

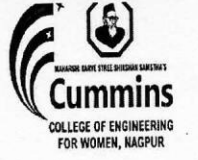


Maharshi Karve Stree Shikshan Samstha's

Cummins College of Engineering For Women, Nagpur

An Autonomous Institute Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University

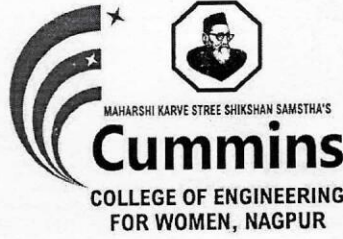
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Board of Studies of Mechanical Engineering Department

B. Tech. Mechanical Engineering

Scheme: 2026



Department of Mechanical Engineering

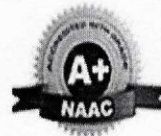


Maharshi Karve Stree Shikshan Samstha's

Cummins College of Engineering For Women, Nagpur

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Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme Summary for B. Tech. Undergraduate Mechanical Engineering

SCHEME SUMMARY						
Semester	Credits	Hours	Marks	No. of Theory Heads	No. of Practical Heads	Total Heads
I	20	25	700	6	4	10
II	20	25	750	6	4	10
III	20	27	950	6	5	11
IV	20	24	800	6	4	10
V	20	24	850	6	4	10
VI	20	24	750	6	2	8
VII	20	25	800	5	3	8
VIII	20	34	400	2	1	3
Total	160	208	6000	43	27	70

BoS Members						
BoS Chairperson		Dean Academics		Principal		



Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Curriculum Framework for B. Tech. Undergraduate Mechanical Engineering

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	8	8	3	--	--	--	--	--	19
Engineering Science Course		4	3	--	--	--	--	--	--	7
Programme Core Course (PCC)	Program Courses	--	3	11	12	14	8	4	--	52
Programme Elective Course (PEC)		--	--	--	--	--	3	7	6	16
Multidisciplinary Minor (MD M)	Multidisciplinary Courses	--	--	2	3	2	3	--	--	10
Open Elective (OE) Other than a particular program		--	--	--	--	2	2	3	--	7
Vocational and Skill Enhancement Course (VSEC)	Skill Courses	2	2	--	2	--	--	--	--	6
Ability Enhancement Course (AEC -01, AEC-02)	Humanities Social Science and Management (HSSM)	2	--	--	1	2	--	--	--	5
Entrepreneurship/Economics/ Management Courses		2	--	--	--	--	--	2	--	4
Indian Knowledge System (IKS)		--	2	--	--	--	--	--	--	2
Value Education Course (VEC)		--	--	2	2	--	--	--	--	4
Research Methodology	Experiential Learning Courses	--	--	--	--	--	2	--	--	2
Comm. Engg. Project (CEP)/Field Project (FP)		--	--	2	--	--	--	--	--	2
Project		--	--	--	--	--	2	4	--	6
Internship/ OJT		--	--	--	--	--	--	--	14	14
Co-curricular Courses (CC)	Liberal Learning Courses	2	2	--	--	--	--	--	--	4
Total Credits (Major)		20	20	20	20	20	20	20	20	160

BoS Members							
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. Anurag Singh	Dr. Anurag Singh	Dr. Anurag Singh	Dr. Anurag Singh
BoS Chairperson		Dean Academics		Principal			

Principal

MKSSS's Cummins College of Engineering For Women, Nagpur.

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BO S	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/A	P		Theory			Practical			Total Marks
								TAE	CAE	ESE	CE	IE	E E	
SEMESTER I														
1	BSC/ASH		Linear Algebra and Differential Calculus	3	1	-	4	25	25	50	-	-	-	100
2	BSC/ASH		Materials Physics	3	-	-	3	25	25	50	-	-	-	100
3	BSC/ASH		Materials Physics Laboratory	-	-	2	1	-	-	-	25	25	-	50
4	ESC/ME		Engineering Graphics	3	-	-	3	25	25	50	-	-	-	100
5	ESC/ME		Engineering Graphics Laboratory	-	-	2	1	-	-	-	25	25	-	50
6	VSEC/ME		Maker Space	-	-	4	2	-	-	-	25	25	-	50
7	AEC/ASH		Professional Communication Skills	1	-	-	1	10	15	25	-	-	-	50
8	AEC/ASH		Professional Communication Skills Laboratory	-	-	2	1	-	-	-	25	25	-	50
9	HSSM/ME		Introduction to Entrepreneurship Development	2	-	-	2	25	25	50	-	-	-	100
10	CC/ASH		Liberal Learning Course-I	-	2	-	2	-	-	-	50	-	-	50
				25			20							700

