

Teerthanker Mahaveer University, Moradabad

Faculty of Engineering

Mechanical Engineering Department

Minutes of BoS Meeting

A meeting of Board of Studies was held in the principal's office, Faculty of Engineering on 05/06/2024. Following points regarding the syllabus of the 2024-25 batch for B.Tech and M.Tech programme syllabus (for approval) had been discussed by Mechanical Engineering department. Following members were present in the meeting:

- Prof R.K Dwivedi, Director, FoE
- Prof Lokesh Varshney, Professor, Mechanical Engineering Department, GB Pant University, Pantnagar, UK (External Expert)
- Prof R K Jain, Professor, Civil Engineering Department, Teerthanker Mahaveer University, Moradabad
- Dr Himansh Kumar, HoD, ME Department (Chairperson)
- Dr Rohit K Singh Gautam, Assistant Professor, ME Department (Member)
- Mr Arun Gupta, ME Department (Member)
- All other faculties of the department

List of Agenda Items

- **The Mechanical Engineering Department has proposed the M.Tech. Program in Additive Manufacturing from session 2024-25 onwards. The details of the program is given below:**

Program Name: Additive Manufacturing

Duration- 02 Years

Offered Seats- 20

Tuition Fee- 32,400/- (per sem)

Examination Fee- 4500/- (per sem)

Eligibility criteria: B.Tech.-Biotechnology Engineering/Instrumentation Engineering/Civil Engineering/Mechanical Engineering/Electrical Engineering, M.Sc.-Physics & Allied branches of Mechanical Engineering

Criteria of Merit: GATE Score/Merit based on the percentage of marks secured

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in the qualifying examination

- Status of the Syllabus 2024-25 for all programs offered by Mechanical Engineering Department
- The department of Mechanical Engineering has also proposed two minor specializations for the honours in B.Tech. programme.
- Any other matter with the permission of chair.

The following points were discussed in BoS:

- Department of Mechanical Engineering has presented the M.Tech in Additive Manufacturing syllabus thoroughly and the BoS experts have recommended the same without any change (**Annexure I**).
- Department of mechanical engineering has proposed the removal of some subjects i.e Deep reading (BDR301), co-curricular activity-II (BCCA401) and co-curricular activity-III (BCCA601) from the course matrix of **B. Tech ME 2023-24** batch. BoS members were agreed on this point.(**Annexure-II**)
- Department of mechanical engineering has proposed the removal of some subjects i.e co-curricular activity-I (BCCA201), Deep reading (BDR301), co-curricular activity-II (BCCA401) and co-curricular activity-III (BCCA601) from the course matrix of **B. Tech ME 2024-25** batch. BoS members were agreed on this point.(**Annexure-III**)
- Department of Mechanical Engineering has suggested upgrading in the Solid works (Lab) (EME-662) course syllabus with the Fusion (Lab) (EME 663) in B.Tech-Mechanical Engineering for the academic session of 2024-25. BoS members are agreed with all the modifications in the B.Tech syllabus. The minor changes in the B.Tech syllabus has been mentioned in the below given table (**Annexure III**)

S. No	Name &code of the courses added	Name &code of the courses deleted	Name &code of the courses where revision is more than20%	Name of the stakeholder from where the inputs have been received	Need /rationale to justify the revision
1	Fusion (Lab) EME 663	Solid Works (Lab) EME 662	Nil	Faculty, students, external and academic Professionals	The syllabus has been changed w.r.to the latest software to enhance the understanding as per the industry demand.

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use

- Mechanical Engineering Department has proposed two minor specialisations for the honours in the B.Tech programme i.e., Machine learning and Automation and Artificial Intelligence in Additive Manufacturing. The detailed syllabus has been discussed and added courses in the B.Tech 2024-25 syllabus. The BoS experts have approved the course content without any further modification (**Annexure-III**).
- BoS experts also recommended few changes as per the NEP-2020 which will be incorporated from the academic session 2025-26.

