

**Rajarshi Shahu Mahavidyalaya, Latur**

**( Autonomous )**

**Structured Work Plan for Teaching**

**First term (July 2021 to Dec 2022)**

**1. Details of Classes to be taught**

Sr. No.	Class	Semester	Name of Asstt. Prof.	Subject	Paper
1	M.Sc.II	III	Mr. D.M.Ghugre	Mathematics	Ring Theory
2	M.Sc.II	III			Practical
3	M.Sc.II	III			Seminar of Allocated Students
4	M.Sc.II	III			Research Project of Allocated Students

**3.Summary of Lesson Plan**

**Name of Teacher: D.M.Ghugre**

**Class**

**: M.Sc.II ( Sem-III)**

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	<b>Unit-I:</b> Terminology, Rings of Continuous Functions, Matrix Rings , Polynomial Rings, Power Series Rings , Laurent Rings , Boolean Rings ,Some	05/07/2021 To 30/07/2021	15	Guest Lecture	Home Assignment

	<p>Special Rings ,Direct Products ,Several Variables ,Opposite Rings , Characteristic of a Ring .</p>				
	<p><b>Unit-II:</b> Definitions, Maximal Ideals, Generators, Basic Properties of Ideals, Algebra of Ideals ,Quotient Rings ,Ideals in Quotient Rings , Local Rings.</p>	<p>31/07/2021 To 25/08/2021</p>	<p>15</p>	<p>Seminar By Students</p>	<p>Online Test</p>
	<p><b>Unit-III:</b> Definitions and Basic Properties, Fundamental Theorems Endomorphism Rings Field of fractions Prime fields</p>	<p>26/08/2021 To 25/09/2021</p>	<p>15</p>		<p>Home Assignment</p>
	<p><b>Unit-IV:</b> Division in Domains, Euclidean Domains, Principal Ideal Domains, Factorization Domains, Unique Factorization Domains, Eisenstein`s Criterion ,</p>	<p>26/09/2021 To 31/10/2021</p>	<p>15</p>		<p>Unit Test 2</p>

### 3. Summary of Lesson Plan

Name of Teacher: D.M.Ghuge

Class

: M.Sc.II (Sem-III)

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	<p><b>Section-I:</b> Elementary set theory, finite, countable and uncountable sets, Real number system as a complete ordered field, Archimedean property, supremum, infimum. Sequences and series, convergence, <math>\limsup</math>, <math>\liminf</math>.</p> <p><b>Section-II:</b> Bolzano Weierstrass theorem, Heine Borel theorem. Continuity, uniform continuity, differentiability, mean value theorem. Sequences and series of functions, uniform convergence</p>	<p>05/07/2021 To 25/08/2021</p> <p>26/08/2021 To 31/10/2021</p>	30	<p>Guest Lecture On Set/Net</p>	Assignment  Online Quiz

Sign of Teaching Staff

(Mr. D.M. Ghuge)

Head,  
Head,

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

Principal  
PRINCIPAL

Rajarshi Shahu Mahavidyalaya  
(Autonomous), Latur

Rajarshi Shahu Mahavidyalaya, Latur

( Autonomous )

Structured Work Plan for Teaching

First term (July 2021 to March 2022)

1. Details of Classes to be taught

Sr. No.	Class	Semester	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.I	I	D.M.Ghugre	Mathematics	<del>Matrix Spaces</del> Diff. Calculus
2	M.Sc.I	I			Abstract Algebra
3	M.Sc.I	I			Complex Analysis
4	M.Sc.II	III			Ring Theory
5	M.Sc.II	III			Lab Course-III

2. Summary of Lesson Plan

Name of Teacher: D.M.Ghugre

Class

: B.Sc.I (I- Semester) : Differential Calculus

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	Unit I: The Real Numbers: Sets and functions, The Real numbers system: Introduction, R as complete order field Bounded and unbounded sets Supremom, Infimum,	20-09-2021 To 23-10-2021	15	workshop Classroom	Assignment of topics first before 30nov

	<p>order completeness of <math>\mathbb{R}</math>, Absolute Value of a Real Number, Limit points of a set, open and Closed sets: Closure of a set, Interior and exterior of a set, countable and uncountable sets.</p> <p><b>Unit II: Real Functions, Limit and Continuity</b></p> <p>Algebraic operations on functions, bounded and unbounded functions, limit of a function, algebra of limits, one sided limits, limits at infinity and infinite limits Continuous function discontinuity of a function, algebra of continuous function, Cauchy's criterion for finite limits, properties of functions continuous in closed finite intervals, Uniform continuity.</p> <p><b>Unit III: The Derivative and Mean Value Theorems</b></p> <p>Derivability of a function, Algebra of derivatives, geometrical meaning of derivative, sign of</p>	<p>25-10-2021 To 4-12-2021</p>	15	Seminar	2021
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		derivative at a point, Darboux's theorem, Rolle's Mean value theorem, Lagrange's mean value theorem. Increasing and decreasing functions, monotonic functions, Cauchy's mean value theorem, generalized mean value theorem, higher order derivatives, Taylor's theorem, power series representation of functions, Maclaurin's infinite series.	6-12-2021 To 15-01-2022	15		
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### 3. Summary of Lesson Plan

Name of Teacher: D.M.Ghugre

Class

: M.Sc.I (I-Semester) Abstract algebra

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	Unit-I: Groups, semi groups and groups, Homomorphism, Subgroups and cosets, Cyclic groups, Generators and relations, Normal subgroup and	27-9-2021 To 13-10-2021	15	NPTL online courses	Assignment before 30 nov 2021

		quotient group			
		<p><b>Unit-II:</b> Isomorphism theorems, Automorphism, Conjugacy and G-sets, Normal series, Solvable groups, Nilpotent groups.</p> <p><b>Unit-III:</b> Fundamental Theorem of Finite Abelian Groups, Permutation Groups, Cyclic decomposition, Alternating group <math>A_n</math>,</p> <p><b>Unit-IV:</b> Structure of groups, Direct product, Finitely Generated Abelian Groups, Invariants of a finite abelian group, Sylow Theorems and its applications</p>	<p>14-10-2021 To 02-11-2021</p> <p>08-11-2021 To 27-11-2021</p> <p>29-11-2021 To 15-12-2021</p>	<p>15</p> <p>15</p> <p>15</p>	<p>workshop</p> <p>Classroom Seminar</p>

#### 4.Summary of Lesson Plan

Name of Teacher: D.M.Ghuge

Class

: M.Sc.I (Sem-I) Complex Analysis

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	<p><b>Unit-I:</b> Complex Field, Modulus, Argument and Conjugate of complex numbers, Algebra of complex numbers, Rectangular and Polar representation of Complex numbers, Point sets in the plane, sequences</p> <p><b>Unit-II:</b> Stereographic Projection, Linear Fractional , Transformation, Other Mappings, The Exponential Function, Mapping Properties, The Logarithmic Function, Complex Exponents.</p>	<p>27-9-2021 To 13-10-2021</p>	15	<p>NPTTEL online courses</p> <p>workshop</p> <p>Classroom Seminar</p>	<p>Assignment before 30 nov 2021</p>



		<b>Unit-III:</b> Analyticity, Harmonic Functions, Sequences of Functions, Uniform Convergence, Maclaurin and Taylor Series, Operations on Power series. <b>Unit-IV:</b> Curves , Parameterizations, Line Integrals, Cauchy's Theorems.	08-11-2021 To 27-11-2021	15		
			29-11-2021 To 15-12-2021	15		

  
Course Teacher

Mr. Dipak M. Ghuge

  
HOD

Dr. Mahesh S Wavare

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Principal

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