MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute affiliated to RGPV, Bhopal)

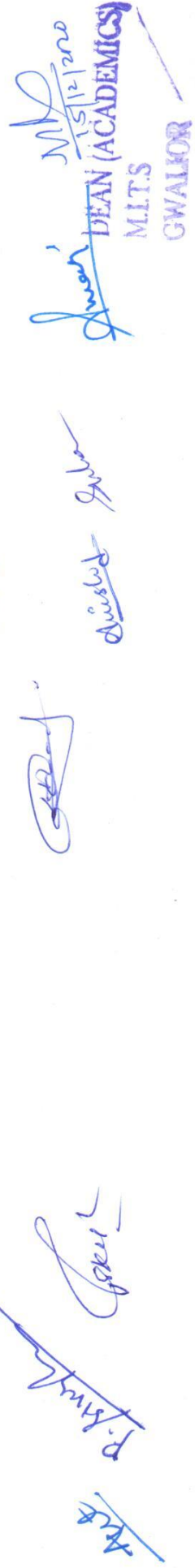## Scheme of Examination
GROUP Y: II Semester

B. Tech. II Semester (Electronics, Computer Science& Engineering, Information Technology, Electronics & Telecommunication. Chemical)

For batches admitted in academic session 2020 – 21 onwards

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted						Total Marks	Contact Hours per Week			Total Credits
				Theory Slot			Practical Slot				L	T	P	
				End Sem.	Mid Sem.	Quiz/Assign ment	End Sem.	Lab work / Sessional						
1.	100011	BSC	Engineering Mathematics –I	60	20	20	-	-		100	3	1	-	4
2.	170211	DC	Chemical Process Calculations	60	20	20	60	40		200	2	1	2	4
5.	100014	ESC	Engineering Graphics	60	20	20	-	-		100	1	2	-	3
2.	100015	HSMC	Energy, Environment, Ecology & Society	60	20	20	-	-		100	3	-	-	3
5.	100016	HSMC	Technical Language	60	20	20	-	-		100	3	-	-	3
6.	100017	HSMC	Language Lab	-	-	-	-	-		100	-	-	2	1
7.	100018	ESC	Eg. Graphics Lab	-	-	-	60	40		100	-	-	2	1
			Total	300	100	100	120	40		800	12	4	6	19

Summer Internship Project – I (Institute Level) (Qualifier): Minimum two-week duration: Evaluation in III Semester.

NSS / NCC   Qualifier

GROUP X: (Civil, Mechanical, Electrical, and Automobile)

GROUP Y: (Electronics, Computer Science& Engineering, Information Technology, Electronics & Telecommunication. Chemical)

01Theory Period=1 Credit; 02 Practical Periods =1 Credit

DEAN (ACADEMICS)
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Scheme of Examination
GROUP Y: I Semester

B. Tech. I Semester (Electronics, Computer Science& Engineering, Information Technology, Electronics & Telecommunication. Chemical)

For batches admitted in academic session 2020 – 21 onwards

S. No.	Subject Code	Category Code	Subject Name	Maximum Marks Allotted					Total Marks	Contact Hours per Week			Total Credits
				Theory Slot			Practical Slot						
				End Sem.	Mid Sem.	Quiz/Assignment	End Sem.	Lab work / Sessional		L	T	P	
1.	100012	BSC	Engineering Chemistry	60	20	20	60	40	200	2	1	2	4
2.	100020	ESC	Basic Civil Engineering & Mechanics	60	20	20			100	3 / 2	- / 1	-	3
4.	100021	ESC	Basic Mechanical Engineering	60	20	20	-	-	100	3 / 2	- / 1	-	3
3.	100022	ESC	Basic Electrical & Electronics Engineering	60	20	20	60	40	200	2	1	2	4
5.	100023	ESC	Basic Computer Engineering	60	20	20	60	40	200	2	1	2	4
6.	100024	ESC	Manufacturing Practices				60	40	100	-	-	2	1
			Total	300	100	100	240	160	900	12 / 10 - 5	3 / 5	8	19

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.

