MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Department of Engineering Mathematics and Computing

Course Outcomes (CO's)

(July- Dec. 2022)

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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Department of Mathematics & Computing

Course Outcomes (CO's)

B. Tech. (I, III & V Sem.) July- Dec. -2022

Subject & Code/ CO's	CO's	Description of CO's
Introduction to Computer Programming	CO1	Identify situations where computational methods and computers would be useful.
&	CO2	Describe the basic principles of imperative and structural programming.
250122	CO3	Develop a pseudo-code and flowchart for a given problem.
	CO4	Analyze the problems and choose suitable programming techniques to develop solutions
	CO5	To design, implement, debug and test programs
Element of Calculus	CO1	Determine the solution of function by using one and two variables.
&	CO2	Interpret the solution of derivatives concepts using different techniques
250124	CO3	Acquire the knowledge of integral calculus
	CO4	Obtain the volume and area of surface by using multiple integrals
	CO5	Evaluate the Gamma and Beta Function
Statistical Methods	CO1	Determine the Central of tendency, Skewness and Kurtosis.
&	CO2	Interpret the theory of Probability
250123	CO3	Evaluate the Probability distributions
	CO4	Acquire the knowledge of correlation and regression analysis
	CO5	Analyze the test of hypothesis.
Simulation Modelling and Analysis	CO1	Explain core components of computing and linkage between them,
&	CO2	Introduce Summarize role of queueing system
250301	CO3	Discuss the role of computing in real world applications
	CO4	Explain Networking aspect of computer engineering and communication,
	CO5	Acquire basic knowledge of database system
Discrete Mathematical Structure	CO1	Determine the solution of function by using one and two variables.
&	CO2	Interpret the solution of derivatives concepts using different techniques
250309	CO3	Acquire the knowledge of integral calculus
	CO4	Obtain the volume and area of surface by using multiple integrals
	CO5	Evaluate the Gamma and Beta Function
Data Structure and Algorithm	CO1	Recognize the basics of algorithms and their performance criteria's.
&	CO2	Explain the working of linear/Non-Linear data structures.
250310	CO3	Identify the appropriate data structure to solve specific problems

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	CO4	Analyze the performance of various data structures & their applications
	CO5	Evaluate the time/space complexities of various data structures & their applications.
Numerical Technique	CO1	Identify the concepts Algebraic & Transcendental Equations
&	CO2	Acquire the knowledge of finite difference
250311	CO3	Describe numerical integration and differentiation
	CO4	Illustrate the numerical solution of ordinary differential equation
	CO5	Apply finite difference methods to solve Partial differential equations
Computer Networks	CO1	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies.
&	CO2	Acquire the knowledge of network layers.
250501	CO3	Specify and identify deficiencies in existing protocols, and then go onto formulate new and better protocols
	CO4	Analyze, specify and design the topological and routing strategies for an IP based networking infrastructure
	CO5	Understand the issues and solution to access shared medium
Real and Complex Analysis	CO1	Understand basic concept of real number system and their applications in engineering problems.
&	CO2	Analyse various properties of continuity and uniform continuity and compare them.
250502	CO3	Apply concepts of Riemann Integral to solve engineering problems.
	CO4	Understand and Analyse the applications of complex valued function in real world engineering problems.
	CO5	Classify various forms of singularities of complex valued functions and their expansion in valid region of convergence.
Data Science using Python	CO1	Define different Data Science techniques.
&	CO2	Understand different TOOL used for Data Science technique.
250504	CO3	Apply data visualization techniques to solve real world problems.
	CO4	Build exploratory data analysis for Data Science methods.
	CO5	Build Data Science techniques for solving real world problems.
Optimization Techniques	CO1	Determine the solution of Linear Programming Problem
&	CO2	Express the solution of Non Linear Programming Problem
250505	CO3	Find the Optimal solution using PERT/CPM
	CO4	Acquire the knowledge of Game theory.
	CO5	Evaluate the different models of inventory.
Mathematics - II	CO1	Apply the Fourier series and Laplace Transform for solving engineering Problems.
&	CO2	Solve Ordinary Differential Equation of Second Order.
100025	CO3	Solve Partial Differential equations application for various engineering problems.
	CO4	Solve problems of Vector Calculus.

