



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

**(Deemed University)**

**(Declared Under Distinct Category by Ministry of Education, Government of India)**

**NAAC Accredited with A++ Grade**

**Department of Engineering Mathematics & Computing**



**Semester-Wise General Scheme Structure & Important Guidelines for Flexible Curriculum**

**(Batch admitted in Academic Session 2024-25 onwards)**

**Abbreviations Used**

<b>L</b>	Lecture
<b>T</b>	Tutorial
<b>P</b>	Practical
<b>HSMC</b>	Humanities and Social Sciences including Management Courses
<b>BSC</b>	Basic Science Courses
<b>ESC</b>	Engineering Science Courses
<b>DC</b>	Departmental Core
<b>DE</b>	Departmental Elective
<b>SPC</b>	Specialization Courses
<b>OC</b>	Open Category
<b>DLC</b>	Departmental Laboratory Courses
<b>MOOC</b>	Massive Open Online Course
<b>MWS</b>	Mandatory Workshop
<b>SP</b>	Semester Proficiency
<b>SIP</b>	Skill Internship Program
<b>SLP</b>	Self-learning Presentation
<b>PDC</b>	Professional Development Component
<b>PBL</b>	Project Based Learning
<b>PC</b>	Professional Certification
<b>MAC</b>	Mandatory Audit Course
<b>NEC</b>	Novel Engaging Course



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing Scheme of Evaluation

### B. Tech. I Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted						Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block				Practical Block			L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment											
1.	25241101	DC	Introduction to Computing	20	20	30	30	-	-	100	3	-	-	3	Face to Face	MCQ	2 Hrs
2.	25241102	ESC	Computer Programming	20	20	30	30	-	-	100	2	-	-	2	Face to Face	MCQ	2 Hrs
3.	25241103	DC	Advanced Calculus	20	20	30	30	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
4.	25241104	DC	Digital Logic Design	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
5.	25241105	BSC	Differential Equations	20	20	30	30	-	-	100	3	-	-	3	Face to Face	PP	2 Hrs
6.	25241106	DLC	Computer Programming Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
7.	25241107	DLC	Computing Lab for Data Analysis	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
8.	25241108	SP	Semester Proficiency <sup>§</sup>	-	-	-	-	50	-	50	-	-	2	1	Face to Face	SO	-
9.	25241109	PBL	Micro Project-I <sup>#</sup>	-	-	-	-	70	30	100	-	-	2	1	Experiential	SO	-
10.	25241110	HSMC	Language Lab	-	-	-	-	70	30	100	-	-	2	1	Blended	AO	-
11.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)	-	-	-	-	-	50	50	-	1	-	1	Interactive	SO	-
<b>Total</b>				<b>100</b>	<b>100</b>	<b>150</b>	<b>150</b>	<b>330</b>	<b>170</b>	<b>1000</b>	<b>12</b>	<b>03</b>	<b>10</b>	<b>20</b>	-	-	-
12.	25241111	MAC	Universal Human Values & Professional Ethics (UHVPE)	20	20	30	30	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
13.	25241112	MWS	Mandatory Workshop on Indian Constitution and Traditional Knowledge at Department Level (Duration: Two Days)	-	-	-	-	-	-	-	-	-	-	GRADE	Interactive	MCQ	-

Induction programme of three weeks (MC): Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations.

Skill Internship Program (Soft Skill): Minimum 45 hours duration: To be credited in II Semester.

