



DEPARTMENT OF MECHANICAL ENGINEERING

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

		nach z no zabie	H	ours p	er		Maximum Marks			ESE
Sr. No.	Course Code	Course Title	week		Credits	Continuous	End Sem.	Total	Duration	
			L	Т	P		Evaluation	Exam		(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-1	3	0	0	3	40	60	100	3
8	N-OEC	Open Elective Course-1	3	0	0	3	40	60	001	3
9	N-VECME301T	Universal Human Values	2	0	0	2	50	-	50	-
	N-CEPME301	Community Engagement Project (CEP)					-		50	
10	OR		0	0	4	2	50	-	50	
	N-FPME301	Field Project (FP)								
11	N-MCME301	Indian Constitution	2	0	0		50	-	50	-
11.5	经验证的	Total	21	1	8	24	420	380	800	

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-	9 ^{ti}	07/05/2024	2024-25



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

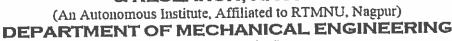
			На	urs p	er		Maximum Marks			
Sr. No.	Course Code	Course Title		week		Credits	Continuous	End Sem.	Total	Duration (Hrs.)
			L	Т	·P		Evaluation	Exam		
1	N-PCCME401T	Engineering Thermodynamics	3	0	0	3	40	60	100	3
2	N-PCCME402T	Mechanics of Deformable Solids	3	0	0	3	40	60	100	3
3	N-PCCME402P	Mechanics of 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	-
STATE OF	HA COHOMOTET	'otal	20	0	08	24	400	400	800	

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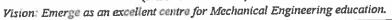
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CURRICULUM SCHEME FOR B.TECH. MECHANICAL ENGINEERING 3rd YEAR SEMESTER-V [NEP-COMPLIANT]

٠.			H	Hours per			Maximum Marks			ESE
Sr. ' No		Course Title	week			Credits	Continuous	End Sem. Total	Total	Duration
•			L	Т	P		Evaluation	Exam	10181	(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	11	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
E.E		Total	18	0	8	22	320	430	750	FILE.

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 FOR B.TECH. MECHANICAL ENGINEERING 3rd YEAR SEMESTER-VI [NEP-COMPLIANT]

			He	Hours per			Maximum Marks			ESE
Sr. No.	Course Code	Course Title	week			Credits	Continuous	End Sem.	Total	Duration
110.			ե	Т	P		Evaluation	Exam	Total	(Hrs.)
1	N-PCCME601T	Computer Aided Design	3	0	0	3	40	60	100	3
2	N-PCCME601P	Computer Aided Design Lab	0	0	2	I	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	l	25	25	50	-
10	N-SECME602P	CNC Machine Programming and Operations	0	0	2	1	25	25	50	-
E.		Total	18	0	8	22	340	460	800	

	Pro	gram 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 Engincering						

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CURRICULUM SCHEME FOR B.TECH. MECHANICAL ENGINEERING 4th YEAR SEMESTER-VII [NEP-COMPLIANT]

			Hours per		Credits	Maximum Marks			ESE	
Sr. No.	Course Code	Course Title	week			Continuous	End Sem.	Total	Duration	
110.			L	T	P	,,11	Evaluation	Exam		(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	-
149		Cotal	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 FOR B.TECH. MECHANICAL ENGINEERING 4th YEAR SEMESTER-VIII [NEP-COMPLIANT]

		THE HEAL	Hours per week		III Semeste	Maxim	um Mark	KS .	ESE Duration	
Sr. No.	Course Code	Course Title				Continuous	End Sem.	Total		
			L	T	P		Evaluation	Exam	Total	(Hrs.)
ī	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	-
YES	The second second second	otal	6	0	12	12	180	220	400	
116				OR				196		
1	N-ELCME801	Internship/On-Job Training (OJT)	One	e Seme	ester	12	100	100	200	-

Program Elective - 6					
Sr. 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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MULTIDISCIPLINARY MINOR COURSES [MDM]