NSS / NCC — Qualifier

GROUP X: (Civil, Mechanical, Electrical, and Automobile)

GROUP Y: (Electronics, Computer Science& Engineering, Information Technology, Electronics & Telecommunication. Chemical)

01Theory Period=1 Credit; 02 Practical Periods =1 Credit

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B.Tech. III Semester (Chemical Engineering) For batches admitted in academic session 2020 – 21 onwards

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 (Offline/Online)
				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	^{S}Proficiency in subject /course												
1.	100012	BSC	Engineering Mathematics-II	50	10	20	20	-	-	-	100	3	-	-	3	PP	Offline (3/0)
2.	170311	DC	Fluid Mechanics	50	10	20	20	60	20	20	200	2	1	2	4	PP	Blended (2/1)
3.	170312	DC	Organic Process Technology	50	10	20	20	-	-	-	100	3	-	-	3	MCQ	Blended (2/1)
4.	170313	DC	Chemical Engineering Thermodynamics	50	10	20	20	-	-	-	100	3	-	-	3	PP	Blended ((2/1)
5.	170314	DC	Fluid Particle Mechanics	50	10	20	20	60	20	20	200	3	-	2	4	PP	Blended (2/1)
6.	170315	DLC	Chemical Synthesis Lab	-	-	-	-	60	20	20	100	-	-	2	1	SO	Offline (3/0)
7.	170316	DLC	Self-learning/Presentation (SWAYAM/NPTEL/MOOC)# or Interdisciplinary course from other institutions and platforms with credit transfer	-	-	-	-	-	40	-	40	-	-	2	1	SO	Online + Mentoring
8.	200XXX	CLC	NSS/NCC/ Novel engaging Courses	-	-	-	-	50	-	-	50	-	-	2	1	SO	Interactive
9.	170317	DLC	Summer Internship Project–I (Institute Level) (Evaluation)	-	-	-	-	60	-	-	60	-	-	4	2	SO	Offline
			Total	250	50	100	100	290	100	60	950	14	1	12	22	-	-
10.	100006^S	MAC	Indian Constitution & Traditional Knowledge (Mandatory audit course)	50	10	20	10	-	-	-	100	2	-	14	Grade	MCQ	Online

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

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^{S}Proficiency in course/subject – includes the weightage towards ability/ skill/ competence /knowledge level /expertise attained /attendance etc. in that particular course/subject
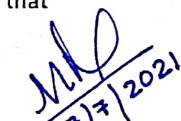
DEAN (ACADEMICS)
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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B.Tech. IV Semester (Chemical Engineering) For batches admitted in academic session 2020 – 21 onwards

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 Exam	Mode of Teaching (Offline/Online)
1.		BSC	Engineering Mathematics-III	50	10	20	20	-	-	-	100	3	-	-	3	PP	Offline (3/0)
2.	170411	DC	Heat Transfer	50	10	20	20	60	20	20	200	2	1	2	4	PP	Blended (2/1)
3.	170412	DC	Instrumentation & Process Control	50	10	20	20	-	-	-	100	3	-	-	3	MCQ	Blended (2/1)
4.	170413	DC	Mechanical Design of Process Equipment	50	10	20	20	-	-	-	100	3	-	-	3	PP	Blended (2/1)
5.	170414	DC	Mass Transfer –I	50	10	20	20	60	20	20	200	2	1	2	4	PP	Blended (2/1)
6.		MC	Cyber Security	50	10	20	20	-	-	-	100	3	-	-	3	MCQ	Online (0/3)
7.	170415	DLC	Process Control Lab	-		-	-	60	20	20	100	-	-	2	1	SO	Offline (2/0)
8.	200XXX	CLC	NSS/NCC/ Novel engaging Courses	-	-	-	-	50	-	-	50	-	-	2	4	SO	Interactive
			Total	300	60	120	120	230	60	60	950	16	2	8	22	-	-
9.	100002*	MAC	Biology for Engineers(Mandatory Audit Course)	50	10	20	10	-	-	-	100	2	-	-	Grade	MCQ	Online

