FIRST-YEAR OF BACHELOR OF SCIENCE MINOR MATHEMATICS REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: VEDIC MATHEMATICS-I SEMESTER-I, W.E.F. 2023-2024

RECOMMENDED BY THE BOARD OF STUDIES IN MATHEMATICS
AND
APPROVED BY THE ACADEMIC COUNCIL
Devrukh Shikshan Prasarak Mandal's
Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal.Sangmeshwar, Dist. Ratnagiri-415804, Maharashtra, India

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

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Academic Council Item No: _____

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangmeshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Bachelor of Science
Name of the Department	:	Mathematics
Name of the Class	:	First Year
Semester	:	First
No. of Credits	:	02
Title of the Course	:	Vedic Mathematics
Course Code	:	MTSE102
Name of the Vertical in adherence to NEP 2020	:	Skill Enhancement Courses (SEC)
Eligibility for Admission	:	Any 12th Pass seeking Admission to Degree Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Formative and Summative
Level	:	UG
Pattern of Marks Distribution for TE and CIA	:	60:40
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2023-2024
Ordinances /Regulations (if any)		

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

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Syllabus for First Year of Bachelor of Science in Mathematics

(With effect from the academic year 2023-2024)

SEMESTER-I   **Paper No. – I**

Course Title: Vedic Mathematics   **No. of Credits - 02**

Type of Vertical: Skill Enhancement Courses (SEC)   COURSE CODE: MTSE102

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to…		
Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Remember	Remember the fundamentals of Vedic Mathematics
CLO-02	Understand	Understand the concept of 'Vedic sutras' for calculation
CLO-03	Apply	Apply the Vedic sutras to numeric calculations quickly

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Syllabus for First Year of Bachelor of Science in Mathematics

(With effect from the academic year 2023-2024)

SEMESTER-I   **Paper No. – I**

Course Title: Vedic Mathematics   **No. of Credits - 02**

Type of Vertical: Skill Enhancement Courses (SEC)   **COURSE CODE: MTSE102**

Module No.	Content	No. of Lectures
1 **Addition, Subtraction and Multiplication**	o Addition o Subtraction Section B – Multiplication with Recognizable Patterns o Multiplication of complementary numbers like 23 x 27 o Multiplication by numbers consisting of all 9s o Multiplication by numbers above the base o Multiplication by numbers below the base o Multiplication by 11 o Multiplication by 12	15
2 **Squaring, Square Root and Cubing**	o Squaring of numbers in patterns o Squaring numbers with any number of digits o Square root o Cubing	15
	Total	30

Required Previous Knowledge

      Basic Mathematics Knowledge is necessary before starting to learn the course.

Access to the Course

      The course is available for all the students admitted for Bachelor of Science as Skill enhancement course. The students seeking admission in other disciplines may select the course as a minor considering the terms and conditions laid down by the University of Mumbai, the Government of Maharashtra, and the college, from time to time.

Forms of Assessment

The assessment of the course will be of Diagnostic, Formative and Summative type. At the beginning of the course diagnostic assessment will be carried out. The formative assessment will be used for the Continuous Internal Evaluation whereas the summative assessment will be conducted at the end of the term. The weightage for formative and summative assessment will be 60:40. The detailed pattern is as given below.

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Term End Evaluation (30 Marks)
Question Paper Pattern
Time: 1 hours

Question No.	Question Pattern	Marks
Q.1	Short Answer Questions (based on Unit I)	15
Q.2	Short Answer Questions (based on Unit II)	15
Total		**30**

Internal evaluation (20 Marks)

Sr. No.	Description	Marks
1	Mid Term Examination	10
2	Active Participation in teaching learning Process	5
3	Subject related activities as assigned by the teacher	5
	Total	**20**

Grading Scale

The grading scale used is O to F. Grade O is the highest passing grade on the grading scale, and grade F is a fail. The Board of Examinations of the college reserves the right to change the grading scale.