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Sr. No.	Multidisciplinary Minor Courses [MDM] Options					
1	Multidisciplinary Minor in Engineering					
2	Multidisciplinary Minor in Business Analytics					
3	Multidisciplinary Minor in Economics & Finance					

LIST OF COURSES- MULTIDISCIPLINARY MINOR IN ENGINEERING

Sr. No.	Category	Course Code	Semester	Course Title
l	Multidisciplinary Minor-1	N-MDMME301T	Third	Introduction to Algorithms & Data Structures
2	Multidisciplinary Minor-2	N-MDMME401T	Fourth	Database Management Systems
3	Multidisciplinary Minor-3	N-MDMME501T	Fifth	Electronic Controls
4	Multidisciplinary Minor-4	N-MDMME601T	Sixth	Sustainable Development and Engineering
_5	Multidisciplinary Minor-5	N-MDMME701T	Seventh	Data Analysis and Visualization

LIST OF COURSES- MULTIDISCIPLINARY MINOR IN BUSINESS ANALYTICS

Sr. No.	Category	Course Code	Semester	Course Title
1	Multidisciplinary Minor-1	N-MDMBA301T	Third	Introduction to Business Analytics
2	Multidisciplinary Minor-2	N-MDMBA401T	Fourth	Data Analysis and Visualization
3	Multidisciplinary Minor-3	N-MDMBA501T	Fifth	Statistical Methods for Business
4	Multidisciplinary Minor-4	N-MDMBA601T	Sixth	Data Warehousing and Mining
5	Multidisciplinary Minor-5	N-MDMBA701T	Seventh	Business Intelligence

LIST OF COURSES- MULTIDISCIPLINARY MINOR IN ECONOMICS & FINANCE

Sr. No.	Category	Course Code	Semester	Course Title
1	Multidisciplinary Minor-1	N-MDMEF301T	Third	Business Economics
2	Multidisciplinary Minor-2	N-MDMEF401T	Fourth	Fundamentals of Accounting
3	Multidisciplinary Minor-3	N-MDMEF501T	Fifth	Business Finance
4	Multidisciplinary Minor-4	N-MDMEF601T	Sixth	Financial Market & Services
5	Multidisciplinary Minor-5	N-MDMEF701T	Seventh	Investment Analysis & Portfolio Management

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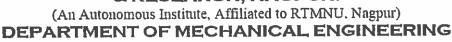


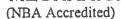
NEP-LIST OF OPEN ELECTIVE COURSES OFFERED BY THE ME DEPARTMENT TO OTHER PROGRAMMES

Sr. No.	Category	Course Code	Semester	Course Title
	Open Elective-1	N-OECME301T	Third	Energy Systems and Technologies
2	Open Elective-2	N-OECME401T	Fourth	Operations Research
3	Open Elective-3	N-OECME501T	Fifth	Smart Manufacturing Systems

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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

