

Rajarshi Shahu Mahavidyalaya, Latur

(Autonomous)

Department of Mathematics

Structured Work Plan for Teaching

(June 2019 to Oct 2019)

1. Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc-III (Sem-V)	Mahesh S Wavare	Mathematics	Linear Algebra -X
2	B.Sc-II(Sem-IV)			SEC on R software -I [Theory +Practical]
3	M.Sc-II(Sem-III)			Coding Theory -I
4	M.Sc-II(Sem-III)			Research Project of allocated M.Sc -II year students
5	M.Sc-I (Sem-I)			Seminar of Allocated students
6	M.Sc-II (Sem-III)			Seminar of Allocated students
7	B.Sc-III(SEm-V)			Lab Course -VIII

2. Summary of Lesson Plan of U-MAT -546 (Paper X) Linear Algebra (Theory and Practicla)

Name of Teacher: Mahesh S Wavare

Class

: B.Sc.III (Third 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	Maths	<p>Unit I: Properties of Vector operations in R^n, Euclidean N Space. Norm and distance in n-space, Vector Space definition, examples and simple properties. Subspace, solution space of homogeneous systems, Linear Combination of vectors, linear span of Vectors. Linear dependence and independence, Basis and Dimension .Coordinate to basis, Row space, column space and null space (only statements), Rank-nullity for Matrices</p>	01/07/2019	8	Guest Lecture	Assignment on unit 1 10 Practical of Unit I
			To	8		
	05/08/2019	7				
2		<p>Unit II: Definition and Examples, Length and distance in inner product space, properties. Cauchy-Schwarz inequality, Properties of Length and distances in inner product space, Angle between</p>	06/08/2019	8	Surprise test	Assignment on unit 2 10 Practical of Unit II
			to			

		vectors, orthogonality, Orthogonal and orthonormal bases, co-ordinate relative to orthogonal and orthonormal bases, Gram-Schmidt methods	15/09/2019	7		
3		<p>Unit III:</p> <p>Definition and Example of Linear transformations, properties, Kernel and range of linear transformation .Dimension theorem of Linear Transformation .Linear Transformation from R^n to R^m ,Linear Transformation from images of basis vectors ,All Linear transformations are matrix transformation, Standard matrices of linear transformations.</p>	16/09/2019 To 24/10/2019	6 3 3	Guest lecture	Homework Examples 10 Practical of Unit III

3. Summary of Lesson Plan of Skill enhancement course on R Software -I (Theory and Practical)

Name of Teacher: Maresh S Wavare

Class : B.Sc.II (Third 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	Maths	<p style="text-align: center;">Section-I</p> <p>Skill- I</p> <p>Basic fundamentals, installation and use of software, data editing, use of R as a calculator, functions and assignments. Use of R as a calculator, functions and matrix operations, missing data and logical operators.</p>	16/07/2019 To 14/08/2019	03 04 04 04	Showing NPTEL video lectures	Assignment of NPTEL
2		<p style="text-align: center;">Section-II</p> <p>Skill-II</p> <p>Conditional executions and loops, data management with sequences. Data management with repeats, sorting, ordering, and lists</p>	16/08/2019 To 19/09/2019	04 04 07	Showing NPTEL video lectures	Assignment of NPTEL


4. Summary of Lesson Plan of Coding Theory –II P-COT-364(A)


Name of Teacher: Mahesh S Wavare

Class : M.Sc. I (Third 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	Maths	Unit I: Error detection, correction and decoding introduction, Communication channels, Maximum likelihood decoding, Hamming distance, nearest neighbor / minimum distance, decoding distance of a code.	01/07/2019 To 31/07/2019	15	Guest Lecture	Assignment as preparation of PPT
2		Unit II: Fields polynomials rings structure of finite fields, minimal polynomials vector spaces over finite fields	1/08/2019 to 30/08/2019	15	Seminar by students	Unit Test -I
3		Unit –III Linear codes , Hamming weight bases for linear codes , Generator matrix and parity check matrix, Equivalence of linear codes , Encoding with linear codes , Decoding of	01/09/2019 to 30/09/2019	15		Assignment solve

		linear codes, Cosets nearest neighbor ,decoding for linear codes syndrome decoding				
4		<i>Unit-IV</i> The main coding theory problem lower bounds sphere covering bound Gilbert-Varshamov bound hamming bounds and perfect codes, Binary Hamming codes, q-ray Hamming codes	1/10/2019 to 24/10/2019	15	Guest lecture	Homework Examples


