

**Rajarshi Shahu Mahavidyalaya, Latur**

**( Autonomous )**

**Structured Work Plan for Teaching**

**First term (July 2020 to March 2021)**

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

Sr. No.	Class	Semester	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.III	V	D.M.Ghuge	Mathematics	Metric Spaces
2	M.Sc.I	I			Abstract Algebra
3	M.Sc.I	I			Complex Analysis
4	M.Sc.II	III			Ring Theory

**2. Summary of Lesson Plan**

**Name of Teacher: D.M.Ghuge                      Class                      : B.Sc.III ( V- Semester) :Metric Spaces**

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> Metric Space, Introduction, Metric, Neighborhood, Limit Point, Isolated Point Closed Set, Boundary Sets, Interior point, Interior, Open Set. <b>Unit II:</b> Cauchy Sequence, Complete Metric spaces, Baire category Theorem, Compactness & Connectedness.	13-07-2020 To 12-08-2020 17-08-2020 To 16-09-2020	15  15	  workshop  Classroom Seminar	Surprise test on 22-08-2020  Assignment of topics first before 30nov 2020

		<b>Unit III:</b> Weierstrass Theorem, Sequen Compactness, Totally bounded Lebesgue number, Lebesgue Cov lemma, Continuity and Uniform Continu	21-09-2020 To 04-11-2020	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	<b>Unit-I:</b> Groups, semi groups and groups, Homomorphism, Subgroups and cosets, Cyclic groups, Generators and relations, Normal subgroup and quotient group  <b>Unit-II:</b> Isomorphism theorems, Automorphism, Conjugacy and G-sets, Normal series, Solvable groups, Nilpotent groups.	1-1-2021 To 18-01-2021  19-01-2021 To 06-02-2021	15  15	NPTEL online courses  workshop  Classroom Seminar	Surprise test on 19 dec 2018

		<b>Unit-III:</b> Fundamental Theorem of Finite Abelian Groups, Permutation Groups, Cyclic decomposition, Alternating group $A_n$ , <b>Unit-IV:</b> Structure of groups, Direct product, Finitely Generated Abelian Groups, Invariants of a finite abelian group, Sylow Theorems and its applications	08-02-2021 To 27-02-2021  1-03-2021 To 21-03-2021	15   15		Surprise test on 12feb 2021  Surprise test on Before 20 feb 2021
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### 3.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	<b>Unit-I:</b> Complex Field, Modulus, Argument and Conjugate of complex numbers, Algebra of complex	1-1-2021 To 18-01-2021	15	NPTEL online courses	Surprise test on 19 dec 2018

	<p>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><b>Unit-III:</b> Analyticity, Harmonic Functions, Sequences of Functions, Uniform Convergence, Maclaurin and Taylor Series, Operations on Power series.</p> <p><b>Unit-IV:</b> Curves , Parameterizations, Line Integrals, Cauchy's Theorems.</p>	<p>19-01-2021 To 06-02-2021</p> <p>08-02-2021 To 27-02-2021</p> <p>1-03-2021 To 21-03-</p>	<p>15</p> <p>15</p> <p>15</p>	<p>workshop</p> <p>Classroom Seminar</p>	
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### 3.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> Terminology, Rings of Continuous Functions, Matrix Rings , Polynomial Rings, Power Series Rings , Laurent Rings , Boolean Rings ,Some 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>13-07-2020 To 30-07-2020</p> <p>31-07-2020 To 19-08-2020</p>	<p>15</p> <p>15</p>	<p>NPTEL online courses</p> <p>workshop</p> <p>Classroom Seminar</p>	<p>Surprice test on 19 dec 2018</p> <p>Surprice test on</p>

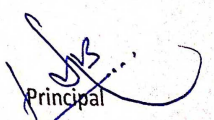
		Unit-III: Definitions and Basic Properties, Fundamental Theorems	20-08-2020 To 12-09-2020	15		09 jan 2019
		Endomorphism Rings Field of fractions Prime fields				
		Unit-IV: Division in Domains, Euclidean Domains, Principal Ideal Domains, Factorization Domains, Unique Factorization Domains, Eisenstein"s Criterion ,	14-09-2020 To 30-09-2020	15		Surprice test on 31 Jan 2019

  
Teaching Staff

Mr.D. M. Ghuge


  
HOD,  
Department of Mathematics,  
Rajarshi Shahu Mahavidyalaya,  
(Autonomous) Latur-413012




  
Principal  
**PRINCIPAL**  
Rajarshi Shahu Mahavidyalaya, Latur  
(Autonomous)

	<p>Linear systems of Equations: Gauss Elimination, Gauss-Jordan method, LU decomposition, iterative methods, and Gauss-Seidel iteration.</p> <p><b>Unit-IV:</b> Numerical Calculus : Numerical differentiation, Errors in numerical differentiation, Numerical Integration, Trapezoidal rule, Simpson's 1/3 - rule, Simpson's 3/8 rule, error estimates for Trapezoidal rule and Simpson's rule.</p>	<p>01-04-2021 To 16-04-2021</p>	15		
		<p>17-04-2021 To 31-04-2021</p>	15		

  
Teaching Staff

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



  
Principal  
**PRINCIPAL**  
Rajarshi Shahu Mahavidyalaya, Latur  
(Autonomous)

**Second Term(march 2021-may 2021)**

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

Sr. No.	Class	Semester	Name of Asstt. Prof.	Subject	Paper
1	B.Sc.I	II	D.M.Ghugre	Mathematics	Integral Calculus
2	M.Sc.II	IV			Numerical Analysis

**2. Summary of Lesson Plan**

Name of Teacher: D.M.Ghugre

Class

: B.Sc.I ( II- Semester) :Integral 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: Riemann Integration Introduction, Partition of a closed interval, Norm of partition, upper and lower Darboux's sums, oscillatory sum, upper and lower Riemann integrals, Riemann integrals, Darboux's theorem, Necessary and sufficient condition of Inerrability, some classes of bounded integrable functions. Riemann sum integral as the limit of sum, examples using Riemann sum, Properties of Riemann Integral and First Fundamental Theorem of	10-03-2021 To 15-04-2021	15		Assignment of topics first before 31 March 2021



	Integral Calculus. Unit II: Improper integrals Finite and infinite intervals, bounded functions, proper integral, improper integral, improper integral as the limit of proper integral, test of convergence of series, general test for convergence, Cauchy test, absolute convergence. Unit III: Beta and Gamma functions [12 Lectures] Beta functions, convergence of Beta functions, properties of beta function, Gamma function, convergence of gamma functions, recurrence formula for gamma function, relation between beta and gamma functions (only statements), and duplication formula.	16-04-2021 12-05-2021	15		
		13-05-2021 31-05-2021	15		

### 3. Summary of Lesson Plan

Name of Teacher: D.M.Ghuge

Class

: M.Sc.II ( IV- Semester) Numerical 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	Unit-I:	22-02-2021			

		<p>Iterative solutions of nonlinear equation: bisection method. Fixed-point iteration, Newton's method, secant method, acceleration of convergence, Newton's method for two non linear equations, polynomial equation methods.</p> <p><b>Unit-II:</b> Polynomial interpolation: interpolation polynomial, divided difference interpolation, Aitken's formula, finite difference formulas, Hermite's interpolation, double interpolation.</p> <p><b>Unit-III:</b></p>	<p>To 10-03-2021</p> <p>12-03-2021 To 31-03-2021</p>	<p>15</p> <p>15</p>	<p>NPTEL online courses</p> <p>workshop</p> <p>Classroom Seminar</p>	<p>Assignment of topics first before 31 March 2021</p>
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