SI.	NPTEL C N SME Nome				Course		
No	Course ID	Course Name	SME Name	Offering Institute	Duration	Credits	
140	Course ID	C	ORE	Angereare	201111111111		
	112105218		Prof. Suman	IIT			
	112103210	Advanced Fluid Mechanics	Chakraborty	Kharagpur	12 weeks	3	
			OR	Tenaragoar			
	112105287	Advanced Concepts in Fluid	Prof. Aditya	TIT			
1	112103267	Mechanics	Bandopadhyay	Kharagpur	12 weeks	3	
		Wicentines	OR	ranagpar			
	112103302		Prof. Amaresh	IIT			
	112103302	Viscous Fluid Flow	Dalal	Guwahati	12 weeks	3	
	103108123	Transport Processes I: Heat	Prof. V.	IISc			
2	103100123	and Mass Transfer	Kumaran	Bangalore	12 weeks	3	
	111107105		Prof. Ameeya				
3	Numerical methods		Kumar Nayak	IIT Roorkee	8 weeks	2	
	103106119	Computational Fluid	Prof. Sreenivas			2	
	105100115	Dynamics	Jayanti	IIT Madras	12 weeks	3	
	OR						
		Foundation of	D. C				
	112106186	Computational Fluid	Prof.	IIT Madras	8 weeks	2	
		Dynamics	Vengadesan				
	OR						
		Computational Fluid	DC Amanagh	ПТ			
4	112103289	Dynamics for	Prof. Amaresh	Guwahati	12 weeks	3	
, i		Incompressible Flows	Dalal	Guwanau	i 		
	OR						
	110100000	Computational Fluid	Prof.				
	112106294	Dynamics using Finite	Kameswararao	IIT Madras	12 weeks	3	
		Volume Method	Anupindi			<u> </u>	
	OR						
	112104302	Computational Fluid	Prof. Gautam	HT Kanpur	12 weeks	3	
		Dynamics and Heat Transfer	Biswas	III Kanpu	12 WCCKS		
	ELECTIVE COURSES						
-	112104272	Turbulent Combustion:	Prof. Ashok De	IIT Kanpur	12 weeks	3	
5		Theory and Modelling	Froi. Asnok De		12 WCCKS	, ,	
	112103294	Fundamentals of	Prof. Niranjan	IIT	8 weeks	2	
6		Compressible Flow	Sahoo	Guwahati	O WCCK3		

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S. B. JAIN INSTITUTE OF TECHNOLOGY, MANAGEMENT



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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.

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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	Ш		
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
		EL	ECTIVE			
1	112104252	Design Practice - II	Prof. Shantanu Bhattacharya	IIT Kanpur	8 weeks	2
	107103084	Ergonomics in Automotive Design	Prof. Sougata Karmakar	IIT Guwahati	4 weeks	1
2			OR			
30	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	llT 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 wecks	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 Roorkee	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

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-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.

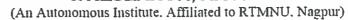
Course Name	Semester	Credits	
Research Project-!	VII	9	
Research Project-2	VIII	9	

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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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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		
Core i			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		
	Programming and Data Structures and Algorithms in Python	8 Weeks	Prof. Madhavan Mukund	Chenni Mathematical Institute	106106145	2		
Core 3			OR					
	Python for Data Science	4 Weeks	Prof. Raghunathan Rengasamy	IIT Madras	106106212	1		
	Introduction to Machine Leaning	8 Weeks	Prof. Sudeshana Sarkar	IIT Kharagpur	106105152	2		
Core 4	OR							
	Introduction to Machine Leaning	12 Weeks	Prof. B Ravindran	IIT Madras	106106139	3		
	Deep Learning	12 Weeks	Prof. Mitesh Khapra	IIT Madras	106106184	3		
	OR							
Elective 1	Deep Learning	12 Weeks	Prof. Prabir Kumar Biswas	IIT Kharagpur	106105215	3		
	OR							
	Deep Learning for Computer Vision	12 Weeks	Prof. Vineeth N Balasubramanian	IIT Hyderabad	106106224	3		
Elective 2	Reinforcement Learing	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	Chenni Mathematical Institute	106106211	3
B :: 134 1:		Prof. Ashish			

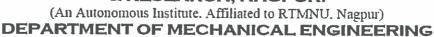
Practical Machine Tendulkar IIT Madras 8 Weeks 106106213 Elective 6 2 Learning with Prof. B & GOOGLE Tensorflow Ravindran

