MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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

Department of Mechanical Engineering

Scheme of Evaluation

B.Tech. I Semester (Mechanical Engineering)

For batch admitted in academic session 2022 – 2023

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.	Duration of Exam.
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	$^{\$}$Proficiency in subject /course	Mid Sem. Exam	Quiz/ Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	**100011**	BSC	Engineering Mathematics-I	50	10	20	20	-	-	-	100	3	1	-	4	Offline	PP	2 Hrs
2.	**160122**	ESC	Computer Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
3.	100021	ESC	Basic Mechanical Engineering	50	10	20	20	-	-	-	100	2	1	-	3	Blended	MCQ	1.5 Hrs
4.	**100022**	ESC	Basic Electrical and Electronics Engineering	50	10	20	20	60	20	20	200	2	1	2	4	Blended	MCQ	1.5 Hrs
5.	**100020**	ESC	Basic Civil Engineering and Mechanics	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP	2 Hrs
6	**120026**	ESC	Basic Mechanical Engineering Lab	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO	-
Total				**250**	**50**	**100**	**100**	**180**	**60**	**60**	**800**	**11**	**5**	**6**	**19**	-	-	
7.	**3000003**	**Natural Sciences & Skills**	Environmental Engineering	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs

- **Induction programme of three weeks (MC):Physical activity, Creative Arts,Universal Human Values,Literary,ProficiencyModules,Lectures by Eminent People, Visits 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.**
- **Natural Science & Skill : Engineering Physics / Engineering Chemistry / Environmental Science / Language**

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

Theory			Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended	Offline	Interactive	PP	A+O	MCQ	SO	SO	
4	0	14	1	0	7	4	7	1	0	19
21	0	73.68	5	0	36.8	21	36.8	5	0	Credits %

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Department of Mechanical Engineering

Scheme of Evaluation

B.Tech. II Semester (Mechanical Engineering)

For batch admitted in academic session 2022 – 2023

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.	Duration of Exam.
				Theory Slot				Practical Slot										
				End Term Evaluation		Continuous Evaluation		End Sem. Exam	Continuous Evaluation			L	T	P				
				End Sem. Exam	$^{\$}$Proficiency in subject /course	Mid Sem. Exam	Quiz/ Assignment		Lab Work & Sessional	Skill Based Mini Project								
1.	**120221**	DC	Material Science	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP	2 Hrs
2.	**120222**	DC	Manufacturing Processes	50	10	20	20	-	-	-	100	2	1	-	3	Blended	PP	2 Hrs
3.	120223	DC	Engineering Thermodynamics	50	10	20	20	-	-	-	100	3	1	-	4	Blended	PP	2 Hrs
	100014	ESC	Engineering Graphics	50	10	20	20	-	-	-	100	2	1	-	3	Offline	AO	2 Hrs
4.	**160222**	ESC	Python Programming	50	10	20	20	60	20	20	200	2	1	2	4	Blended	AO	2 Hrs
5.	**100024**	ESC	Manufacturing Practices	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO	-
6.	100018	ESC	Engineering Graphics Lab	-	-	-	-	60	20	20	100	-	-	2	1	Offline	SO	-
Total				**250**	**50**	**100**	**100**	**180**	**60**	**60**	**800**	**11**	**5**	**6**	**19**	-	-	
7.	**3000004**	**Natural Sciences & Skills**	Language	50	10	20	20	30	10	10	150	1	-	2	GRADE	Blended	MCQ	1.5 Hrs

- **$ proficiency in course/subject-includes the weightage towards ability/skill/competence/knowledge level/ expertise attained etc. in that particular course/subject.**
- **Natural Sciences & Skills : Engineering Physics / Engineering Chemistry / Environmental Science / Language**

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

Theory			Lab	NEC	Theory			Lab	SIP/ SLP/ NEC	
Offline	Online	Blended	Offline	Interactive	PP	A+O	MCQ	SO	SO	
3	0	14	2	0	10	7	0	2	0	19
15.78	0	73.68	10.5	0	52.6	36.8	0	10.5	0	Credits %

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100014: Engineering Graphics

Category	Title	Code	Credit-3			Theory Slot
Engineering Science-ESC	Engineering Graphics	100014/100105/CEL/MEL/CSL/ EEL/ELL/ITL/CHL/ BTL105/1X25/BEEL/BELL/ BETL/BCHL/BAUL105/ BCEL/BMEL/BCSL/ BITL/BBTL204	L	T	P	Max.Marks-50 Min.Marks-16 Duration-2hrs.
			1	2	-	

Course Objective:

1. To inculcate the imagination and mental visualization capabilities for interpreting the geometrical details of common engineering objects.
2. To impart knowledge about principles/methods related to projections of one,two and three dimensional objects.

