

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

B.Tech. I Semester (Chemical Engineering) For batches admitted in academic session 2022-23

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam	Duration 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.	2100020	ESC	Basic Civil Engineering & Mechanics	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP	2Hrs
2.	2100021	ESC	Basic Mechanical Engineering	50	10	20	20	-	-	-	100	2	1	-	3	Blended	MCQ	1.5 Hrs
3.	2100022	ESC	Basic Electrical & Electronics Engineering	50	10	20	20	60	20	20	200	2	1	2	4	Blended	MCQ	1.5 Hrs
4.	2100024	ESC	Manufacturing Practices	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO	-
5.	2170121	DC	Fuel Technology	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP	2Hrs
6.	2170122	DC	Computer Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2Hrs
Total				250	50	100	100	240	80	80	900	10	5	8	19	-	-	-
7.	3000004	Natural Sciences & Skills	Language	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs

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

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

Proficiency in course/subject – includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject

Natural Sciences & Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language (Credits of Natural Sciences & Skills will be added in the VI Semester)

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

Mode of Teaching				Mode of Examination				Total Credits
Theory		Lab		Theory			Lab	
Offline	Online	Blended	Offline	PP	AO	MCQ	SO	
-	-	15	4	06	03	06	04	19
-	-	75.00%	21.05%	21.05%	15.79%	15.79%	21.05%	Credits %

MIO
DEAN (ACADEMICS)
M.I.T.S
GWALIOR

ANGC

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Anish

Sakshi

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

B.Tech. (Chemical Engineering) II Semester **For batches admitted in academic session 2022-23**

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted						Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode of Exam	Duration 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.	2100011	BSC	Engineering Mathematics -I	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP	2 Hrs
2.	2100014	ESC	Engineering Graphics	50	10	20	20	-	-	-	100	3	-	-	3	Offline	AO	2 Hrs
3.	2101221	DC	Chemical Process Calculations	50	10	20	20	-	-	-	200	2	1	-	3	Blended	PP	2 Hrs
4.	2101222	DC	Python Programming	50	10	20	20	60	20	20	100	2	1	2	4	Blended	MCQ	1.5 Hrs
5.	2101223	DC	Fluid Particle Mechanics	50	10	20	20	60	20	20	100	2	1	2	4	Blended	PP	2 Hrs
6.	2100018	ESC	Lg. Graphics Lab	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO	-
Total				250	50	100	100	180	60	60	800	12	4	6	19	-	-	-
7.	8000003	Natural Sciences & Skills	Environmental Engineering	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs

Summer Internship Project - I (Institute Level) (Qualifier): Minimum two-week duration; Evaluation in III Semester.
Proficiency in course/subject - includes the weightage towards ability/ skill/ competency /knowledge level /expertise attained etc. in that particular course/subject

Natural Sciences & Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language (Credits of Natural Sciences & Skills will be added in the VI Semester)

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

Mode of Teaching	Mode of Examination			Total Credits
	Theory		Lab	
	Offline	Online	Blended	
07	03	03	03	03
30.04%	17.36%	17.36%	15.78%	19
				Credits %

(Handwritten signatures)

MNO
02.03.2023
DEAN (ACADEMICS)
M.I.T.S
GWALIOR

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
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Department of Chemical Engineering
Scheme of Evaluation

B. Tech. III Semester *Effective for academic session 2021-22 & 2022-23*

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Online, Offline, Blended)	Mod e of Exam.
				Theory Slot				Practical Slot				L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation								
				End Sem. Exam	Proficiency in subject /course	Mid Sem. Exam.	Quiz/ Assignment		Lab Work & Sessional	Skill Based Mini Project							
1.		BSC	Engineering Mathematics-II	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP
2.	2170311	DC	Fluid Mechanics	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
3.	2170312	DC	Organic Process Technology	50	10	20	20	-	-	-	100	3	-	-	3	Blended	PP
4.	2170313	DC	Chemical Engineering Thermodynamics	50	10	20	20	-	-	-	100	3	-	-	3	Blended	PP
5.	2170314	DC	Heat Transfer	50	10	20	20	60	20	20	200	3	-	2	4	Blended	PP
6.	2170315	DLC	Chemical Synthesis Lab	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO
7.	2170316	DLC	Self-learning/Presentation (SWAYAM/NPTEL/MOOC)	-	-	-	-	-	40	-	40	-	-	2	1	Online + Mentoring	SO
8.	200XXX	CLC	Novel Engaging Course (Informal Learning)	-	-	-	-	50	-	-	50	-	-	2	1	Interactive	SO
9.	2170317	DLC	Summer Internship Project-I (Institute Level) (Evaluation)	-	-	-	-	60	-	-	60	-	-	4	2	Offline	SO
Total				250	50	100	100	290	100	60	950	14	2	14	23	-	-
10.	3000002	Natural Sciences & Skills	Engineering Chemistry	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ