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Total Credits	Evaluation Scheme							
				L	T/A	P		Theory			Practical			Total Marks	
								TAE	CAE	ESE	CE	IE	EE		
SEMESTER II															
1	BSC/ASH		Engineering Mathematics	3	-	-	3	25	25	50	-	-	-	100	
2	BSC/ASH		Engineering Mathematics Laboratory	-	-	2	1	-	-	-	25	25	-	50	
3	BSC/ASH		Applied Chemistry	3	-	-	3	25	25	50	-	-	-	100	
4	BSC/ASH		Applied Chemistry Laboratory	-	-	2	1	-	-	-	25	25	-	50	
5	ESC/CE		C-Programming	2	-	-	2	25	25	50	-	-	-	100	
6	ESC/CE		C-Programming Laboratory	-	-	2	1	-	-	-	25	25		50	
7	PCC/ME		Engineering Mechanics	3	-	-	3	25	25	50	-	-	-	100	
8	VSEC/ME		Solid Modelling	-	-	4	2	-	-	-	25	25	-	50	
9	IKS/ASH		Ancient Indian Knowledge	2	-	-	2	25	25	50	-	-	-	100	
10	CC/ASH		Liberal Learning Course -II	-	2	-	2	-	-	-	50	-	-	50	
			TOTAL	25			20							-	750

BoS Members						
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. Anurag Bhat	Dr. Anurag Bhat	Dr. Anurag Bhat
BoS Chairperson		Dean Academics			Principal	

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						Total Marks
				L	T/A	P		Theory			Practical			
								TAE	CAE	ESE	CE	IE	EE	
SEMESTER III														
1	BSC/ASH		Applied Mathematics	3	-	-	3	25	25	50	-	-	-	100
2	PCC/ME		Fluid Mechanics and Hydraulic Machines	2	-		2	25	25	50	-	-	-	100
3	PCC/ME		Fluid Mechanics and Hydraulic Machines Laboratory	-	-	2	1	--	--	--	25	-	25	50
4	PCC/ME		Kinematics of Machines	2	-		2	25	25	50	-	-	-	100
5	PCC/ME		Engineering Materials and Applications	2	-		2	25	25	50	-	-	-	100
6	PCC/ME		Engineering Materials and Applications Laboratory	-	-	2	1	-	-	-	25	-	25	50
7	PCC/ME		Manufacturing Processes and Technology	2	-		2	25	25	50	-	-	-	100
8	PCC/ME		Manufacturing Processes and Technology Laboratory	-	-	2	1	-	-	-	25	-	25	50
9	MDM/ME		MDM-I	2	-	-	2	25	25	50	-	-	-	100
10	CEP/ME		Community Engagement Project	-	-	4	2	-	-	-	25	25	50	100
11	VEC/ASH		Advanced Communication Skills	-	-	4	2	-	-	-	25	25	50	100
			TOTAL	18			20							950

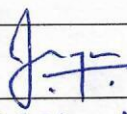
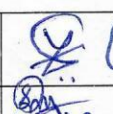
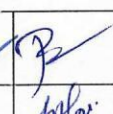
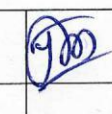
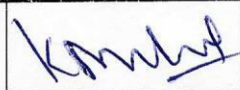
BoS Members							
BoS Chairperson			Dean Academics		Principal		