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

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

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
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B.Tech. V Semester (Chemical Engineering) *Effective for 2020-21, 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 (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.	170511	MC	Data Science	50	10	20	20	60	20	20	200	3	0	2	4	Blended (2/1)	MCQ
2.	170512	DC	Mass Transfer –II	50	10	20	20	60	20	20	200	2	1	2	4	Blended (2/1)	PP
3.	170513	DC	Chemical Reaction Engineering – I	50	10	20	20	60	20	20	200	2	1	2	4	Blended (2/1)	PP
4.	170514	DC	Computational Methods in Chemical Engg	50	10	20	20	60	20	20	200	2	1	2	4	Blended (2/1)	PP
5.	170515	DC	Inorganic Process Technology	50	10	20	20	-	-	-	100	2	-	-	2	Blended (2/1)	MCQ
6.	170516	DLC	Minor Project-I	-	-	-	-	60	40	-	100	-	-	4	2	Offline (2/0)	SO
7.	170517	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.	170518	DLC	Summer Internship Project–II (Institute Level) (Evaluation)	-		-	-	60	-	-	60	-	-	4	2	Offline	SO
	Total			250	50	100	100	410	160	60	1150	10	3	20	24	-	-
10.	1000006	MAC	Disaster Management	50	10	20	20	-	-	-	100	2	-	-	GRADE	Online	MCQ
11.	1000005	MAC	Project Management & Financing	50	10	20	20	-	-	-	100	2	-	-	GRADE	Online	MCQ
Additional Course for Honours or minor Specialization				Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization													

$proficiency in course/subject-includes the weightage towards ability/skill/competence/knowledge level/ expertise attained etc. in that particular course/subject.
$$MCQ: Multiple Choice Question $$AO: Assignment + Oral $$PP: Pen Paper $$SO: Submission + Oral
** 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
Note: Students of 2020-21 admitted batch needs to appear and complete an additional MAC course of 30 Hrs. duration on Project Management & Financing. other modules related to futuristic technologies (Drones/ Robotics etc.)

DEAN (ACADEMICS)
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Department of Chemical Engineering Scheme of Evaluation
B.Tech. VI Semester

Effective for academic session 2020-21, 2021-22 & 2022-23

S. No.	Subject Code	Category Code	Subject Name	End Term Evaluation – End Sem. Exam	End Term Evaluation – Proficiency in subject course	Continuous Evaluation – Mid Sem. Exam	Continuous Evaluation – Quiz/ Assignment	Interm. Exam.	Continuous Evaluation – Labwork & Sessional	Continuous Evaluation – Skill Based Mini Project	MOOCs Assignment	MOOCs Exam	Total Marks	L	T	P	Total Credits	Mode of Teaching	Mode of Exam
1	170615	DC	Process Modeling & Simulation	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	PP
2	170616	DC	Process Equipment Design	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	AO
3	170617	MC	Artificial Intelligence & Machine Learning	50	10	20	20	60	20	20	-	-	200	3	-	2	4	Blended	MCQ
4	DE	DE	Departmental Elective (DE-1)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	online	MCQ
5	OC	OC	Open Category (OC-1)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	MCQ
6	170618	DLC	Minor Project-II	-	-	-	-	60	40	-	-	-	100	1	-	-	3	Blended	MCQ
7	200XXX	CLC		-	-	-	-	50	-	-	-	-	50	-	-	4	2	Interactive	-
			Total	200	40	80	80	230	80	40	25	75	850	15	-	10	20	-	-
8	1000007	MAC	Intellectual Property Rights (IPR)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Online	MCQ

