MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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

NAAC Accredited with A++ Grade

Flexible
Scheme & Syllabus
2022-2025

B.Tech.

in

Mathematics and Computing

Department of Engineering Mathematics and Computing
Madhav Institute of Technology & Science
Gwalior-474005

Mathematics and Computing

Abbreviations used

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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L	**Lecture**
T	**Tutorial**
P	**Practical**
HSMC	**Humanities and Social Sciences including Management Courses**
BSC	**Basic Science Courses**
ESC	**Engineering Science Courses**
DC	**Departmental Core**
DE	**Departmental Elective**
OC	**Open Category**
DLC	**Departmental Laboratory Courses**
MC	**Mandatory Course**
MOOC	**Massive Open Online Courses**

Definition of Credit:

1 Hr. Lecture (L) per week	**1 credit**
1 Hr. Tutorial (T) per week	**1 credit**
2 Hours Practical(Lab)/week	**1 credit**

***Minor variation is allowed as per need of the respective disciplines. Please consult the AICTE model curriculum as a standard reference, if needed.**

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Department of Engineering Mathematics & Computing
Scheme of Examination
B. Tech. I Semester

(Admitted batch 2022)

S.No	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Exam	Mode of Teaching
				Theory Slot				Practical Slot				L	T	P			
				End Sem.	$^\$$Proficiency in subject /course	Mid Sem Exam.	Quiz/ Assignment	End Sem.	Lab work & Sessional	Skill Based Mini Project							
1.	2250121	DC	Introduction to Computing	50	10	20	20	-	-	-	100	3	-	-	3	MCQ	Blended (2/1)
2.	2250122	DC	Computer Programming	50	10	20	20	60	20	20	200	2	1	2	4	A+O	Blended (2/1)
3.	2250123	DC	Statistical Methods	50	10	20	20				100	3	1	-	4	PP	Off line
4.	2250124	DC	Element of Calculus	50	10	20	20	-	-	-	100	3	1	-	4	PP	Off line
5.	2250125	DC	Digital Logic Deign	50	10	20	20	-	-	-	100	3	-	-	3	MCQ	On line
6.	2250126	DLC	Computing Lab					60	20	20	100			2	1	SO	Off line
		Total		**250**	**50**	**100**	**100**	**120**	**40**	**40**	**700**	**14**	**03**	**02**	**19**	**-**	
7	3000004	Natural Sciences & Skills	Language	50	10	20	20	30	10	10	150	1	-	2	Grade	Online	MCQ

MCQ: Multiple Choice Question, **AO:** Assignment + Oral, **OB:** Open Book, **PP:** Pen Paper, **SO:** Submission and Oral

Mode of Teaching						Mode of Examination					Total Credits
Theory				Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended		Offline	Interactive	PP	A+O	MCQ	SO	SO	
		Offline	Online								
8	3	4	2	2	-	2	1	2	1	-	19
42%	16%	21%	10.5%	10.5%	-	33.33%	16.66%	33.33%	16.66%	-	Credits %

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Department of Engineering Mathematics & Computing
Scheme of Examination
B. Tech. II Semester

(Admitted batch 2022)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Exam	Mode of Teaching
				Theory Slot				Practical Slot									
				End Sem.	$Proficiency in subject /course	Mid Sem Exam.	Quiz/ Assignment	End Sem.	Lab work & Sessional	Skill Based Mini Project		L	T	P			
1.	2250221	DC	Computer Architecture & Organization	50	10	20	20	-	-	-	100	2	1	-	3	PP	Blended (2/1)
2.	2250222	DC	Differential Equations	50	10	20	20	-	-	-	100	3	1	-	4	PP	Offline
3.	2250223	DC	Object Oriented Methodology and Programming with C++	50	10	20	20	60	20	20	200	2	1	2	4	A+O	Blended (3/1)
4.	2250224	BSC	Linear Algebra	50	10	20	20	-	-	-	100	3	1	-	4	PP	Offline
5.	2250225	DC	Simulation Modeling and Analysis	50	10	20	20				100	2	1	-	3	MCQ	Blended (2/1)
6.	2250226	DLC	Computing Lab					60	20	20	100			2	1	SO	Offline
Total				250	50	100	100	120	40	40	700	12	05	02	19	-	
	$Proficiency in course/subject – includes the weight age towards ability/ skill/ competence /knowledge level /expertise attained /attendance etc. in that particular course/subject																
7	3000003	Natural Sciences & Skills	Environmental Science	50	10	20	20	30	10	10	150	1	-	2	Grade	Online	MCQ

MCQ: Multiple Choice Question , **AO:** Assignment + Oral, **OB:** Open Book, **P:** Pen Paper, **SO:** Sessional and Oral

Mode of Teaching						Mode of Examination					Total Credits
Theory				Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended		Offline	Interactive	PP	A+O	MCQ	SO	SO	
		Offline	Online								
8	-	6	3	2	-	4	1	-	1	-	19
44%	-	31.5%	16%	10.5%	-	66.66%	16.66%	-	16.66%	-	Credits %

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Department of Engineering Mathematics & Computing
Scheme of Examination
B. Tech. III Semester

