



S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute. Affiliated to RTMNU, Nagpur)

DEPARTMENT OF MECHANICAL ENGINEERING

(NBA Accredited)

Vision: Emerge as an excellent centre for Mechanical Engineering education.



**CURRICULUM SCHEME
FOR
B.TECH. MECHANICAL ENGINEERING
2nd YEAR
SEMESTER-III
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, III Semester B.Tech. (Mechanical Engineering)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME301T	Mathematics for Mechanical Engineering	3	1	0	4	40	60	100	3
2	N-PCCME302T	Kinematics of Machines	3	0	0	3	40	60	100	3
3	N-PCCME303T	Fluid Mechanics	3	0	0	3	40	60	100	3
4	N-PCCME303P	Fluid Mechanics Lab	0	0	2	1	25	25	50	-
5	N-PCCME304T	Material Science and Metallurgy	2	0	0	2	20	30	50	2
6	N-PCCME304P	Material Science and Metallurgy Lab	0	0	2	1	25	25	50	-
7	N-MDM	Multidisciplinary Minor Course-I	3	0	0	3	40	60	100	3
8	N-OEC	Open Elective Course-I	3	0	0	3	40	60	100	3
9	N-VECME301T	Universal Human Values	2	0	0	2	50	-	50	-
10	N-CEPME301	Community Engagement Project (CEP)	0	0	4	2	50	-	50	-
	OR									
	N-FPME301	Field Project (FP)								
11	N-MCME301	Indian Constitution	2	0	0	-	50	-	50	-
Total			21	1	8	24	420	380	800	-

Revision	BoS Meeting	Date	wef. Academic Year
-	9 th	07/05/2024	2024-25

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**CURRICULUM SCHEME
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2nd YEAR
SEMESTER-IV
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, IV Semester B.Tech. (Mechanical Engineering)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME401T	Engineering Thermodynamics	3	0	0	3	40	60	100	3
2	N-PCCME402T	Mechanics of Deformable Solids	3	0	0	3	40	60	100	3
3	N-PCCME402P	Mechanics of Deformable Solids Lab	0	0	2	1	25	25	50	-
4	N-PCCME403T	Manufacturing Processes	2	0	0	2	20	30	50	2
5	N-PCCME403P	Manufacturing Processes Lab	0	0	2	1	25	25	50	-
6	N-MDM	Multidisciplinary Minor Course-2	3	0	0	3	40	60	100	3
7	N-OEC	Open Elective Course-2	3	0	0	3	40	60	100	3
8	N-SECME401P	Python for Mechanical Engineers	0	0	2	1	25	25	50	-
9	N-SECME402P	Integration of IoT in Mechanical Systems	0	0	2	1	25	25	50	-
10	N-AECME401T	Business Communications	2	0	0	2	20	30	50	2
11	N-HSSMME401T	Entrepreneurship Development	2	0	0	2	50	-	50	-
12	N-VECME401T	Environmental Studies	2	0	0	2	50	-	50	-
Total			20	0	08	24	400	400	800	-

Revision	BoS Meeting	Date	wef. Academic Year
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**CURRICULUM SCHEME
FOR
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3rd YEAR
SEMESTER-V
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, V Semester B.Tech. (Mechanical Engineering)

Sr. No	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME501T	Design of Machine Elements	3	0	0	3	40	60	100	3
2	N-PCCME502T	Heat Transfer	3	0	0	3	40	60	100	3
3	N-PCCME502P	Heat Transfer Lab	0	0	2	1	25	25	50	-
4	N-PCCME503T	Manufacturing Technology	2	0	0	2	20	30	50	2
5	N-PCCME503P	Manufacturing Technology Lab	0	0	2	1	25	25	50	-
6	N-PCCME504T	Measurements & Metrology	2	0	0	2	20	30	50	2
7	N-PCCME504P	Measurements & Metrology Lab	0	0	2	1	25	25	50	-
8	N-PCCME505P	Machine Drawing and Solid Modelling Lab	0	0	2	1	25	25	50	-
9	N-PEC	Program Elective- 1	3	0	0	3	40	60	100	3
10	N-MDM	Multidisciplinary Minor Course-3	3	0	0	3	40	60	100	3
11	N-OEC	Open Elective Course- 3	2	0	0	2	20	30	50	2
Total			18	0	8	22	320	430	750	-

Program Elective - 1		
Sr. No.	Course Code	Course Title
1	N-PECME501T	Hydraulic Machines
2	N-PECME502T	Optimization Techniques
3	N-PECME503T	Control Systems Engineering