<sup>§</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

<sup>#</sup>Micro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
1	1	1	3	0	0	0	2	1	1	0	0	0	1	1	1

Mode of Learning						Mode of Examination					Total Credits
Theory		NEC		Lab		Theory			Lab		
Face to Face	Online	Interactive	Blended	Experiential	Experimental	PP	AO	MCQ	OB	SO	
15	0	1	1	1	2	6	3	8	0	3	20
75%	0	5%	5%	5%	10%	30%	15%	40%	0	15%	Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing Scheme of Evaluation

### B. Tech. II Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted						Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block			Practical Block				L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment											
1.	25241201	DC	Object Oriented Programming & Methodology	20	20	30	30	-	-	100	3	-	-	3	Face to Face	MCQ	2 Hrs
2.	25241202	DC	Data Structures	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
3.	25241203	DC	Numerical Techniques	20	20	30	30	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
4.	25241204	DC	Computer Organization & Architecture	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
5.	25241205	DC	Linear Algebra	20	20	30	30	-	-	100	2	-	-	2	Face to Face	PP	2 Hrs
6.	25241206	DLC	Data Structures Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
7.	25241207	DLC	Object Oriented Programming & Methodology Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
8.	25241208	DLC	Numerical Computation using MATLAB	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
9.	25241209	SP	Semester Proficiency <sup>§</sup>	-	-	-	-	50	-	50	-	-	2	1	Face to Face	SO	-
10.	25241210	PBL	Micro Project-II <sup>#</sup>	-	-	-	-	70	30	100	-	-	2	1	Experiential	SO	-
11.	NECXXXX	NEC	Novel Engaging Course (Activity Based Learning)	-	-	-	-	-	50	50	-	1	-	1	Interactive	SO	-
12.	SIPXXXX	SIP	Skill Internship Program (Soft Skill)	-	-	-	-	42	18	60	-	-	-	2**	Experiential	SO	-
<b>Total</b>				<b>100</b>	<b>100</b>	<b>150</b>	<b>150</b>	<b>372</b>	<b>188</b>	<b>1060</b>	<b>11</b>	<b>04</b>	<b>10</b>	<b>22</b>	-	-	-
13.	25241211	MAC	Sustainability & Environmental Science	20	20	30	30	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
14.	25241212	MWS	Mandatory Workshop on Indian Knowledge System at Department Level (Duration: Two Days)	-	-	-	-	-	-	-	-	-	-	GRADE	Interactive	MCQ	-

Summer Semester of six-eight week duration will be conducted for makeup of I & II semester examination.

<sup>§</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

\*\* These credits will be transferred from Skill Internship Program (Soft Skill).

<sup>#</sup>Micro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee.

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	0	0	5	0	0	0	3	1	1	0	0	0	1	1	1

Mode of Learning						Mode of Examination				Total Credits	
Theory		NEC		Lab		Theory			Lab		
Face to Face	Online	Interactive	Blended	Experiential	Experimental	PP	AO	MCQ	OB		SO
15	0	1	0	3	3	5	3	9	0	5	22
68.18%	0	4.54%	0	13.64%	13.64%	22.72%	13.64%	40.91%	0	22.72%	Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing Scheme of Evaluation

### B. Tech. III Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted						Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block			Practical Block				L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment											
1.	25241301	BSC	Simulation Modeling and Analysis	20	20	30	30	-	-	100	3	-	-	3	Face to Face	MCQ	2 Hrs
2.	25241302	DC	Operating Systems	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
3.	25241303	DC	Discrete Mathematical Structures	20	20	30	30	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
4.	25241304	DC	Design & Analysis of Algorithms	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
5.	25241305	DC	Stochastic Process & Financing Mathematics	20	20	30	30	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
6.	25241306	DLC	Simulation Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
7.	25241307	DLC	Design & Analysis of Algorithms Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
8.	25241308	DLC	Problem Solving through Python Programming	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
9.	25241309	SP	Semester Proficiency <sup>§</sup>	-	-	-	-	50	-	50	-	-	2	1	Face to Face	SO	-
10.	25241310	PBL	Macro Project-I <sup>#</sup>	-	-	-	-	70	30	100	-	-	2	1	Experiential	SO	-
11.	25241311	SLP	Self-learning/Presentation <sup>\$\$\$</sup> (SWAYAM/NPTEL/MOOC)	-	-	-	-	40	-	40	-	-	2	1	Mentoring	SO	-
12.	NECXXXXX	NEC	Novel Engaging Course (Activity Based Learning)	-	-	-	-	-	50	50	-	1	-	1	Interactive	SO	-
<b>Total</b>				<b>100</b>	<b>100</b>	<b>150</b>	<b>150</b>	<b>370</b>	<b>170</b>	<b>1040</b>	<b>11</b>	<b>05</b>	<b>12</b>	<b>22</b>	-	-	-
13.	25241312	MAC	Cyber Security	20	20	30	30	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
14.	25241313	MWS	Mandatory Workshop on Internet of Things(IoT) at Department Level (Duration: Two Days)	-	-	-	-	-	-	-	-	-	-	GRADE	Interactive	MCQ	-

