

**Shiv Chhatrapati Shikshan Sanstha's**  
**Rajarshi Shahu Mahavidyalaya, Latur**  
**(Autonomous)**



**Structure and Curriculum of Four Year Multidisciplinary  
Degree (Honors) Programme with Multiple Entry and  
Exit option**

**Undergraduate Programme of Science and Technology**  
**B.Sc. (Honors) in Mathematics**

**Board of Studies**  
**in**  
**Mathematics**  
**Rajarshi Shahu Mahavidyalaya, Latur**  
**(Autonomous)**

**w.e.f. June, 2023**  
**(In Accordance with NEP-2020)**

## **CERTIFICATE**

I hereby certify that the documents attached are the Bonafide copies of the Curriculum of **B.Sc. (Honors) in Mathematics** Programme to be effective from the **Academic Year 2023-24**.

Date: 14/07/2023

Place: Latur



(Prof. M S Wavare)

Chairperson

Board of Studies in Mathematics  
Rajarshi Shahu Mahavidyalaya, Latur  
(Autonomous)



## **Rajarshi Shahu Mahavidyalaya, Latur**

**(Autonomous)**

### **Members of Board of Studies in the Subject Mathematics Under the Faculty of Science and Technology**

<b>Sr. No.</b>	<b>Name</b>	<b>Designation</b>	<b>In position</b>
<b>1</b>	<b>Prof. Mahesh S Wavare</b> Head, Department of Mathematics Rajarshi Shahu Mahavidyalaya, Latur (Autonomous)	Chairperson	HoD
<b>2</b>	<b>Dr. Bhalchandra D. Karande</b> Head and Associate Professor , Department of Mathematics, Maharashtra Udaygiri Mahavidyalaya, Udaygiri Dist. Latur.	Member	V.C. Nominee
<b>3</b>	<b>Dr. S. D. Kendre,</b> Associate Professor, Department of Mathematics, Savitribai Phule Pune University, Pune.	Member	Academic Council Nominee
<b>4</b>	<b>Dr. M. T. Gophane</b> Department of Mathematics Shivaji University, Kolhapur.	Member	Academic Council Nominee
<b>5</b>	<b>Dr. N. S. Darkunde</b> School of Mathematical Sciences, S. R. T. M. U Nanded.	Member	Expert from outside for Special Course
<b>6</b>	<b>Mr. S. S. Ranmal</b> Sungrace Computers Pvt Ltd, Pune.	Member	Expert from Industry
<b>7</b>	<b>Prof. S. M. Shinde</b> Government College of Engineering, Amravati, Dist. Amaravati.	Member	P.G. Alumni
<b>8</b>	<b>Dr. N. S. Pimple</b>	Member	Faculty Member
<b>9</b>	<b>Miss. S. D. Shinde</b>	Member	Member from same Faculty
<b>10</b>	<b>Mr. S. B. Khose</b>	Member	Member from same Faculty
<b>11</b>	<b>Mr. N. D. Kapale</b>	Member	Member from same Faculty
<b>12</b>	<b>Dr. A. A. Yadav</b>	Member	Other members of the staff of the same faculty

### From the Desk of the Chairperson...

When Shiv Chhatrapati Shikshan Sanstha started the Science Faculty in Rajarshi Shahu Mahavidyalaya, Latur in 1971, the Department of Mathematics was founded. In the beginning, there was just one instructor for the PUC class and the first year of the B.Sc. B.Sc.-II and B.Sc. III year courses began in 1973 and 1974, respectively, in response to the natural expansion. During the 2017–2018 academic year, the department launched its M.Sc. Mathematics programme with a 30-student entry limit.