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/ BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/ A	P		Theory			Practical			Total Marks
								TA E	CA E	ES E	CE	IE	EE	
SEMESTER IV														
1	PCC/ME		Engineering Thermodynamics	3	1	-	4	25	25	50	-	-	-	100
2	PCC/ME		Machining Processes	3	-	-	3	25	25	50	-	-	-	100
3	PCC/ME		Machining Processes Laboratory	-	-	2	1	-	-	-	25	-	25	50
4	PCC/ME		Strength of Materials	3	-	-	3	25	25	50		-		100
5	PCC/ME		Strength of Materials Laboratory	-	-	2	1	-	-	-	25	-	25	50
6	VSEC/M E		Machine Drawing	1	-	-	1	25	25	50	-	-		100
7	VSEC/M E		Machine Drawing Laboratory	-	-	2	1	-	-	-	25	-	25	50
8	VEC/ASH		Environmental Sciences	2	-	-	2	25	25	50	-	-	-	100
9	MDM/ME		MDM-II	3	-	-	3	25	25	50	-	-	-	100
10	AEC/ASH		Soft Skills	-	-	2	1	-	-	-	25	25	-	50
			TOTAL	25			20							800

BoS Members						
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. P. S. Chavhan	Dr. P. S. Chavhan	Dr. P. S. Chavhan
BoS Chairperson		Dean Academics			Principal	

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/ A	P		Theory			Practical			Total Marks
								TAE	CAE	ESE	CE	IE	EE	
SEMESTER V														
1	PCC/ME		Mechanical Measurement and Metrology	2	-	-	2	25	25	50	-	-	-	100
2	PCC/ME		Mechanical Measurement and Metrology Laboratory	-	-	2	1	-	-	-	25	-	25	50
3	PCC/ME		Heat Transfer	3	-	-	3	25	25	50		-		100
4	PCC/ME		Heat Transfer Laboratory		-	2	1	-	-		25	-	25	50
5	PCC/ME		Design of Machine Elements	3	-	-	3	25	25	50	-	-	-	100
6	PCC/ME		Energy Conversion -I	3	-	-	3	25	25	50	-	-	-	100
7	PCC/ME		Energy Conversion -I Laboratory	-	-	2	1	-	-	-	25	-	25	50
8	MDM/ME		MDM-III	2	-	-	2	25	25	50	-	-	-	100
9	OE/ME		Open Elective-I	2	-	-	2	25	25	50	-	-	-	100
10	AEC/ASH		Employability Enhancement Training	-	-	4	2	-	-	-	25	25	50	100
			TOTAL	24			20							850

BoS Members						
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. S. S. Chavhan	Dr. M. S. Chavhan	Dr. P. S. Chavhan
BoS Chairperson		Dean Academics		Principal		

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Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

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Sr. No	Course Category/BO S	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/ A	P		Theory			Practical			Total Marks
								TA E	CA E	ES E	C E	I E	E E	
SEMESTER VI														
1	PCC/ME		Dynamics of Machines	3	--	-	3	25	25	50	-	-	-	100
2	PCC/ME		Dynamics of Machines Laboratory	-	-	2	1	-	-	-	25	-	25	50
3	PCC/ME		Energy Conversion-II	3	1	-	4	25	25	50	-	-	-	100
4	PEC/ME		Program Elective-I	3		-	3	25	25	50	-	-	-	100
5	OE/ME		Open Elective-II	2		-	2	25	25	50	-	-	-	100
6	MDM/ME		MDM- IV	3	-	-	3	25	25	50	-	-	-	100
7	ELC/ME		Research Methodology	2	-	-	2	25	25	50				100
8	PROJ/ME		Minor Project		-	4	2	-	-	-	50	-	50	100
			TOTAL	23			20							750

BoS Members						
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. Anil D. Bhat	Dr. Pooja Bhat	Dr. Pooja Bhat
BoS Chairperson		Dean Academics		Principal		

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/A	P		Theory			Practical			Total Marks
								TA E	CA E	ES E	CE	IE	EE	
SEMESTER VII														
1	PEC/ME		Program Elective-II	3	-	-	3	25	25	50	-	-	-	100
2	PEC/ME		Program Elective-III	3	-	-	3	25	25	50	-	-	-	100
3	PEC/ME		Program Elective-III Laboratory	-	-	2	1	-	-	-	25	-	25	50
4	OE/ME		Open Elective-III	3	-	-	3	25	25	50	-	-	-	100
5	PCC/ME		Computer Aided Design	3	-	-	3	25	25	50	-	-	-	100
6	PCC/ME		Computer Aided Design Laboratory	-	-	2	1	-	-	-	25	-	25	50
7	HSSM/ME		Industrial Engineering and Management	2	-	-	2	25	25	50	-	-	-	100
8	PROJ/ME		Project	-	-	8	4	-	-	-	50	50	100	200
			TOTAL	26			20							800

