Govt. J Yoganandam Chhattisgarh College Raipur (CG)

MANUAL

For

CO-PO, CO- PSO Mappings and their attainments

Department of Mathematics

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3.18. Programming in C-II (CO43)

3.19. Operation Research-II (CO44)

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1. Programme Outcomes : M.Sc

Upon successful completion of Master of Science program, students will develop:

1. **Critical Thinking:** The ability to gather and access relevant information using abstract ideas to interpret it effectively.
2. **Scientific Skills:** Ability to understand scientific principles or concept and demonstrate scientific knowledge and skills in scientific reasoning.
3. **Communication Skills:** Develop oral and written skills for effective communication with both technical and non-technical audiences through written reports, presentations and teaching. Ability to work productively on team projects with team spirit.
4. **Social Adoptability:** Inculcate values which provide guidelines for social conduct and social interest. Integrate mathematical concepts and techniques into interdisciplinary context.
5. **Effective Citizenship:** Develop into an ideal citizen who performs the duties towards himself, family, society, community and the country. Contribute to advancements in the field and apply it to emerging challenges.
6. **Environmental Awareness:** Borders understanding of current national and global environmental problem.
7. **Ethics:** Moral and ethical value are at the development of scientific temper of mind, capacity to think and judge about oneself.
8. **Further Education or Employment:** Engage for further academic pursuits, including PhD programs in related fields. Possess the skills and knowledge necessary for employment in academia, research institutions, industry, government and other sectors.

2. Programme Specific Outcomes

Name of the Programme : - M.Sc. in Mathematics

Student completing M.Sc. in Mathematics is able to:

1. Comprehend, analyze, model and solve given problems based on logical and structured reasoning.
2. Explain the importance of mathematics and its techniques to solve real life problems, provide the limitations of such techniques and the validity of the results.
3. Use mathematical knowledge and skills appropriate in professional activities and demonstrate highest standards of ethical issues in Mathematics.
4. Apply computer techniques as a tool to carry out scientific investigations and develop new variants of the acquired methods.
5. Understand advanced areas of Pure and Applied Mathematics.
6. Use logical thought to make deductions from advanced concepts.
7. Pursue Research and Development in challenging areas of Pure and Applied Mathematics.
8. Employ confidently in Computer based fields by the knowledge of mathematical software and tools for treating the complex problems and scientific investigations.
9. Appear in several Government examinations.
10. Get employability in the sectors of finance, statistics, Engineering, Computers, Teaching or Accountancy with a success.
11. Qualify National level eligibility tests like NET/ GATE etc. for Research and Teaching in top most Institutes.
12. Solve problems and develop analytical and computational skills.

3. Course Outcomes

Name of the Program: M.Sc. in Mathematics

M.Sc. I Sem

Paper I: Advanced Abstract Algebra-I

Upon successful completion of this course the student will be able to

1. Use of Solvable groups, Nilpotent groups, Composition series and relation between them and understand and analyze Jordan holder Theorem.
2. Illustrate the fundamental results and techniques from the theory of extension field and apply it into theory of equations and branches of applied mathematics
3. Explain the fundamental concepts of finite fields and algebraically closed field and their role in modern mathematics and applied contexts.
4. Illustrate the concept of Galois Theory and their applications.
5. Apply concept of radical extension to check a polynomial is solvable by radicals or not.

Paper II: Real Analysis-I

After the completion of this course the students will be able to

1. Recognize the difference between pointwise and uniform convergence of sequences and series of functions.
2. Illustrate the effect of uniform convergence of sequences & series of functions on the limit function with respect to continuity, differentiability, and integrability.
3. Gain confidence in proving theorems and solving problems. Extend their knowledge of real variable theory for further exploration of the subject for going into research.
4. Understand the concept of Power series.
5. Determine radius of convergence of power series and the sum of rearrangement of series.

6. Understand the Functions of several variables.
7. Develop concepts on derivatives in an open subset of R^n & partial derivatives.
8. Understand the basics concepts of Taylor's theorem.
9. Apply Implicit and inverse function theorem, moving towards calculus on manifolds.
10. Determine the differentiation of an integral & Jacobians.
11. Find Extrema of functions of two or three variables & understand the use of the method of Lagrange multipliers & solve constrained optimization problems.
12. Learn Differential forms & Stokes' theorem.
13. Understand to how Differential forms provide a natural way to define integration on manifold.

Paper III: Topology-I

Upon successful completion of this course the student will be able to

1. Get knowledge of well known theorems and their applications as Zorn's Lemma, Axiom of Choice.
2. Learn the concept of Cardinality and its arithmetic, Countable sets.
3. Introduce the concept of Topological Spaces, its Base and Sub-base with properties.
4. Illustration of Closed set, Limit Point, Continuous functions, Homeomorphism in context of Topological spaces.
5. Learn the various topological properties as Countability and the Separation axioms.
6. Explain the concepts of Compactness and its types including one-point compactification.
7. Explore the equivalence of Compactness and connectedness in Metric spaces as well as Topological spaces.

Paper IV: Complex Analysis- I

Upon completion of this course, the student will be able to:

1. Explain the fundamental concepts of complex analysis and their role in modern mathematics and applied contexts.
2. Demonstrate accurate and efficient use of complex analysis techniques.

3. Demonstrate capacity for mathematical reasoning through analyzing, proving and explaining concepts from complex analysis
4. Apply problem-solving using complex analysis techniques applied to diverse situations in physics, engineering and other mathematical contexts.
5. Understand complex integration, Cauchy – Gorsat theorem, Cauchy's integral formula.
6. Understand Laurent's series, Isolated singularities, Meromorphic functions and Rouche's theorem.
7. Explain Mobius transformations, Fixed points, Cross ratio, Bilinear transformations and Conformal mappings.
8. Understand the Residues, Cauchy's residue theorem, Evaluation of integrals and branches of many valued functions.