	CO5	Apply probability theory with distributions for statistically analysis of given data.
Mathematics - I	CO1	Apply differential Calculus in basic engineering problems
&	CO2	Use integration techniques to determine the solution of various complex problems
100011	CO3	Solve the differential equations by various methods
	CO4	Solve the problem of matrix.
	CO5	Concept of Boolean algebra and graph theory.
Foundation Computational Science	CO1	Acquire Knowledge of set theory
&	CO2	Analyse the concept of Lattices
680111	CO3	Identify the concept of Group Theory
	CO4	Derive the Inferences from Graph theory
	CO5	Illustrate the Discrete numeric function and recursive relation
Probability and Random Process	CO1	Interpreting the theory of Probability and its distributions
&	CO2	Evaluating the Skewness, Kurtosis, curve fitting, correlation and regression.
250300	CO3	Applying the various test to validate the hypothesis
	CO4	Explaining the knowledge of random variables.
	CO5	Judging the various random process
Linear Algebra	CO1	Determine the solution of Matrix
&	CO2	Find the analytical solution of algebraic structures'
250100	CO3	Express the vector space
	CO4	Acquire the knowledge of Linear transformation
	CO5	Illustrate the concept of Inner product spaces

Dr. J. K. Muthele
(OBE- Coordinator)

Dr. Vikas Shinde
(Professor and Head)

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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Department of Engineering Mathematics & Computing
Co Attainment & Gap Analysis
B. Tech. (I, III & V Sem.) July- Dec. -2022

MAC- I

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Prof. P. Sharma	Introduction to Computer Programming (250122)	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85	68	65	Attained	
		CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained	
		CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88			Attained	
		CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained	
		CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained	
Dr. J. K. Muthele	Statistical Methods (250123)	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29	68	63	Attained	
		CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained	
		CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45			Attained	
		CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45			Attained	
		CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained	
Dr. D. K. Jain	Element of Calculus (250124)	CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76	68	66	Attained	
		CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained	
		CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78			Attained	
		CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51			Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes, .Give Assignments
		CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained	

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MAC- III Sem.

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Dr. A. K. Ray	Modelling and Analysis (250301)	CO-1	73.06		91.38	82.22	69.00	79.57	65.00	-14.57			Attained	
		CO-2	66.72		90.22	78.47	67.00	76.18	65.00	-11.18			Attained	
		CO-3		52.38	77.84	65.11	57.00	63.49	65.00	1.51	67	66	Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes, .Give Assignments
		CO-4		65.69	74.22	69.96	66.00	69.17	65.00	-4.17			Attained	
		CO-5		62.70	86.71	74.70	64.00	72.56	65.00	-7.56			Attained	
Dr. D.K. Jain	Discrete Mathematical Structure (250309)	CO-1	67.06		91.38	79.22	62.00	75.77	60.00	-15.77			Attained	
		CO-2	55.31		90.22	72.76	65.00	71.21	60.00	-11.21			Attained	
		CO-3		51.39	77.84	64.62	55.00	62.69	60.00	-2.69	67	65	Attained	
		CO-4		71.94	74.22	73.08	60.00	70.47	60.00	-10.47			Attained	
		CO-5		79.86	86.71	83.28	61.00	78.83	60.00	-18.83			Attained	
Prof. P. Sharma	Data Structure and Algorithm (250310)	CO-1	71.00		84.76	77.88	84.76	79.26	60.00	-19.26			Attained	
		CO-2	63.59		92.06	77.83	92.06	80.67	60.00	-20.67			Attained	
		CO-3		68.40	75.90	72.15	75.90	72.90	60.00	-12.90	67	66	Attained	
		CO-4		63.82	70.83	67.32	70.83	68.02	60.00	-8.02			Attained	
		CO-5		66.39	83.37	74.88	83.37	76.58	60.00	-16.58			Attained	
Dr. J.K. Muthele	Numerical Technique (250311)	CO-1	72.53		91.38	81.95	76.00	80.76	60.00	-20.76			Attained	
		CO-2	74.00		90.22	82.11	74.00	80.49	60.00	-20.49			Attained	
		CO-3		76.67	77.84	77.26	69.00	75.60	60.00	-15.60	67	64	Attained	
		CO-4		71.43	74.22	72.82	68.00	71.86	60.00	-11.86			Attained	
		CO-5		75.00	86.71	80.85	61.00	76.88	60.00	-16.88			Attained	

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MAC- V Sem.

