### Department of Engineering Mathematics and Computing

**Course Outcomes (CO's)** 

(July- Dec. 2022)

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

### **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.
250122	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	C01	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
050201	CO3	Discuss the role of computing in real world applications
250301	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

	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
&	CO1 CO2	Acquire the knowledge of finite difference
	CO2 CO3	Describe numerical integration and differentiation
250311	CO3	Illustrate the numerical solution of ordinary differential equation
	C04 C05	Apply finite difference methods to solve Partial differential equations
	0.05	Appry mine 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
<b>.</b>		
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.
250502	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	C01	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.

	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	C01	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

Sthathere

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

Shinde

Dr. Vikas Shinde (Professor and Head)

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

MAC- I

	త	les	CO	Attainm	ent %		C	O Attain	ment %		Res	ult		CO Attainment
Name of Faculty	Course Name Code	Course Outcomes	I- Mid Term	II- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
na	O b0	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85			Attained	
Sharma	ion 1 iter min <sub>8</sub> 22)	CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained	
P. S	Introduction to Computer Programming (250122)	CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88	68	65	Attained	
Prof. P.	Col Col Col (2:	CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained	
$P_{7}$		CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained	
ele	Statistical Methods (250123)	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29			Attained	
futh	1eth 23)	CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained	
K. Muthele	stical Met (250123)	CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45	68	63	Attained	
у.	(25	CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45			Attained	
Dr.	Stat	CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained	
		CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76			Attained	
u	Calculus 24)	CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained	
Jain	Calc	CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78	68 6		Attained	
Dr. D. K.	Element of Cal (250124)	CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51		68 66	66	Not Attained
		CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained	