Paper V: ADVANCED DISCRETE MATHEMATICS - I

After the completion of this course the students will be able to

1. Able to use logical notations to define and reason about fundamental mathematical concepts such as sets, relations and functions, Evaluate and analyze logical propositions via truth tables.
2. Understand the Basic concept of Homomorphism of semigroups, Monoids, Congruence relations and direct products of semigroups.
3. Understand Lattices of partial order relation, Boolean algebra, Switching Algebra and sketch relations.
4. Understand the different forms of Boolean function and their use in different Gates and circuits.
5. Able to know the concept of Grammars and Languages and their uses in different Theorems.

MSc II Sem

Paper I: Advanced Abstract Algebra-II

Upon successful completion of this course the student will be able to

1. Have knowledge of modules and its properties and understand Schur's lemma, Hillbert basis and other theorems based on modules
2. Develop concepts of linear Transformations and relation between matrix.
3. Understand similarity of linear transformations, triangular forms. nilpotent transformations and may reduce matrix into Jordan forms.
4. Explain fundamental structure theorem for finitely generated modules over a principle ideal domain and its applications to finitely generated abelian groups.
5. Reduce a matrix into rational canonical form and Generalized Jordan form over any field and analyze properties of reduced matrix.

Paper II: Real Analysis-II

After the completion of this course the students will be able to

1. Develop knowledge of Riemann-Stieltjes integral and use theory of Riemann-Stieltjes integral in solving definite integrals arising in different fields of science and engineering.
2. Understand Rectifiable curve, define the length of curves and study behavior of the curves.
3. Familiar with the basic concepts and results of Lebesgue measure theory (outer measure, measurable sets and connections with topology, Borel sigma algebra) as well as of Lebesgue theory of integrals (measurable functions, convergence theorems).
4. Learn how to generalize the concept of measure theory, Approximating measurable functions by simple and step functions, Understand the basics concepts of measures and outer measures
5. Learn how a smallest sigma algebra containing all open sets be constructed on a topological space which ensures the measurability of all continuous function and how a measure called Borel measure is defined on this sigma algebra which ensures the integrability of a huge class of continuous functions.
6. Apply the knowledge of concepts of functions of several variables and measure theory in order to study theoretical development of different mathematical concepts and their applications.
7. Determine the Four derivatives and connection between differentiation and integration in the context of Lebesgue theory, Interpret Lebesgue differentiation theorem.
8. Decide under which conditions the fundamental theorem of calculus is applicable in the context of Lebesgue integration.
9. Understand the functions of bounded variation, L_P Spaces, the convex functions, Jensen's inequality, Holder's and Minkowski's inequalities, convergence in measures and Almost uniform convergence.

Paper III: General and AlgebraicTopology-II

Upon successful completion of this course the student will be able to

1. Define the concept of product topology and extend the separation axioms in product space.
2. Illustrate the properties as Compactness, Connectedness and Countability in product space
3. Understand the Metrization theorems as Urysohn , Nagata Smirnov metrization theorems and apply the concept of Paracompactness to derive SmirnovMetrization Theorem.
4. Define the concept of Net, Filter and Ultra Filter. Demonstrate their convergence with compactness of Topological Space.
5. Get knowledge of Homotopy of paths. Define Fundamental group and Covering spaces.
6. Derive Fundamental group of Circle and Fundamental theorem of Algebra using Covering space.

Paper IV: Complex Analysis-II

Upon completion of this course, the student will be able to:

1: Define Riemann's functional equation. Prove Weierstrass' factorization theorem.

2: To understand Gamma and Zeta functions, their properties and relationships

3: Prove Runge's theorem, Mittag-Leffler's theorem. Define Analytic Continuation and Power series method of analytic continuation.

4: Explain Schwarz Reflection principle, Monodromy theorem and Harmonic functions on a disk.

4: Understand Harnack's inequality and theorem, Dirichlet problem, Green's function, Jensen's formula, Poisson-Jensen formula.

5: Understand Bloch's theorem, The little Picard theorem, Schottky's theorem, Montel caratheodary and great Picard theorem.

7: To understand the Harmonic functions on a disc and concerned results

8: To understand the factorization of entire functions having infinite zeros.

9: To understand range of analytic functions and concerned results.

10: To understand univalent functions.

Paper V: ADVANCED DISCRETE MATHEMATICS - II

After the completion of this course the students will be able to

1. Able to solve real world problems using graphs.
2. Understand the concept of matrices representation of Graph, Trees and Spanning Trees.
3. Understand the directed graph, Dijkstra's Algorithm for shortest path in weighted graph and Transitive cloure from Warshall's algorithms.
4. Develop the concept of Finite State Machine and use it for different machines.
5. Understand the phenomenon of Finite Automata and Turing Machine.

M Sc III Sem

Paper I: Integration Theory & Functional Analysis (I)

After the completion of this course the students will be able to

1. Understand the concept of Signed measure.
2. Learn to recognize the fundamental properties of Signed measure and Hahn decomposition theorem Radon-Nikodin theorem , Jordan & Lebesgue decompositions.
3. Understand Lebesgue-Stieltjes integral, Product measures, Differentiation and Integration.
4. Overview the central results of the theory of Lebesgue integration, including convergence theorems and Fubini's theorem.
5. Learn to characterize bounded linear functionals on Lp spaces.
6. Understand the concept of Borel & Baire measures, regularity and continuous function with compact support.
7. Learn to recognize the fundamental properties of Normed linear spaces, Banach spaces.

8. Learn the concept of normed linear spaces and various properties operators defined on them.
9. Get an idea about different types of convergence of sequences in normed spaces and their relations.
10. Gain a comprehensive understanding of both weak and strong convergence and their applications in various areas of mathematics, particular functional analysis and related fields.
11. Understand the concept of the bounded operators and its application in solving certain differential equations.
12. Understand the concept of Dual spaces.

Paper II: Partial Differential Equations and Mechanics-I

Upon successful completion of this course the student will be able to

1. Extend the knowledge of PDE in n-dimension. Understand the classification of PDE, such as elliptic, parabolic and hyperbolic.
2. Understand and analyze the properties of the transport equation and Laplace equation. Develop the concept of Green's function.
3. Have knowledge of Heat equation and its properties.
4. Apply method of spherical means for solution of wave equation and illustrate it for different dimensions.
5. Study and analyze the nonlinear 1^{st} order PDE, know about the weak solution and its behavior.
6. Develop the concept of calculus of variations and its application in various problems.
7. Explain the attraction potential of different types of bodies.
8. Apply the Gauss theorem for normal attraction to find work done and equipotential surface.

