Rajarshi Shahu Mahavidyalaya, Latur
(Autonomous)
Structured Work Plan for Teaching
First Term
(June 2022 to Oct 2022)

1. Details of Classes to be taught

Sr. No.	Class	Name of Faculty	Subject	Paper	Workload
1.	B.Sc. II	Dr. Nishank Sudhakar Pimple	Mathematics	Real Analysis(T)	03
				Lab Curse V -Problems in Real Analysis (P)	06
2.	B.Sc. III			Metric Space	03
				Lab Course IX-Problems in Metric Space (P)	06
3.	M.Sc. II			Functional Analysis (T)	06
				Seminars	02
				Project Guidance (2 Groups)	02
				TOTAL	28 Lectures/Week

Course Teacher

Dr. Nishank S. Pimple

HoD

Dr. Mahesh S. Wavare
Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

1. **Summary of Lesson Plan**
   Name of Teacher: Dr. Nishank S. Pimple

   Course Name: Real Analysis   Course Code – U-MAT-339

   Class: - B.Sc. II (III- Sem)

   Paper – V(Theory)

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1.	Mathematics (Real Analysis)	**Unit I :** **Sequences:** Sequences and their limits, limit theorems, Monotone Sequences, Subsequences and Bolzano Weierstrass theorem, The Cauchy's criterion, properly divergent sequences	26 June 2022 to 5Aug 2022	15	**Assignments** **NPTEL Course registration** **Madhava Quiz Competition**	**Unit Test-1**
		Unit II : Sequence of functions Pointwise and uniform convergence, Interchange of limits, The exponential and Logarithmic functions, The trigonometric functions	6 Aug 2022 to 15 Sept 2022	15	**Ramanujan Quiz Competition**	
		Unit III : Infinite Series Introduction to series, Cauchy's criterion for series, Comparison tests, Absolute convergence Test for Absolute convergence, Test for Non- absolute convergence, series of functions.	18 Sept 2022 to 30 Oct 2022	15	**IIT-JAM Entrance preparation**	**Unit Test-2**

Course Teacher
Dr. Nishank S. Pimple

HoD

Dr. Mahesh S. Wavare
Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

(Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

2. Summary of Lesson Plan

Name of Teacher: Dr. Nishank S. Pimple

Course Name : Problems in Real Analysis

Course Code: U-MAT-341

Class : B. Sc. II (III - Sem)

Paper-III

Sr. No.	Subject	Practical to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	Mathematics	Practical-1 to Practical-10	04 July 2022 to 02 Aug 2022	10	Exercise Question solved	
		Practical-11 to Practical-20	08 Aug 2022 to 19 Sept 2022	10	Exercise Question solved	
		Practical-21 to Practical-30	20 Sept 2022 to 11 Oct 2022	10	Exercise Question solved	

Course Teacher

Dr. Nishank S. Pimple

HoD

Dr. Mahesh S. Wavare

Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal

PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

3. Summary of Lesson Plan
   Name of Teacher: Dr. Nishank S. Pimple
   Course Name : Metric Space

   Course Code: U-MAT-555

   Class: - B.Sc. III (V-Sem)
   Paper- IX (Theory)

Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1.	Mathematics (Metric Spaces)	**Unit I** Metric Space, Introduction, Metric, Neighborhood, Limit Point, Isolated Point Closed Set, Boundary Sets, Interior point, Interior, Open Set.	27 June 2022 to 30 July 2022	15	Assignments NPTEL Course registration IIT-JAM Entrance preparation	Unit Test-1
		Unit-II Cauchy Sequence, Complete Metric spaces, Baire category Theorem, Compactness & Connectedness.	04 Aug 2022 to 10 Sept 2022	15	Madhava Quiz Competition Ramanujan Quiz Competition	
		Unit-III Weierstrass Theorem, Sequentially Compactness, Totally boundedness, Lebesgue number, Lebesgue Covering lemma, Continuity and Uniform Continuity.	12Sept 2022 to 15 Oct 2022	15	Poster Presentation	Unit Test-2

Course Teacher

Dr. Nishank S. Pimple

HoD

Dr. Mahesh S. Wavare
Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
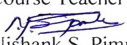(Autonomous), Latur

4. Summary of Lesson Plan

Name of Teacher: Dr. Nishank S. Pimple

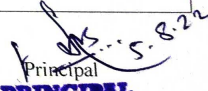Course Name : Problems in Metric Space   Course Code: U-MAT-557

Class : B. Sc. III (III - Sem)

Paper- XI

Sr. No.	Subject	Practical to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1	Mathematics	Practical-1 to Practical-10	06 July 2022 to 04 Aug 2022	10	Exercise Question solved	
		Practical-11 to Practical-20	10 Aug 2022 to 14 Sept 2022	10	Exercise Question solved	
		Practical-21 to Practical-30	15 Sept 2022 to 13 Oct.2022	10	Exercise Question solved	

Course Teacher

Dr. Nishank S. Pimple

HoD

Dr. Mahesh S. Wavare
Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

5. Summary of Lesson Plan

Name of Teacher: Dr. Nishank S. Pimple
Course Name : Functional Analysis Course Code: P-FUA-165
Class: M.Sc. II (III-Sem)
Paper- XII (Theory)

