

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur
Department of Mathematics
Academic Year : 2018-19
Term - First (June,2018 - Nov.,2018)

Name of Assistant Professor : Miss Ashwini Balajirao Kale

Subject : Mathematics

1. Details of Classes to be taught

| Sr. No. | Class | Course Name | Course Code | (Theory / Practical) |
|---------|-------|-----------------------|-------------|----------------------|
| 1. | U.G-I | Differential Calculus | U-MAT-139 | Theory |
| 2. | U.G-I | Algebra using MATLAB | U-MAT-140 | Lab Work-I |
| 3. | P.G-I | Latex Typesetting | P-LAB-169 | Lab Work-I |

2. Summary of Lesson Plan

| Sr.No. | Unit to be covered | Date | No.of Lectures | Academic activities to be organized | No.of Test / Assignment with topic and date |
|--------|--|--------------------------|----------------|-------------------------------------|---|
| 1. | Unit I: The Real Numbers: Sets and functions, The Real numbers system, Bounded and unbounded sets, Limit points of a set, open and Closed sets: Closure of a set, Interior and exterior of a set, countable and uncountable sets. | 04/07/2018 to 28/07/2018 | 12 | | |

| Sr.No. | Unit to be covered | Date | No.of Lectures | Academic activities to be organized | No.of Test / Assignment with topic and date |
|--------|--|--------------------------|----------------|-------------------------------------|---|
| 2 | Unit II: Real Functions, Limit and Continuity : Algebraic operations on functions, bounded and unbounded functions, limit of a function, Continuous function, discontinuity of a function, Cauchy's criterion for finite limits, Uniform continuity. | 02/08/2018 to 15/09/2018 | 18 | Classroom seminar | Assignment : Activity based unit test 1 |
| 3. | Unit-III:-The Derivative & Mean Value Theorems: Derivability of a function, geometrical meaning Darboux's theorem, Rolle's Mean value theorem, Lagrange's mean value theorem. Cauchy's mean value theorem, higher order derivatives, Taylor's theorem, power series representation of functions, Maclaurin's infinite series. | 21/09/2018 to 10/10/2019 | 20 | | |

Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Structured Work Plan for Teaching

(Dec – 2018 to March . 2019)

1. Details of Classes to be taught

| Sr. No. | Class | Name of Assist. Prof. | Subject | Paper |
|---------|----------|-----------------------|-------------|---|
| 1 | B.Sc.-I | Miss A.B.Kale | Mathematics | Geometry(Section-A) |
| 2 | B.Sc.-I | | | Laboratory Course-II (Algebra using MATLAB) |
| 3 | M.Sc.-I | | | Lab Work-II (Writing & Presentation using Latex) |
| 4 | M.Sc.-II | | | Field Theory |

2.Summary of Lesson Plan

Name of Teacher: Miss A.B.Kale

Class

: B.Sc. I (Second Semester)

| 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 (U-MAT-239 Geometry (Section-A)) | Unit I : Analytical Geometry of Two Dimensions - Change of axes: translation and rotation. Conic Sections: General equation of second degree in two variables. Reduction to standard form. Centre of | 03 Dec 18 to 26 Dec 18 | 3 | Definition- Writing Proof Writing workshop Tutorial classes Surprise test | Assignment Unit Test-I |

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| | | <p>conic. Nature of conic.</p> | | |
| | <p>Unit II : The Plane and Right Line- The plane: First degree equation, converse, transformation to normal form, plane under given condition, system of planes, length of perpendicular from a point</p> <p>Right line: equation of line, line through a point and given direction, line through two points, Angle between line and plane, conditions to lie in plane, coplanar lines, number of constants in equation of line, Shortest distance.</p> | <p>01 Jan 19 to 13 Feb 19</p> | <p>3 3 1 3 2 1 3 4</p> | <p>Classroom Seminar</p> |
| | <p>Unit III : Sphere, Cones and Cylinder The sphere: Equation of a sphere, general equation, plane section of sphere, intersection of two</p> | <p>18 Feb 19 To 20 Mar 19</p> | <p>3 2</p> | |

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| | | <p>sphere, sphere with given diameter, equations of a circle, sphere through given circle, intersection of a sphere and a line, equation of tangent plane, Angle between two spheres, conditions of orthogonality</p> <p>Cones and Cylinders: Cone, equation of cone, right circular cone and equation, Cylinder and its equation.</p> | 2 | 2 | | |
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3. Summary of Lesson Plan

Name of Teacher: Miss A.B.Kale

Class

: M.Sc. II (Fourth Semester)

| 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-FIT-464 T Field Theory) | <p>Unit I – Introduction: Definition and examples of fields Minimal polynomial, adjoining elements, irreducible polynomial Algorithm for factorization The Schoneman- Eisenstein criterion,</p> <p>Unit II Fields Extension : Prime radicals, historical notes the degree of extension Finite Extensions</p> | 06 Dec 18 to 22 Dec 18 | 4 3 4 3 | Proof Writing workshop Tutorial classes Surprise Test Classroom Seminar | Assignment Unit Test-I |

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| | <p>The Tower theorem Algebraic extension mathematical notes.</p> <p>Unit-III Normal and Separable : Splitting fields Definition and examples Uniqueness of splitting fields Normal extensions Separable extension Fields of characteristic zero, Fields of characteristic p, Computations, Mathematical notes historical notes , Theorem of primitive element.</p> <p>Unit-IV The Galois Group : Definition of the Galois Group, Historical notes Galois group of splitting fields Permutations of the roots</p> | <p>10 Jan 19</p> <p>11 Jan 19 to 04 Feb 19</p> | <p>4 2</p> <p>4 2 4 3 3 3 2</p> | | |
| | | <p>05 Feb 19 to 25 Feb 19</p> | <p>2 2 2</p> | | |

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| | | Mathematical notes Examples of Galois groups The p^{th} roots of 2 The Universal Extension A polynomial of degree 5 Mathematical notes, Historical notes | | 4 3 3 | |

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 Sign of Staff
 Miss A. B. Kale

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