References:

1. Bhatiya Dhaval, Vedic Mathematics Made Easy, Jaico Publishing House
2. Thakur Rajesh Kumar, Vedic Mathematics for students taking Competitive Examinations. Unicorn Books 2015 or Later Edition
3. Gupta Atul, Power of Vedic Mathematics with Trigonometry , Jaico Books
4. V. G. Unkalkar, Magical World of Mathematics (Vedic Mathematics), Vandana Publishers, Bangalore

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FIRST-YEAR OF BACHELOR OF SCIENCE MINOR MATHEMATICS REVISED SYLLABUS ACCORDING TO CBCS NEP2020

COURSE TITLE: VEDIC MATHEMATICS-I SEMESTER-I, W.E.F. 2023-2024

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Academic Council Item No: _____

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangmeshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Bachelor of Science
Name of the Department	:	Mathematics
Name of the Class	:	First Year
Semester	:	Second
No. of Credits	:	02
Title of the Course	:	Vedic Mathematics
Course Code	:	MTSE104
Name of the Vertical in adherence to NEP 2020	:	Major and Minor
Eligibility for Admission	:	Any 12th Pass seeking Admission to Degree Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Formative and Summative
Level	:	UG
Pattern of Marks Distribution for TE and CIA	:	60:40
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2023-2024
Ordinances /Regulations (if any)		

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

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Syllabus for First Year of Bachelor of Science in Mathematics

(With effect from the academic year 2023-2024)

SEMESTER-II   **Paper No. – II**

Course Title: Vedic Mathematics   **No. of Credits - 02**

Type of Vertical: Skill Enhancement Courses (SEC)   **COURSE CODE: MTSE104**

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to…		
Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Remember	Vedic sutras of Multiplication
CLO-02	Understand	the division Vedic sutras division
CLO-03	Apply	Vedic sutras to solve problems quickly

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

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Syllabus for First Year of Bachelor of Science in Mathematics

(With effect from the academic year 2023-2024)

SEMESTER-II   **Paper No. –II**

Course Title: Vedic Mathematics   **No. of Credits - 02**

Type of Vertical: Skill Enhancement Courses (SEC)   **COURSE CODE: MTSE104**

Module No.	Content	No. of Lectures
1	o Multiplication of any number by 9, 99, 999 o Generic Multiplication o Multiplication by two-digit numbers o Multiplication by three and four-digit numbers	15
2	o Nikhilam-Division o Divisibility Test o Division (base above 10) o Division (base below 10) o Division (base above 100) o Division (base below 100)	15
	Total	30

Required Previous Knowledge

Basic Mathematics Knowledge is necessary before starting to learn the course.

Access to the Course

The course is available for all the students admitted for Bachelor of Science as a Skill enhancement course. The students seeking admission in other disciplines may select the course as a minor considering the terms and conditions laid down by the University of Mumbai, the Government of Maharashtra, and the college, from time to time.

Forms of Assessment

The assessment of the course will be of Diagnostic, Formative and Summative type. At the beginning of the course diagnostic assessment will be carried out. The formative assessment will be used for the Continuous Internal Evaluation whereas the summative assessment will be conducted at the end of the term. The weightage for formative and summative assessment will be 60:40. The detailed pattern is as given below.

Term End Evaluation (30 Marks)
Question Paper Pattern
Time: 1 hour

Question No.	Question Pattern	Marks

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

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Q.1	Short Answer Questions (based on Unit I)	15
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	Total	**30**

Internal evaluation (20 Marks)

Sr. No.	Description	Marks
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2	Active Participation in teaching learning Process	5
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	Total	**20**

Grading Scale

The grading scale used is O to F. Grade O is the highest passing grade on the grading scale, and grade F is a fail. The Board of Examinations of the college reserves the right to change the grading scale.

References:

1. Vedic Mathematics Made Easy, 2nd Edition by Dhaval Bathia.
2. Vedic Mathematics Sutra by Alok Kumar
3. For Competitive Exams Vedic Mathematics MADE EASY by Ramnandan Shastri
4. VEDIC MATHEMATICS For Students: LEVEL – 1   by Nava Vision

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