BoS Members						
BoS Chairperson		Dean Academics		Principal		

Cummins College of Engineering For Women, Nagpur

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Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

Sr. No.	Course Category/BOS	Course Code	Name of Course	Teaching Scheme (Hrs.)			Credits	Evaluation Scheme						
				L	T/A	P		Theory			Practical			Total Marks
								TAE	CAE	ESE	CE	IE	EE	
SEMESTER VIII														
1	PEC/ME		Program Elective IV (NPTEL)	3	-	-	3	25	25	50	-	-	-	100
2	PEC/ME		Program Elective V (NPTEL)	3	-	-	3	25	25	50	-	-	-	100
3	OJT/ME		Internship	-	-	28	14		-	-	75	75	150	300
			TOTAL	34			20							500

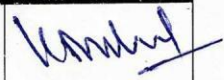
BoS Members						
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Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

OPEN ELECTIVES			
Offered by BOS Mechanical Engineering	Open Elective - I [V Sem]	Open Elective - II [VI Sem]	Open Elective - III [VI Sem]
	1. Production Planning and Control	1. Computer Integrated Manufacturing Systems	1. Energy Conservation and Management
	2. Refrigeration and Air Conditioning	2. Introduction to Robotics	2. Product Design and Development
	3. Operation Research	3. Rural Innovation and Technologies	3. Supply Chain Management

BoS Members						
	Dr. Jayant Giri	Dr. A.S. Dhoble	J.C. Nayak	Dr. Anurag	Dr. Anurag	Dr. Anurag
	BoS Chairperson		Dean Academics		Principal	

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PROGRAM ELECTIVES			
Sr. No.	Program Elective-I for VI SEMESTER	Program Elective-II for VII SEM	Program Elective-III for VII SEM
1	Advanced IC Engines	Design of Transmission System	Automation in Production
2	Power Plant Engineering	Product Design and Development	Automobile Engineering
3	3D Printing and Additive Manufacturing	Renewable Energy Sources	Refrigeration & Air Conditioning
4	Operation Research	Introduction to Electric and Hybrid Vehicles	Mechatronics
5	Design Thinking	Application of AI/ML in Mechanical Engineering	Finite Element Method
6	Data Science for Mechanical Engineering	Hydraulics & Pneumatics	Computational Fluid Dynamics
7	Production Planning and Control		Industrial Robotics & Digital Manufacturing

Sr. No.	*Program Elective-IV (NPTEL-I) for VIII SEM	*Program Elective-V (NPTEL-II) for VIII SEM
1	Machine Tool Design	Composite Materials
2	Design for Manufacturing and Assembly	Industrial IOT
3	Solar Energy and Its Utilisation	Introduction to Industry 4.0 and Industrial Internet of Things
4	MATLAB	

*Program Electives (VIII Sem, NPTEL-I & II) will be offered as per availability of NPTEL Courses at that time.

BoS Members						
BoS Chairperson		Dean		Principal		

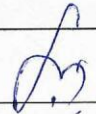
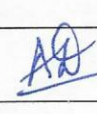
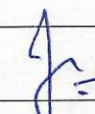
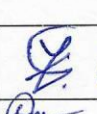
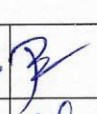
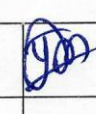
Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

MULTIDISCIPLINARY MINOR (MDM) BASKET

Offering Department	MDM-I 3 rd Semester	MDM-II 4 th Semester	MDM-III 5 th Semester	MDM-IV 6 th Semester	MDM-V
CE/CSE	Introduction to Data Science (CE)	Database System (CE)	Software Engineering and Project Management	Artificial Intelligence & Machine Learning (CE)	Operating Systems
ETC	Sensors and Systems (ETC)	Microcontroller and Applications	Analogue and Digital Communication	Wireless Sensor Networks	Internet of Things and its applications
ME	Renewable Energy Sources	3D Printing and Additive Manufacturing	Automobile Engineering	Industrial Robotics and Digital Manufacturing	Computer Aided Design
For ME Students	Sensors and Systems (ETC)	Microcontroller and Applications (ETC)	Introduction to Data Science (CE)	Artificial Intelligence and Machine Learning (CE)	Internet of Things and its Applications (ETC)
For CE/CSE Students	Sensors and Systems	Microcontroller and Applications	Internet of Things and its Applications	Industrial Robotics and Digital Manufacturing	Automobile Engineering
For ETC Students	Operating Systems	Database System	Software Engineering and Project Management	Renewable Energy Sources	3D Printing and Additive Manufacturing