The undergraduate degree course in mathematics is a six- or eight-semester course spanned across three- or four-academic years, in accordance with the guidelines of the Undergraduate Curriculum Framework 2022 (UGCF 2022). The teaching and learning process is centered on the learner and includes both theoretical and practical elements. While guaranteeing that the student has a solid foundation in the topic and obtains in-depth knowledge, it provides flexibility in program structure. A student may choose courses from the syllabus that includes Discipline Specific Electives (DSEs), Generic Electives (GEs), Skill Enhancement Courses (SECs), Ability Enhancement Courses (AECs), and Value Addition Courses (VACs) in addition to the Discipline Specific Core (DSC) courses. As a result, the interdisciplinary approach and commitment to creative approaches within the curricular framework are highlighted.

The new National Education Policy (NEP), 2020, which includes significant elements, offers a platform to develop, nurture, grow, encourage, and multiply mathematical thinking. To achieve a balance between the requirement for employment in the twenty-first century and entrepreneurship, which is characterized by lateral, critical, and numerical thinking, the essential changes have been put in place. The NEP acknowledged the importance of mathematical thinking and how necessary it is for the country to become a Vishwa guru. The NEP provides children with the nutrition they require by making mathematics enjoyable and engaging from the very beginning. Because it encourages the development of computer skills and intuitive reasoning, the NEP also requires the adoption of a coding curriculum, which should start in middle school.

The courses for the UG Programme are framed using time tested and internationally popular text books so that the courses are at par with the courses offered by any other reputed universities around the world.

Only those concepts that can be introduced at the UG level are selected and instead of cramming the course with too many ideas the stress is given in doing the selected concepts rigorously. The idea is to make learning mathematics meaningful and an enjoyable activity rather than acquiring manipulative skills and reducing the whole thing an exercise in using thumb rules.

As learning Mathematics is doing Mathematics, to this end, some activities are prescribed to increase student's participation in learning. Duration of the degree Programme shall be six- or-eight semesters distributed in a period of three/four academic years.



**(Prof. Mahesh S Wavare)**  
Chairperson  
Board of Studies in Mathematics



## Rajarshi Shahu Mahavidyalaya, Latur

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## Rajarshi Shahu Mahavidyalaya, Latur

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Faculty of Science and Technology

### Structure for Four Year Multidisciplinary Undergraduate Degree Programme in Mathematics Multiple Entry and Exit (In accordance with NEP-2020)

Year & Level	Sem	Major		Minor	GE/OE	VSC/ SEC (VSEC)	AEC/ VEC	OJT,FP,CEP, RP	Credit per Sem.	Cum./Cr. per exit
		DSC	DSE							
1	2	3		4	5	6	7	8	9	10
I 4.5	I	DSC I: 04 Cr. DSC II: 04 Cr.	NA	NA	GE-I: 04 Cr.	VSC-I: 02 Cr. SEC-I: 02 Cr.	AEC-I MIL: 02 Cr. VEC-I: 02 Cr.	CC-I: 02 Cr. (NSS, NCC, Sports, Cultural)/ CEP-I: 02 Cr. (SES-I)/ OJT: 02 Cr. / Mini Project: 02 Cr.	22	44 Cr. UG Certificate
	II	DSCIII: 04 Cr. DSC IV: 04 Cr. (IKS)	NA	NA	GE-II: 04 Cr.	VSC-II: 02 Cr. SEC-II: 02 Cr.	AEC- II MIL: 02 Cr. VEC- II: 02 Cr.	CC-II: 02 Cr. (NSS, NCC, Sports, Cultural)/ CEP-II: 02 Cr. (SES-II)/ OJT: 02 Cr. / Mini Project: 02 Cr.	22	
	Cum. Cr.	16	-	-	08	04+04= 08	04+02 +02=0 8	04	44	
Exit Option: Award of UG Certificate in Major with 44 Credits and Additional 04 Credits Core NSQF Course/Internship or continue with Major and Minor										