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Prof. Vivek Sharma	Computer Networks (250501)	CO-1	49.22		91.38	70.30	70.00	70.24	60.00	-10.24	66	64	Attained	
		CO-2	54.00		90.22	72.11	71.00	71.89	60.00	-11.89			Attained	
		CO-3		77.93	77.84	77.89	59.00	74.11	60.00	-14.11			Attained	
		CO-4		83.19	74.22	78.71	59.00	74.77	60.00	-14.77			Attained	
		CO-5		71.67	86.71	79.19	64.00	76.15	60.00	-16.15			Attained	
Dr. Divya Charturvedi	Real and Complex Analysis (250502)	CO-1	69.44		91.38	80.41	59.00	76.13	60.00	-16.13	66	63	Attained	
		CO-2	68.44		90.22	79.33	60.00	75.46	60.00	-15.46			Attained	
		CO-3		65.63	77.84	71.73	61.00	69.59	60.00	-9.59			Attained	
		CO-4		69.69	74.22	71.96	62.00	69.96	60.00	-9.96			Attained	
		CO-5		71.94	86.71	79.33	61.00	75.66	60.00	-15.66			Attained	
Dr. Minakshi	Data Science using Python (250504)	CO-1	73.03		91.38	82.20	64.00	78.56	65.00	-13.56	66	65	Attained	
		CO-2	74.22		90.22	82.22	69.00	79.58	65.00	-14.58			Attained	
		CO-3		73.96	77.84	75.90	54.00	71.52	65.00	-6.52			Attained	
		CO-4		68.55	74.22	71.39	63.00	69.71	65.00	-4.71			Attained	
		CO-5		77.64	86.71	82.17	61.00	77.94	65.00	-12.94			Attained	
Dr. V.P.Shinde	Optimization Techniques (250505)	CO-1	74.75		82.66	78.71	71.00	77.17	55.00	-22.17	66	62	Attained	
		CO-2	65.86		92.39	79.12	73.00	77.90	55.00	-22.90			Attained	
		CO-3		71.88	74.29	73.08	74.00	73.27	55.00	-18.27			Attained	
		CO-4		65.63	79.87	72.75	65.00	71.20	55.00	-16.20			Attained	
		CO-5		89.17	83.37	86.27	62.00	81.41	55.00	-26.41			Attained	

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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Engineering Mathematics- (100011)

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Dr. S. K. Bharadwaj	Engg. Mathematics- I (ME/ CSE 100011)	CO-1	61.62		79.12	70.37	71.00	70.50	75.00	4.50	287	254	Not Attained	Doubt Clearing Session to be arranged in Extra Hours Remedial Classes,
		CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13			Attained	
		CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55			Attained	
		CO-4		76.04	64.28	70.16	65.00	69.13	75.00	5.87			Not Attained	To Organize the Remedial Classes, .Give Assignments
		CO-5		88.89	83.97	86.43	62.00	81.54	75.00	-6.54			Attained	
Prof. D.K. Mishra	Engg. Mathematics- I (EE-100011)	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00	168	151	Attained	
		CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained	
		CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24			Attained	
		CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
		CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	
Prof. A. S. Ojha	Engg. Mathematics- I (CE- 100011)	CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95	176	168	Attained	
		CO-2	0.00		94.38	47.19	73.00	52.35	70.00	17.65			Not Attained	Doubt Clearing Session to be arranged in Extra Hours
		CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12			Attained	
		CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17			Attained	
		CO-5		89.17	74.71	81.94	62.00	77.95	70.00	-7.95			Attained	
		CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17			Attained	
		CO-5		89.17	74.71	81.94	62.00	77.95	70.00	-7.95			Attained	

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Prof. D.K. Mishra	MCA680111	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00	59	58	Attained	
		CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained	
		CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24			Attained	
		CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
		CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	

Engineering Mathematics- II (100025) Sem. -III

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Dr. J. K. Muthele	Mathematics- II (IT-100025)	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00	77	74	Attained	
		CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained	
		CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24			Attained	
		CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
		CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	
Prof. A. Ojha	Mathematics- II (ET-100025)	CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95	70	67	Attained	
		CO-2	0.00		94.38	47.19	73.00	52.35	70.00	17.65			Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes,
		CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12			Attained	
		CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17			Attained	
		CO-5		89.17	74.71	81.94	62.00	77.95	70.00	-7.95			Attained	

