



Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

(An Autonomous Institution Affiliated to RTM Nagpur University, Nagpur)



SCHEME OF INSTRUCTION & SYLLABI

Program: Mechanical Engineering

Scheme of Instructions: Final Year B.Tech. in Mechanical Engineering Semester-VII (As Per NEP 2020)

Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hrs/Wk			Credits	Exam Scheme			ESE Duration	Total Marks
					L	P	Hrs		CT/IA	CA	ESE		
1	PCC	BME34701	Refrigeration and Air Conditioning	T	4	-	4	4	30	10	60	3Hrs	100
2	PCC	BME34702	Design of Mechanical drives	T	4	-	4	4	30	10	60	3Hrs	100
4	PCC	BME34703	Sustainable Development Goals	T	2	-	2	2	14	06	30	2 Hrs	50
5	PEC	BME34704-07	Program Elective-IV	T	4	-	4	4	30	10	60	3Hrs	100
6	MDM	BEE 34712	Introduction to Electric Vehicles	T	4	-	4	4	30	10	60	3Hrs	100
7	PCC	BME34708	Refrigeration and Air Conditioning Lab	P	-	2	2	1	-	25	25	2 Hrs	50
8	PCC	BME34709	Advance CAD Lab	P	-	2	2	1	-	25	25	2 Hrs	50
9	Project	BME34710	Project	P	-	8	8	4	-	100	100	2 Hrs	200
Total					15	12	27	24	134	196	440	18 Hrs	750

Course Category	PCC (Program Core Courses)	PEC (Program Elective Courses)	(MDM) Multidisciplinary Minor	OEC (Open Elective courses from other discipline)	VSEC (Vocational and Skill Enhancement Course)	HSSM (Humanities Social Science and management)(V EC/IKS/AEC)	FP/CP/OJT/RM/ Project (Experimental Learning Courses)
Credits	12	4	4	-	-	-	4
Cumulative Sum	52	14	15	8	8	14	6

PROGRESSIVE TOTAL CREDITS:126+24=150

				June,2026	1.00	Applicable for AY2026-27 Onwards
Chairperson HOD	Vice Principal / Director Academics	Director Administration	Principal	Date of Release	Version	

Mechanical Engineering (NBA Accredited)
Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Dr. Premanand Naktode
Principal
TGPCET, Nagpur



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SCHEME OF INSTRUCTION & SYLLABI

Program: Mechanical Engineering

Scheme of Instructions: Final Year B.Tech. in Mechanical Engineering Semester-VIII (As Per NEP 2020)

Sr. No.	Course Category	Course Code	Course Title	T/P	Contact Hrs/Wk			Credits	Exam Scheme			ESE Duration	Total Marks
					L	P	Hrs		CT/IA	CA	ESE		
1	PCC	BME34801	Research Methodology	T	4	-	4	4	30	10	60	3Hrs	100
2	CEP	BME34802	Internship/ On Job Training	P	-	24	24	12	-	100	200	2 Hrs	300
3			Total		4	24	28	16	30	110	260	5 Hrs.	400

Course Category	PCC (Program Core Courses)	PEC (Program Elective Courses)	(MDM) Multidiscipli nary Minor	OEC (Open Elective courses from other discipline)	VSEC (Vocational and Skill Enhancement Course)	HSSM (Humanities Social Science and management)(V EC/IKS/AEC)	FP/CP/OJT/RM/ Project (Experimental Learning Courses)
Credits	4	-	-	-	-	-	12
Cumulative Sum	56	14	15	8	8	14	18

PROGRESSIVE TOTAL CREDITS : 150+16 =166

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Program: Mechanical Engineering




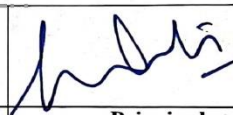
List of **Program Electives** offered By Mechanical Engineering Department (NBA Accredited)

Program Elective- I	Program Elective-II	Program Elective- III	Program Elective- IV
Semester V	Semester VI	Semester VI	Semester VII
BME33504: Industrial Economics and Management	BME33605: Hydraulic and Pneumatic Systems	BME33609: Finite Element Method	BME34704: Material Handling System
BME33505: Computer Aided Design	BME33606: Mechanical Measurement and Metrology	BME33610: Advanced Manufacturing techniques	BME34705: Total Quality Management
BME33506: Automotive System	BME33607: Ginning Processes	BME33611: Operation Research	BME34706: Ginning Management
BME33507: Smart Manufacturing	BME33608: Control System Engineering	BME33612: Industrial Robotics	BME34707: Computer Integrated Manufacturing

Program: Mechanical Engineering

List of **Open Electives** offered Mechanical Engineering Department (NBA Accredited)





Open Elective-I	Open Elective-II	Open Elective-III
III-Semester	IV-Semester	V-Semester
BME32306: Basics of Manufacturing Technology and Processes	BME32407: Automobile Engineering	BSS32XX: Additive Manufacturing

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



Course Category	BSC (Basic Science Course)	ESC (Engineering Science Course.)	PCC (Program Core courses)	PEC (Program Elective courses)	Multidisciplinary courses	OEC (Open Elective courses from other discipline)	VSEC (Skill Course)	Humanities Social Science & Management	Experiential Learning Courses	CC (Liberal Learning Courses)	Semester Wise Credits
Semester -I	8	5	2	--	--	--	2	2	--	2	21
Semester -II	8	8	--	--	--	--	2	2	--	2	22
Semester -III	--	--	8	--	3	4	--	4	2	--	21
Semester -IV	--	--	11	--	2	2	2	4	--	--	21
Semester -V	--	--	12	4	3	2	-	-	--	--	21
Semester -VI	--	--	8	6	2	-	2	2	--	--	20
Semester -VII	--	--	6	4	4	--	--	--	8	--	24
Semester -VIII	--	--	4	4	-	--	--	--	12	--	16
Cumulative Sum	16	13	51	18	14	8	8	14	22	4	166

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Course Category	Theory		Practical		Semester Wise Credits
	Contact Hours	Credit	Contact Hours	Credit	
Semester-I	12	12	18	9	21
Semester-II	13	13	18	9	22
Semester-III	17	17	8	4	21
Semester-IV	15	15	12	6	21
Semester-V	18	18	6	3	21
Semester-VI	14	14	12	6	20
Semester-VII	18	18	12	6	24
Semester-VIII	4	4	24	12	16
Cumulative Sum	117	117	102	51	166

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