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**CURRICULUM SCHEME
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3rd YEAR
SEMESTER-VI
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, VI Semester B.Tech. (Mechanical Engineering)

Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE Duration (Hrs.)
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	
1	N-PCCME601T	Computer Aided Design	3	0	0	3	40	60	100	3
2	N-PCCME601P	Computer Aided Design Lab	0	0	2	1	25	25	50	-
3	N-PCCME602T	Energy Conversion-I	3	0	0	3	40	60	100	3
4	N-PCCME603T	Dynamics of Machines	3	0	0	3	40	60	100	3
5	N-PCCME603P	Dynamics of Machines Lab	0	0	2	1	25	25	50	-
6	N-PEC	Program Elective- 2	3	0	0	3	40	60	100	3
7	N-PEC	Program Elective- 3	3	0	0	3	40	60	100	3
8	N-MDM	Multidisciplinary Minor Course- 4	3	0	0	3	40	60	100	3
9	N-SECME601P	Simulation Methods in Mechanical Engineering	0	0	2	1	25	25	50	-
10	N-SECME602P	CNC Machine Programming and Operations	0	0	2	1	25	25	50	-
Total			18	0	8	22	340	460	800	-

Program Elective - 2		
Sr. No.	Course Code	Course Title
1	N-PECME601T	Internal Combustion Engines
2	N-PECME602T	Industrial Engineering
3	N-PECME603T	Hydraulic and Pneumatic Systems

Program Elective - 3		
Sr. No.	Course Code	Course Title
1	N-PCCME604T	Refrigeration & Air Conditioning
2	N-PCCME605T	Automobile Engineering
3	N-PCCME606T	Environmental Engineering

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**CURRICULUM SCHEME
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4th YEAR
SEMESTER-VII
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, VII Semester B.Tech. (Mechanical Engineering)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PCCME701T	Energy Conversion-II	3	0	0	3	40	60	100	3
2	N-PCCME701P	Energy Conversion-II Lab	0	0	2	1	25	25	50	-
3	N-PCCME702T	Design of Mechanical Drives	3	0	0	3	40	60	100	3
4	N-PEC	Program Elective- 4	3	0	0	3	40	60	100	3
5	N-PEC	Program Elective- 5	3	0	0	3	40	60	100	3
6	N-MDM	Multidisciplinary Minor Course- 5	2	0	0	2	20	30	50	2
7	N-PROJME701	Project- 1	0	0	8	4	75	75	150	-
Total			14	0	10	19	280	370	650	-

Program Elective - 4		
Sr. No.	Course Code	Course Title
1	N-PECME701T	Power Plant Engineering
2	N-PECME702T	Statistics and Quality Control
3	N-PECME703T	Product Design and Development

Program Elective - 5		
Sr. No.	Course Code	Course Title
1	N-PECME704T	Finite Element Analysis
2	N-PECME705T	Additive Manufacturing
3	N-PECME706T	Solar Energy Utilization

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**CURRICULUM SCHEME
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4th YEAR
SEMESTER-VIII
[NEP-COMPLIANT]**

Scheme of Teaching & Examination of Bachelor of Technology, VIII Semester B.Tech. (Mechanical Engineering)										
Sr. No.	Course Code	Course Title	Hours per week			Credits	Maximum Marks			ESE
			L	T	P		Continuous Evaluation	End Sem. Exam	Total	Duration (Hrs.)
1	N-PEC	Program Elective- 6	3	0	0	3	40	60	100	3
2	N-RMME801T	Research Methodology	3	0	0	3	40	60	100	3
3	N- PROJME801	Project-II	0	0	12	6	100	100	200	-
Total			6	0	12	12	180	220	400	-
OR										
1	N-ELCME801	Internship/On-Job Training (OJT)	One Semester			12	100	100	200	-

Program Elective - 6		
Sr. No.	Course Code	Course Title
1	N-PECME801T	Renewable Energy Systems
2	N-PECME802T	Industrial Management
3	N-PECME803T	Automation in Manufacturing

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Dr. H. S. Chaturvedi
H. D. Wagh
Pravin

Dr. T. M. Sankar
Y. J. John
P. Sankar
J. Sankar
A. Sankar
M. Sankar



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NEP-HONOURS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering

Sr. No.	Honours
1	Honours in Computational Thermo Fluids
2	Honours in Product Design
3	Honours with Research

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NEP-HONOURS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering

Honours in 'Computational Thermo Fluids'