#### MAC- III Sem.

9) (250301) Course Name (250301) Code	CO-1 CO-2 CO-3 CO-4 CO-5	<b>Wid Term</b> 73.06 66.72	<b>II- Wid Term</b>	<b>Exam</b> 91.38 90.22 777.84	<b>bind</b> 82.22 78.47 65.11	<b>Iu-Direct</b> 69.00	<b>Overall</b> 79.57	<b>Target</b>	<b>Attainment %</b> -14.57 -11.18	Registered Students	PASS	Attained Attained	Action Taken
	CO-2 CO-3 CO-4		52.38	90.22	78.47					-			
	CO-3 CO-4	66.72	52.38			67.00	76.18	65.00	-11.18			Attained	
	CO-4		52.38	77.84	65.11							Attaineu	
						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
(6	CO-5		65.69	74.22	69.96	66.00	69.17	65.00	-4.17			Attained	
(6			62.70	86.71	74.70	64.00	72.56	65.00	-7.56			Attained	
_ 0	CO-1	67.06		91.38	79.22	62.00	75.77	60.00	-15.77			Attained	
tica 503	CO-2	55.31		90.22	72.76	65.00	71.21	60.00	-11.21	67		Attained	
ema e (2	CO-3		51.39	77.84	64.62	55.00	62.69	60.00	-2.69	67	65	Attained	
1ath ictur	CO-4		71.94	74.22	73.08	60.00	70.47	60.00	-10.47			Attained	
Stru	CO-5		79.86	86.71	83.28	61.00	78.83	60.00	-18.83			Attained	
10)	CO-1	71.00		84.76	77.88	84.76	79.26	60.00	-19.26			Attained	
503	CO-2	63.59		92.06	77.83	92.06	80.67	60.00	-20.67			Attained	
n (2	CO-3		68.40	75.90	72.15	75.90	72.90	60.00	-12.90	67	66	Attained	
a str			63.82	70.83	67.32	70.83	68.02	60.00	-8.02			Attained	
Data Algo			66.39	83.37	74.88	83.37	76.58	60.00	-16.58			Attained	
		72.53		91.38	81.95	76.00	80.76	60.00	-20.76			Attained	
ue 1)		74.00		90.22	82.11	74.00	80.49	60.00	-20.49			Attained	
031.			76.67	77.84	77.26	69.00	75.60	60.00	-15.60	67	64	Attained	
Tech (25			71.43	74.22	72.82	68.00	71.86	60.00	-11.86			Attained	
			75.00	86.71	80.85	61.00	76.88	60.00	-16.88	-		Attained	
Data Structure and	(250311) Algorithm (250310) Mathematical (250311) Algorithm (250309)	High Co-1 Algorithm (250310) CO-2 CO-3 CO-3 CO-4 CO-4 CO-5 CO-5 CO-1	CO-1 71.00 CO-2 63.59 CO-3 CO-3 CO-4 CO-4 CO-4 CO-5 CO-1 72.53 CO-1 72.53 CO-3 CO-2 74.00 CO-3 CO-3 CO-3 CO-3 CO-4 CO-2 CO-3 CO-4 CO-2 CO-3 CO-4 CO-2 CO-3 CO-4 CO-2 CO-2 CO-3 CO-4 CO-2 CO-3 CO-3 CO-4 CO-3 CO-4 CO-2 CO-3 CO-4 CO-4 CO-5 CO-4 CO-5 CO-4 CO-5 CO-5 CO-1 CO-4 CO-5 CO-1 CO-2 CO-2 CO-3 CO-4 CO-2 CO-3 CO-4 CO-4 CO-4 CO-5 CO-4 CO-5 CO-1 CO-3 CO-4 CO-4 CO-5 CO-1 CO-4 CO-5 CO-1 CO-2 CO-1 CO-4 CO-4 CO-5 CO-1 CO-4 CO-5 CO-1 CO-2 CO-1 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-2 CO-1 CO-3 CO-3 CO-1 CO-2 CO-1 CO-3 CO-3 CO-3 CO-3 CO-4 CO-1 CO-3 CO-3 CO-3 CO-3 CO-1 CO-3 CO-3 CO-3 CO-3 CO-1 CO-3 CO-3 CO-3 CO-3 CO-3 CO-4 CO-2 CO-1 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-3 CO-4 CO-3 CO-4 CO-4 CO-3 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4 CO-4	CO-1 71.00 71.00   CO-2 63.59 68.40   CO-3 CO-3 63.82   CO-5 66.39   CO-1 72.53   CO-2 74.00   CO-2 74.00   CO-3 CO-3   CO-4 77.53   CO-3 CO-3   CO-3 CO-3   CO-4 CO-3	CO-1 71.00 84.76   CO-2 63.59 92.06   CO-3 68.40 75.90   CO-4 63.82 70.83   CO-5 66.39 83.37   CO-1 72.53 91.38   CO-2 74.00 90.22   CO-3 76.67 77.84   CO-4 71.43 74.22	CO-1 71.00 84.76 77.88   CO-2 63.59 92.06 77.83   CO-3 68.40 75.90 72.15   CO-4 63.82 70.83 67.32   CO-5 66.39 83.37 74.88   CO-1 72.53 91.38 81.95   CO-2 74.00 90.22 82.11   CO-3 76.67 77.84 77.26   CO-4 71.43 74.22 72.82	CO-1 71.00 84.76 77.88 84.76   CO-2 63.59 92.06 77.83 92.06   CO-3 68.40 75.90 72.15 75.90   CO-4 63.82 70.83 67.32 70.83   CO-5 66.39 83.37 74.88 83.37   CO-1 72.53 91.38 81.95 76.00   CO-2 74.00 90.22 82.11 74.00   CO-3 76.67 77.84 77.26 69.00   CO-4 0 71.43 74.22 72.82 68.00	CO-1 71.00 84.76 77.88 84.76 79.26   CO-2 63.59 92.06 77.83 92.06 80.67   CO-3 68.40 75.90 72.15 75.90 72.90   CO-4 63.82 70.83 67.32 70.83 68.02   CO-5 66.39 83.37 74.88 83.37 76.58   CO-1 72.53 91.38 81.95 76.00 80.76   CO-2 74.00 90.22 82.11 74.00 80.49   CO-3 76.67 77.84 77.26 69.00 75.60   CO-4 71.43 74.22 72.82 68.00 71.86	CO-1 71.00 84.76 77.88 84.76 79.26 60.00   CO-2 63.59 92.06 77.83 92.06 80.67 60.00   CO-3 68.40 75.90 72.15 75.90 72.90 60.00   CO-4 63.82 70.83 67.32 70.83 68.02 60.00   CO-5 66.39 83.37 74.88 83.37 76.58 60.00   CO-1 72.53 91.38 81.95 76.00 80.76 60.00   CO-2 74.00 90.22 82.11 74.00 80.49 60.00   CO-3 76.67 77.84 77.26 69.00 75.60 60.00   CO-4 71.43 74.22 72.82 68.00 71.86 60.00	CO-1 71.00 84.76 77.88 84.76 79.26 60.00 -19.26   CO-2 63.59 92.06 77.83 92.06 80.67 60.00 -20.67   CO-3 68.40 75.90 72.15 75.90 72.90 60.00 -12.90   CO-4 63.82 70.83 67.32 70.83 68.02 60.00 -8.02   CO-5 66.39 83.37 74.88 83.37 76.58 60.00 -16.58   CO-1 72.53 91.38 81.95 76.00 80.76 60.00 -20.76   CO-2 74.00 90.22 82.11 74.00 80.49 60.00 -20.76   CO-3 76.67 77.84 77.26 69.00 75.60 60.00 -15.60   CO-4 71.43 74.22 72.82 68.00 71.86 60.00 -11.86	CO-1 71.00 84.76 77.88 84.76 79.26 60.00 -19.26   CO-2 63.59 92.06 77.83 92.06 80.67 60.00 -20.67   CO-3 68.40 75.90 72.15 75.90 72.90 60.00 -12.90 67   CO-4 63.82 70.83 67.32 70.83 68.02 60.00 -8.02   CO-5 66.39 83.37 74.88 83.37 76.58 60.00 -16.58   CO-1 72.53 91.38 81.95 76.00 80.76 60.00 -20.76   CO-2 74.00 90.22 82.11 74.00 80.49 60.00 -20.76   CO-3 76.67 77.84 77.26 69.00 75.60 60.00 -15.60 67   CO-4 71.43 74.22 72.82 68.00 71.86 60.00 -11.86	CO-1 71.00 84.76 77.88 84.76 79.26 60.00 -19.26 A model and model and model and a model and model and a model and model and	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 Attained   CO-3 68.40 75.90 72.15 75.90 72.90 60.00 -12.90 66 Attained   CO-4 63.82 70.83 67.32 70.83 68.02 60.00 -8.02 66 Attained   CO-5 66.39 83.37 74.88 83.37 76.58 60.00 -16.58 Attained   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 67 64 Attained   CO-3 76.67 77.84 77.26 69.00 75.60 60.00 -11.86 64 Attained   Attained 0.04 0.04