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Natural Sciences & Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language (Credits of Natural Sciences & Skills will be added in the VI Semester)

^{§§} MCQ: Multiple Choice Question ^{§§} AO: Assignment + Oral ^{§§} PP: Pen Paper ^{§§} SO: Submission + Oral

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
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Department of Chemical Engineering
Scheme of Evaluation

B. Tech. IV Semester *Effective for academic session 2021-22, 2022-23*

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted							Total Marks	Contact Hours per week			Total Credits	Mode of Teaching (Online, Offline, Blended)	Mode of Exam.
				Theory Slot				Practical Slot				L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem. Exam.	Continuous Evaluation								
				End Sem. Exam.	Proficiency in subject/course	Mid Sem. Exam.	Quiz/Assignment		Lab Work & Sessional	Skill Based Mini Project							
1.		BSC	Engineering Mathematics-III	50	10	20	20	60	20	20	200	2	1	2	4		
2.	2170411	DC	Instrumentation & Process Control	50	10	20	20	-	-	-	100	3	-	-	3		
3.	2170411	DC	Mass Transfer –I	50	10	20	20	60	20	20	200	3	-	2	4		
4.	2170411	DC	Mechanical Design of Process Equipments	50	10	20	20	-	-	-	100	3	-	-	3		
5.	2170411	DC	Inorganic Process Technology	50	10	20	20	-	-	-	100	3	-	-	3		
		MC	Cyber Security	50	10	20	20	-	-	-	100	2	-	-	2		
6.	2170411	DLC	Process Control Lab	-	-	-	-	60	20	20	100	-	-	2	1		
7.	200XXX	CLC	Novel Engaging Course (Informal Learning)	-	-	-	-	50	-	-	50	-	-	2	1		
Total				250	50	100	100	230	60	60	850	16	01	8	21	-	-
8.	3000001	Natural Sciences & Skills	Engineering Physics	50	10	20	20	-	-	-	100	2	-	-	GRADE	Online	MCQ

Summer Internship Project-II (Soft skills Based) for two weeks duration: Evaluation in V Semester

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Natural Sciences & Skills: Engineering Physics / Engineering Chemistry / Environmental Science/ Language (Credits of Natural Sciences & Skills will be added in the VI Semester)

^{\$\$} MCQ: Multiple Choice Question ^{\$\$} AO: Assignment + Oral ^{\$\$} PP: Pen Paper ^{\$\$} SO: Submission + Oral

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
(Deemed to be University)

NAAC Accredited with A++ Grade

B.Tech. V Semester (Chemical Engineering) For batches admitted in academic session 2022 – 23

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.	2170511	MC	Data Science	50	10	20	20	60	20	20	200	3	0	2	4	Blended	MCQ
2.	2170512	DC	Mass Transfer –II	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
3.	2170513	DC	Chemical Reaction Engineering – I	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
4.	2170514	DC	Computational Methods in Chemical Engg	50	10	20	20	60	20	20	200	2	1	2	4	Blended	PP
5.	2170515	DC	Process Engineering & Costing	50	10	20	20	-	-	-	100	2	-	-	2	Blended	PP
6.	2170516	DLC	Minor Project-I	-	-	-	-	60	40	-	100	-	-	4	2	Blended	SO
7.	2170517	DLC	Self-learning/Presentation (SWAYAM/NPTEL/MOOC)# compulsory registration for one online course using SWAYAM/NPTEL/ MOOC, evaluation through attendance, assignments and presentation interdisciplinary course from other institutions and platforms with credit transfer	-	-	-	-	-	40	-	40	-	-	2	1	Online + Mentoring	SO
8.	200XXX	CLC	Open Engaging Course (Informal Learning)	-	-	-	-	50	-	-	50	-	-	2	1	Interactive	SO
9.	2170518	DLC	Summer Internship Project–II (Institute Level) (Evaluation)	-	-	-	-	60	-	-	60	-	-	4	2	Offline	SO
Total				250	50	100	100	410	160	60	1150	11	3	20	24	-	-
10.	1000006	MAC	Disaster Management (MC)	50	10	20	20	-	-	-	100	2	-	-	Grade	Blended	MCQ
Additional Course for Honours or minor Specialization				Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization													

