2. Students will be able to learn about Opportunity Recognition

3. Students will be able to learn about Risk Assessment and Management

4. Students will be able to learn about Resilience and Adaptability

5. Students will be able to learn about Business and Financial Aspects

6. Students will be able to learn about Networking and Relationship Building

7. Students will be able to learn about Leadership and Team Management

8. Students will be able to learn about Customer Focus and Market Orientation

9. Students will be able to learn about Financial Literacy and Resourcefulness

10. Students will be able to learn about Self Development and Continuous Learning

Course Objectives

1. Understand advanced concepts and techniques in Vedic Arithmetic, building upon the foundational knowledge gained in Vedic Arithmetic-I, DIVM-102

2. Develop proficiency in performing complex Arithmetic calculations mentally and using Vedic Arithmetic techniques,such as Sutras and Sub-Sutras, to simplify and solve advanced Arithmetic problems.

3. Apply Vedic Arithmetic methods to solve practical problems, such as financial calculations, measurement conversions and data analysis, with efficiency and precision.

4. Enhance mental agility and mathematical intuition through regular practice of Vedic Arithmetic techniques, improving overall computational speed and accuracy.

5. Compare and contrast Vedic Arithmetic techniques with coventional Arithmetic methods, evaluating their advantages in terms of efficiency, simplicity and versatility.

6. Reflect on the broader applications of Vedic Arithmetic in various fields, such as engineering, finance, computer science and recognise its relevance in modern-day contexts.

Unit-1	Cubes, Cube Roots & Fourth Power
Unit-2	Addition and Subtraction of Fractions
Unit-3	Three Rows Multiplication by General and Base Method
Unit-4	Approximations
Unit-5	Magic Squares
Unit-6	Divisibility Rules

Course Outcomes

1. Demonstrate a comprehensive understanding of advanced concepts and techniques in Vedic Arithmetic, building upon the foundational knowledge gained in Vedic Arithmetic-I, DIVM-102.

2. Apply specific Vedic Arithmetic Sutras and Sub-Sutras to perform complex Arithmetic calculations mentally and efficiently.

3. Apply Vedic Arithmetic methods to solve practical problems in various contexts, such as financial calculations, measurement conversions and data analysis.

4. Enhance mental agility, mathematical intuition and computational speed through regular practice of Vedic Arithmetic techniques.

5. Evaluate and compare the efficiency and effectiveness of Vedic Arithmetic techniques with coventional Arithmetic methods in terms of accuracy and speed.

6. Recognise the broader application of Vedic Arithmetic in field such as engineering, finance, computer science and appreciate its relevance in modern-day problem-solving and computational contexts.

Semester-2
Syllabus
Course Code : DIVM 203
Course Name : Vedic Algebra-II

Course Objectives

1. Develop a deeper understanding of advanced concepts and techniques in Vedic Algebra, building upon the foundational knowledge gained in Vedic Algebra-I, DIVM-103

2. Apply advanced Vedic Algebraic methods, such as specific Sutras and Sub-Sutras, to solve complex algebraic expressions.

3. Utilise Vedic Algebraic techniques for efficient and systematic simplification of algebraic expressions.

4. Solve Quadratic Equations using Vedic Algebraic methods, including the application of Sutras such as "Paravartya Yojyet" & "Sunyam Samya Samuccaye."

5. Apply Vedic Algebraic Techniques to solve simultaneous equations, systems of linear equations and word problems involving algebraic concepts.

6. Explore Advanced topics in Vedic Algebra such as factorisation, expansion of algebraic expressions and solving higher degree equations.

7. Develop a deeper understanding of algebraic identities and formulae, including the application of specific Vedic Sutras for their derivation and simplification.

8. Apply Vedic Algebraic methods to solve real-life problems and practical applications in various fields, such as physics, engineering and finance.

9. Enhance critical thinking and analytical skills through the application of Vedic Algebraic techniques in solving complex mathematical problems.

10. Reflect on the historical and cultural context of Vedic Algebra, recognising its contributions to ancient Indian Mathematics and its relevance in modern-day algebraic reasoning and problem-solving approaches.

Unit-1	Simple Eqautions-II
Unit-2	Factorisation of Quadratic Equations
Unit-3	Factorisation of Harder Quadratics
Unit-4	Find the value of Algebraic Expression
Unit-5	Beejank-Cross Checking Way

Course Outcomes

1. Demonstrate a comprehensive understanding of advanced concepts and techniques in Vedic Algebra, building upon the foundational knowledge gained in Vedic Algebra-I, DIVM-103.

2. Apply Specific Vedic Algebraic Sutras and Sub-Sutras to solve complex Algebraic expressions with accuracy and efficiency.