Minimum of 72 Weeks [18 credits]

LIST OF COURSES

Sl. No	NPTEL Course ID	Course Name	SME Name	Offering Institute	Course Duration	Credits	
CORE							
1	112105218	Advanced Fluid Mechanics	Prof. Suman Chakraborty	IIT Kharagpur	12 weeks	3	
	OR						
	112105287	Advanced Concepts in Fluid Mechanics	Prof. Aditya Bandopadhyay	IIT Kharagpur	12 weeks	3	
OR							
	112103302	Viscous Fluid Flow	Prof. Amaresh Dalal	IIT Guwahati	12 weeks	3	
2	103108123	Transport Processes I: Heat and Mass Transfer	Prof. V. Kumaran	IISc Bangalore	12 weeks	3	
3	111107105	Numerical methods	Prof. Ameeya Kumar Nayak	IIT Roorkee	8 weeks	2	
4	103106119	Computational Fluid Dynamics	Prof. Sreenivas Jayanti	IIT Madras	12 weeks	3	
	OR						
	112106186	Foundation of Computational Fluid Dynamics	Prof. Vengadesan	IIT Madras	8 weeks	2	
	OR						
	112103289	Computational Fluid Dynamics for Incompressible Flows	Prof. Amaresh Dalal	IIT Guwahati	12 weeks	3	
	OR						
	112106294	Computational Fluid Dynamics using Finite Volume Method	Prof. Kameswararao Anupindi	IIT Madras	12 weeks	3	
OR							
	112104302	Computational Fluid Dynamics and Heat Transfer	Prof. Gautam Biswas	IIT Kanpur	12 weeks	3	
ELECTIVE COURSES							
5	112104272	Turbulent Combustion: Theory and Modelling	Prof. Ashok De	IIT Kanpur	12 weeks	3	
6	112103294	Fundamentals of Compressible Flow	Prof. Niranjan Sahoo	IIT Guwahati	8 weeks	2	

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7	112103297	Fundamentals of Convective Heat Transfer	Prof. Amaresh Dalal	IIT Guwahati	12 weeks	3
8	112103296	Computational Continuum Mechanics	Prof. Sachin Singh Gautam	IIT Guwahati	12 weeks	3
9	112101298	Optimization from fundamentals	Prof. Ankur A. Kulkarni	IIT Bombay	12 weeks	3
10	112103301	Evolutionary Computation for Single and Multi-Objective Optimization	Prof. Deepak Sharma	IIT Guwahati	8 weeks	2
11	112106299	Fundamentals of Combustion	Prof. V. Raghavan	IIT Madras	12 weeks	3

Note- Apart from above courses, the department shall notify about addition/ deletion of the courses related to this domain as updated by the NPTEL from time to time.

Handwritten signatures and initials:
 Dr. H. S. Bhakur
 H. O. Wagh
 H. S. Hussain
 Ajay Jadhav
 M. K. Patil
 Dr. B. K. Bhanu
 Dr. S. M. S.

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NEP-HONOURS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering

Honours in 'Product Design'

Minimum of 72 Weeks [18 credits]

LIST OF COURSES

Sl. No	NPTEL Course ID	Course Name	SME Name	Offering Institute	Course Duration	Credits
CORE						
1	112107258	Manufacturing Guidelines for Product Design	Prof. Inderdeep Singh	IIT Roorkee	8 weeks	2
2	112107217	Product Design and Development	Prof. Inderdeep Singh	IIT Roorkee	4 weeks	1
3	112104230	Product Design and Manufacturing	Prof. J. Ramkumar	IIT Kanpur	12 weeks	3
4	112104228	Design Practice	Prof. Shantanu Bhattacharya	IIT Kanpur	8 weeks	2
5	112106293	Basics of Materials Engineering	Prof. Ratna Kumar Annabattula	IIT Madras	12 weeks	3
6	112104304	Production Technology: Theory and Practice	Prof. Sounak Kumar Choudhury	IIT Kanpur	12 Weeks	3
ELECTIVE						
1	112104252	Design Practice - II	Prof. Shantanu Bhattacharya	IIT Kanpur	8 weeks	2
2	107103084	Ergonomics in Automotive Design	Prof. Sougata Karmakar	IIT Guwahati	4 weeks	1
	OR					
	107103085	Ergonomics Workplace Analysis	Prof. Urmi R. Salve	IIT Guwahati	4 weeks	1
3	107103081	System Design for Sustainability	Prof. Sharmistha Banerjee	IIT Guwahati	12 weeks	3
4	109103101	Digital Human Modeling and Simulation for Virtual Ergonomics Evaluation	Prof. Sougata Karmakar	IIT Guwahati	8 weeks	2
5	112105234	Gear and Gear Unit Design : Theory and Practice	Prof. Rathindranath Maiti	IIT Kharagpur	8 weeks	2
6	112106249	Design for Quality, Manufacturing and Assembly	Prof. Palaniappaan Ramu	IIT Madras	8 weeks	2
7	112108298	Robotics: Basics and Selected Advanced Concepts	Prof. Ashitava Ghosal	IISc Bangalore	12 weeks	3