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ltγ	જ	nes	СО	Attainm	ent %		С	O Attain	ment %		Res	ult		CO Attainment
acu	a a	con												
Name of Faculty	Course Name Code	Course Outcomes	l- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
<b>A</b>		CO-1	49.22		91.38	70.30	70.00	70.24	60.00	-10.24			Attained	
ivel	ter rks )1)	CO-2	54.00		90.22	72.11	71.00	71.89	60.00	-11.89			Attained	
rof. Vive Sharma	Computer Networks (250501)	CO-3		77.93	77.84	77.89	59.00	74.11	60.00	-14.11	66	64	Attained	
Prof. Vivek Sharma	Co (2: (2:	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	
	o2)	CO-1	69.44		91.38	80.41	59.00	76.13	60.00	-16.13			Attained	
vya	omp 505(	CO-2	68.44		90.22	79.33	60.00	75.46	60.00	-15.46			Attained	
Dr. Divya harturved	is (2	CO-3		65.63	77.84	71.73	61.00	69.59	60.00	-9.59	66	63	Attained	
Dr. Divya Charturvedi	Real and Complex Analysis (250502)	CO-4		69.69	74.22	71.96	62.00	69.96	60.00	-9.96			Attained	
	Re An	CO-5		71.94	86.71	79.33	61.00	75.66	60.00	-15.66			Attained	
Ē	sing )4)	CO-1	73.03		91.38	82.20	64.00	78.56	65.00	-13.56			Attained	
aks	ce u: 5050	CO-2	74.22		90.22	82.22	69.00	79.58	65.00	-14.58			Attained	
Min	cienc n (2:	CO-3		73.96	77.84	75.90	54.00	71.52	65.00	-6.52	66	65	Attained	
Dr. Minakshi	Data Science using Python (250504)	CO-4		68.55	74.22	71.39	63.00	69.71	65.00	-4.71			Attained	
	Dat Py	CO-5		77.64	86.71	82.17	61.00	77.94	65.00	-12.94			Attained	
de		CO-1	74.75		82.66	78.71	71.00	77.17	55.00	-22.17			Attained	
hin	atior Jues )5)	CO-2	65.86		92.39	79.12	73.00	77.90	55.00	-22.90			Attained	
P.C	Dptimizatior Techniques (250505)	CO-3		71.88	74.29	73.08	74.00	73.27	55.00	-18.27	66	62	Attained	
Dr. V.P.Shinde	Optimization Techniques (250505)	CO-4		65.63	79.87	72.75	65.00	71.20	55.00	-16.20			Attained	
Dı		CO-5		89.17	83.37	86.27	62.00	81.41	55.00	-26.41			Attained	