## **Abbreviations:**

1. **DSC : Discipline Specific Core (Major)**
2. **DSE : Discipline Specific Elective (Major)**
3. **DSM : Discipline Specific Minor**
4. **GE/OE : Generic/Open Elective**
5. **VSEC : Vocational Skill and Skill Enhancement Course**
6. **VSC : Vocational Skill Courses**
7. **SEC : Skill Enhancement Course**
8. **AEC : Ability Enhancement Course**
9. **MIL : Modern Indian Languages**
10. **IKS : Indian Knowledge System**
11. **FSRCE : Fostering Social Responsibility & Community Engagement**
12. **VEC : Value Education Courses**
13. **OJT : On Job Training**
14. **FP : Field Projects**
15. **CEP : Community Engagement and Service**
16. **CC : Co-Curricular Courses**
17. **RP : Research Project/Dissertation**
18. **SES : Shahu Extension Services**



## Rajarshi Shahu Mahavidyalaya, Latur

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Department of Mathematics

B.Sc. (Honors) Mathematics

Year & Level	Semester	Course Code	Course Title	Credits	No. of Hrs.	
I 4.5	I	101MAT1101 (DSC-I)	Topics in Algebra	03	45	
		101MAT1103	Lab Course-I	01	30	
		101MAT1102 (DSC-II)	Differential Calculus	03	45	
		101MAT1104	Lab Course-II	01	30	
		GE-I	From Basket	04	60	
		101MAT1501 (VSC-I)	Introduction to Mathematics Software	02	30	
		(SEC-I)	From Basket	02	30	
		(AEC-I)	From Basket	02	30	
		(VEC-I)	Constitution of India	02	30	
		AIPC/OJT-I	Case Study	02	60	
	<b>Total Credits</b>				<b>22</b>	
	II	101MAT2105 (DSC-III)	Analytical Geometry	03	45	
		101MAT2107	Lab Course-III	01	30	
		101MAT2106 (DSC-IV) IKS	Vedic Mathematics	04	60	
		GE-II	From Basket	04	60	
		101MAT2502 (VSC-II)	Programming with Mathematics Software	02	30	
		(SEC-II)	From Basket	02	30	
		(AEC-II)	From Basket	02	30	
		(VEC-II)	FSRCE (CBPR)	02	30	
		AIPC/OJT-II	Project	02	60	
	<b>Total Credits</b>				<b>22</b>	
	<b>Total Credits (Semester I &amp; II)</b>				<b>44</b>	





## Rajarshi Shahu Mahavidyalaya, Latur

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Faculty of Science & Technology

Programme Outcomes (POs) for B.Sc. Programme	
PO 1	
PO 2	
PO 3	
PO 4	
PO 5	
PO 6	
PO 7	
PO 8	
PO 9	
PO 10	



## Rajarshi Shahu Mahavidyalaya, Latur

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<b>Programme Specific Outcomes (PSOs) for B.Sc. in Mathematics (Honors)</b>	
<b>PSO No.</b>	Upon completion of this Programme the students will be able to
<b>PSO 1</b>	To Develop their mathematical knowledge, oral, written, and practical skills in a way to enhance confidence and provide satisfaction.
<b>PSO 2</b>	To inculcate the confidence by developing a feel for numbers, patterns, and relationships.
<b>PSO 3</b>	To advance an ability to consider, solve problems, present and interpret results.
<b>PSO 4</b>	To improve Communication and reason using mathematical concepts.
<b>PSO 5</b>	To understand mathematical principles and their applications.
<b>PSO 6</b>	To foster the abilities to reason logically, to classify, to generalize and to prove.
<b>PSO 7</b>	To acquire the foundation, appropriate to their further studies of mathematics and of other disciplines.
<b>PSO 8</b>	To qualify IIT-JAM a higher education entrance in the subject of Mathematics.
<b>PSO 9</b>	To do minor research project in the field of Mathematics.
<b>PSO 10</b>	To nurture the basic information of Indian Knowledge System.



## Rajarshi Shahu Mahavidyalaya, Latur

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Department of Mathematics

Course Type: DSC-I

Course Title: Topics in Algebra

Course Code: 101MAT1101

Credits: 03

Max. Marks: 75

Lectures: 45 Hrs.