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OR						
	112104298	Introduction to Robotics	Prof. Ashish Dutta	IIT Kanpur	12 weeks	3
8	112104272	Turbulent Combustion: Theory and Modelling	Prof. Ashoke De	IIT Kanpur	12 weeks	3
9	112105294	Engineering drawing and computer graphics	Prof. Rajaram Lakkaraju	IIT Kharagpur	12 weeks	3
10	112107298	Mechatronics	Prof. Pushparaj Mani Pathak	IIT Roorkec	8 weeks	2
11	112104301	Manufacturing Processes - Casting and Joining	Prof. Sounak Kumar Choudhury	IIT Kanpur	4 weeks	1
12	112103305	Welding Application Technology	Prof. Pankaj Biswas	IIT Guwahati	8 weeks	2
13	112103306	Fundamentals of Additive Manufacturing Technologies	Prof. Sajan Kapil	IIT Guwahati	12 Weeks	3
14	112101304	Design of Mechatronic Systems	Prof. Prasanna Gandhi	IIT Bombay	12 Weeks	3

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Dr. H. S. Bhattacharya
H. D. Chougale

P. S. Hussaini

Dr. J. S. Jais
Dr. T. K. Ghor

Dr. A. S. Jais

Dr. S. K. Jais

Dr. T. M. Saker

P. Jaiswari

Dr. J. S. Jais
Dr. H. S. Jais

Dr. K. B. Jais

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NEP-HONOURS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering

Honours with Research

The students shall work on a research project or dissertation for 18 credits in the fourth year.

Course Name	Semester	Credits
Research Project-1	VII	9
Research Project-2	VIII	9

Dr. N. S. Chakrabarti
H. D. Singh

P. H. Hussain
Ajay Dal
P. J. Jaiswal
Dr. K. S. Ghor

Dr. B. B. Bhatnagar
Dr. B. B. Bhatnagar

Dr. S. S. S. S.

Dr. T. M. Saha

Dr. S. S. S. S.

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NEP-MINORS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering

Sr. No.	Minors
1	Minors in Artificial Intelligence
2	Minors in Robotics
3	Minors in Environment

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A. J. Jain, S. D. Wagh, A. S. Jain, P. S. Jain, S. S. Jain, Y. S. Jain



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NEP-MINORS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering
Minors in 'Artificial Intelligence'

(All Core Courses + Electives as per choice) Minimum of 72 Weeks i.e. 18-20 credits

Core/ Elective	Course Name	Duration	SME Name	Institute	NPTEL ID	Credit
Core 1	Artificial Intelligence- Search Method for Problem Solving	12 Weeks	Prof. Deepak Khemani	IIT Madras	106106126	3
	OR					
	An Introduction to Artificial Intelligence	12 Weeks	Prof. Mausam	IIT Delhi	106102220	3
Core 2	Artificial Intelligence Knowledge Representation and Reasoning	12 Weeks	Prof. Deepak Khemani	IIT Madras	106106140	3
Core 3	Programming and Data Structures and Algorithms in Python	8 Weeks	Prof. Madhavan Mukund	Chennai Mathematical Institute	106106145	2
	OR					
	Python for Data Science	4 Weeks	Prof. Raghunathan Rengasamy	IIT Madras	106106212	1
Core 4	Introduction to Machine Leaning	8 Weeks	Prof. Sudeshana Sarkar	IIT Kharagpur	106105152	2
	OR					
	Introduction to Machine Leaning	12 Weeks	Prof. B Ravindran	IIT Madras	106106139	3
Elective 1	Deep Learning	12 Weeks	Prof. Mitesh Khapra	IIT Madras	106106184	3
	OR					
	Deep Learning	12 Weeks	Prof. Prabir Kumar Biswas	IIT Kharagpur	106105215	3
OR						
	Deep Learning for Computer Vision	12 Weeks	Prof. Vinceth N Balasubramanian	IIT Hyderabad	106106224	3
Elective 2	Reinforcement Learning	12 Weeks	Prof. Balaraman Ravindran	IIT Madras	106106143	3
Elective 3	AI: Constraint Satisfaction	8 Weeks	Prof. Deepak Khemani	IIT Madras	106106158	2
Elective 4	Computer Vision	12 Weeks	Prof. Jayanta Mukhopadhyay	IIT Kharagpur	106105216	3
Elective 5	Natural Language Processing	12 Weeks	Prof. Pawan Goyal	IIT Kharagpur	106105158	3