The meeting is ended with vote of thanks.

for




Teerthanker Mahaveer University
Faculty of Engineering
Department of Mechanical Engineering

Study & Evaluation Scheme

of

Master of Technology
(Specialization: Additive Manufacturing)
(Blended Mode)

[Applicable w.e.f. Academic Session - 2024-25]
[As per CBCS guidelines given by AICTE]



TEERTHANKER MAHAVEER UNIVERSITY
N.H.-24, Delhi Road, Moradabad, Uttar Pradesh-244001
Website: www.tmu.ac.in

TEERTHANKER MAHAVEER UNIVERSITY

for
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(Established under Govt. of U.P. Act No. 30, 2008)
Delhi Road, Bagarpur, Moradabad(U.P.)

Study & Evaluation Scheme

SUMMARY

Institute Name	Faculty of Engineering
Programme	Master of Technology (Additive Manufacturing)
Duration	Two-year full time (Four Semesters)
Medium	English
Minimum Required Attendance	75%
<u>Credits</u>	
Maximum Credits	74
Minimum Credits Required for Degree	74

Assessment:

Evaluation	Internal	External	Total
Theory	40	60	100
Practical/ Dissertations/ Project Reports/ Viva-Voce	50	50	100
Class Test-1 Class Test-2	Assignment(s)	Attendance & Participation	Total
10 10	10	10	40
Duration of Examination		External	Internal
		3 Hours	1.5 Hours

To qualify the course a student is required to secure a minimum of 45% marks in aggregate including the semester end examination and teachers continuous evaluation (i.e. both internal and external). A candidate who secures less than 45% of marks in a course shall be deemed to have failed in that course. The student should have at least 45% marks in aggregate to clear the semester.

Policy regarding promoting the students from semester to semester & year to year. No specific condition to earn the credit for promoting the students from one semester to next semester.

Maximum no of years required to complete the program: N+2 (N=No of years for program)

Question Paper Structure

- The question paper shall consist of six questions. Out of which the first question shall be of short answer type (not exceeding 50 words) and will be compulsory. Question no. 2 to 6 (from Unit-I to V) shall have explanatory answers (approximately 350 to 400 words) along with having an internal choice within each unit.
- Question No. 1 shall contain 8 parts from all units of the syllabus with at least one question from each unit and students shall have to answer any five, each part will carry 2 marks.
- The remaining five questions shall have internal choice within each unit; each question will carry 10 marks.

IMPORTANT NOTES:

- The purpose of examination should be to assess the Course Outcomes (CO) that will ultimately lead to the attainment of Programme Specific Outcomes (PSOs). A question paper must assess the following aspects of learning: Remember, Understand, Apply, Analyse, Evaluate & Create (reference to Bloom's Taxonomy).
- Case Study is essential in every question paper (wherever it is being taught as a part of pedagogy) for evaluating higher-order learning. Not all the courses might have case teaching methods used as pedagogy.
- There shall be continuous evaluation of the student and there will be a provision of a fortnight progress report.

for
BBA

Program Course Summary

M.Tech (Additive Manufacturing) : Two-Years (4-Semester) CBCS Programme			
Basic Structure: Distribution of Courses			
S.No.	Type of Course	Credit Hours	Total Credits
1	Professional Core Course (PCC)	4 Courses of 4 Credit Hrs, (16) 4 Courses of 3 Credits Hrs (12)	28
2	Professional Elective Course (PEC)	1 Course of 4 Credits Hrs, (4) 1 Course of 3 Credits Hrs (3)	7
3	Laboratory Course (LC)	4 Courses of 2 Credits Hrs, (8) 1 Course of 1 Credit Hrs (1)	9
4	Project/ Seminar/ Dissertation (PROJ)	1 Course of 2 Credit Hrs. (2) 1 Course of 8 Credit Hrs (8) 1 Course of 20 Credit Hrs (20)	30
Total Credits			74

Contact hours include work related to Lecture, Tutorial and Practical (LTP), where our institution will have flexibility to decide course wise requirements.

B. Choice Based Credit System (CBCS)

Choice Based Credit System (CBCS) is a versatile and flexible option for each student to achieve his target number of credits as specified by the UGC and adopted by our University. The following is the course module designed for the M.Tech program:

Professional Core Course (PCC): Professional Core courses of M.Tech program will provide a holistic approach to master education, giving students an overview of the field, a basis to build and specialize upon. These core courses are the strong foundation to establish engineering knowledge and provide broad multi-disciplined knowledge that can be studied further in depth during the elective phase.