### Learning Objectives:

- LO 1. To know Set, Relations and types of function
- LO 2. To get Euclidian algorithm and Properties of congruence's
- LO 3. To determine Determinants, Co factor, Minor Adjoint of matrix of square Matrix.
- LO 4. To Find Solutions to linear systems
- LO 5. To Know Applications of Caley Hamilton theorem.

### Course Outcomes:

After completion of course the student will be able to-

- CO 1. Sort out one-one, onto, into, many one types of functions
- CO 2. Apply induction principle
- CO 3. Apply Division Algorithm
- CO 4. Handle Elementary Linear algebra problems

Unit No.	Title of Unit & Contents	Hrs.
<b>I</b>	<b>Sets Relations and Functions</b>	<b>12</b>
	1. Sets, Relations, Equivalence relations 2. Equivalence classes and partitions of sets 3. Functions, Basic terminology, Types of Functions, Inverse of a Function, Composition of Functions .	
	<b>Unit Outcomes:</b> UO 1. Acquaint with the basic concepts of mathematics such as Set and partitions of set. UO 2. Able to differentiate different types of relations and functions.	
<b>II</b>	<b>Elementary number theory</b>	<b>12</b>
	1. Mathematical Induction, Well Ordering Principle, Archimedean Property 2. The Binomial theorem, Pascal's triangle. 3. The Division Algorithm, the Greatest Common Divisor 4. The Euclidean Algorithm, Basic Properties of Congruences	
	<b>Unit Outcome:</b> UO 1. Handle various types of problems using Algorithms in Number theory	

Unit No.	Title of Unit & Contents	Hrs.
<b>III</b>	<b>Rank of Matrix</b>	<b>10</b>
	1. Minor of order k, Rank of Matrix, Elementary Rows, column operations 2. Elementary operations, Inverse of elementary operations. 3. Equivalent Matrices, Row – Echelon Matrix row rank and column rank of a matrix.	
	<b>Unit Outcomes:</b> UO 1. Handle the problems based on finding rank of matrix. UO 2. Techniques to solve Echelon Matrices.	
<b>IV</b>	<b>System of Linear Equations</b>	<b>11</b>
	1. Linear equations, equivalent system, 2. System of homogeneous and non-homogeneous equations 3. Characteristic Roots , Caley Hamilton theorem and applications .	
	<b>Unit Outcomes:</b> UO 1. Differentiate between system of homogeneous and non-homogeneous equations.	

### Learning Resources:

1. A Foundation Course in Mathematics, Ajit Kumar, S. Kumeresan and Bhaba Kumar Sarma, Reprint , Narosa Publication House 2018.
2. Elementary Number Theory, David M. Burton, Sixth Edition, Tata McGraw – Hill Publishing Company Limited(2007).
3. Topics in Algebra , Om. P. Chug, K. Prakash, A.D. Gupta , First Edition , Anmol Pub. Pvt Ltd. New Delhi (2008).
4. A text books of matrices , Shanti Narayan , Reprint , (S. Chand & Company Ltd) Ram Nagar, New Delhi (2010).
5. Theory and Problems of linear Algebra , Seymour Lipschutz, Third Edition , (Tata McGraw Hill) (2004).
6. Matrix & Linear Algebra , K.B. Datta, Prentice Hall India Pvt., Limited, 2004.
7. An Introduction to theory of numbers, I. Niven, H. Zuckerman, V.H.L. Montgomery, Fifth Edition, John Wiley & Sons(1991).



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Department of Mathematics

**Course Type: Lab Course**

**Course Title: Lab Course –I (Based on DSC-I)**

**Course Code: 101MAT1103**

**Credits: 01**

**Max. Marks: 50**

**Hours: 30**

### Learning Objectives

LO 1. To get Types of functions

LO 2. To Determine Determinants, Co-factor, Minor Adjoint of matrix of square Matrix.

LO 3. To Find Solutions to linear systems and an applications of Caley Hamilton theorem.