Paper III: Programming in C –I

Upon successful completion of this course the student will be able to-

1. Understand basic techniques of C-language.
2. Understand the concepts of pointers and decision making, loop statements.

3. Be able to use an array to store multiple pieces of homogeneous data
4. Be able to use various operators in program
5. Develop programming skills in C
6. Develop some expertise in developing programs to solve various mathematical problems
7. Understand the fundamentals of cryptography and cryptanalysis.

Paper IV: Operation Research - I

After completion of the course student will be able to

1. Understand the nature and basic concept of operation research and learn to formulate and solve real life problems.

2. To understand the concept of linear programming modeling and its applications.

3. Understanding the dual problem leads to specialized algorithms for some important classes of linear programming problems and sensitivity analysis.

4. Use of Parametric linear programming in different applications.

5. Determine the degree of attainment of the goals with the available resources. Providing the best satisfying solution under a varying amount of resources and priorities of the goals.
6. To build and solve Transportation Problems and Assignment Problems.
7. Train on organizing and presenting a project through a diagram using CPM and PERT.
8. Covers various real life problems like finding the shortest path, spanning tree, travelling salesman problem etc.

Paper V: Fuzzy sets and its application-I

1. Know the concept of basic knowledge of the fuzzy sets, operations and their properties.
2. Understand the basic ideas of fuzzy Numbers and Arithmetic operations on intervals
3. Know the concept of Fuzzy relations and Fuzzy Morphisms.

4. Solve the problem of Fuzzy relations equations and its uses in Neural networks.
5. Identify the similarities and differences between possibility theory and fuzzy set theory and their application conditions.

Program – M.Sc. in Mathematics

MSc IV Sem

Paper I: Integration Theory & Functional Analysis - II

After the completion of this course the students will be able to

1. Illustrate Closed Graph and Open Mapping theorem
2. Analytical approach to open mapping, closed graph theorem &Uniform boundedness theorem.
3. Understand the concept of linear functionals, Hahn-Banach theorems, reflexive spaces and some standard theorems.
4. Analytical approach to Hahn Banach theorems, Understand Compact Linear map, Compact operator
5. Understand inner product spaces, orthogonal sets and Bessel's inequality, Learn to recognize the fundamental properties of Hilbert space.
6. Know and use the elementary properties of inner product and the main properties of bounded operators between Banach and Hilbert spaces, the basic results associated to different types of convergences in normed spaces.
7. Understand bounded operators and adjoints, Explain Riesz Representation Theorem.
8. Understand the surjective, isometry between a Hilbert space and its dual.
9. Correlate Functional Analysis to problems arising in operator Theory and other branches of Mathematics.
10. Check whether a linear operator is bounded, to find its adjoint and determine whether operators are normal, self adjoint, unitary or positive.
11. Learn to recognize application of self adjoint operators, positive operator, projection and unitary operators.

Paper II: Partial Differential Equations and Mechanics-II

Upon successful completion of this course the student will be able to

1. Learn various techniques and representations for solving various types of Partial Differential Equations in n-dimension.
2. Apply Transform methods as Laplace, Fourier, to find solutions of various PDE.
3. Develop the concept of Perturbations and Asymptotics.
4. Illustrate the Cauchy –Kovalevskaya Theorem.
5. Develop a deep understanding of fundamental principles and laws of Classical Mechanics.
6. Apply the concept of cyclic coordinates to derive important theorems.
7. Illustrate the concept of Poisson and Lagrange Bracket and its applications.
8. Knowledge of Canonical Transformations and its properties.

Paper III: Programming in C –II

Upon successful completion of this course the student will be able to

1. Understand the concepts of storage classes.
2. Use functions, and understand how function calls are carried out, including passing parameters.
3. Use structure and union to store multiple pieces of different data types.
4. Create linked list and insert or delete nodes.
5. Understand dynamic memory management techniques by using pointers
6. Handle file Input /Output operations

Paper IV: Operation Research - II

After completion of the course student will be able to

1. Solve multi-level decision problems using dynamic programming method and to find the shortest way to a solution when solving a problem**.**
2. Understand the game theory and discuss various concept related to games and to analyze pure and mixed strategy games.
3. Propose the best strategy using decision making methods under uncertainty and game theory.

4. Construct linear integer programming models and discuss the solution techniques for pure, mixed and binary integer programming models.
5. Solve the integer programming models using branch-and-bound method.
6. Mathematical study of waiting lines or queues and has its base as statistical models and methods which provide competitive advantage to improve customer satisfaction.
7. Analyze the general nonlinear programming problems using some solution methods.
8. Explain the Lagrange multipliers.

Paper V: Fuzzy sets and its application-II

After the completion of this course the students will be able to

1. Understand the fundamental concepts of Fuzzy logic and apply the concepts of Fuzzy logic in image processing.
2. Know the concept of Approximate Reasoning and Fuzzy implications.
3. Have knowledge Fuzzy control system to design different machines and design it with the help of fuzzy rule based system.
4. Understand the basic features of membership functions, fuzzification process and defuzzification process and its application use in fuzzy control system.
5. Understand the concepts of different decision making techniques such as Individual, Multiperson, Multicriteria and Multistage decision making and its applications.