The core courses will provide more practical-based knowledge, case-based lessons and collaborative learning models. It will train the students to analyze, decide, and lead-rather than merely know-while creating a common student experience that can foster deep understanding, develop decision-making ability and contribute to the business and community at large. A wide range of core courses provides groundwork in the basic engineering disciplines: The integrated foundation is important for students because it will not only allow them to build upon existing skills, but they can also explore career options in a range of industries, and expand their understanding of various research fields.

Professional Elective Course (PEC): Professional Elective is an interdisciplinary additional subject that is compulsory in the first, second and third semester of a program. The score of Professional Elective is counted in your overall aggregate marks under Choice Based Credit System (CBCS). Each Professional Elective paper will be of 7 Credits and students will have the choice of taking PEC's. We

for
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Study & Evaluation Scheme

M.Tech. (Additive Manufacturing) Semester I

S. No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	PCC-1	ADM-111	Design for Additive Manufacturing	3	1	-	4	40	60	100
2	PCC-2	ADM-112	Additive Manufacturing Processes	3	1	-	4	40	60	100
3	PCC-3	ADM-113	Mechanical Behavior and Characterization of Materials	2	1		3	40	60	100
4	PCC-4	ADM-114	Laser in Manufacturing process	2	1		3	40	60	100
5	LC-1	ADM-151	CAD/CAM Laboratory	-	-	4	2	50	50	100
6	LC-2	ADM-152	Characterization of Materials Laboratory	-	-	4	2	50	50	100
			Total	10	4	8	18	260	340	600

M.Tech (Additive Manufacturing) Semester II

S. No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	PCC-5	ADM-211	Materials, Energy Sources and Bonding Mechanisms	3	-	-	3	40	60	100
2	PCC-6	ADM-212	Rapid Tooling and Industrial Applications	3	-	-	3	40	60	100
3	PCC-7	ADM-213	Micro and Nano Manufacturing	3	-	-	4	40	60	100
4	PCE-1		Elective-I	3	-	-	3	40	60	100
5	LC-3	ADM-251	Metal Printing Laboratory	-	-	2	1	50	50	100
6	LC-4	ADM-252	Seminar-I based on application of additive manufacturing in respected fields	-	-	4	2	50	50	100
			Total	11	2	6	16	260	340	600

for
KBD

M.Tech (Additive Manufacturing)

Semester III

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-8	ADM-311	Surface Engineering	3	1	-	4	40	60	100
2	PCE-2		Elective-II	3	1	-	4	40	60	100
3	LC-5	ADM-351	Python Programing basics Lab			4	2	50	50	100
4	PROJ-1	ADM-352	Seminar II based on recent development in the field of additive manufacturing in various field	-	-	4	2	50	50	100
5	PROJ-2	ADM-353	Dissertation Part A	-	-	-	8	50	50	100
			Total	6	1	8	20	230	270	500

M.Tech (Additive Manufacturing)

Semester IV

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal *	External *	Total
1	PROJ-3	ADM-451	Dissertation Part B	-	-	-	20	250	250	500
			Total	-	-	-	20	250	250	500

for 

ELECTIVE COURSES OFFERED

S. No	Code	Course	L	T	P	Credit
Program Elective I - (Any one)						
1	ADM-201	Mechanics of Metal Forming	3	0	0	3
2	ADM-202	Mathematical Methods in Engineering	3	0	0	3
3	ADM-203	Soft Computing Techniques	3	0	0	3
Program Elective II - (Any one)						
4	ADM-301	Renewable Sources of Energy	3	1	0	4
5	ADM-302	Metrology and Computer Aided Inspection	3	1	0	4
6	ADM-303	Energy Systems and Management	3	1	0	4

for
10/8/22

Annexure - II

Study & Evaluation Scheme

of

Bachelor of Technology Mechanical Engineering (Specialization in Mechatronics)

[Applicable w.e.f. Academic Session - 2023-24 till revised]

[As per CBCS guidelines given by AICTE]



Accredited with NAAC **A** Grade

12-B Status from UGC

TEERTHANKER MAHAVEER UNIVERSITY

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(Established under Govt. of U.P. Act No. 30, 2008)
Delhi Road, Bagarpur, Moradabad (U.P.)