(Admitted batch 2022)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Offline/ Online)	Mode of Exam.
				Theory Slot				Practical Slot				L	T	P			
				End Sem.		Mid Sem. Exam.	Quiz/ Assignment	End Sem	Lab Work & Sessional	Skill Based Mini Project							
				End Term Evaluation	$Proficiency in subject /course												
1.	2250321	DC	Stochastic Process & Financial Mathematics	50	10	20	20	-	-	-	100	2	1	-	3	Blended (2/1)	MCQ
2.	2250322	BSC	Discrete Mathematical Structures	50	10	20	20	-	-	-	100	3	1	-	4	Offline(4/0)	PP
3.	2250323	DC	Operating System Concepts	50	10	20	20	-	-	-	100	2	1	-	3	Blended (2/1)	PP
4.	2250324	DC	Data Structures and Algorithms	50	10	20	20	60	20	20	200	3	-	2	4	Blended (2/1)	PP
5.	2250325	DC	Numerical Techniques	50	10	20	20	-	-	-	100	3	1	-	4	Offline (4/0)	PP
6.	2250326	DLC	Computing Lab	-	-	-	-	60	20	20	100	-	-	2	1	Offline (2/0)	A+O
7.	2250327	DLC	Self-learning/ Presentation#	-	-	-	-	-	40	-	40	-	-	2	1	Online +Mentoring	SO
8.	200xxx	CLC	Novel Engaging Course	-	-	-	-	50	-	-	50	-	-	2	1	Interactive	SO
9.	2250328	DLC	Summer Internship Project–I (Institute Level Evaluation	-	-	-	-	60	-	-	60	-	-	4	2	Offline	SO
		Total		250	50	100	100	230	80	40	850	13	4	6	23		
10.	100201	Natural Sciences & Skills	Engineering Physics	50	10	20	20	-	-	-	100	1	-	-	Grade	Online	MCQ
11	1000001	MAC	Indian Constitution and Traditional Knowledge	50	10	20	20	-	-	-	100	1	-	-	Grade	Online	MCQ

$Proficiency in course/subject – includes the weight age towards ability/ skill/ competence /knowledge level /expertise attained /attendance etc. in that particular course/subject

#compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance, assignments and presentation

Mode of Teaching						Mode of Examination					Total Credits
Theory				Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended		Offline	Interactive	PP	A+O	MCQ	SO	SO	
		Offline	Online								
8	-	6	3	5	1	4	1	1	2	1	23
34.78%	-	26.09%	13.045%	21.74%	4.34%	44.44%	11.11%	11.11%	22.22%	11.11%	Credits %

MCQ: Multiple Choice Question ,**AO:** Assignment + Oral, **OB:** Open Book, **PP:** Pen Paper, **SO:** Submission and Oral

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Department of Engineering Mathematics & Computing
Scheme of Examination
B. Tech. IV Semester
(Admitted batch 2022)

S. No.	Subject Code	Category Code	Subject Name	Theory Slot — End Sem. — End Term Evaluation	Theory Slot — End Sem. — $^\$$Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment	Practical Slot — End Sem	Practical Slot — Lab Work & Sessional	Practical Slot — Skill Based Mini Project	Total Marks	L	T	P	Total Credits	Mode of Teaching (Offline/ Online)	Mode of Exam.
1.	2250401	DC	Transform and Vector Calculus	50	10	20	20	-	-	-	100	2	1	-	3	Offline (3/0)	PP
2.	2250402	DC	Data Base and Management System & SQL	50	10	20	20	60	20	20	200	2	1	2	4	Blended (2/1)	PP
3.	2250403	DC	Theory of Computation	50	10	20	20				100	2	1	-	3	Blended (2/1)	MCQ
4.	2250404	DC	Design & Analysis of Algorithm	50	10	20	20				100	2	1	-	3	Blended(2/1)	PP
5.	2250405	DC	Number Theory and Cryptography	50	10	20	20	-	-	-	100	3	1	-	4	Offline(3/0)	PP
6.	2250406	DLC	Programming in Python	-	-	-	-	60	20	20	100	-	-	4	2	Offline	SO
7.	200xxx	CLC	Novel Engaging Course	-	-	-	-	50	-		50	-	-	2	1	Interactive	SO
	Total			**250**	**50**	**100**	**100**	**170**	**40**	**40**	**750**	**11**	**5**	**4**	**20**		
Summer Internship Project-II (Soft skills Based) for two weeks duration: Evaluation in V Semester																
8.	100101	Natural Science & Skill)	Engg. Chemistry	50	10	20	20	-	-	-	100	2	-	-	Grade	Online	MCQ
9	1000005	MAC	Project Management and Financing	50	10	20	20	-	-	-	100	2	-	-	Grade	Online	MCQ

$^\$$Proficiency in course/subject – includes the weight age towards ability/ skill/ competence /knowledge level /expertise attained /attendance etc. in that particular course/subject

$^\#$compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance, assignments and presentation

Mode of Teaching — Theory — Offline	Mode of Teaching — Theory — Online	Mode of Teaching — Theory — Blended — Offline	Mode of Teaching — Theory — Blended — Online	Mode of Teaching — Lab — Offline	Mode of Teaching — NEC — Interactive	Mode of Examination — Theory — PP	Mode of Examination — Theory — A+O	Mode of Examination — Theory — MCQ	Mode of Examination — Lab — SO	Mode of Examination — NEC — SO	Total Credits
6	2	6	3	2	1	4	-	2	1	1	20
30%	10%	30%	15%	10%	5%	50%	-	25%	12.5%	12.5%	Credits %

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