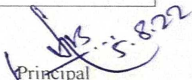| Sr. No.	Subject	Unit and Chapter to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test / Assignment with topic and date
1.	Mathematics (Functional Analysis)	**Unit-I:** Definition and some Examples of Banach Spaces, continuous linear transformations, The Hahn-Banach Theorem, The Natural embedding of N in N**.	26 June 2022 to 30 July 2022	20	Assignments NPTEL Course registration	Unit Test -1
		Unit-II: The open Mapping Theorem, The conjugate of an operator. The definition and some simple properties of Hilbert Spaces, orthogonal complements, orthonormal sets.	1 Aug 2022 to 30 Aug 2022	18	Seminars	
		Unit-III: The conjugate space H*, The adjoint of an operator, self-adjoint operators, Normal and Unitary Operators, projections.	02 Sept 2022 to 25 Sept 2022	12		
		Unit-IV:	26 Sept 2022	10		

		Finite Dimensional Spectral Theory: Introduction, Matrices, Determinants and spectrum of an operator, The spectral Theorem.	to 15 Oct 2022		**Guest lecture**	**Unit Test -2**
4.	**M.Sc. I , II**	Seminar & project	**July 2022** to **Oct 2022**	40	2 students per week for seminar and six students for project	2- project Presentations for each group

Course Teacher
Dr. Nishank S. Pimple

HoD
Dr. Mahesh S. Wavare
Head,
Department of Mathematics,
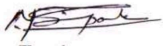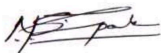Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal
PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

Shiv Chhatrapati Shikshan Sanstha's
Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Structured Work Plan for Teaching
(December-2022 to March-2023)

Sr. No.	Class	Name of the Teacher	Subject	Paper
1	B.Sc. II Year	Dr. Nishank S Pimple	Mathematics	Ordinary Differential Equations

Sr. No.	Unit	Unit to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test/ Assignment with topic and date
1	UNIT – I	Definitions and formation of differential equations	08 Dec 2022 to 31 Dec 2022	10	NPTEL Registration	Assignment on unit I
2	UNIT – II	Linear differential equations with constant coefficients	05 Jan 2023 to 11 Feb 2023	18	Poster Presentation	Assignment on unit II
3	UNIT – III	Linear differential equations with variable coefficients	16 Feb 2023 to 29 Mar 2023	17	Quiz Competition	Assignment on unit III

Teacher

Shiv Chhatrapati Shikshan Sanstha's

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Structured Work Plan for Teaching
(December-2022 to March-2023)

2	B.Sc. II Year	Dr. Nishank S Pimple	Mathematics	Complex Analysis

Sr. No.	Unit	Unit to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test/ Assignment with topic and date
1	UNIT – I	Functions of Complex Variables	8 Dec 2022 To 13 Jan 2023	15	IIT-JAM Entrance Preparation	Assignment on unit I
2	UNIT – II	Integrals	14 Jan 2023 to 23 Feb 2023	15	Poster Presentation	Unit Test-I
3	UNIT – III	Singularities and the calculus of Residues	24 Feb 2023 To 29 Mar 2023	15	Madhava Competition presentation	Unit Test-II

Teacher

Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Structured Work Plan for Teaching
(December-2022 to March-2023)

3	M.Sc. II year	Dr. Nishank S Pimple	Mathematics	Linear Integral Equations

Sr. No.	Unit	Unit to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test/ Assignment with topic and date
1	UNIT – I	Classification of Integral equations	8 Dec 2022 to 31 Dec 2022	20	Surprise Test	Assignment on unit I
2	UNIT – II	Method of Successive approximation	02 Jan 2023 to 21 Jan 2023	15	Quiz	Unit Test-I
3	UNIT – III	Integral equations with symmetric kernel	23 Jan 2023 to 15 Feb 2023	15	Solving Exercise problem	Assignment on unit III
4	UNIT – IV	Integral transform method	16 Feb 2023 To 29 Mar 2023	10	Seminar	Unit Test-II

Teacher

Head,
Department of Mathematics,
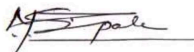Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur

Shiv Chhatrapati Shikshan Sanstha's

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Structured Work Plan for Teaching
(December-2022 to March-2023)

4	B.Sc. II Year	Dr. Nishank S Pimple	Mathematics	Ordinary Differential Equations (Practical)

Sr. No.	Unit	Practical to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test/ Assignment with topic and date
1	UNIT – I	Practical-1 to Practical-10	12 Dec 2022 To 13 Jan 2023	15	Problem Solving	Homework problems
2	UNIT – II	Practical-11 to Practical-20	23 Jan 2023 to 28 Feb 2023	15	Problem Solving	Homework problems
3	UNIT – III	Practical-21 to Practical-30	03 Mar 2023 To 29 Mar 2023	15	Problem Solving	Homework problems

Teacher

Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

Principal
PRINCIPAL
Rajarshi Shahu.Mahavidyalaya
(Autonomous), Latur

5	B.Sc. III Year	Dr. Nishank S Pimple	Mathematics	Complex Analysis (Practical)

Sr. No.	Unit	Practical to be covered	Date	No. of Lectures	Academic activities to be organized	No. of Test/ Assignment with topic and date
1	UNIT – I	Practical-1 to Practical-10	12 Dec 2022 To 21 Jan 2023	15	Problem Solving	Homework problems
2	UNIT – II	Practical-11 to Practical-20	23 Jan 2023 to 28 Feb 2023	15	Problem Solving	Homework problems
3	UNIT – III	Practical-21 to Practical-30	03 Mar 2023 To 29 Mar 2023	15	Problem Solving	Homework problems

Teacher

Head,
Department of Mathematics,
Rajarshi Shahu Mahavidyalaya,
(Autonomous) Latur-413512

PRINCIPAL
Rajarshi Shahu Mahavidyalaya
(Autonomous), Latur