Study & Evaluation Scheme	
SUMMARY	
Institute Name	Faculty of Engineering
Programme	B.Tech. (Mechanical Engineering)
Duration	Four-year full time (Eight Semesters)
Medium	English
Minimum Required Attendance	75%
Credits	
Minimum Credits Required for Degree	200

Assessment:					
Evaluation			Internal	External	Total
Theory			40	60	100
Practical/ Dissertations/ Project Reports/ Viva-Voce			50	50	100
Class Test-1	Class Test-2	Class Test-3	Assignment(s)	Attendance & Participation	Total
Best two out of three					
10	10	10	10	10	40
Duration of Examination			External	Internal	
			3 Hours	1.5 Hours	

To qualify the course a student is required to secure a minimum of 45% marks in aggregate including the semester end examination and teachers continuous evaluation (i.e. both internal and external). A candidate who secures less than 45% of marks in a course shall be deemed to have failed in that course. The student should have at least 45% marks in aggregate to clear the semester.

Provision for delivery of 25% content through online mode.

Policy regarding promoting the students from semester to semester & year to year. No specific condition to earn the credit for promoting the students from one semester to next semester.

Maximum no of years required to complete the program: N+2 (N=No of years for program)

Question Paper Structure	
1	The question paper shall consist of six questions. Out of which first question shall be of short answer type (not exceeding 50 words) and will be compulsory. Question no. 2 to 6 (from Unit-I to V) shall have explanatory answers (approximately 350 to 400 words) along with having an internal choice within each unit.
2	Question No. 1 shall contain 8 parts from all units of the syllabus with at least one question from each unit and students shall have to answer any five, each part will carry 2 marks.
3	The remaining five questions shall have internal choice within each unit; each question will carry 10 marks.
IMPORTANT NOTES:	
1	The purpose of examination should be to assess the Course Outcomes (CO) that will ultimately lead to attainment of Programme Specific Outcomes (PSOs). A question paper must assess the following aspects of learning: Remember, Understand, Apply, Analyze, Evaluate & Create (Reference to Bloom's Taxonomy).
2	Case Study is essential in every question paper (wherever it is being taught as a part of pedagogy) for evaluating higher-order learning. Not all the courses might have case teaching method used as pedagogy.
3	There shall be continuous evaluation of the student and there will be a provision of fortnight progress report.

for

B.Tech. Mechanical Engineering: Four-Year (8-Semester) CBCS Programme			
Basic Structure: Distribution of Courses			
S. No.	Type of Course	Credit	Total Credits
1	BSC - Basic Science Courses	4 Courses of 4 Credits each (Total Credit 4X4)	16
2	ESC - Engineering Science Courses	2 Courses of 4 Credits each (Total Credit 2X4) 2 Courses of 3 Credits each (Total Credit 2X3)	14
3	PCC - Professional core courses	8 Courses of 3 Credits each (Total Credit 8X3) 10 Courses of 4 Credits each (Total Credit 10X4)	64
4	PEC - Professional Elective courses	4 Courses of 4 Credits each (Total Credit 4X4) 1 Course of 1 Credits each (Total Credit 1X1)	17
5	OEC - Open Elective courses	2 Course of 3 Credits each (Total Credit 2X3)	06
6	Skill Enhancement Course (SEC)	6 Courses of 1 Credits each (Total Credit 6X1)	06
7	LC - Laboratory course	19 Courses of 1 Credits each (Total Credit 19X1) 2 Courses of 2 Credits each (Total Credit 2X2)	23
8	AECC-Ability Enhancement Compulsory Course	2 Course of 3 Credits each (Total Credit 2X3) 2 Course of 2 Credits each (Total Credit 2X2) 5 Course of 5 Credits each (Total Credit 5X5)	35
9	PROJ-Viva Voce for Dissertation and Skill based practical training & Industrial Training Report	1 Course of 5 Credits each (Total Credit 1X5) 1 Course of 3 Credits each (Total Credit 1X3) 2 Course of 2 Credits each (Total Credit 2X2)	12
10	MOOC-Optional (credits will consider only in case a student fails to secure minimum required credits for the award of degree)	As per the approval of Hon'ble Vice Chancellor	-
11	LPBEI-Learning by Project Based Entrepreneurship Initiative	3 Course of 2 Credits each (Total Credit Hrs. 3X2)	06
12	CCA- Co-Curricular Activities	1 Course of 1 Credits each (Total Credit Hrs. 1X1)	01
13	DGP- Discipline & General Proficiency	8 Course of 0 Credits each (Total Credit Hrs. 8X0)	00
Total Credits			200