4. CO-PO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO11	3	2	2	3	3	-	3	3
CO12	3	2	2	2	3	-	3	3
CO13	3	1	2	1	3	-	3	3
CO14	3	2	2	2	3	-	3	3
CO15	3	3	3	3	3	1	3	3
CO21	3	2	2	3	3	-	3	3
CO22	3	2	2	2	3	-	3	3
CO23	3	1	2	1	3	-	3	3
CO24	3	2	2	2	3	-	3	3
CO25	3	3	3	3	3	1	3	3
CO31	3	2	2	3	3	-	3	3
CO32	3	2	2	1	3	-	3	3
CO33	3	1	2	3	2	-	1	-
CO34	3	1	2	2	2	1	2	3
CO35	3	3	2	2	1	1	2	3
CO41	3	2	2	3	3	-	3	3
CO42	3	2	2	1	3	-	3	3
CO43	3	1	2	3	2	-	1	-
CO44	3	1	2	2	2	1	2	3
CO45	3	3	2	2	1	1	2	3

5. CO-PSO Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11	PSO12
CO11	3	2	1	-	3	2	3	-	2	2	3	3
CO12	3	2	1	-	3	2	3	-	1	1	3	3
CO13	3	-	1	-	3	1	3	-	1	1	2	2
CO14	3	2	1	-	3	2	3	-	1	1	3	3
CO15	3	2	2	2	3	3	3	1	-	2	1	3
CO21	3	2	1	-	3	2	3	-	2	2	3	3
CO22	3	2	1	-	3	2	3	-	1	1	1	3
CO23	3	-	1	-	3	1	3	-	-	1	-	1
CO24	3	2	1	-	3	2	3	-	1	1	1	1
CO25	3	2	2	2	3	3	3	1	-	2	-	3
CO31	3	2	1	-	3	2	3	-	1	2	1	2
CO32	3	2	1	-	3	1	3	-	-	1	-	2
CO33	3	3	2	3	1	2	-	1	-	1	-	2
CO34	3	3	2	-	3	2	3	-	-	1	1	3
CO35	3	3	2	3	3	2	3	1	-	1	1	3
CO41	3	2	2	1	3	3	3	-	1	2	1	3
CO42	3	2	1	-	3	1	3	-	-	1	1	2
CO43	3	3	2	3	-	2	-	1	-	1	-	2
CO44	3	3	2	-	3	2	3	-	-	1	1	3
CO45	3	3	2	3	3	2	3	1	-	1	1	3

6. Result

M.Sc. Ist Sem

S.N.	Roll No.	Student Name	Paper I		Paper II		Paper III		Paper IV		Paper V	
			Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal
1	230401	ABHISHEK BARIK	21	9	8	8	18	9	25	9	30	8
2	230402	AKASH CHOUDHARY	10	13	12	7	10	11	34	19	45	13
3	230403	BANDINI SAHU	3	0	3	2	16	2	4	2	34	3
4	230404	DIPTI VERMA	10	8	18	4	18	5	28	9	44	6
5	230405	DEVESH KUMAR	16	11	27	9	33	9	41	12	48	8
6	230406	GAJENDRA KUMAR	45	13	34	10	21	12	42	18	57	17
7	230407	HARICHARAN	15	11	14	6	13	11	26	20	44	9
8	230408	HEMLATA RAJPUT	28	13	8	4	13	9	18	15	50	7
9	230409	KHEMENDRA KUMAR SAHU	39	16	32	10	31	15	52	19	61	14
10	230410	KHUSHBOO SAHU	8	8	8	4	16	7	23	12	48	8
11	230411	KISHOR KUMAR	ABS	1	ABS	0	ABS	0	ABS	0	ABS	1
12	230412	LATA PATEL	14	4	16	6	26	7	22	13	52	9
13	230413	NALINI BHOI	5	3	6	3	9	2	7	4	24	5
14	230414	RAJ VERMA	0	12	ABS	5	ABS	7	ABS	14	ABS	6
15	230415	RAJATPREET SINGH	50	14	29	13	55	16	47	17	67	17
16	230416	RITU MAHESHWARI	26	9	31	16	35	13	35	6	48	10
17	230417	RUKHMANI SAHU	16	10	16	10	16	10	21	13	41	9
18	230418	SAHIL GILHARE	12	10	0	7	0	7	0	11	37	7
19	230419	SIMMEE MANDAVI	12	9	9	6	10	8	33	14	38	8
20	230420	UMESH PRADHAN	18	12	23	8	33	8	44	12	49	10
21	230421	VAISHNAVI MISHRA	11	5	16	6	26	7	18	13	36	7
22	230422	VIBHA DUBEY	48	13	33	11	33	11	29	15	50	16
23	220422	VIPIN SINHA	44	4	10	8	25	10	69	6	47	7

M.Sc. II nd Sem

S.N.	Roll No.	Student Name	Paper I		Paper II		Paper III		Paper IV		Paper V	
			Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal
1	230401	ABHISHEK BARIK	38	10	53	4	33	10	44	7	27	7
2	230402	AKASH CHOUDHARY	44	12	49	5	27	10	32	10	30	9
3	230404	DIPTI VERMA	32	8	60	4	26	9	29	7	29	8
4	230405	DEVESH KUMAR	50	8	56	6	40	8	48	12	17	6
5	230406	GAJENDRA KUMAR	39	10	51	8	27	10	66	11	48	15
6	230407	HARICHARAN	32	14	33	7	36	9	39	13	33	6
7	230408	HEMLATA RAJPUT	36	7	39	10	22	13	28	6	50	13
8	230409	KHEMENDRA KUMAR SAHU	55	17	44	11	57	16	62	14	36	13
9	230415	RAJATPREET SINGH	60	18	67	15	64	16	65	17	57	16
10	230416	RITU MAHESHWARI	41	15	47	17	45	12	45	11	59	16
11	230417	RUKHMANI SAHU	36	11	40	4	19	8	60	5	18	8
12	230420	UMESH PRADHAN	49	15	56	8	38	13	67	16	42	11
13	230421	VAISHNAVI MISHRA	26	7	19	4	12	5	29	4	14	5
14	230422	VIBHA DUBEY	41	16	47	11	ABS	16	ABS	12	ABS	17
15	220403	BHAVNA SAHU	56	8	34	10	49	4	58	15	50	9

M.Sc. III rd Sem

S.N.	Roll No.	Student Name	Paper I		Paper II		Paper III		Paper IV		Paper V	
			Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal
1	220402	Alaka verma	43	17	47	15	57	22	59	19	70	14
2	220403	bhavna sahu	12	6	26	9	22	23	35	16	39	10
3	220404	devendra nayak	21	12	42	9	35	20	50	19	43	12
4	220405	DEVRAJ	47	11	32	16	46	28	45	14	52	16