### Course outcomes

After completion of course the student will be able to-

CO 1. Sort out one-one, onto, into, many one types of functions

CO 2. Apply induction principle and Division Algorithm

CO 3. Handle Elementary Linear algebra problems

Practical No.	Unit
1	Compute various equivalence classes for given relation
2	Find number of relations, functions, and their types.
3	Find inverse and composition of the functions.
4	Apply division algorithm for computing greatest common divisor.
5	Discuss basic properties of congruences.
6	Compute rank, row rank and column rank of matrix
7	Compute row Echelon form and reduced Echelon form of given matrix
8	Solve system of linear equations (Homogeneous and non-homogeneous).
9	Find eigen values and eigen vectors of given matrix.
10	Apply Caley Hamilton theorem



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Department of Mathematics

Course Type: DSC-II

Course Title: Differential Calculus

Course Code: 101MAT1102

Credits: 03

Max. Marks: 75

Lectures: 45 Hrs.

### Learning Objectives

- LO 1. To learn Least upper bound axiom of  $\mathbb{R}$  and its consequences
- LO 2. To get Concepts of limit and Continuity through notations
- LO 3. To know Relation between continuity and uniform continuity
- LO 4. To learn Mean Value theorem and its applications.

### Course outcomes

After completion of course the student will be able to-

- CO 1. Know hyperbolic function and compute successive differentiation
- CO 2. Expand the function in terms of in Finite series.
- CO 3. Calculate Extreme values of functions
- CO 4. study various indeterminate forms

Unit No.	Title of Unit & Contents	Hrs.
<b>I</b>	<b>Hyperbolic Function and Successive Differentiation</b>	<b>12</b>
	<ul style="list-style-type: none"><li>1. Hyperbolic function, derivatives of Hyperbolic functions, inverse hyperbolic functions</li><li>2. Higher order derivatives, calculation of the <math>n^{\text{th}}</math> derivative</li><li>3. <math>n^{\text{th}}</math> derivatives of the products of the powers of sines and cosine</li><li>4. Leibnitz theorem, Taylor's theorem, Maclaurin's theorem.</li></ul>	
	<b>Unit Outcome:</b> UO 1. Techniques to classify derivatives of hyperbolic functions UO 2. Able to solve the problems based on limit and continuity	
<b>II</b>	<b>Mean Value Theorems</b>	<b>10</b>
	<ul style="list-style-type: none"><li>1. Maximum value of a function; minimum value of a function</li><li>2. A necessary condition for extreme values, Sufficient condition for extreme value</li><li>3. Use of second order derivatives, Application to problems.</li></ul>	

Unit No.	Title of Unit & Contents	Hrs.
	<b>Unit Outcome:</b> UO 1. Discriminate the maximum and minimum value of a function. UO 2. Apply proper MVT's to solve problems.	
<b>III</b>	<b>Maxima and Minima</b>	<b>10</b>
	1. Maximum value of a function; minimum value of a function 2. A necessary condition for extreme values, Sufficient condition for extreme value 3. Use of second order derivatives, Application to problems.	
	<b>Unit Outcomes:</b> UO 1. Discriminate the maximum and minimum value of a function.	
<b>IV</b>	<b>Indeterminate Forms</b>	<b>10</b>
	1. The indeterminate form $\frac{0}{0}$ , The indeterminate from $\frac{\infty}{\infty}$ 2. The indeterminate from $0 \cdot \infty$ , The indeterminate from $\infty - \infty$ 3. The indeterminate from $0^0, 1^\infty, \infty^0$	
	<b>Unit Outcome:</b> UO 1. Know various types of indeterminate forms.	

### Learning Resources:

1. Differential Calculus , Shanti Narayan and Dr. P. K. Mittal , Revised Edition , S. Chand and Co. Ltd.2012 (Reprint 2014)
2. Differential Calculus , Shanti Narayan , Tenth Edition, S. Chand and Co. Ltd.(1962).
3. Text book on Differential Calculus, Gorakh Prasad, Nineteenth Edition , Pothishala Private limited Allahabad(2022).
4. Calculus, Schaum's outline series , Ayres F, Sixth Edition, Mc Graw Hill, (2013).
5. Differential calculus for beginners , Joseph Edwards , Arihant publication India limited(2023).
6. Golden Differential Calculus , N. Bali , Laxmi Publication Pvt Ltd.(2012).
7. Theory and Problems on Advance Calculus, Murray and R Spiegel . Second Edition, Schaum Pub. Co. New York (1963).