**Skill Internship Program (Institute Level) (Qualifier): Minimum 30 hours duration: To be credited in IV Semester**

<sup>§</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

<sup>#</sup> Macro Project-I will be presented and evaluated through an interdisciplinary project evaluation committee.

<sup>\$\$\$</sup> Compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance and presentation.

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	1	0	4	0	0	0	3	1	1	1	1	0	1	1	1
Mode of Learning						Mode of Examination						Total Credits			
Theory		NEC		Lab		Theory			Lab						
Face to Face	Online	Interactive	Mentoring	Experiential	Experimental	PP	AO	MCQ	OB	SO					
16	0	1	1	1	3	6	3	9	0	4	22				
72.73%	0	4.54%	4.54%	4.54%	13.64%	27.27%	13.64%	40.91%	0	18.18%	Credits %				

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing

### Scheme of Evaluation

#### B. Tech. IV Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted					Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation	
				Theory Block			Practical Block			Major Evaluation	L	T					P
				Continuous Evaluation			Lab Work & Sessional	Major Evaluation									
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment											
1.	25241401	DC	Data Science	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
2.	25241402	DC	Database Management System	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
3.	25241403	DC	Software Engineering	20	20	30	30	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
4.	25241404	DC	Transforms and Vector Calculus	20	20	30	30	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
5.	25241405	DC	Number theory and Cryptography	20	20	30	30	-	-	100	3	-	-	3	Face to Face	PP	2 Hrs
6.	25241406	DLC	Data Science Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
7.	25241407	DLC	Database Management System Lab	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
8.	25241408	DLC	Competitive Programming	-	-	-	-	70	30	100	-	-	2	1	Experimental	AO	-
9.	25241409	SP	Semester Proficiency <sup>§</sup>	-	-	-	-	50	-	50	-	-	2	1	Face to Face	SO	-
10.	25241410	PBL	Macro Project-II <sup>#</sup>	-	-	-	-	70	30	100	-	-	2	1	Experiential	SO	-
11.	25241411	PC	Professional Certification	-	-	-	-	50	-	50	-	-	2	1	Blended	SO	-
12.	NECXXXX	NEC	Novel Engaging Course (Activity Based Learning)	-	-	-	-	-	50	50	-	1	-	1	Interactive	SO	-
13.	SIP2XXXX	SIP	Skill Internship Program (Evaluation)	-	-	-	-	42	18	60	-	-	-	2**	Experiential	SO	-
<b>Total</b>				<b>100</b>	<b>100</b>	<b>150</b>	<b>150</b>	<b>422</b>	<b>188</b>	<b>1110</b>	<b>11</b>	<b>05</b>	<b>12</b>	<b>24</b>	-	-	-
14.	25241412	MAC	Project Management, Economics & Financing	20	20	30	30	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
15.	25241413	MWS	Mandatory Workshop on Computer Vision at Department Level (Duration: Two Days)											GRADE	Interactive	MCQ	-
16.	25241414	MWS	Mandatory Workshop on Life Skills at Department Level (Duration: Two Days)											GRADE	Interactive	MCQ	-

Summer Semester of six-eight week duration will be conducted for makeup of previous semester examination.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

<sup>§</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

<sup>#</sup> Macro Project-II will be presented and evaluated through an interdisciplinary project evaluation committee. <sup>\*\*</sup> These credits will be transferred from Skill Internship Programme.