#### **Engineering Mathematics- (100011)**

	જ	es es		Attainm	,		C	O Attain	ment %		Res	sult		CO Attainment
Name of Faculty	Course Name Code	Course Outcomes	l- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
ıdwaj	tics- I 11)	CO-1	61.62		79.12	70.37	71.00	70.50	75.00	4.50			Not Attained	Doubt Clearing Session to be arranged in Extra Hours Remedial Classes,
ara	emat 1000	CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13			Attained	
BI	athe SE 1	CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55	287	254	Attained	
Dr. S. K. Bharadwaj	Engg. Mathematics- (ME/ CSE 100011)	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
Γ		CO-5		88.89	83.97	86.43	62.00	81.54	75.00	-6.54			Attained	
	-	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00			Attained	
Prof. D.K. Mishra	Engg. Mathematics- I (EE-100011)	CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained	
rof. D.K Mishra	Engg. nemat -1000	CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24	168	151	Attained	
Pro M	E lath (EE-	CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
	2	CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	
		CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95			Attained	
Prof. A. S. Ojha	s. Mathematics- I (CE- 100011	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
<b>A.</b> (	lath - 10	CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12	176	168	Attained	
of.	.g. N (CE	CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17			Attained	
Pı	Engg. ((	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	

ulty	ళ	nes	СО	Attainm	ent %		C	O Attain	ment %		Res	sult		CO Attainment
Name of Facu	Course Name Code	Course Outcon	l- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken
shra		CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00			Attained	
Mis	680111	CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02	1		Attained	
D.K.	A68(	CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24	59	58	Attained	
of. E	MCA	CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained	
Pro		CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained	

#### Engineering Mathematics- II (100025) Sem. -III

ty	త	les	СО	Attainm	ent %		С	O Attain	ment %		Res	ult		CO Attainment	
Name of Faculty	Course Name Code	Course Outcomes	l- Mid Term	II- Mid Term	End Sem Exam	Direct	InDirect	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken	
	=	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00			Attained		
K. ele	athematics- (IT-100025)	CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained		
Dr. J. K. Muthele	Mathematics (IT-100025	CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24	77	74	Attained		
Dr. Mu	1ath (IT-	CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained		
	2	CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained		
-	=	CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95			Attained		
. Ojha	Mathematics- I (ET-100025)	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,	
ſ. A.	nem. -10(	CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12	70	67	Attained		
Prof.	Math (ET	CO-4		81.25	64.18	72.71	65.00	71.17	70.00	-1.17		1		Attained	
	2	CO-5		89.17	74.71	81.94	62.00	77.95	70.00	-7.95			Attained		

Ray	=	CO-1	61.62		79.12	70.37	71.00	70.50	75.00	4.50			Not Attained	Doubt Clearing Session to be arranged in Extra Hours Remedial Classes,	
R.	lathematics- (EE-100025)	CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13			Attained		
A. K.	ema 100	CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55	168	157	Attained		
Dr. A	Mathematics- (EE-100025)	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		
	=	CO-1	81.00		78.50	79.75	71.00	78.00	70.00	-8.00			Attained		
.K.	tics- 025)	CO-2	72.81		93.24	83.02	73.00	81.02	70.00	-11.02			Attained		
Prof. D.K. Mishra	Mathematics- (ME-100025)	CO-3		76.75	76.86	76.80	74.00	76.24	70.00	-6.24	184	171	Attained		
Pro M	athe ME-	CO-4		77.93	81.84	79.88	65.00	76.91	70.00	-6.91			Attained		
	Σ)	CO-5		83.19	84.38	83.79	62.00	79.43	70.00	-9.43			Attained		
		CO-1	63.62		83.26	73.44	71.00	72.95	70.00	-2.95			Attained		
. Ojha	Mathematics- II (CE-100025)	CO-2	0.00		94.38	47.19	73.00	52.35	70.00	17.65	100	170	Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes,	
f. A	hem E-10	CO-3		79.17	71.62	75.40	74.00	75.12	70.00	-5.12	182	172	Attained		
Prof. A.	Mat (CI	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		
K. Bharadwaj	 5)	CO-1	88.62		83.97	86.43	62.00	81.54	75.00	-6.54			Attained		
Irac	ics-   002	CO-2	87.50		91.33	89.41	73.00	86.13	75.00	-11.13	305 2		Attained		
Bh	mati C-10	CO-3		77.08	74.78	75.93	74.00	75.55	75.00	-0.55		298	Attained		
Ś	Mathematics- II (CSE/ EC-100025)	CO-4		76.04	64.28	70.16	65.00	69.13	75.00	5.87		. 305 298		Not Attained	To Organize the Remedial Classes, Give Assignments
Dr.		CO-5		88.89	83.97	86.43	62.00	81.54	75.00	-6.54			Attained		