Syllabus:

Unit - 1

Introduction and scale: Basics of instruments, Lettering and dimensioning, Plane geometrical constructions. Plain and diagonal scale - Representative fraction, Unit conversion and Exercises based on linear, area, volume and speed. Scale of chord.

Engineering curves: Cycloidal curves - cycloid, epicycloid and hypocycloid curve, tangent and normal. Spiral curves - Archimedean and logarithmic spiral curves. Tangent & normal on the curves. Involute curve.

Unit - 2

Projection of points: Introduction, types of projections, quadrant system, positions of points and Exercise.

Projection of straight line: Introduction, Orientation of a straight line, Traces of a line and Exercise.

Unit - 3

Projection of planes: Introduction, Types of planes, Traces of planes, Position of planes and Exercise.

Projection of solids: Introduction, Types of solids, Positions of solids and Exercise.

Unit - 4

Section of solids: introduction, Types of section planes and Anti-section and Exercise.

Development of surfaces of right solids: Introduction, Methods of development & anti-development and Exercise.

Intersection of cylinders: Introduction, methods of developments, intersection of cylinder by another cylinder and exercise.

Unit - 5

Isometric projections: Introduction, isometric scale, isometric axis, isometric view and isometric projections from orthographic views, orthographic views from pictorial view and exercise.

Computer Aided Drafting using Auto CAD: Introduction, software's basic commands, transformation and editing commands.

Course Outcomes: After successful completion of this course students will be able to:
CO1. **Visualize** the geometric details of engineering objects.
CO2. **Translate** the geometric information of engineering objects into engineering drawings.
CO3. **Draw** orthographic projections and sections.
CO4. **Develop** knowledge to read, understand and explain drawing.
CO5. **Improve** their skills so that they can apply these skills in developing new products.
CO6. **Prepare** simple layout of factory, machine and buildings.

Text books:

1. Engineering Drawing by N. D. Bhatt, Charotar Publication Pvt. Ltd.
2. Engineering Drawing by P.S. Gill, S. K. kataria& sons, Delhi
3. Engineering Drawing by BasantAgrawal& C. M. Agrawal, Tata McGraw Hill Education Pvt. Ltd.
4. Engineering Graphics by K. Venugopal, New Age International Publication, India

NPTEL Link for Engineering Graphics:

http://nptel.ac.in/courses/112103019/

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Engineering Graphics Lab

Category	Title	Code	Credit-1			Practical End Sem
			L	T	P	
HSMC	Engineering Graphics Lab	100018	-	-	2	Max.Marks-60 Min.Marks-19

Laboratory Work

List of Experiments:

1. To prepare sheet of Plain scale, diagonal scale and Scale of chord.
2. To prepare sheet of Cycloidal curves.
3. To prepare sheet of Projection of points and lines.
4. To prepare sheet of Projection of Planes.
5. To prepare sheet of Projection of Solids.
6. To prepare sheet of Section of Solids.
7. To prepare sheet of Development of Surfaces.
8. To prepare sheet of Isometric and Intersection of Solids

Skill Based Projects:

1. To prepare the 3D view of any object.
2. To Prepare scale for your home and make a map using this scale.
3. To prepare cut section models drawing of any object.
4. To make paper object, cut and show the development of surfaces.

Course Outcomes: After successful completion of this course students will be able to:

CO1. **Visualize** the geometric details of engineering objects.
CO2. **Translate** the geometric information of engineering objects into engineering drawings.
CO3. **Draw** orthographic projections and sections.
CO4. **Develop** knowledge to read, understand and explain drawing.
CO5. **Improve** their skills so that they can apply these skills in developing new products.
CO6. **Prepare** simple layout of factory, machine and buildings.

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