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

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

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

Mode of Teaching	Mode of Examination	Total Credits
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
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Theory			Lab	Theory			Lab	
Offline	Online	Blended	Offline	PP	AO	MCQ	SO	
-	1	19	04	14	-	04	06	24
-	4.17%	79.17%	16.67%	58,33%	-	16.67%	25%	Credits %



Department of Chemical Engineering Scheme of Evaluation
B.Tech. VI Semester (for batch admitted in academic session 2022-23)

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted									Total Marks	Contact Hours per week			Total Credits	Mode of Teaching	Mode Of Exam.
				Theory Slot				Practical Slot			MOOCs			L	T	P			
				End Term Evaluation		Continuous Evaluation		End Sem .Exam.	Continuous Evaluation		Assignment	Exam							
				End Sem. Exam.	\$Proficiency In subject /course	Mid Sem .Exam	Quiz/Assignment		Lab work & Sessional	Skill Based Mini Project									
1.	2170615	DC	Process Modeling& Simulation	50	10	20	20	60	20	20	-	-	200	2	-	2	3	Blended	PP
2.	2170616	DC	Process Equipment Design	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	AO
3.	DE	DE	Departmental Elective* (DE-1)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Online	MCQ
4.	OC	OC	Open Category (OC1)**	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	MCQ
5.	2170617	MC	Artificial Intelligence & Machine Learning	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	MCQ
6.	2170618	DLC	Minor Project-II**	-	-	-	-	60	40	-	-	-	100	-	-	4	2	Offline	SO
7.	200XXX	CLC	Novel Engaging Course (Informal Learning)	-	-	-	-	50	-	-	-	-	50	-	-	2	1	Blended	SO
8.		NSS	*Natural Sciences & Skills	200	40	80	80	120	40	40	-	-	600	1	-	2	2*	-	-
Total				400	40	80	80	350	120	80	25	75	1450	16	-	12	21	-	-
8.	1000007	MAC	Intellectual Property Rights (IPR)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Online	MCQ
Summer Internship-III (On Job Training) for Four weeks duration: Evaluation in VII Semester																			
Additional Course for Honours or minor Specialization				Permitted to opt for maximum two additional courses for the award of Honours or Minors pecialization															

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

("Natural Sciences & 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)

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\$\$MCQ: Multiple Choice Question \$\$AO: Assignment + Oral \$\$PP: Pen Paper \$\$SO: Submission + Oral

*CourserunthroughSWAYAM/NPTEL/MOOC LearningBasedPlatformwithcredittransfer

**The minor project-II may be evaluated by an internal committee for awarding sessional marks.



माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed University

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

NAAC ACCREDITED WITH A++ Grade

Gola Ka Mandir, Gwalior (M.P.) - 474005, INDIA

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MITS

*DE-1(SWAYAM/NPTEL/MOOC platform)		**Open Category (OC-1)(For students of other branches)	
2170661	Multiphase Flow		Fuels & Combustion (PP)
2170662	Membrane Technology		
2170663	Physical and Electrochemical Characterizations in Chemical Engineering		

Mode of Teaching				Mode of Examination				Total Credits
Theory			Lab	Theory			Lab	
Offline	Online	Blended	Offline	PP	AO	MCQ	SO	
-	03	12	06	03	03	09	05	21
-	14.28	57.14	28.57	14.28	14.28	42.85	23.80	Credits %