PC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
1	0	0	5	0	0	0	3	1	1	1	0	0	1	1	2
Mode of Learning								Mode of Examination							Total Credits
Theory		NEC		Lab				Theory			Lab				
Face to Face	Online	Interactive	Blended	Experiential	Experimental	PP	AO	MCQ	OB	SO					
16	0	1	1	3	3	6	3	9	0	6	24				
66.66 %	0	4.17 %	4.17 %	12.5 %	12.5 %	25 %	12.5 %	37.5 %	0	25 %	Credits %				

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024





# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing

### Scheme of Evaluation

#### B. Tech. V Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted								Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block				Practical Block		MOOCs			L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation	Assignment	Exam								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment													
1.	25241501	DC	Computer Networks and Protocols	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
2.	25241502	DC	Theory of Computation	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
3.	25241503	DC	Artificial Intelligence & Machine Learning	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
4.	25241504	DE	Departmental Elective* (DE-1)	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ	3 Hrs
5.	25241505	SPC	Specialization Course (SPC-1)	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
6.	25241506	DLC	Lab SPC-I	-	-	-	-	70	30	-	-	100	-	-	2	1	Experimental	AO	-
7.	25241507	DLC	Artificial Intelligence & Machine Learning Lab	-	-	-	-	70	30	-	-	100	-	-	2	1	Experimental	AO	-
8.	25241508	SP	Semester Proficiency <sup>§</sup>	-	-	-	-	50	-	-	-	50	-	-	2	1	Face to Face	SO	-
9.	25241509	PBL	Cornerstone Project	-	-	-	-	70	30	-	-	100	-	-	4	2	Experiential	SO	-
<b>Total</b>				<b>80</b>	<b>80</b>	<b>120</b>	<b>120</b>	<b>260</b>	<b>90</b>	<b>25</b>	<b>75</b>	<b>850</b>	<b>11</b>	<b>04</b>	<b>10</b>	<b>20</b>	-	-	-
10.	25241510	MAC	Supply Chain Management	20	20	30	30	-	-	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
11.	25241511	MWS	Mandatory Workshop on Blockchain at Department Level (Duration: Two Days)	-	-	-	-	-	-	-	-	-	-	-	-	GRADE	Interactive	MCQ	-

**Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree**

<sup>§</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

\* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	0	0	3	1	1	0	2	0	1	0	0	0	1	1	1

Mode of Learning					Mode of Examination					Total Credits
Theory		Lab			Theory			Lab		
Face to Face	Online	Blended	Experiential	Experimental	PP	AO	MCQ	OB	SO	
13	3	0	2	2	6	2	9	0	3	20
65 %	15 %	0	10 %	10 %	30 %	10 %	45 %	0	15 %	Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing Scheme of Evaluation