5	220406	KANCHAN CHANDRAKAR	25	7	47	11	58	24	60	20	44	15
6	220407	KAUSHAL KUMAR	32	13	42	16	38	28	45	15	51	16
7	220408	KHIRSINDHU NAGESH	18	12	2	15	34	24	46	15	32	12
8	220409	KIRAN	28	6	43	11	43	23	47	13	42	12
9	220410	LEKH RAJ	32	11	29	17	41	24	49	18	46	15
10	220411	MUSKAN BANSAL	22	7	29	10	41	22	62	13	28	14
11	220413	NEETA	9	4	21	6	16	23	38	11	33	10
12	220414	RADHIKA	52	15	34	17	42	27	46	19	68	19
13	220415	ROJEE LOVELY XALXO	37	13	32	15	55	25	56	17	48	18
14	220416	SRISTY MANIKPURI	14	5	27	4	28	24	32	8	26	10
15	220419	TIKESHWAR KUMAR	37	14	38	16	34	25	61	18	41	17
16	220421	UPASANA	10	6	19	10	21	24	29	13	26	14
17	220422	VIPIN SINHA	8	4	27	6	47	21	40	13	31	7
18	210406	ASHOK KUMAR BANDHE	9	4	56	7	47	18	60	4	52	7
19	210410	NARESH DEWANGAN	17	4	64	6	52	18	58	11	57	7

M.Sc. IV th Sem												
S.N.	Roll No.	Student Name	Paper I		Paper II		Paper III		Paper IV		Paper V	
			Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal	Theory	Internal
1	220402	Alaka verma	56	17	67	19	46	25	56	20	68	19
2	220403	bhavna sahu	21	8	32	10	28	22	53	13	47	14
3	220404	devendra nayak	34	11	46	10	37	23	56	18	45	12
4	220405	DEVRAJ	51	19	54	18	52	27	62	15	53	17
5	220406	KANCHAN CHANDRAKAR	27	9	48	18	60	25	61	16	72	17
6	220407	KAUSHAL KUMAR	45	13	52	18	51	27	63	14	51	15
7	220408	KHIRSINDHU NAGESH	31	9	41	12	29	21	54	13	48	14
8	220409	KIRAN	34	11	56	11	38	22	41	14	53	12
9	220410	LEKH RAJ	37	12	53	18	43	25	46	19	59	16
10	220411	MUSKAN BANSAL	21	13	23	13	30	24	39	16	44	14
11	220413	NEETA	11	11	42	11	21	21	41	9	39	13
12	220414	RADHIKA	61	19	67	19	60	26	75	18	63	19
13	220415	ROJEE LOVELY XALXO	46	18	56	16	55	24	53	17	63	18
14	220416	SRISTY MANIKPURI	9	7	28	10	21	23	19	9	27	14
15	220419	TIKESHWAR KUMAR	57	19	50	18	50	24	48	18	54	16
16	220421	UPASANA	16	4	24	10	24	22	42	7	36	11

7. Student feedback on Course Outcome

S N	Name	C11	C12	C13	C14	C15	C21	C22	C23	C24	C25	C31	C32	C33	C34	C35	C41	C42	C43	C44	C45
1	Ramakant	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	Nilambar Patel	3	3	2	3	2	3	2	2	3	3	2	1	2	3	2	2	1	2	3	2
3	DILESH PANIGRAH	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	Rojee lovely xalxo	2	2	2	2	3	2	3	2	3	3	2	2	2	3	3	2	2	2	3	3
5	Vandana Sahu	2	2	3	2	3	2	2	3	2	2	2	3	2	3	2	2	3	2	2	3
6	Sunita verma	2	3	2	3	3	2	3	2	3	2	2	2	2	3	2	3	2	2	3	2
7	Sakshi Agrawal	3	2	3	3	3	3	2	3	3	3	2	3	3	3	2	2	3	3	3	2
8	Anamika sahu	2	2	2	3	3	3	3	2	3	3	3	3	2	3	3	2	2	2	3	3
9	Nishant Jaiswal	2	2	1	3	3	3	2	1	3	3	2	2	2	3	2	2	2	2	3	3
10	Anjan Bhoi	3	2	2	3	3	3	3	2	3	3	3	3	2	3	3	3	3	3	3	3
11	Kaushal Kumar Sahu	2	2	2	2	3	2	2	2	2	3	2	2	2	3	2	2	2	2	3	2
12	Kusumlata sahu	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	2	3	3	2
13	Arun Kumar Chaturvedi	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

14	Devendra Nayak	2	2	2	3	3	2	2	2	3	3	2	3	3	3	3	3	3	2	3	3
15	Jagdish Ram Sahu	2	2	1	3	3	2	2	1	3	2	1	2	3	2	1	2	2	3	2	2
16	Kiran Dhruw	2	3	2	1	2	2	2	2	1	2	3	2	2	2	2	3	2	2	2	2
17	Radhika Yadu	2	3	1	3	3	2	3	1	3	3	3	3	2	3	3	3	3	3	3	3
18	Sagar kumar	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
19	Lekhraj	2	2	3	3	3	2	2	3	3	3	2	3	3	3	3	2	3	3	3	3
20	Varsha Nagariya	2	2	3	3	2	2	2	2	2	3	3	3	2	3	3	3	2	2	3	3
21	Devraj	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
22	Mahavir phekar	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
23	Sangeeta sahu	2	2	2	3	3	2	3	3	3	3	2	3	3	3	3	2	2	2	3	3
24	Naresh dewangan	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
25	Nitin Sahu	3	2	1	1	1	3	2	1	1	1	3	2	1	2	1	3	2	1	2	1