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Department of Mathematics

**Course Type: Lab Course**

**Course Title: Lab Course –II (Based on DSC-II)**

**Course Code: 101MAT1104**

**Credits: 01**

**Max. Marks: 50**

**Hours: 30**

### Learning Objectives

LO 1. To Compute limit points, interior point, supremum and infimum of given set

LO 2. So solve Problems on concepts of limit and Continuity through notations

LO 3. To solve Problems on Mean Value theorem and its applications

### Course outcomes

After completion of course the student will be able to-

CO 1. Find limit points, interior points, exterior points, boundary points of sets

CO 2. Find LUB, GLB apply the definition of limit and continuity.

CO 3. Handle the problems on Continuity, uniform Continuity and MVT's.

Practical No.	Unit
1	Find supremum and infimum of given set.
2	Find limit points of a set.
3	Discuss nature of set as open or closed.
4	Find interior, exterior, frontier and boundary points of given set.
5	Discuss countability and uncountability of given sets.
6	Compute limit of given functions.
7	Discuss continuity and differentiability of given function.
8	Solve examples on mvt.
9	Apply generalized mvt.
10	Discuss whether given function is increasing or decreasing.





## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Department of Mathematics

Course Type: VSC-I

Course Title: Introduction to Mathematics Software's

Course Code: 101MAT1501

Credits: 02

Max. Marks: 50

Lectures: 30 Hrs.

### Learning Objectives:

- LO 1. To know MATLAB programming language.
- LO 2. To assign and manage variables.
- LO 3. To create function input validation.
- LO 4. To generate linearly spaced vectors.
- LO 5. To solve linear system of equations.

### Course Outcomes:

After completion of course the student will be able to-

- CO 1. Perform basic MATLAB commands and will apply MATLAB for elementary
- CO 2. number theory problem
- CO 3. Do Arithmetic Operations of Arrays
- CO 4. Solve elementary linear Algebra examples using MATLAB
- CO 5. Compute Row Reduced Echelon Form

Unit No.	Title of Unit & Contents	Hrs.
<b>I</b>	<b>Introduction to MATLAB</b>	<b>08</b>
	<ol style="list-style-type: none"><li>1. MATLAB Programming language</li><li>2. Built-in Functions</li><li>3. Graphics, computations, External interface, and Tool boxes</li><li>4. MATLAB windows, desktop, command window, workspace, Figure and Editor Windows</li><li>5. Input-output</li><li>6. File types.</li><li>7. Platform dependence.</li><li>8. Printing</li></ol>	
	<b>Unit Outcomes:</b> UO 1. Apply MATLAB for elementary number theory problems. UO 2. Able to differentiate function file and structure of function file.	
<b>II</b>	<b>Programming in MATLAB</b>	<b>07</b>
	<ol style="list-style-type: none"><li>1. Scripts and functions</li><li>2. Script files, function files</li><li>3. Executing of function</li><li>4. Writing good functions</li><li>5. Sub functions</li></ol>	

	6. Compiled functions	
	<b>Unit Outcomes:</b> UO 1. To understand different types of functions.	
<b>III</b>	<b>Matrix as array</b>	<b>07</b>
	1. Matrices and Vectors 2. Input, indexing, matrix manipulation 3. Creating vectors 4. Matrix and Array operations 5. Arithmetic operations 6. Relational operations 7. Logical operations	
	<b>Unit Outcome:</b> UO 1. Recognize vectors operations and solve problems based on matrix.	
<b>IV</b>	<b>Linear Algebra and MATLAB</b>	<b>08</b>
	1. Elementary math functions, 2. Matrix functions, 3. Character string. 4. Finding the determinant, rank, inverse of matrix. 5. Solving Linear system of equations and computation of row reduced echelon form 6. Finding eigenvalues and eigenvectors.	
	<b>Unit Outcomes:</b> UO 1. Perform matrix based operations such as rank, eigen value, eigen function and system of linear equations.	