Contact hours include work related to Lecture, Tutorial and Practical (LTP), where our institution will have flexibility to decide course wise requirements.

for
10/6/20

Study & Evaluation Scheme

B.Tech. Mechanical Engineering

Semester I

S. No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	BSC-1	EAS116	Engineering Mathematics-I	3	1	-	4	40	60	100
2	BSC-2	EAS112/212	Engineering Physics	3	1	-	4	40	60	100
		EAS113/213	Engineering Chemistry							
3	ESC-1	EEE117/217	Basic Electrical Engineering	3	1	-	4	40	60	100
		EEC111/211	Basic Electronics Engineering							
4	AECC-1	TMU101	Environmental Studies	2	1	-	3	40	60	100
5	AECC-2	TGE103	English Communication- I	1	-	2	2	40	60	100
6	LC-1	EAS162/262	Engineering Physics (Lab)	-	-	2	1	50	50	100
		EAS163/263	Engineering Chemistry (Lab)							
7	LC-2	EEE161/261	Basic Electrical Engineering (Lab)	-	-	2	1	50	50	100
		EEC161/261	Basic Electronics Engineering (Lab)							
8	LC-3	EME161/261	Engineering Drawing (Lab)	-	-	4	2	50	50	100
		EME162/262	Workshop Practice (Lab)							
9	DGP-1	EGP111	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				12	4	10	21	450	450	900

for
VBS

Semester II

S. No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	BSC-3	EAS211	Engineering Mathematics-II	3	1	-	4	40	60	100
2	BSC-4	EAS212/112	Engineering Physics	3	1	-	4	40	60	100
		EAS213/113	Engineering Chemistry							
3	ESC-2	EEE217/117	Basic Electrical Engineering	3	1	-	4	40	60	100
		EEC211/111	Basic Electronics Engineering							
4	ESC-3	ECS212	Computer System & Programming in C++	3	-	-	3	40	60	100
5	AECC-3	TMUTGE201	Business English	1	-	2	2	40	60	100
6	LC-4	EAS262/162	Engineering Physics (Lab)	-	-	2	1	50	50	100
		EAS263/163	Engineering Chemistry (Lab)							
7	LC-5	EEE261/161	Basic Electrical Engineering (Lab)	-	-	2	1	50	50	100
		EEC261/161	Basic Electronics Engineering (Lab)							
8	LC-6	ECS262	Computer System & Programming in C++ (Lab)	-	-	2	1	50	50	100
9	LC-7	EME261/161	Engineering Drawing (Lab)	-	-	4	2	50	50	100
		EME262/162	Workshop Practice (Lab)							
10	CCA-1	BCCA201	Co-Curricular Activity-I	-	-	2	1	100	0	100
11	LPBEI-1	BLPBEI201	LPBEI-I*	2	-	-	2	100	0	100
12	DGP-2	EGP211	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				15	3	14	25	700	500	1200

***Learning by Project based Entrepreneurship Initiative (Stage A, B & C)**

Stage A: Forming a team of Multidisciplinary Background

Stage B: Identifying Business Opportunity, Analysis of current economic, Social & Technology trends

Stage C: Market & Customer Studies

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B.Tech. Mechanical Engineering - Semester III

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-1	EME311	Engineering Mechanics	3	1	-	4	40	60	100
2	PCC-2	EME312	Engineering Thermodynamics	3	1	-	4	40	60	100
3	PCC-3	EME313	Material Science	3	1	-	4	40	60	100
4	PCC-4	EME314	Industrial Engineering	3	-	-	3	40	60	100
5	AECC (SP)-4	TMUTGE301	Design Thinking	3	1	1	5	40	60	100
6	LC-8	EME361	Machine Drawing (Lab)	-	-	2	1	50	50	100
7	LC-9	EME362	Engineering Thermodynamics (Lab)	-	-	2	1	50	50	100
8	LC-10	EME363	Material Science (Lab)	-	-	2	1	50	50	100
9	SEC-1	TGC307	Foundation in Quantitative Aptitude	-	-	2	1	50	50	100
10	DGP-3	EGP311	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				15	4	9	24	500	500	1000