Student feedback on Program and Program Specific Outcomes

SN	Name	P1	P2	P3	P4	P5	P6	P7	P8	PS1	PS2	PS3	PS4	PS5	PS6	PS7	PS8	PS9	PS10	PS11	PS12
1	Ramakant	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	Nilambar Patel	3	2	2	3	2	3	2	3	3	3	3	2	3	2	3	2	3	3	2	2
3	Dilesh panigrah	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3
4	Rojee lovely xalxo	3	2	3	3	2	3	3	3	2	3	3	3	3	2	2	2	3	2	1	3
5	Devendra Nayak	2	2	2	2	2	1	2	2	3	2	2	2	2	2	2	2	1	1	1	1
6	Pavan Kumar Dewangan	1	1	2	1	2	2	1	1	2	1	1	1	1	1	2	1	1	1	1	2
7	Rupali kadam	2	3	3	2	3	2	3	2	2	3	2	2	3	3	3	2	3	3	2	3
8	Nishant Jaiswal	2	2	2	1	3	2	2	1	2	2	2	2	1	2	2	2	3	3	1	2
9	Kaushal Kumar Sahu	2	2	2	2	2	3	3	2	2	2	2	2	2	2	2	2	3	2	2	2
10	Radhika Yadu	2	2	2	3	3	3	3	3	3	3	3	2	2	3	2	2	2	3	3	2
11	Kiran Dhruw	2	1	3	2	3	3	3	2	2	3	3	3	2	2	2	1	3	1	2	2

12	Devraj	2	2	2	3	3	2	3	3	2	2	2	2	2	3	2	2	3	2	3	2
13	Sagar Kumar	3	3	2	3	3	3	3	2	3	3	2	2	2	3	3	2	3	1	2	2
14	Reena poya	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	2	1	1
15	Nitin Sahu	2	2	3	2	2	3	3	2	1	2	3	1	2	2	2	1	3	2	3	2
16	kaushal sahu	2	2	1	2	2	1	2	2	3	2	1	2	3	2	2	2	2	3	2	3
17	Muskan	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	1
18	Tarun kaushal	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2
19	Damini sahu	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
20	GOPIKISHAN SAHU	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
21	PREMANAND SAHU	2	2	2	3	2	3	2	2	2	3	2	2	2	2	2	3	3	2	2	2
22	Amar markhande	3	3	2	3	3	2	2	3	3	2	3	3	2	3	2	1	3	3	2	2
23	Sakshi Agrawal	2	2	3	3	3	3	3	2	3	3	3	3	1	2	1	3	3	3	2	2
24	Kanchan sahu	2	3	3	3	3	3	3	1	2	3	2	2	2	2	2	2	2	2	1	1
25	Kusum sahu	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

8. CO Attainments-

M.Sc 1st Sem

Direct Attainment

	CO11		CO12		CO13		CO14		CO15	
Exam Type	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)
Max Mark	20	80	20	80	20	80	20	80	20	80
Bench Mark	50 %	50%	50 %	50%	50 %	50%	50 %	50%	50 %	50%
Target Value	10	40	10	40	10	40	10	40	10	40
No. of Students Appeared	23	22	23	21	23	21	23	21	23	21
No. of Students scored>=Benchmark	12	4	6	0	9	1	16	6	7	15
% of No. of Students scored >= Benchmark	52.5	18.2	26.1	0	39.1	4.8	69.6	28.6	30.4	71.4
Level of attainment	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**3**

IA - Internal Assessment; ESE-End Semester Exam

Level of attainment:

3: >70% of students scored more than target value

2: 60-70% of students scored more than target value

1: <60% of students scored more than target value

M.Sc 1st Sem

Indirect Attainment

Feedback from students (3 point scale)

	CO11	CO12	CO13	CO14	CO15
No. of students responded	25	25	25	25	25
Sum of all responses	61	61	57	67	68
Average Indirect Attainment	**2.44**	**2.44**	**2.28**	**2.68**	**2.72**

M.Sc 1st Sem

CO Attainment

CO	Internal Ass(IN)	End SE (ESE)	Direct Att (DA) = .2 IN + .8 ESE	Indirect Att. (IA) (Feedback)	Overall Att = .9 DA + .1IA	%
CO11	1	1	1.0	2.44	**1.144**	38.13
CO12	1	1	1.0	2.44	**1.144**	38.13
CO13	1	1	1.0	2.28	**1.128**	37.6
CO14	2	1	1.2	2.68	**1.348**	44.93
CO15	1	3	2.6	2.72	**2.612**	87.06

M.Sc 2nd Sem

Direct Attainment

	CO21		CO22		CO23		CO24		CO25	
Exam Type	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)
Max Mark	20	80	20	80	20	80	20	80	20	80
Bench Mark	50 %	50%	50 %	50%	50 %	50%	50 %	50%	50 %	50%
Target Value	10	40	10	40	10	40	10	40	10	40
No. of Students Appeared	15	15	15	15	15	14	15	14	15	14
No. of Students scored >= Benchmark	10	8	6	11	9	5	10	9	7	6
% of No. of Students scored >= Benchmark	66.7	53.3	40	73.3	60	35.7	66.7	64.3	46.7	42.9
Level of attainment	2	1	1	3	2	1	2	2	1	1

IA - Internal Assessment

ESE-End Semester Exam

Level of attainment:

3: >70% of students scored more than target value

2: 60-70% of students scored more than target value

1: <60% of students scored more than target value

M.Sc 2nd Sem

Indirect Attainment

Feedback from students (3 point scale)

	CO21	CO22	CO23	CO24	CO25
No. of students responded	25	25	25	25	25
Sum of all responses	62	63	57	67	68
Average Indirect Attainment	**2.48**	**2.52**	**2.3**	**2.68**	**2.72**

CO Attainment

CO	Internal Ass(IN)	End SE (ESE)	Direct Att (DA)= .2 IN + .8 ESE	Indirect Att. (IA)(Feedback)	Overall Att = .9 DA + .1IA	%
CO21	2	1	1.2	2.48	1.328	44.3
CO22	1	3	2.6	2.52	2.592	86.4
CO23	2	1	1.2	2.3	1.31	43.7
CO24	2	2	2	2.68	2.068	68.9
CO25	1	1	1	2.72	1.172	39.1