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OR						
	Applied Natural Language Processing	12 Weeks	Prof. Ramaseshan R	Chennai Mathematical Institute	106106211	3
Elective 6	Practical Machine Learning with Tensorflow	8 Weeks	Prof. Ashish Tendulkar Prof. B Ravindran	IIT Madras & GOOGLE	106106213	2

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[Handwritten signatures and initials: A. J. Jari, H. D. Chougale, AD, Dr. H. S. Bhambhani, P. J. Jari, Dr. T. M. Sathu, Y. J. Jari, P. H. Joshi]

Revision	BoS Meeting	Date	W. E. F.
-	9 th	07/05/2024	2024-25

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S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT & RESEARCH, NAGPUR.

(An Autonomous Institute. Affiliated to RTMNU, Nagpur)

DEPARTMENT OF MECHANICAL ENGINEERING

(NBA Accredited)

Vision: *Emerge as an excellent centre for Mechanical Engineering education.*



NEP-MINORS SCHEME

WEF. 2024-25 [NEP]

**Name of Programme: Mechanical Engineering
Minors in 'Robotics'**

(All Core Courses + Electives as per choice) Minimum of 72 Weeks i.e. 18-20 credits

Core/ Elective	Course Name	Duration	SME Name	Institute	NPTEL ID	Credits
Core 1	Introduction to robotics	12 weeks	Prof. Balaraman Ravindran	IIT Madras	107106090	3
	OR					
	Robotics	8 weeks	Prof. Dk Pratihar	IIT Kharagpur	112105249	2
	OR					
	Mechanism and Robot Kinematics	8 weeks	Prof. Anirvandasgupta	IIT Kharagpur	112105236	2
	OR					
	Robotics and Control : Theory and Practice	8 weeks	Prof. M. Felix Orlando	IIT Roorkee	112107289	2
	OR					
	Introduction to Robotics	12 weeks	Prof. Ashish Dutta	IIT Kanpur	112104298	3
OR						
	Mechanics and Control of Robotic Manipulators	8 Weeks	Prof. Santhakumar Mohan	IIT Palakkad	112106304	2
Core 2	Wheeled Mobile Robots	8 weeks	Prof. Santhakumar Mohan	IITM IIT Palakkad	112106298	2
Elective 1	Microprocessors and Microcontrollers	12 weeks	Prof. Santanu Chattopadhyay	IIT Kharagpur	108105102	3
Elective 2	Digital Image Processing	12 weeks	Prof. Prabir Kumar Biswas	IIT Kharagpur	117105135	3
Elective 3	Fundamentals of Power Electronics	12 weeks	Prof. Vivek Agarwal, Prof. L Umanand	IISc Bangalore	108101126	3
	OR					
	Power Electronics	12 weeks	Prof. G. Bhuvaneshwari	IIT Delhi	108102145	3
Elective 4	Embedded Systems Design	12 weeks	Prof. Anupam Basu	IIT Kharagpur	106105159	3
	OR					
	Embedded System Design with ARM	8 weeks	Prof. Indranil Sen Gupta, Prof. Kamalika Dutta	IIT Kharagpur	106105193	2
Elective 5	Industrial Automation and Control	12 weeks	Prof. Siddhartha Mukhopadhyay	IIT Kharagpur	108105088	3
Elective 6	Mechanics of Human Movement	12 weeks	Prof. Sujatha Srinivasan	IIT Madras	112106248	3

