



Flexible Scheme (Jan. – June- 2025) B.Tech.

in

Mathematics and Computing







Flexible Scheme 2021-2022 B.Tech.

in

Mathematics and Computing







Mathematics and Computing Abbreviations used

L	Lecture
Т	Tutorial
Р	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.





(Admitted Batch 2021)

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

	1																iicu D	attii 202	1)
S.	Subject	Category	Subject Name				Maximu	m Marks	s Allotted						onta				
No.	Code	Code			Theorem	<u>Cla4</u>			Practical Slot MOOCs						ours p				
					Theory	5101			Practical	5101	INIC				week			Mode of	
				End Term Evaluation		Continuous Evaluation			Continuous Evaluation		Assign ment	Exam	Total	L	Т	Р	Total	Teaching (Online,	Mode of
				End Sem. Exam.	^{\$} Proficiency in subject /course	Mid Sem. Exam	Quiz/ Assign ment	End Sem. Exam.	Lab work & Sessional	Skill Based Mini Project			Marks				Credits	Offline, Blended)	Exam ·
1.	2508XX	DE	Departmental Elective* (DE-V)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ
2.	910XXX	OC	Open Category* (OC-III)	-	-	-	-	-	-	-	25	75	100	3	I	-	3	Online	MCQ
3.	250801	DLC	Internship/Project	-	-	-	-	250	150	-	-	-	400	-	-	18	9	Online	SO
4.	250802	PD	Professional # Development	-	-	-	-	50	-	-	-	-	50	-	-	4	2		
	Total			-	-	-	-	300	150	-	50	150	650	6	-	22	17	-	-
	Additional Course for Honours or minor Specialization				Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization														
	-	•	urse/subject-includes the boice Question	0	ge towards a nment + Oral	•	-	t ence/kn n Paper	0	vel/ expertist mission + Or		ed etc. in t	hat partic	ular o	cours	e/sub	ject.		

*All of these courses will run through SWAYAM/NPTEL/ MOOC with credit transfer

[#]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.)

		Mode	of Teaching	Ş			Mode of Examination						
	T	heory		Lab	NEC		Theory Lab NEC						
Offline	Online	Blei	nded Online	Offline	Interactive	РР	A+O	MCQ	SO	SO	Total Credits		





Flexible Scheme (2022-2026) B.Tech.

in

Mathematics and Computing





Department of Engineering Mathematics & Computing Scheme of Examination

B. Tech. VI Semester (Admitted Batch 2022) **Maximum Marks Allotted** S. ibject Code Category Subject Name Contact Total MOOCs Code **Theory Slot** Practical Slot Hours No. Credits per week Mod Mode of Lab Work Assignment Т End Sem. Mid Quiz/ End Skill Exam L Р e of Total Teaching End Proficiency Sem. Assignment Sem & Sessional Based Marks (Offline/ Exa in subject Exam. Mini Term Online) m. /course Project Evaluatio n 50 1. 2250601 DC **Computer Graphics** 10 20 20 . . 100 3 1 4 Offline PP -**Compiler Design** 2. 2250602 DC 50 20 20 3 4 10 100 1 Offline PP --2 Departmental 25 75 Online 3. 2250603 DE 100 3 3 _ MCO Elective (DE-I) Artificial Intelligence & 2250604 MC 50 10 20 20 20 20 200 3 2 MCQ 4 60 4 Blended -Machine Learning (AI & ML) **Open Category** PP/M **OC** 50 10 20 20 100 3 Offline 5. _ ---3 $(\overline{\mathbf{0}\mathbf{C-1}})$ CQ Offline 4 2 6. 2250605 DLC Minor Project-II 60 40 100 _ _ SO (2/0)Novel Engaging CLC 2 7. 200xxx 50 50 Interactive SO ----Course *Natural Sciences --8 NSS 600 2* 200 40 80 80 120 40 40 ---& Skill 25 75 Total 400 80 160 160 290 100 60 1350 15 2 Δ 23 Summer Internship-III (On Job Training) for Four weeks duration: Evaluation in VII Semester **Intellectual Property** 50 9. 1000007 10 20 20 100 2 GRADE Online MCQ Right (IPR)

*Natural Sciences& Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language

("Natural Sciences & amp; Skills" treated as Mandatory Audit Courses from first to fourth semester and cumulative marks converted as a cluster of credits and awarded in the VI semester)

*^{\$}proficiency in course/subject-includes the weightage towards ability/skill/competence/knowledge level/ expertise attained etc. in that particular course/subject.