### Learning Resources:

1. Getting Started with MATLAB 7 by Rudra Pratap, Oxford University Press (For MATLAB User )(2005).
2. MATLAB An introduction with applications by Amos Gilat , Fourth Edition , Wiley publication (2012).
3. Understanding Matlab A Textbook For Beginners by , S S Alam , S N Alam, Zeroth Edition , I K International Publishing House (2007).
4. Suggested digital platform: NPTEL/SWAYAM/MOOCs
5. <https://nptel.ac.in/courses/103106118>
6. [https://spoken-tutorial.org/tutorialsearch/?search\\_foss=Scilab&search\\_language=Englis](https://spoken-tutorial.org/tutorialsearch/?search_foss=Scilab&search_language=Englis)



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

UG First Year

### Basket I: Generic/Open Elective (GE/OE)

(GEs offered to the Science & Technology students in Sem.-I)

Sr. No.	BoS Proposing GE/OE	Code	Course Title	Credits	Hrs.
1	Commerce	101AAF1401	Mutual Fund Management	04	60
2	Commerce	101MAE1401	Fundamentals of Statistics	04	60
3	English	101ENG1402	English for Science and Technology	04	60
4	Geography	101GEO1401	General Geography	04	60
5	Commerce	101BAI1401	Personal Financial Management	04	60
6	Marathi	101MAR1401	स्पर्धा परीक्षा आणि मराठी भाषा	04	60
7	Political Science	101POL1401	Human Rights	04	60
8	Biotechnology	101BIO1401	Nutrition, Health and Hygiene	04	60
9	Music	101MUS1401	Indian Vocal Classical & Light Music	04	60
10	NCC Studies	101NCC1401	Introduction to NCC	04	60
11	Sports	101SPO1401	Counseling and Psychotherapy	04	60

**Note: Student can choose any one GE from the basket**



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

UG First Year

### Basket II: Skill Enhancement Courses (SEC)

(SEC offered to the Science & Technology students in Sem.-I)

Sr. No.	BoS Proposing SEC	Code	Course Title	Credits	Hrs.
1	Chemistry	101CHE1601	Pesticides and Green Chemistry	02	30-45
2	Information Technology	101COM1601	Basics of Python Programming	02	30-45
3	Physics	101PHY1601	Physics Workshop Skills	02	30-45
4	Biotechnology	101BIO1601	Food Processing Technology	02	30-45
5	Botany	101BOT1601	Mushroom Cultivation Technology	02	30-45
6	English	101ENG1601	Proof Reading and Editing	02	30
7	Information Technology	101COA1601	PC Assemble and Installation	02	30-45
8	Marathi	101MAR1601	कथा/पटकथालेखन	02	30
9	Zoology	101ZOO1601	Bee Keeping	02	30-45

**Note: Student can choose any one SEC from the basket**



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**UG First Year**

**Basket III: Ability Enhancement Courses (AEC)**

**(AEC offered to the Science & Technology students in Sem.-I)**

Sr. No.	BoS Proposing AEC	Code	Course Title	Credits	Hrs.
1	Marathi	101MAR7101	भाषिक कौशल्य भाग - १	02	30
2	Hindi	101HIN7101	हिंदी भाषा शिक्षण भाग - १	02	30
3	Sanskrit	101SAN7101	व्यावहारीक व्याकरण व नितिसुभाषिते	02	30
4	Pali	101PAL7101	उपयोजित व्याकरण	02	30

**Note: Student can choose any one AEC from the basket**



## **Rajarshi Shahu Mahavidyalaya, Latur**

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**UG First Year**

### **Extra Credit Activities**

<b>Sr. No.</b>	<b>Course Title</b>	<b>Course Code</b>	<b>Credits</b>	<b>Hours T/P</b>
1	MOOCs		Min. of 02 credits	Min. of 30 Hrs.
2	Certificate Courses		Min. of 02 credits	Min. of 30 Hrs.
3	IIT Spoken English Courses		Min. of 02 credits	Min. of 30 Hrs.