Faculty	Subject	CO							Target	Gap			Status	Remarks
Dr. A. K. Ray	Mathematics- II (EE-100025)	CO-1	61.62		79.12	70.37	71.00	70.50	75.00	4.50	168	157	Not Attained	Doubt Clearing Session to be arranged in Extra Hours, Remedial Classes,
		CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13			Attained	
		CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55			Attained	
		CO-4		76.04	64.28	70.16	65.00	69.13	75.00	5.87			Not Attained	To Organize the Remedial Classes, Give Assignments
		CO-5		88.89	83.97	86.43	62.00	81.54	75.00	-6.54			Attained	
Prof. D.K. Mishra	Mathematics- II (ME-100025)	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00	184	171	Attained	
		CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained	
		CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24			Attained	
		CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
		CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	
Prof. A. Ojha	Mathematics- II (CE-100025)	CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95	182	172	Attained	
		CO-2	0.00		94.38	47.19	73.00	52.35	70.00	17.65			Not Attained	Doubt Clearing Session to be arranged in Extra Hours, To Organize the Remedial Classes,
		CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12			Attained	
		CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17			Attained	
		CO-5		89.17	74.71	81.94	62.00	77.95	70.00	-7.95			Attained	
Dr. S. K. Bharadwaj	Mathematics- II (CSE/ EC-100025)	CO-1	88.62		83.97	86.43	62.00	81.54	75.00	-6.54	305	298	Attained	
		CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13			Attained	
		CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55			Attained	
		CO-4		76.04	64.28	70.16	65.00	69.13	75.00	5.87			Not Attained	To Organize the Remedial Classes, Give Assignments
		CO-5		88.89	83.97	86.43	62.00	81.54	75.00	-6.54			Attained	

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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Probability & Random Process (250300) for B. Tech. (III- Sem.)

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment % I- Mid Term	CO Attainment % II- Mid Term	CO Attainment % End Sem. Exam	CO Attainment % Direct	CO Attainment % In-Direct	CO Attainment % Overall	CO Attainment % Target	CO Attainment % Gap in Attainment %	Result Registered Students	Result PASS	CO Attainment Status	CO Attainment Action Taken
Dr. D. K. Mishra	Probability & Random Process (EE-IoT- 250300)	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85	65	61	Attained	
		CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained	
		CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88			Attained	
		CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained	
		CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained	
Dr. Minakshi	Probability & Random Process (AIR 250300)	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29	66	64	Attained	
		CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained	
		CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45			Attained	
		CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45			Attained	
		CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained	
Dr. Divya Charturvedi	Probability & Random Process (IT-IoT- 250300)	CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76	67	64	Attained	
		CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained	
		CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78			Attained	
		CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51			Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes, .Give Assignments
		CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained	

Linear Algebra (250100 for First Sem.

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Name of Faculty	Course Name & Code	Course Outcomes	CO Attainment %			CO Attainment %					Result		CO Attainment	
			I- Mid Term	II- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
Dr. Divya Charturvedi	Linear Algebra- AIDS/AIML-250100)	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85	130	124	Attained	
		CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained	
		CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88			Attained	
		CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained	
		CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained	
Dr. Minakshi	Linear Algebra- EE-IoT/IT-IoT-250100)	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29	135	125	Attained	
		CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained	
		CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45			Attained	
		CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45			Attained	
		CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained	
Dr. Atul K. Ray	Linear Algebra- AIR/CSD-250100)	CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76	134	129	Attained	
		CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained	
		CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78			Attained	
		CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51			Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes, Give Assignments.
		CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained	

Dr. J. K. Muthele

(OBE- Coordinator)

Dr. Vikas Shinde

(Professor and Head)

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

Department of Engineering Mathematics & Computing

Action Taken Report Based on Course Outcomes (CO's)
July- Dec. -2022 (I, III & V- Sem.)

➢ More assignment & tutorial classes should be conducted
➢ To support the CO, more numerical questions should be solved in tutorial classes
➢ Animations and videos are planned to demonstrate clear understanding
➢ If necessary, additional classes to be conducted
➢ More questions through assignments
➢ Provide various numerical problems through tutorial sheet
➢ Extra time will be given on this topic
➢ Variety of assignments and MCQs
➢ More interaction with the students

Dr. Vikas Shinde
(Professor and Head)