3. Simplify and manipulate algebraic expressions involving multiple variables and exponents using advanced Vedic Algebraic techniques.

4. Solve quadratic equations using Vedic Algebraic methods, including the application of Sutras such as "Paravartya Yojyet" & "Sunyam Samya Samuccaye."

5. Apply Vedic Algebraic techniques to solve simultaneous equations, systems of linear equations and word problems involving algebraic concepts.

6. Apply factorisation techniques and expand algebraic expressions using Vedic Algebraic methods, showcasing a deep understanding of algebraic identities and formulae.

7. Utilise Vedic Algebraic methods to solve real-life problems and practical applications in various fields, demonstrating the applicability of Vedic Algebra in relevant contexts.

8. Develop critical thinking and analytical skills through the application of Vedic Algebraic techniques in solving complex mathematical problems.

9. Evaluate and compare the efficiency and effectiveness of Vedic algebraic techniques with conventional algebraic methods, recognising their advantages in terms of simplicity and computational speed.

10. Recognise and appreciate the historical and cultural context of Vedic Algebra, acknowledging its contributions to ancient Indian Mathematics and its relevance in modern-day algebraic reasoning and problem-solving approaches.

Semester-2
Syllabus
Course Code : DIVM 204
Course Name : Vedic Geometry

Course Objectives

1. Understand the foundational concepts and principles of Vedic Geometry, including its historical development and its significance within Vedic Mathematics.

2. Learn and apply specific geometric principles and formulae from Vedic Mathematics, such as the Vedic Sutras for finding areas, perimeters and volumes of geometric shapes.

3. Develop proficiency in performing geometric calculations mentally and using Vedic Geometry techniques for solving problems efficiently.

4. Explore the unique geometric properties and relationships in Vedic Geometry, such as the concept of Pythagoras Theorem(Baudhyana's Triples)" and its applications.

5. Apply Vedic Geometry methods to solve practical problems related to measurement, construction and spatial reasoning.

6. Reflect on the connections between Vedic Geometry and other branches of Mathematics, such as algebra and trigonometry, to develop a holistic understanding of mathematical concepts.

7. Explore the cultural and historical aspects of Vedic Geometry, recognising its contributions to ancient Indian Mathematics and its continued influence in contemporary Mathematics and problem-solving approaches.

Unit-1	Proofs of Pythagoras Theorem
Unit-2	Finding the other two sides when one side is given
Unit-3	Basics of two dimensional and three Dimensional Geometry
Unit-4	Coordinate Geometry
Unit-5	Importance of Baudhayana's Triples in Geometry

Course Outcomes

1. Demonstrate a comprehensive understanding of the foundational concepts and principles of Vedic Geometry, including its historical development and its significance within Vedic Mathematics.

2. Apply specific Vedic Geometry techniques and formulae to solve geometric problems accurately and efficiently, including finding areas, perimeters, and volumes of geometric shapes.

3. Perform mental calculations and apply mental visualisation skills to solve geometric problems using Vedic Geometry methods.

4. Analyse and interpret geometric patterns, symmetries, and relationships using Vedic Geometry principles, showcasing a deeper understanding of mathematical structures.

5. Apply Vedic Geometry principles to solve practical problems and real-life situations, recognising its relevance in measurement, construction and spatial reasoning.

6. Recognise the connections between Vedic Geometry and other branches of Mathematics, such as algebra and trigonometry, fostering a holistic understanding of mathematical concepts.

7. Reflect on the cultural and historical context of Vedic Geometry, appreciating its contributions to ancient Indian Mathematics and its continued influence in contemporary Mathematics and problem-solving approaches.

8. Apply critical thinking skills to analyse and assess the applicability of Vedic Geometry in various academic, professional and everyday life situations, recognising its potential for innovative problem-solving and creative thinking.

Semester-2
Syllabus
Course Code : DIVM 205
Course Name : Vedic Trigonometry

Course Objectives

1. To enable students to understand the fundamental concepts of Trigonometry.

2. To enable students to apply Trigonometric ratios.

3. To enable students to understand the concept of directions and height and distance.

4. To enable student to solve the mathematical problem with precision and accuracy

Unit-1	Introduction to Triples
Unit-2	Addition and Subtraction of triples
Unit-3	Double angle and Half angle
Unit-4	Trigonometry
Unit-5	Inverse Trigonometry

Course Outcomes

1. Students will be able to understand the fundamental concepts of Trigonometry.

2. Students will be able to apply Trigonometric ratios.

3. Students will be able to understand the concepts of directions, height and distance.

4. Students will be able to solve the mathematical problems with precision and accuracy.