M.Sc 3rd Sem

Direct Attainment

	CO31		CO32		CO33		CO34		CO35	
Exam Type	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)
Max Mark	20	80	20	80	30	70	20	80	20	80
Bench Mark	50 %	50%	50 %	50%	50 %	50%	50 %	50%	50 %	50%
Target Value	10	40	10	40	15	35	10	40	10	40
No. of Students Appeared	19	19	19	19	19	19	19	19	19	19
No. of Students scored>=Benchmark	9	3	12	7	19	13	17	15	16	12
% of No. of Students scored>=Benchmark	47.4	15.8	63.2	36.8	100	68.4	89.5	78.9	84.2	63.2
Level of attainment	1	1	2	1	3	2	3	3	3	2

IA - Internal Assessment

ESE-End Semester Exam

Level of attainment:

3: >60% of students scored more than target value

2: 50-60% of students scored more than target value

1: <50% of students scored more than target value

M.Sc 3rd Sem

Indirect Attainment

Feedback from students (3 point scale)

	CO31	CO32	CO33	CO34	CO35
No. of students responded	25	25	25	25	25
Sum of all responses	62	65	61	71	63
Average Indirect Attainment	**2.48**	**2.6**	**2.44**	**2.84**	**2.52**

CO Attainment

CO	Internal Ass(IN)	End SE (ESE)	Direct Att (DA)= .2 IN + .8 ESE	Indirect Att. (IA)(Feedback)	Overall Att = .9 DA + .1IA	%
CO31	1	1	1.0	**2.48**	1.148	38.3
CO32	2	1	1.2	**2.6**	1.34	44.7
CO33	3	2	2.2	**2.44**	2.224	74.1
CO34	3	3	3	**2.84**	2.984	99.5
CO35	3	2	2.2	**2.52**	2.232	74.4

M.Sc 4th Sem

Direct Attainment

	CO41		CO42		CO43		CO44		CO45	
Exam Type	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)	(IA)	(ESE)
Max Mark	20	80	20	80	30	70	20	80	20	80
Bench Mark	50 %	50%	50 %	50%	50 %	50%	50 %	50%	50 %	50%
Target Value	10	40	10	40	15	35	10	40	10	40
No. of Students Appeared	16	16	16	16	16	16	16	16	16	16
No. of Students scored>=Benchmark	11	6	16	12	16	10	13	14	16	13
% of No. of Students scored>=Benchmark	68.8	37.5	100	75	100	62.5	81.3	87.5	100	81.3
Level of attainment	2	1	3	3	3	2	3	3	3	3

IA - Internal Assessment

ESE-End Semester Exam

Level of attainment:

3: >70% of students scored more than target value

2: 60-70% of students scored more than target value

1: <60% of students scored more than target value

M.Sc 4th Sem

Indirect Attainment

Feedback from students (3 point scale)

	CO41	CO42	CO43	CO44	CO45
No. of students responded	25	25	25	25	25
Sum of all responses	63	61	61	70	65
Average Indirect Attainment	**2.52**	**2.44**	**2.44**	**2.8**	**2.6**

CO Attainment

CO	Internal Ass(IN)	End SE (ESE)	Direct Att (DA)= .2 IN + .8 ESE	Indirect Att. (IA)(Feedback)	Overall Att = .9 DA + .1IA	%
CO41	2	1	1.2	**2.52**	1.332	44.4
CO42	3	3	3	**2.44**	2.944	98.1
CO43	3	2	2.2	**2.44**	2.224	74.1
CO44	3	3	3	**2.8**	2.98	99.3
CO45	3	3	3	**2.6**	2.96	98.7

9. PO attainment

M.Sc. I Sem

CO	CO attainment values	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11	PSO12
CO11	1.144	3	2	2	3	3	-	3	3	3	2	1	-	3	2	3	-	2	2	3	3
CO12	1.144	3	2	2	2	3	-	3	3	3	2	1	-	3	2	3	-	1	1	3	3
CO13	1.128	3	1	2	1	3	-	3	3	3	-	1	-	3	1	3	-	1	1	2	2
CO14	1.348	3	2	2	2	3	-	3	3	3	2	1	-	3	2	3	-	1	1	3	3
CO15	2.612	3	3	3	3	3	1	3	3	3	2	2	2	3	3	3	1	-	2	1	3
Wt. Sum		22.128	16.236	17.364	17.38	22.128	2.612	22.128	22.128	22.128	12.496	9.988	5.224	22.128	16.236	22.128	2.612	5.908	11.132	15.776	21
PO Sum		15	10	11	11	15	1	15	15	15	8	6	2	15	10	15	1	5	7	12	14
Attainment Values		1.48	1.63	1.58	1.58	1.48	2.61	1.48	1.48	1.48	1.56	1.67	2.61	1.48	1.62	1.48	2.61	1.18	1.59	1.31	1.5

M.Sc. II Sem

CO	CO attainment values	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11	PSO12
CO21	1.328	3	2	2	3	3	-	3	3	3	2	1	-	3	2	3	-	2	2	3	3
CO22	2.592	3	2	2	2	3	-	3	3	3	2	1	-	3	2	3	-	1	1	1	3
CO23	1.31	3	1	2	1	3	-	3	3	3	-	1	-	3	1	3	-	-	1	-	1
CO24	2.068	3	2	2	2	3	-	3	3	3	2	1	-	3	2	3	-	1	1	1	1
CO25	1.172	3	3	3	3	3	1	3	3	3	2	2	2	3	3	3	1	-	2	-	3
Wt. Sum		25.41	16.802	18.112	18.13	25.41	1.172	25.41	25.41	25.41	14.32	9.642	2.344	25.41	16.802	25.41	1.172	7.316	10.97	8.644	18.654
PO Sum		15	10	11	11	15	1	15	15	15	8	6	2	15	10	15	1	4	7	5	11
Attainment Values		1.69	1.68	1.65	1.65	1.69	1.17	1.69	1.69	1.69	1.79	1.61	1.17	1.69	1.68	1.69	1.17	1.83	1.57	1.73	1.7