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BoS Chairperson					Principal	

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DEPARTMENT / BOS WISE BASKETS OF MULTIDISCIPLINARY MINOR COURSES WITH ELIGIBLE STUDENTS				
		Students Eligible for Registration / learning		
Host	Name of the	ETC	ME	CE/ CSE (AIML)
ETC	Sensors and Systems		Yes	Yes
	Microcontroller and Applications		Yes	Yes
	Analog and Digital Communication		No	No
	Wireless Sensor Networks		No	No
	Internet of Things and its Applications		Yes	Yes
ME	Renewable Energy sources	Yes		No
	3D Printing and Additive Manufacturing	Yes		No
	Automobile Engineering	No		Yes
	Industrial Robotics & Digital Manufacturing	No		Yes
	Computer Aided Design	No		No
CE/CSE (AI/ML)	Introduction to Data Science	Yes	Yes	
	Database System	Yes	No	
	Software Engineering and Project Management	No	No	
	Artificial Intelligence & Machine Learning	No	Yes	
	Operating Systems	Yes	No	

BoS Members						
BoS Chairperson		Dean		Principal		

Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

BASKET OF COURSES FOR MINOR DEGREE IN MECHANICAL ENGINEERING

Sr. No.	COURSES	Credits
1	Manufacturing Processes and Technology	2
2	Engineering Thermodynamics	3
3	Measurement and Metrology	2
4	Power Plant Engineering	3
5	Product Design and Development	3
6	SWAYAM NPTEL (Design Domain)	3
7	SWAYAM NPTEL (Thermal Domain)	3
8	SWAYAM NPTEL (Production Domain)	3
9	SWAYAM NPTEL (Industrial Domain)	3
10	SWAYAM NPTEL (Automobile Domain)	3

Eligible students should complete 18 to 20 credits from 2nd year to final year.

From the above list five (Sr. No. 1 to 5) subjects are compulsory and from Sr. No. 6 to 10, any 2 courses must be completed through SWAYAM NPTEL platform*.

*NPTEL Courses will be offered as per availability of NPTEL Courses at that time from above domain.

BoS Members						
BoS Chairperson		Dean Academics		Principal		

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An Autonomous Institute Affiliated to Rashtrasant Tukadoji Maharaj Nagpur University

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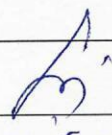
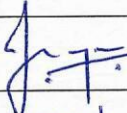
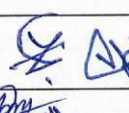
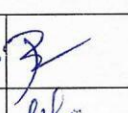
Board of Studies of Mechanical Engineering Department

Program: B. Tech. in Mechanical Engineering

Scheme: 2026

The following are the Open Elective Basket offered by other BOS for Mechanical Engineering Students

Offering Department	OE-I Semester 5th	OE-II Semester 6th	OE-III Semester 7th
CE	1. Application Development 2. Introduction to Data Science 3. Digital Marketing	1. Soft Computing 2. Data Visualisation 3. Enterprise Resource Planning	1. Organizational Behavior 2. ANN-FL 3. E-Commerce
ETC	1. Sensors & Actuators 2. Mechatronics 3. Industrial IOT	1. Adhoc Network 2. Communication Systems 3. Biomedical Engineering	1. Mobile Communication 2. Drone and UAV Electronics 3. AR-VR 4. Smart Mobility
CSE (AI/ML)	1. Python Programming 2. Ethics in AI 3. Digital Forensics	1. Deep Learning 2. Cyber Security 3. Optimization Techniques	1. Generative AI 2. Industrial AI 3. Predictive Analysis
ASH	1. Organisational Behaviour & Engineering Psychology	1. Circular Economy Through Indian Practices	---

BoS Members						
BoS Chairperson		Dean Academics		Principal	