NUTAN MAHARASHTRA VIDYA PRASARAK MANDAL'S

NUTAN MAHARASHTRA INSTITUTE OF ENGINEERING AND TECHNOLOGY

AN AUTONOMOUS INSTITUTE | UNDER ADMINISTRATIVE SUPPORT OF PCET

ESTD : 1906

Curriculum Structure and Syllabus

of

Third Year B. Tech

Mechanical Engineering (2025 Pattern)

VISION OF THE INSTITUTE

To be a notable institution for providing quality technical education and ensuring ethical, moral and holistic development of students.

MISSION OF THE INSTITUTE

To nurture engineering graduates with state of the art competence, professionalism and problem solving skills to serve needs of industry as well as society.

VISION OF MECHANICAL ENGINEERING

To be a renowned mechanical engineering education provider for serving needs of industry and society.

MISSION OF MECHANICAL ENGINEERING

- To provide quality technical education with an effective teaching learning process.
- To bridge the gap between industry and academia by collaborative activities.
- To develop students with research, innovation and entrepreneurship activities.
- To advance graduates with professionalism and a sense of gratitude towards society.

INDEX

COURSE-WISE CREDIT DISTRIBUTION

Sr. No.	Type of Course	No. of Courses	Total Credits	
			No.	%
1.	Basic Science Course (BSC)	08	14	8.14
2.	Engineering Core Course (ECC)	10	15	8.72
3.	Programme Core Course (PCC)	30	53	30.82
4.	Programme Elective Course (PEC)	09	20	11.63
5.	Multidisciplinary Minor (MDM)	07	14	8.15
6.	Open Elective Course (OEC)	03	08	4.65
7.	Vocational and Skill Enhancement Course (VSEC)	04	08	4.65
8.	Ability Enhancement Course (AEC)	02	04	2.32
9.	Entrepreneurship / Management Course (EMC)	02	04	2.32
10.	Value Education Course (VEC)	02	04	2.32
11.	Experiential Learning Courses	08	22	12.79
12.	Indian Knowledge System	01	02	1.17
13.	Co-curricular Courses	02	04	2.32
TOTAL		86	172	100

SEMESTER-WISE COURSE DISTRIBUTION

COURSE DISTRIBUTION: SEMESTER WISE										
SR NO.	**TYPE OF COURSE**	**NO. OF COURSES / SEMESTER**								**Total**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
1.	Basic Science Course (BSC)	4	4	-	-	-	-	-	-	08
2.	Engineering Science Course (ESC)	6	4	-	-	-	-	-	-	10
3.	Programme Core Course (PCC)	-	2	6	6	5	5	4	2	30
4.	Programme Elective Course (PEC)	-	2	-	-	2	3	2	2	11
5.	Multidisciplinary Minor (MDM)	-	-	1	1	2	1	-	2	07
6.	Open Elective Course (OEC)	-	-	1	1	1	-	-	-	03
7.	Vocational and Skill Enhancement Course (VSEC)	1	1	1	-	-	1	-	-	04
8.	Ability Enhancement Course (AEC)	1	1	-	1	-	-	-	-	03
9.	Entrepreneurship / Management Course(EMC)	-	-	1	1	-	-	-	-	02
10.	Value Education Course (VEC)	-	-	1	1	-	-	-	-	02
11.	Experiential Learning Courses	-	-	-	1	1	1	1	1	05
12.	Indian Knowledge System	-	1	-	-	-	-	-	-	01
13.	Co-curricular Courses	1	1	-	-	-	-	-	-	02
Total		13	16	11	12	11	11	07	07	88

SEMESTER-WISE CREDIT DISTRIBUTION

CREDIT DISTRIBUTION: SEMESTER WISE										
1 Lecture hour = 1 Credit, 2 Lab Hours = 1 Credit, 1 Tutorial Hour = 1 Credit										
SR NO.	**TYPE OF COURSE**	**NO. OF CREDIT / SEMESTER**								**Total**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	
1.	Basic Science Course (BSC)	7	7	-	-	-	-	-	-	14
2.	Engineering Science Course (ESC)	9	6	-	-	-	-	-	-	15
3.	Programme Core Course (PCC)	-	3	10	10	10	8	8	4	53
4.	Programme Elective Course (PEC)	-	-	-	-	4	8	4	4	20
5.	Multidisciplinary Minor (MDM)	-	-	2	2	4	2	-	4	14
6.	Open Elective Course (OEC)	-	-	4	2	2	-	-	-	08
7.	Vocational and Skill Enhancement Course (VSEC)	2	2	2	-	-	2	-	-	08
8.	Ability Enhancement Course (AEC)	2	-	-	2	-	-	-	-	04
9.	Entrepreneurship / Management Course(EMC)	-	-	2	2	-	-	-	-	04
10.	Value Education Course (VEC)	-	-	2	2	-	-	-	-	04
11.	Experiential Learning Courses	-	-	-	2	2	2	8	8	22
12.	Indian Knowledge System	-	2	-	-	-	-	-	-	02
13.	Co-curricular Courses	2	2	-	-	-	-	-	-	04
Total		22	22	22	22	22	22	20	20	172