Following additional Course for Lateral Entry Students with B.Sc./Polytechnic background to be taken in III semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

1	LC	EME161/261	Engineering Drawing (Lab)	-	-	4	-	50	50	100
2		TMU101	Environmental Studies	2	1	-	-	40	60	100

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B.Tech. Mechanical Engineering - Semester IV

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-5	EME411	Strength of Materials	3	1	-	4	40	60	100
2	PCC-6	EME412	Production Technology-I	3	1	-	4	40	60	100
3	PCC-7	EME413	Measurement, Metrology & Control	3	1	-	4	40	60	100
4	PCC-8	EME414	Fluid Mechanics	3	-	-	3	40	60	100
5	AECC (SP)-5	ETS401	CAD for 3D Design	3	1	1	5	40	60	100
6	LC-11	EME461	Production Technology-I (Lab)	-	-	2	1	50	50	100
7	LC-12	EME462	Measurement, Metrology & Control (Lab)	-	-	2	1	50	50	100
8	LC-13	EME463	Fluid Mechanics (Lab)	-	-	2	1	50	50	100
9	SEC-2	TGC407	Analytical Reasoning	-	-	2	1	50	50	100
10	LPBEI-2	BLPBEI401	LPBEI-II*	2	-	-	2	100	0	100
11	DGP-4	EGP411	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				17	4	9	26	600	500	1100

*Skill based Training/Internship of 4 weeks duration from a reputed Industry/organization after completion of 4th semester end-semester examination.

Following additional Courses for Lateral Entry Students with B.Sc./Polytechnic background to be taken in IV semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

1	LC	EME162/262	Workshop Practice (Lab)*	-	-	4	-	50	50	100
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* Learning by Project Based Entrepreneurship Initiatives (Stage D)
Stage D: Project formulation, analysis & Evaluation Phase

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B.Tech. Mechanical Engineering - Semester V

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-9	EME511	Production Technology -II	3	1	-	4	40	60	100
2	PCC-10	EME512	Dynamics of Machines	3	-	-	3	40	60	100
3	PCC-11	EME513	Heat & Mass Transfer	3	-	-	3	40	60	100
4	PCC-12	EME517	Power Plant Engineering	3	-	-	3	40	60	100
5	AECC (SP)-6	ETS501	Design for Additive Manufacturing	3	1	1	5	40	60	100
6	AECC-7	EHM513	Human values & Professional Ethics	3	-	-	3	40	60	100
7	LC-14	EME561	Production Technology-II (Lab)	-	-	2	1	50	50	100
8	LC-15	EME562	Dynamics of Machines (Lab)	-	-	2	1	50	50	100
9	LC-16	EME563	Heat & Mass Transfer (Lab)	-	-	2	1	50	50	100
10	PROJ-1	EME592	Skill based Practical Training & Presentation	-	-	-	2	50	50	100
11	SEC-3	TGC507	Modern Algebra and Data Management	-	-	2	1	50	50	100
12	SEC-4	TGC502	Self Management for Engineers	-	-	2	1	50	50	100
13	DGP-5	EGP511	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				18	2	11	28	640	660	1300

MOOC Course:

1	MOOC-1	MOOC01	MOOC Program -I (Optional)	-	-	-	2	-	100	100
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for
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B.Tech. Mechanical Engineering - Semester VI

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-13	EME611	Refrigeration & Air Conditioning	3	1	-	4	40	60	100
2	PCC-14	EME612	Mechanical Vibrations	3	-	-	3	40	60	100
3	PCC-15	EME613	Design of Machine Elements	3	-	-	3	40	60	100
4	AECC (SP)-8	ETS601	Industrial Mechatronics System	3	1	1	5	40	60	100
5	PCC-16	EME614	Renewable Energy Resources	3	1	-	4	40	60	100
6	ESC-4	EHM611	Operations Management	3	-	-	3	40	60	100
7	LC-17	EME661	Refrigeration & Air Conditioning (Lab)	-	-	2	1	50	50	100
8	LC-18	EME662	Solid Works (Lab)	-	-	2	1	50	50	100
9	SEC-5	TGC607	Advance Algebra and Geometry	-	-	2	1	50	50	100
10	SEC-6	TGC602	Workplace Management for Engineers	-	-	2	1	50	50	100
11	LPBEI-3	BLPBEI601	LPBEI-III*	2	-	-	2	100	0	100
12	DGP-6	EGP611	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				20	3	9	28	640	560	1200

*Industrial Training of 6 weeks duration from a reputed Industry/organization after completion of 6th semester end-semester examination.