M.Sc. III Sem

CO	CO attainment values	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	PSO11	PSO12
CO31	1.148	3	2	2	3	3	-	3	3	3	2	1	-	3	2	3	-	1	2	1	2
CO32	1.34	3	2	2	1	3	-	3	3	3	2	1	-	3	1	3	-	-	1	-	2
CO33	2.224	3	1	2	3	2	-	1	-	3	3	2	3	1	2	-	1	-	1	-	2
CO34	2.984	3	1	2	2	2	1	2	3	3	3	2	-	3	2	3	-	-	1	1	3
CO35	2.232	3	3	2	2	1	1	2	3	3	3	2	3	3	2	3	1	-	1	1	3
Wt. Sum		29.784	16.88	19.856	21.888	20.112	5.216	20.12	23.112	29.784	27.296	17.368	13.368	25.336	18.516	23.112	4.456	1.148	11.076	6.364	25.072
PO Sum		15	9	10	11	11	2	11	12	15	13	8	6	13	9	12	2	1	6	3	12
Attainment Values		1.99	1.86	1.99	1.99	1.83	2.61	1.83	1.93	1.99	2.1	2.17	2.23	1.95	2.06	1.93	2.23	1.15	1.85	2.12	2.09

M.Sc. IV Sem

CO	CO attainment values	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO 7	PO 8	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PS O9	PS O1 0	PS O1 1	PS O1 2
CO41	1.332	3	2	2	3	3	-	3	3	3	2	2	1	3	3	3	-	1	2	1	3
CO42	2.944	3	2	2	1	3	-	3	3	3	2	1	-	3	1	3	-	-	1	1	2
CO43	2.224	3	1	2	3	2	-	1	-	3	3	2	3	-	2	-	1	-	1	-	2
CO44	2.98	3	1	2	2	2	1	2	3	3	3	2	-	3	2	3	-	-	1	1	3
CO45	2.96	3	3	2	2	1	1	2	3	3	3	2	3	3	2	3	1	-	1	1	3
Wt. Sum		37.32	22.636	24.88	25.492	26.196	5.94	26.932	30.648	37.32	33.044	21.936	16.884	30.648	23.268	30.648	5.184	1.332	13.772	10.216	32.152
PO Sum		15	9	10	11	11	2	11	12	15	13	9	7	12	10	12	2	1	6	4	13
Attainment Values		2.49	2.52	2.49	2.32	2.38	2.97	2.45	2.55	2.49	2.54	2.44	2.42	2.55	2.33	2.55	2.59	1.33	2.29	2.55	2.47

10 . PO/ PSO attainment of the M.Sc. Course

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8	PSO 9	PSO 10	PSO 11	PSO 12
I Sem	1.48	1.63	1.58	1.58	1.48	2.61	1.48	1.48	1.48	1.56	1.67	2.61	1.48	1.62	1.48	2.61	1.18	1.59	1.31	1.5
II Sem	1.69	1.68	1.65	1.65	1.69	1.17	1.69	1.69	1.69	1.79	1.61	1.17	1.69	1.68	1.69	1.17	1.83	1.57	1.73	1.7
III Sem	1.99	1.86	1.99	1.99	1.83	2.61	1.83	1.93	1.99	2.1	2.17	2.23	1.95	2.06	1.93	2.23	1.15	1.85	2.12	2.09
IV Sem	2.49	2.52	2.49	2.32	2.38	2.97	2.45	2.55	2.49	2.54	2.44	2.42	2.55	2.33	2.55	2.59	1.33	2.29	2.55	2.47
Sum	7.65	7.69	7.71	7.54	7.38	9.36	7.45	7.65	7.65	7.99	7.89	8.43	7.67	7.69	7.65	8.6	5.49	7.3	7.71	7.76
Average direct att (DA)	1.9125	1.9225	1.9275	1.885	1.845	2.34	1.8625	1.9125	1.9125	1.9975	1.9725	2.1075	1.9175	1.9225	1.9125	2.15	1.3725	1.825	1.9275	1.94
Average indirect att (IA)	2.2	2.12	2.28	2.36	2.44	2.4	2.44	2.16	2.32	2.4	2.28	2.16	2.16	2.24	2.2	2.04	2.56	2.28	1.92	2.12
Overall PO Att =.9*DA +.1*IA	1.94	1.94	1.96	1.93	1.9	2.35	1.92	1.94	1.95	2.04	2	2.11	1.94	1.95	1.94	2.14	1.49	1.87	1.93	1.96
% of PO attainment	64.67	64.67	65.33	64.33	63.33	78.33	64	64.67	65	68	66.67	70.33	64.67	65	64.67	71.33	49.67	62.33	64.33	65.33

PO/ PSO Overall attainment for the M.Sc. Course

PO/PSO	Target %	Target value	Attainment Level	Observations
PO1	65	1.95	1.94	**Target Not Achieved**
PO2	65	1.95	1.94	**Target Not Achieved**
PO3	65	1.95	1.96	**Target Achieved**
PO4	65	1.95	1.93	**Target Not Achieved**
PO5	65	1.95	1.9	**Target Not Achieved**
PO6	65	1.95	2.35	**Target Achieved**
PO7	65	1.95	1.92	**Target Not Achieved**
PO8	65	1.95	1.94	**Target Not Achieved**
PSO1	65	1.95	1.95	**Target Achieved**
PSO2	65	1.95	2.04	**Target Achieved**
PSO3	65	1.95	2	**Target Achieved**
PSO4	65	1.95	2.11	**Target Achieved**
PSO5	65	1.95	1.94	**Target Not Achieved**
PSO6	65	1.95	1.95	**Target Achieved**
PSO7	65	1.95	1.94	**Target Not Achieved**
PSO8	65	1.95	2.14	**Target Achieved**
PSO9	65	1.95	1.49	**Target Not Achieved**
PSO1O	65	1.95	1.87	**Target Not Achieved**
PSO11	65	1.95	1.93	**Target Not Achieved**
PSO12	65	1.95	1.96	**Target Achieved**

11. Future Plans for improvement in the courses:

1. Critical thinking will be improved by group discussions and inter college activities
2. Scientific awareness skill will be improved by arranging science activities as quiz, poster, debate and slogan competition.
3. Guidance for NET/SET /GATE exams will be organized and also include contents of syllabus in curriculum
4. Lectures and workshops will be organized to understand advanced areas of Mathematics to pursue Research and Development in challenging areas of Pure and Applied Mathematics.
5. Guidance of other job oriented exams and interaction with successful alumni will be provided