CURRICULUM STRUCTURE
Third Year B.Tech. Mechanical Engineering

Semester – V

Level - 5.5																	
Third Year B. Tech Mechanical Engineering																	
Semester V																	
Sr. No.	**Course Code**	**Course Type**	**Course Name**	**Credit Scheme**			**Teaching Scheme (Hours/Week)**			**Examination Scheme and Marks**							
										CCE		**ESE**	**PR**	**OR**	**TW**	**TOTAL**
				TH	**TUT**	**PR**	**L**	**T**	**P**	**UT**	**FA**	**SA**				
										25	**25**	**50**				
1	ME25PCC-301	Programme Core Course	Metrology & Measurement	2			2			**25**	**25**	**50**				100
2	ME25PCC-302	Programme Core Course	Heat and Mass Transfer	3			3			**25**	**25**	**50**				100
3	ME25PCC-303	Programme Core Course	Heat and Mass Transfer Lab			1			2				**25**		**25**	50
4	ME25PCC-304	Programme Core Course	Design of Machine Elements	2			3			**25**	**25**	**50**				100
5	ME25PCC-305	Programme Core Course	Design of Machine Elements & Measurement Lab			2			4					**25**	**25**	50
6	ME25PEC-306 A/B/C	Programme Elective Course	Program Elective - I	3			3			**25**	**25**	**50**				100
7	ME25PEC-307 A/B/C	Programme Elective Course	Program Elective- I Lab			1			2					**25**	**25**	50
8	ME25MDM-308	Multi-disciplinary Minor	Mechatronics systems	3			3			**25**	**25**	**50**				100
9	ME25MDM-309	Multi-disciplinary Minor	Mechatronics Systems Lab			1			2					**25**	**25**	50
10	--	Open Elective Course	Open Elective- III		1	1		1	2						**25**	25
11	ME25ELC-311	Experiential Learning Course	Research Methodology - I		1	1			4						**25**	25
TOTAL				**13**	**2**	**7**	**14**	**1**	**16**	**125**	**125**	**250**	**25**	**75**	**150**	**750**
				22			**31**									

CCE- Comprehensive Continuous Evaluation**, ESE**- End Semester Evaluation, **TW**-Term Work, **OR**-Oral, **PR**-Practical, **TH**- Theory**, L**-Lecture, **TUT**-Tutorial, **UT**- Unit Test, **FA**–Formative Assessment, **SA** – Summative

List of Basket:

List of Courses – Open Elective Course -III

	Open Elective-III	
ETC25OEC310	Industrial Organization & Management	Choose Any One
ME25OEC-310	Supply Chain Management	
CE25OEC-310	Fundamentals of Fintech	

List of Courses – Program Elective Course -I

	Program Elective-I	
ME25PEC-306A	Machining Science Technology	Choose Any One
ME25PEC-306B	Design for Reliability	
ME25PEC-306C	Automobile Engineering	

CURRICULUM STRUCTURE

Third Year B.Tech. Mechanical Engineering

Semester – VI

Level - 5.5

Third Year B. Tech Mechanical Engineering

Semester VI

Sr. No.	Course Code	Course Type	Course Name	Credit Scheme			Teaching Scheme (Hours/Week)			Examination Scheme and Marks						
										CCE		ESE	PR	OR	TW	TOTAL
				TH	TUT	PR	L	T	P	UT	FA	SA				
										25	25	50				
1	ME25PCC-351	Programme Core Course	Computer Aided Engineering	2			2			**25**	**25**	**50**				100
2	ME25PCC-352	Programme Core Course	Computer Aided Engineering Lab			1			2				**25**			25
3	ME25PCC-353	Programme Core Course	Numerical Methods & Optimization	2			2			**25**	**25**	**50**				100
4	ME25PCC-354	Programme Core Course	Numerical Methods & Optimization Lab			1			2				**25**			25
5	ME25PCC-355	Programme Core Course	Design of Transmission Systems	2			3			**25**	**25**	**50**				100
6	ME25PEC-356 A/B/C	Programme Elective Course	Program Elective - II	3			3			**25**	**25**	**50**				100
7	ME25PEC-357 A/B/C	Programme Elective Course	Program Elective - II Lab			2			4					**25**	**25**	50
8	ME25PEC-358 A/B/C	Programme Elective Course	Program Elective - III	3			3			**25**	**25**	**50**				100
9	ME25MDM-359	Multi-disciplinary Minor	E-Vehicle	2			2			**25**		**50**				75
10	ME25VSEC-360	Vocational and skill Enhancement course	Digital Manufacturing (3D printing, CNC)			2			4						**25**	25
11	ME25ELC-361	Experiential Learning Course	Internship / Mini Project			2			4					**25**	**25**	50
TOTAL				**14**	**0**	**8**	**15**	**0**	**16**	**150**	**150**	**300**	**50**	**50**	**50**	**750**
				22			**31**									

CCE- Comprehensive Continuous Evaluation**, ESE**- End Semester Evaluation, **TW**-Term Work, **OR**-Oral, **PR**-Practical, **TH**- Theory**, L**-Lecture, **TUT**-Tutorial, **UT**- Unit Test, **FA**–Formative Assessment, **SA** – Summative

Basket: List of Courses – Program Elective Course -II

	Program Elective-II	
ME25PEC-356A	Design of Fan, Blower and Compressor	Choose Any One
ME25PEC-356B	Internal Combustion Engines	
ME25PEC-356C	Product Design and Development	

Basket: List of Courses – Program Elective Course -III

	Program Elective-III	
ME25PEC-358A	Surface Engineering	Choose Any One
ME25PEC-358B	Composite Materials	
ME25PEC-358C	Industrial Engineering	