Additional Course for Honours or Minor Specialization

Summer Internship-III (On Job Training) for Four week duration. Evaluation in VII Semester

Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization

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

ssMCQ: Multiple Choice Question   ssAO: Assignment + Oral   ssPP: Pen Paper   ssSO: Submission + Oral

*Courses run through SWAYAM/NPTEL/MOOC Learning Based Platform with credit transfer

DE-4 (Online)	OC-1
170661- Multiphase Flow	910115-Fuels & Combustion (MCQ)
170662- Membrane Technology	
170663- Physical and Electrochemical Characterizations in Chemical Engineering	

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Department of Chemical Engineering
Scheme of Evaluation
B. Tech. VII Semester *Effective for academic session 2020-21*

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			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.	DE	DE	Departmental Elective (DE-2)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	PP
2.	DE	DE	Departmental Elective* (DE-3)	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
3.	OC	DE	Departmental Elective(DE-4)*	-	-	-	-	-	-	-	25	75	100	3	-	-	3	Blended	MCQ
4.	OC	OC	Open Category (OC-3)	50	10	20	20	-	-	-	-	-	100	3	-	-	3	Blended	MCQ
5.	170715	DLC	Process Computation Lab	-	-	-	-	60	20	20	-	-	100	-	-	4	2	Offline	SO
6.	170716	DLC	Creative Problem Solving (Evaluation)	-	-	-	-	25	25	-	-	-	50	-	-	2	1	Blended	SO
7.	170717	DLC	Summer Internship Project-III (04 weeks) (Evaluation)	-	-	-	-	60	-	-	-	-	60	-	-	4	2	Offline	SO
	Total			150	30	60	60	145	45	20	25	75	610	12	-	10	17	-	-
8		MAC	Universal Human Values & Professional Ethics(UHVPE)	50	10	20	20	-	-	-	-	-	100	2	-	-	GRADE	Online	MCQ
Additional Course for Honours or minor Specialization				Permitted to opt for maximum two additional courses for the award of Honours or Minor specialization															

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

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

* **Course run through SWAYAM/NPTEL/ MOOC Learning Based Platform with Credit Transfer**

DE-II(Offline)	DE-III(Online)	DE-IV (Online)	OC-III
Transport Phenomena -170721	Chemical Process Safety - 170761	Energy Conversion Technologies (Biomass And Coal)- 170764	Industrial Safety and Hazards
Equilibrium Stage operation -170722	Sustainable Energy Technology -170762	Petroleum Reservoir Engineering-170765	-
Heterogeneous Reaction Systems -170723	Rheology and Processing of Paints, Plastic, and Elastomer Based Composites -170763	Petroleum Technology-170766	-
Multi – Component Distillation -170724	-		

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Department of Chemical Engineering
Scheme of Evaluation
B. Tech. VIII Semester *Effective for academic session 2020-21*

S. No.	Subject Code	Category Code	Subject Name	Theory Slot - End Term Evaluation - End Sem. Exam.	Theory Slot - End Term Evaluation - $Proficiency in subject /course	Theory Slot - Continuous Evaluation - Mid Sem. Exam.	Theory Slot - Continuous Evaluation - Quiz / Assignment	Practical Slot - End Sem. Exam.	Practical Slot - Continuous Evaluation - Lab work & Sessional	Practical Slot - Continuous Evaluation - Skill Based Mini Project	MOOCs - Assignment	MOOCs - Exam	Total Marks	L	T	P	Total Credits	Mode of Teaching (Online, Offline, Blended)	Mode of Exam.
1.	DE	DE	Departmental Elective* (DE-4)	-	-	-	-	-	-	-	25	75	100	3	-	-	3		
2.	OC	OC	Open Category* (OC-4)	-	-	-	-	-	-	-	25	75	100	3	-	-	3		
3.	DLC	DLC	Internship/Research Project	-	-	-	-	250	150	-	-	-	400	-	-	18	9		
4.		-	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**

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

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

*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.)