### B. Tech. VI Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted								Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block				Practical Block		MOOCs			L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation	Assignment	Exam								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment													
1.	25241601	DC	Compiler Design	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
2.	25241602	DC	Cloud Computing and Virtualization	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	MCQ	2 Hrs
3.	25241603	DE	Departmental Elective* (DE-2)	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ	3 Hrs
4.	25241604	OC	Open Category Course (OC-1)	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
5.	25241605	SPC	Specialization Course (SPC-2)	20	20	30	30	-	-	-	-	100	3	-	-	3	Face to Face	PP	2 Hrs
6.	25241606	DLC	Cloud Computing and Virtualization Lab	-	-	-	-	70	30	-	-	100	-	-	2	1	Experimental	AO	-
7.	25241607	DLC	Lab SPC-2	-	-	-	-	70	30	-	-	100	-	-	2	1	Experimental	AO	-
8.	25241608	SP	Semester Proficiency <sup>\$</sup>	-	-	-	-	50	-	-	-	50	-	-	2	1	Face to Face	SO	-
9.	25241609	PBL	Capstone Project	-	-	-	-	70	30	-	-	100	-	-	4	2	Experiential	SO	-
<b>Total</b>				<b>80</b>	<b>80</b>	<b>120</b>	<b>120</b>	<b>260</b>	<b>90</b>	<b>25</b>	<b>75</b>	<b>850</b>	<b>12</b>	<b>03</b>	<b>10</b>	<b>20</b>	-	-	-
10.	25241610	MAC	Disaster Management	20	20	30	30	-	-	-	-	100	2	-	-	GRADE	Blended	MCQ	1.5 Hrs
11.	25241611	MWS	Mandatory Workshop on Intellectual Property Rights at Department Level (Duration: Two Days)	-	-	-	-	-	-	-	-	-	-	-	-	GRADE	Interactive	MCQ	-
<b>Skill Enhancement Program/Research Internship/On Job Training for Four weeks duration (Optional)</b>																			
<b>Summer Semester of six-eight week duration will be conducted for makeup of Previous semester examination.</b>																			
<b>Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree</b>																			

<sup>\$</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

\* Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	0	0	2	1	1	1	2	0	1	0	0	0	1	1	1

Mode of Learning					Mode of Examination					Total Credits
Theory		Lab			Theory			Lab		
Face to Face	Online	Blended	Experiential	Experimental	PP	AO	MCQ	OB	SO	
13	3	0	2	2	6	2	9	0	3	20
65 %	15 %	0	10 %	10 %	30 %	10 %	45 %	0	15 %	Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing Scheme of Evaluation

### B. Tech. VII Semester (MAC)

(for batch admitted in academic session 2024-25)



S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted								Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block				Practical Block		MOOCs			L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation Lab Work & Sessional	Major Evaluation	Assignment	Exam								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment													
1.	25241701	DE	Departmental Elective (DE-3)	20	20	30	30	-	-	-	-	100	3	-	-	3	Face to Face	PP	2 Hrs
2.	25241702	DE	Departmental Elective* (DE-4)	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ	3 Hrs
3.	25241703	OC	Open Category Course (OC-2)	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	PP	2 Hrs
4.	25241704	SPC	Specialization Course (SPC-3)	20	20	30	30	-	-	-	-	100	2	1	-	3	Face to Face	MCQ	2Hrs
5.	25241705	SP	Semester Proficiency <sup>s</sup>	-	-	-	-	50	-	-	-	50	-	-	2	1	Face to Face	SO	-
6.	25241706	DLC	Creative Problem Solving	-	-	-	-	70	30	-	-	100	-	-	2	1	Experiential	SO	-
<b>Total</b>				<b>60</b>	<b>60</b>	<b>90</b>	<b>90</b>	<b>120</b>	<b>30</b>	<b>25</b>	<b>75</b>	<b>550</b>	<b>10</b>	<b>02</b>	<b>04</b>	<b>14</b>	-	-	-
7.	25241707	MWS	Mandatory Workshop on Advanced Intellectual Property Rights at Department Level (Duration: Two Days)												GRADE	Interactive	MCQ	-	

<sup>s</sup>Semester Proficiency– includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in the semester courses

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

\*Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	0	0	0	2	1	1	1	0	1	0	0	0	0	0	1

Mode of Learning					Mode of Examination				Total Credits	
Theory		Lab			Theory			Lab		
Face to Face	Online	Blended	Experiential	Experimental	PP	AO	MCQ	OB	SO	
10	3	0	1	0	6	0	6		2	
71.43 %	21.43 %	0	7.14 %		42.86 %	42.86 %			14.28 %	
										Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024





# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade

## Department of Engineering Mathematics & Computing



### Scheme of Evaluation

### B. Tech. VIII Semester (MAC)

(for batch admitted in academic session 2024-25)