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Elective 7	Modelling and Simulation of Dynamic Systems	8 weeks	Prof. Pushparaj Mani Pathak	IIT Roorkee	112107214	2
Elective 8	Design of Mechatronic Systems	12 Weeks	Prof. Prasanna Gandhi	IIT Bombay	112101304	3
Elective 9	Fundamentals of Artificial Intelligence	12 weeks	Prof. Shyamanta M. Hazarika	IIT Guwahati	112103280	3
	OR					
	An Introduction to Artificial Intelligence	12 weeks	Prof. Mausam	IIT Delhi	106102220	3
Elective 10	Introduction to Machine Learning	8 weeks	Prof. Sudeshna Sarkar	IIT Kharagpur	106105152	2
	OR					
	Introduction to Machine Learning	12 weeks	Prof. Balaraman Ravindran	IIT Madras	106106139	3
	OR					
	Practical Machine Learning with Tensorflow	8 weeks	Prof. Ashish Tendulkar Prof. B. Ravindran	IIT Madras & Google	106106213	2
	OR					
	Machine Learning, ML	8 weeks	Prof. Carl Gustaf Jansson	KTH Royal Institute of Technology, Sweden	106106202	2
Elective 11	Reinforcement Learning	12 weeks	Prof. Balaraman Ravindran	IIT Madras	106106143	3
Elective 12	Deep Learning	12 weeks	Prof. Prabir Kumar Biswas	IIT Kharagpur	106105215	3
	OR					
	Deep Learning	12 weeks	Prof. Mitesh Khapra	IIT Madras	106106184	3
Elective 13	Robot Motion Planning	8 weeks	Prof. Ashish Dutta	IIT Kanpur	112104308	2

Note- Apart from above courses, the department shall notify about addition/ deletion of the courses related to this domain as updated by the NPTEL from time to time.

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NEP-MINORS SCHEME

WEF. 2024-25 [NEP]

Name of Programme: Mechanical Engineering
Minors in 'Environment'

(All Core Courses + Electives as per choice) Minimum of 72 Weeks i.e. 18-20 credits

Core/ Elective	Course Name	Duration	SME Name	Institute	NPTEL ID	Credits
Core 1	Applied Environmental Microbiology	12 weeks	Prof. Gargi Singh	IIT Roorkee	105107173	3
Core 2	Environmental Chemistry	12 weeks	Prof. Bhanu Prakash Vellanki	IIT Roorkee	105107176	3
Core 3	Integrated Waste Management for a Smart City	12 weeks	Prof. Brajesh Kumar Dubey	IIT Kharagpur	105105160	3
Core 4	Sustainable Engineering Concepts And Life Cycle Analysis	8 weeks	Prof. Brajesh Kumar Dubey	IIT Kharagpur	105105157	2
Core 5	Wastewater Treatment and Recycling	12 weeks	Prof. Manoj Kumar Tiwari	IIT Kharagpur	105105178	3
	OR					
	Water and waste water treatment	12 weeks	Prof. Bhanu Prakash V	IIT Roorkee	105107207	3
Core 6	Air pollution and Control	12 weeks	Prof. Bhola Ram Gurjar	IIT Roorkee	105107213	3
Elective 1	Electronic Waste Management - Issues And Challenges	4 weeks	Prof. Brajesh Kumar Dubey	IIT Kharagpur	105105169	1
Elective 2	Energy Efficiency, Acoustics and Daylighting in Building	12 weeks	Prof. B. Bhattacharjee	IIT Delhi	105102175	3
Elective 3	Environmental Remediation of Contaminated Sites	12 weeks	Prof. Bhanu Prakash Vellanki	IIT Roorkee	105107181	3
Elective 4	Sustainable River Basin Management	8 weeks	Prof. Franziska Steinbruch	IIT Madras	105106145	2
Elective 5	Plastic Waste Management	8 weeks	Prof. Brajesh Kumar Dubey	IIT Kharagpur	105105184	2
Elective 6	Geographic Information Systems	12 weeks	Prof. Arun K. Saraf	IIT Roorkee	105107206	3
Elective 7	Remote Sensing: Principles and Applications	12 weeks	Prof. Eswar Rajasekaran	IIT Bombay	105101206	3
Elective 8	Environmental Impact Assessment	12 weeks	Prof. Harshit Sosan Lakra	IIT Roorkee	124107160	3

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Elective 9	Microwave Remote Sensing in Hydrology	12 weeks	Prof. J. Indu	IIT Bombay	105101213	3
Elective 10	Groundwater hydrology and management	12 weeks	Prof. Pennan Chinnasamy	IIT Bombay	105101214	3
Elective 11	Rural Water Resources Management	12 weeks	Prof. Pennan Chinnasamy	IIT Bombay	105101215	3

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Handwritten signatures and initials:
 H. D. Chinnasamy
 P. Jaisury
 Dr. T. M. Sahu
 H. S. Bhambur
 J. Indu
 A. D.
 Gupta

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