### **Guidelines:**

#### **Extra -academic activities**

1. All extra credits claimed under this heading will require sufficient academic input/ contribution from the students concerned.
2. Maximum 04 extra credits in each academic year will be allotted.
3. These extra academic activity credits will not be considered for calculation of SGPA/CGPA but will be indicated on the grade card.

#### **Additional Credits for Online Courses:**

1. Courses only from SWAYAM and NPTEL platform are eligible for claiming credits.
2. Students should get the consent from the concerned subject Teacher/Mentor/Vice Principal and Principal prior to starting of the course.
3. Students who complete such online courses for additional credits will be examined/verified by the concerned mentor/internal faculty member before awarding credits.
4. Credit allotted to the course by SWAYAM and NPTEL platform will be considered as it is.

#### **Additional Credits for Other Academic Activities:**

1. One credit for presentation and publication of paper in International/National/State level seminars/workshops.
2. One credit for measurable research work undertaken and field trips amounting to 30 hours of recorded work.
3. One credit for creating models in sponsored exhibitions/other exhibits, which are approved by the concerned department.
4. One credit for any voluntary social service/Nation building exercise which is in collaboration with the outreach center, equivalent to 30 hours
5. All these credits must be approved by the College Committee.

### **Additional Credits for Certificate Courses:**

1. Students can get additional credits (number of credits will depend on the course duration) from certificate courses offered by the college.
2. The student must successfully complete the course. These credits must be approved by the Course Coordinators.
3. Students who undertake summer projects/ internships/ training in institutions of repute through a national selection process, will get 2 credits for each such activity. This must be done under the supervision of the concerned faculty/mentor.

### **Note:**

1. The respective documents should be submitted within 10 days after completion of Semester End Examination.
2. No credits can be granted for organizing or for serving as office bearers/ volunteers for Inter-Class / Associations / Sports / Social Service activities.
3. The office bearers and volunteers may be given a letter of appreciation by the respective staff coordinators. Besides, no credits can be claimed for any services/activities conducted or attended within the college.
4. All claims for the credits by the students should be made and approved by the mentor in the same academic year of completing the activity.
5. Any grievances of denial/rejection of credits should be addressed to Additional Credits Coordinator in the same academic year.
6. Students having a shortage of additional credits at the end of the third year can meet the Additional Credits Coordinator, who will provide the right advice on the activities that can help them earn credits required for graduation.



## Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

### Examination Framework

#### Theory:

40% Continuous Assessment Tests (CATs) and 60% Semester End Examination (SEE)

#### Practical:

50% Continuous Assessment Tests (CATs) and 50% Semester End Examination (SEE)

Course	Marks	CAT & Mid Term Theory				CAT Practical		Best Scored CAT & Mid Term	SEE	Total
		3				4				
1	2	Att.	CAT I	Mid Term	CAT II	Att.	CAT	5	6	5 + 6
DSC/DSE/GE/OE/Minor	100	10	10	20	10	-	-	40	60	100
DSC	75	05	10	15	10	-	-	30	45	75
Lab Course/AIPC/OJT/FP	50	-	-	-	-	05	20	-	25	50
VSC/SEC/AEC/VEC/CC	50	05	05	10	05	-	-	20	30	50

#### Note:

1. All Internal Exams are compulsory
2. Out of 02 CATs best score will be considered
3. Mid Term Exam will be conducted by the Exam Section
4. Mid Term Exam is of Objective nature (MCQ)
5. Semester End Exam is of descriptive in nature (Long & Short Answer)
6. CAT Practical (20 Marks): Lab Journal (Record Book) 10 Marks, Overall Performance 10 Marks.