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 '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					
	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					
Core 1			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 I	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					
	Fundamentals of Power Electronics	I		Prof. Vivek Agarwal, Prof. L Umanand IISc Bangalore		3					
Elective 3	OR										
	Power Electronics	12 weeks	Prof. G. Bhuvaneshwari	IIT Delhi	108102145	3					
	Embedded Systems Design	12 weeks	Prof. Anupam Basu	IIT Kharagpur	106105159	3					
			OR								
Elective 4	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				
	Fundamentals of Artificial Intelligence	12 weeks	Prof. Shyamanta M. Hazarika	IIT Guwahati	112103280	3				
Elective 9			OR							
Dicoure	An Introduction to Artificial Intelligence	12 weeks	Prof. Mausam	IIT Delhi	106102220	3				
	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									
Elective	Practical Machine Learning with Tensorflow	8 weeks	Prof. Ashish Tendulkar Prof. B. Rayindran	IIT Madras & Google	106106213	2				
10	Telisornow									
	Machine Learning, ML 8 weeks		Prof. Carl Gustaf Jansson	KTH Royal Institute of Technology, Sweden	106106202	2				
Elective	Reinforcement Learning	12 weeks	Prof. Balaraman Ravindran	IIT Madras	106106143	3				
Elective	Deep Learning 12 weeks		Prof. Prabir Kumar Biswas	IIT Kharagpur	106105215	3				
12			OR	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

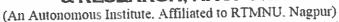
Core/ Elective	Course Name	rrse Name Duration SME Name		Institute	NPTEL ID	Credits
Core 1	Applied Environmental Microbiology	12 weeks	Prof. Gargi Singh	IIT Roorkee	105107173	3
Core 2	Environmental Chemistry	12 weeks	Prof. Bhanu Prakash Vellanki	IIT Roorkee	105107176	3
Core 3	Integrated Waste Management 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
	Wastewater Treatment and Recycling	12 weeks	Prof. Manoj Kumar Tiwari	IIT Kharagpur	105105178	3
Core 5			OR			
00.00	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	Environmental Remediation of 12 weeks Prof. Bhanu Prakas		IIT Roorkee	105107181	3
Elective 4	Sustainable River Basin Management	8 weeks	Prof. Franziska Steinbruch	IIT Madras	105106145	
Elective 5	Plastic Waste Management	8 weeks	Prof. Brajesh Kumar Dubey	IIT Kharagpu	105105184	
Elective 6	Geographic Information Systems	12 weeks	Prof. Arun K. Saraf	IIT Roorkee	105107206	
Elective 7	Remote Sensing: Principles and Applications	12 weeks	Prof. Eswar Rajasekaran	IIT Bombay	105101206	
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	12 weeks	Prof. Pennan Chinnasamy	IIT Bombay	105101214	3
Elective	Rural Water Resources Management	12 weeks	Prof. Pennan Chinnasamy	IIT Bombay	105101215	3

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NEP EXIT SCHEME

	S	5.5 Pr	cu			UI TO LIST					r)	4.5 Pr			Levels E
	Semester]	Programme	3rd Year			Semester]	Programme (4th	2nd Year		1st Year Programme [2nd Semester]				Exit After	
	Discipline	B.Voc. in Major	Three Years			e Two Years UG Diploma in Major Discipline					One Year UG Certificate in Major Discipline				Qualification Title
	Semester	III,IV,V and VI	All Credits of LIL			All Credits of I and II Semester All Credits of I,II, III and IV Semester						Programme Credit requirements			
3	2	1	Sr. No.	Total Credits: 08	ω	2	1	Sr. No.	Total Credits: 08	ω	2	_	Sr. No.	Total Credits: 08	Additional
NX-ME303	NX-ME302	NX-ME301	Course Code	: 08	NX-ME203	NX-ME202	NX-ME201	Course Code	. 08	NX-ME103	NX-ME102	NX-ME101	Course Code	: 08	Mandatory Exit C
Internship/ Apprenticeship of 4 weeks	Mini Project	Introduction to Robotics	Course Name		Internship/ Apprenticeship of 4 weeks	Mini Project	Additive Manufacturing	Course Name		Internship/ Apprenticeship of 4 weeks	Welding and Fabrication	Machine Shop Practices	Course Name		Additional Mandatory Exit Credit requirements offered during summer vacation
2	درا	دي	Credits		2	در	u	Credits		2	دي	led.	Credits		er vacation

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