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 (M . S. Wavare)


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 Principal
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Department of Mathematics

Structured Work Plan for Teaching

(December 2019 to March 2020)

1. Details of Classes to be taught

Sr. No.	Class	Name of Asstt. Prof.	Subject	Paper
1	B.Sc-II (Sem-IV)	Mahesh S Wavare	Mathematics	Ring Theory
2	B.Sc-III(Sem-VI)			SEC on Python Programming [Theory +Practical]
3	M.Sc-I (Sem-II)			Seminar of Allocated students
4	M.Sc-II(Sem-IV)			Coding Theory –II
5	B.SC-III(Sem-VI)			Research Project of allocated B.Sc -III year students
6	M.Sc-II(Sem-IV)			Research Project of allocated M.Sc -II year students
7	M.Sc-II (Sem-IV)			Seminar of Allocated students
8				

2. Summary of Lesson Plan of U-MAT -440 (Paper VIII) Ring Theory (**Theory and Practical**)

Name of Teacher: **Mahesh S Waware**

Class : **B.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	Maths	Unit I: Definition and examples of rings, some special classes of rings, Homeomorphisms, Isomorphism	12/12/2019 to 10/01/2020	5 5 5	Guest Lecture	Assignment on unit 1 10 Practical on Unit I
2		Unit II: Ideals and quotients rings, More ideals and quotients rings, the field of quotients of an integral domains .	16/01/2020 to 15/02/2020	5 6 4	Surprise test	Assignment on unit 2 10 Practical on Unit II
3		Unit III: Euclidean rings, A particular Euclidean ring (Ring of Gaussian Integers), Polynomial rings, Polynomial over the rational fields.	20/02/2020 To 28/03/2020	6 3 6	Guest lecture	10 Practical on Unit III

3. Summary of Lesson Plan of Skill enhancement course on Python Programming - (Theory and Practical)

Name of Teacher: Mahesh S Waware

Class : B.Sc.III (Sixth 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	Maths	<p style="text-align: center;">Section-I</p> <p>Introduction to Python and Basic Concepts in python Introduction to python: What is python? , Applications of Python, Why Python? Installation of python, First program in Python, Comments and Docstrings in Python.Variable and data types, Operators in python. File Handling : working with open, read, write, append modes of file Conditional Statements: Indentation in python, if, if-else, nested if-else statements</p>	02.01.2020	03		
			To	03		
			15/02/2020	03		
2		<p style="text-align: center;">Section-II</p> <p>Looping Statements, Control statements, String Manipulations Looping Statements: for loop, while loop , Nested loops Control Statements: break, continue and pass String Manipulations: Accessing strings, Basic operations, String slices, Functions and methods</p>	16/02/2020	03		
			To	03		
			30/03/2020	04		


4. Summary of Lesson Plan of Coding Theory –II P-COT-467(A)


Name of Teacher: Mahesh S Wavare

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	Maths	Unit I: Construction of Linear codes, propogation Rules Reed -Mullar codes, Subfield codes	10/12/2019 To 31/12/2019	04 04 04 04	Guest Lecture	Assignment as preparation of PPT
2		Unit II: Definition of cyclic codes, generator polynomial, Generator and parity check matrices, Decoding of cyclic codes, Bust error correcting codes.	1/01/2020 to 31/01/2020	2 4 5 4 4	Seminar by students	Activity Examples for Unit Test -I

3	<i>Unit-III</i> B.C.H codes, definations, Parameters of B.C.H codes, Decoding of B.C.H codes, Reed Soleman codes, Quadratic recidue code	01/02/2020 to 29/02/2020	18		
4	<i>Unit-IV</i> Generalised reed - Solemon codes , Alterment codes , Goppa codes, Sudaan decoding or Generalized R.S codes, Generation of (p,k,t) polynomial	1/03/2020 to 31/03/2020	05 05 04 06	Guest lecture	Homework Examples


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(M . S. Wavare)


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