S. No.	Course Code	Category Code	Course Name	Maximum Marks Allotted								Total Marks	Contact Hours per week			Total Credits	Mode of Learning	Mode of Major Evaluation	Duration of Major Evaluation
				Theory Block				Practical Block		MOOCs			L	T	P				
				Continuous Evaluation			Major Evaluation	Continuous Evaluation	Major Evaluation	Assignment	Exam								
				Minor Evaluation I	Minor Evaluation II	Quiz/Assignment													
1.	25241801	DE	Departmental Elective* (DE-5)	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ	3 Hrs
2.	25241802	OC	Open Category Course* (OC-3)	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ	3 Hrs
3.	25241803	PBL	Industry Internship/Research Internship/ Innovation & Start-up	-	-	-	-	280	120	-	-	400	-	-	20	10	Experiential	SO	-
4.	25241804	PDC	Professional Development##	-	-	-	-	-	50	-	-	50	-	-	4	2	Interactive	SO	-
<b>Total</b>				-	-	-	-	280	170	50	150	650	06	-	24	18	-	-	-

Summer Semester of six-eight week duration will be conducted to complete any backlog courses.

Additional Course for Honours or Minor Degree: Permitted to opt for maximum two additional courses for the award of Honours or Minor Degree

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

\*Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform

## Evaluation will be based on participation/laurels brought by the students to the institution in national/state level technical and other events during the complete tenure of the UG programme (participation in professional chapter activities, club activities, cultural events, sports, personality development activities, collaborative events, MOOCs, technical events, institute/department committees, etc.)

HSMC	BSC	ESC	DC	DE	SPC	OC	DLC	NEC	SP	SIP	SLP	PDC	PBL	MAC	MWS
0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0

Mode of Learning					Mode of Examination					Total Credits
Theory		Lab			Theory				Lab	
Face to Face	Online	Interactive	Experiential	Experimental	PP	AO	MCQ	OB	SO	
0	6	2	10	0	0	0	6	0	12	18
0	33.33 %	11.11	55.55 %	0	0	0	33.33 %	0	66.67 %	Credits %

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(Deemed University)

(Declared Under Distinct Category by Ministry of Education, Government of India)

NAAC Accredited with A++ Grade



## Department of Engineering Mathematics & Computing

Specialization in <b>Data Science</b>					
Description		Specialization within Data science allows professionals to focus on applying techniques to solve complex problems within particular industries or technical areas. Core Specializations in Data Science lies in AI & ML, Bigdata and Distributed System and healthcare data science.			
Courses and Credits required		3 courses and 9 credits			
Course Category	Course ID	Course Title	Contact Hours per week		
			L	T	P
<b>SPC-1 (Core)</b>		<b>Descriptive Statistics with R programming</b>	2	-	2
<b>SPC-2 (Core)</b>		<b>Data Mining &amp; Warehouse</b>	2	1	-
<b>SPC-3</b>	Elective-1	<b>Data Analytics</b>	2	1	-
	Elective-2	<b>Distributed System and Machine Learning</b>	2	1	-

Specialization in <b>Optimization</b>					
Description		Optimization is a branch of mathematics and computer science. It is powerful toolkit to tackle complex decision-making problems in various industries, from finance and healthcare to engineering and machine learning.			
Courses and Credits required		3 courses and 9 credits			
Course Category	Course ID	Course Title	Contact Hours per week		
			L	T	P
<b>SPC-1 (Core)</b>		<b>Optimization Techniques</b>	2	1	-
<b>SPC-2 (Core)</b>		<b>Soft Computing</b>	2	1	-
<b>SPC-3</b>	Elective-1	<b>Nonlinear optimization Techniques</b>	2	1	-
	Elective-2	<b>System Reliability</b>	2	1	-

Recommended in the Board of Studies Meeting of Dept. of MAC held on 10<sup>th</sup> September 2024