 State
 State

** The Minor Project-I may be evaluated by an internal committee for awarding sessional marks.

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

		Mode	of Teaching	[Mode of Examination						
Theory Lab NEC						Theory Lab NEC					Total Credits		
Offline	Online	Blended		Offline	Interactive	РР	A+O	МСО	SO	SO	Total Credits		
Onnie	Omme	Offline	Online	Onnie	Interactive	11	ATO	MCQ	50	50			
11	3	3	1	2	1	3		3	1	1			
52.38%	14.28%	14.28%	4.76%	9.52%	4.76%	37.5%		37.5%	12.5%	12.5%			





Open Course (OC- I)											
S. No. Subject Code Subject name											
1		Advanced Numerical Techniques									
2		Transform Calculus									
3		Computational Fluid Dynamics									

	DE –I (Through NPTEL)													
S. No.	Subject Code	Subject name	Time Duration (Weeks)	Faculty Coordinator	Mentor Name and Affiliation									
1	250605	Block chain and its application	12	Dr. Minakshi Dhaiya	Prof. Sandip Chakraborty, Prof. Shamik Sural from IIT Kharagpur									
2	250606	Cloud Computing	12	/ Dr. A. K. Ray	Prof. Soumya Kanti Ghosh from IIT Kharagpur									
3	250607	GPU Architectures and Programming	12]	Prof. Soumya jit Dey from IIT Kharagpur									
4	250608	Introduction to internet of things	12		Prof. Sudip Misra from IIT Kharagpur									

	Minor Specialization													
S. No.	Subject Code	Subject name	Time Duration (Weeks)	Faculty Coordinator	Mentor Name and Affiliation									
1	M250601	A Primer to Mathematical Optimization	12	Dr. Minakshi Dhaiya	Prof. DebdasGhosh from IIT (BHU), Varanasi									
2	M250602	Advanced Linear Algebra	12		Prof. PremanandaBera from IIT Roorkee									
3	M250603	Advanced Probability Theory	12		Prof. NiladriChatterjee from IIT Delhi									

	Honors Specialization													
S. No.	Subject Code	Subject name	Time Duration (Weeks)	Faculty Coordinator	Mentor Name and Affiliation									
1	H250601	Getting Started with Competitive Programming	12	Dr. Minakshi Dhaiya	Prof. NeeldharaMisra from IIT Gandhinagar									
2	H250602	Advanced Graph Theory	8		Prof. Rajiv Misra from IIT Patna									
3	H250603	Computer Vision & Image Processing Fundamental and Applications	12		Prof. M. K. Bhuyan from IIT Guwahati									





Flexible Scheme & Syllabus 2023-2027

B.Tech.

in

Mathematics and Computing







Flexible Scheme & Syllabus 2023-2027

B.Tech.

in

Mathematics and Computing







Mathematics and Computing Abbreviations used

L	Lecture
Т	Tutorial
Р	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.



माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर MADHAV INSTITUTE F TECHNOLOGY & SCIENCE, GWALIOR Deemed to be University (Declared under Disting Category by Ministry of Education, Government of India) NAC ACCREDITED With Education, Government of India) Bola Ka Mander, Gwalier (M.P.)- 474005, INDIA Bola Ka Mander, Gwalier (M.P.)- 474005, INDIA Department of Engineering Mathematics & Computing



Scheme of Examination

B. Tech. IV Semester

(Admitted batch 2023)

S.	Subject	Category	Subject Name		Ι	Maximum	Marks Allo	tted				Cont	act H	lours			
No.	Code	Code	Ŭ		Theory S	lot			Practical Slo	ot		ре	er wee	ek		Mode of	
				End	Sem.	Mid	Quiz/	End	Lab Work	Skill	Total	L	Т	Р	Total	Teaching	Mode of
				End Term Evaluation	Proficiency in subject /course	Sem. Exam.	Assignment	Sem	& Sessional	Based Mini Project	Marks				Credits	(Offline/ Online)	Exam.
1.	3250401	DC	Transform and Vector Calculus	50	10	20	20	-	-	-	100	2	1	-	3	Offline (3/0)	PP
2.	3250402	DC	Data Base and Management System & SQL	50	10	20	20	40	30	30	200	2	1	2	4	Blended (2/1)	РР
3.	3250403	DC	Theory of Computation	50	10	20	20				100	2	1	-	3	Blended (2/1)	MCQ
4.	3250404	DC	Design & Analysis of Algorithm	50	10	20	20				100	2	1	-	3	Blended(2/1)	PP
5.	3250405	DC	Number Theory and Cryptography	50	10	20	20	-	-	-	100	3	1	-	4	Offline(3/0)	PP
6.	3250406	DLC	Programming in Python	-	-	-	-	40	30	30	100	-	-	4	2	Offline	SO
7.	200xxx	CLC	Novel Engaging Course	-	-	-	-	50	-		50	-	-	2	1	Interactive	SO
		Total		250	50	100	100	130	60	60	750	11	5	4	20		
			Su	mmer Interns	ship Project-II	(Soft skills	s Based) for	two we	eks duration:	Evaluatio	n in V Ser	nester					
8.	3000002	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						Mode of Examination					
Theory				Lab	NEC	Theory			Lab	NEC	Total Credits
Offline	Online	Blended		Offline	Interactive	DD	A+O	МСО	SO	SO	Total Credits
		Offline	Online	Onnie	Interactive	I I	A+O	MCQ	50	30	
6	2	6	3	2	1	4	-	2	1	1	20
30%	10%	30%	15%	10%	5%	50%	-	25%	12.5%	12.5%	Credits %