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

ltγ	త	nes	СО	Attainm	ent %		C	O Attain	ment %		Res	sult		CO Attainment
Name of Faculty	Course Name Code	Course Outcomes	l- Mid Term	II- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	SSA	Status	Action Taken
ıra	(EE-	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85			Attained	
Mishra	ability & Process ( 250300)	CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained	
K. N	abilit Proc 503	CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88	65	61	Attained	
D. F	Probability & dom Process IoT- 250300)	CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained	
Dr.	Probability & Random Process (EE- IoT- 250300)	CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained	
hi	(	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29			Attained	
Dr. Minakshi	Probability & Random Process (AIR 250300)	CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained	
<b>Tin</b> :	abil m P 250	CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45	66	64	Attained	
r. N	<sup>o</sup> rob indo AIR	CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45			Attained	
D	Ra ()	CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained	
·i	ess	CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76			Attained	
ved	roc	CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained	
rtur	500) F	CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78			Attained	
Dr. Divya Charturvedi	ility & Random Process (IT-loT- 250300)	CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51	67 64	64	Not Attained	Doubt Clearing Session to be arranged in Extra Hours To Organize the Remedial Classes, .Give Assignments
Dr. I	Probability (IT-I	CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained	

Linear Algebra (250100 for First Sem.

ły	త	les	CO	Attainm	ent %		C	O Attain	ment %		Res	sult		CO Attainment	
Name of Faculty	Course Name Code	Course Outcomes	l- Mid Term	ll- Mid Term	End Sem. Exam	Direct	In-Direct	Overall	Target	Gap in Attainment %	Registered Students	PASS	Status	Action Taken	
di '	a-	CO-1	61.25		91.38	76.32	84.00	77.85	70.00	-7.85			Attained		
Dr. Divya Charturvedi	Linear Algebra AIDS/AIML- 250100)	CO-2	61.92		90.22	76.07	73.00	75.45	70.00	-5.45			Attained		
It Di	r Alg S/Al 501C	CO-3		74.86	77.84	76.35	74.00	75.88	70.00	-5.88	130	124	Attained		
Dr.	nea AID 25	CO-4		70.83	74.22	72.53	65.00	71.02	70.00	-1.02			Attained		
	L	CO-5		77.22	86.71	81.97	62.00	77.97	70.00	-7.97			Attained		
hi	- E 	CO-1	61.33		91.38	76.36	61.00	73.29	65.00	-8.29			Attained		
Dr. Minakshi	Linear Algebra- EE-loT/IT-loT- 250100)	CO-2	60.08		90.22	75.15	59.00	71.92	65.00	-6.92			Attained		
Tin	еаг Algeb -IоТ/IТ-Iс 250100)	CO-3		59.79	77.84	68.82	57.00	66.45	65.00	-1.45	135	125	Attained		
<b>r</b> . N	neai EE-lc 25	CO-4		62.92	74.22	68.57	63.00	67.45	65.00	-2.45	135 125 135	Attained			
D	E E	CO-5		64.38	86.71	75.54	60.00	72.43	65.00	-7.43			Attained		
IJ		CO-1	63.03		91.38	77.20	70.00	75.76	70.00	-5.76			Attained		
Ray	ora- 100)	CO-2	75.00		90.22	82.61	65.00	79.09	70.00	-9.09			Attained		
<b>K</b>	lgek 250	CO-3		69.10	77.84	73.47	60.00	70.78	70.00	-0.78	124	120	Attained		
Dr. Atul K.	Linear Algebra- AIR/CSD-250100)	CO-4		62.50	74.22	68.36	64.00	67.49	70.00	2.51	134	134 129	129	Not Attained	Doubt Clearing Sessionto be arrangedin Extra HoursTo OrganizetheRemedialClasses,Classes,.Give AssignmentsClasses,
		CO-5		61.18	86.71	73.94	65.00	72.16	70.00	-2.16			Attained		
2	Allenth	Je													

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

Shinde

Dr. Vikas Shinde (Professor and Head)

#### MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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#### **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)