MOOC Course:

1	MOOC-2	MOOC02	MOOC Program -II (Optional)	-	-	-	2	-	100	100
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* Learning by Project Based Entrepreneurship Initiatives (Stage E & F)

Stage E: Entrepreneurial Activity

Stage F: Project Outcomes

for
VBA

B.Tech. Mechanical Engineering - Semester VII

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	AECC (SP)-9	ETS701	Robotics for Real World Applications	3	1	1	5	40	60	100
2	PCC-17	EME712	IC Engines	3	-	-	3	40	60	100
3	PEC-1		Program Elective-I	3	1	-	4	40	60	100
4	PEC-2		Program Elective-II	3	1	-	4	40	60	100
5	OEC-1		Open Elective-I	3	-	-	3	40/50	60/50	100
6	LC-19	EME761	Computer Aided Design (Lab)	-	-	2	1	50	50	100
7	LC-20	EME762	IC Engines (Lab)	-	-	2	1	50	50	100
8	PROJ-2	EME792	Industrial Training & Presentation	-	-	-	2	50	50	100
9	PROJ-3	EME798	Project Work Phase-I	1	-	8	5	100	-	100
10	DGP-7	EGP711	Discipline & General Proficiency	-	-	-	-	100	-	100
			Total	16	3	13	28	550/560	450/440	1000

MOOC Course:

1	MOOC-3	MOOC03	MOOC Program -III (Optional)	-	-	-	2	-	100	100
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for
KRD

B.Tech. Mechanical Engineering - Semester VIII

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-18	EME811	Computer Aided Manufacturing (CAM)	3	1	-	4	40	60	100
2	PEC-3		Program Elective	3	1	-	4	40	60	100
3	PEC-4			3	1	-	4	40	60	100
4	PEC-5		Program Elective (Lab)	-	-	2	1	50	50	100
5	OEC-2		Open	3	-	-	3	40/50	60/50	100
6	LC-21	EME861	Computer Aided Manufacturing (CAM) (Lab)	-	-	2	1	50	50	100
7	PROJ-4	EME898	Project Work Phase -II	1	-	4	3	50	50	100
8	DGP-8	EGP811	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				13	3	08	20	410/420	390/380	800

MOOC Course:

1	MOOC-4	MOOC04	MOOC Program -IV (Optional)	-	-	-	2	-	100	100
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for
B.Tech

ELECTIVE COURSES OFFERED

S. No	Code	Course	L	T	P	Credit
Semester VII- Program Elective I (Thermal Engineering) (Any one)						
1	EME716	Automobile Engineering	3	1	0	4
2	EME717	Energy Conservation	3	1	0	4
3	EME715	Gas Dynamics	3	1	0	4
Semester VII- Program Elective II (Any one)						
4	EME714	Hydraulic Machines	3	1	0	4
5	EHM735	Industrial Sociology	3	1	0	4
6	EHM736	Principles of Management and Organizational Behaviour	3	1	0	4
7	EHM734	Engineering and Managerial Economics	3	1	0	4
Semester VIII- Program Elective III (Advanced Manufacturing Systems) (Any one)						
8	EME812	Unconventional Manufacturing Process	3	1	0	4
9	EME813	Mechatronics	3	1	0	4
Semester VIII- Program Elective IV (Product development and Quality control) (Any one)						
10	EME814	Product Design and Value Engineering	3	1	0	4
11	EHM832	Total Quality Management	3	1	0	4
12	EME816	Maintenance Engineering	3	1	0	4
Semester VIII- Program Elective V (Advanced Manufacturing systems Labs) (Any one)						
13	EME862	Unconventional Manufacturing Process (Lab)	0	0	2	1
14	EME863	Mechatronics (Lab)	0	0	2	1

for
PBA

Minor specializations offered by Mechanical Engineering for the B.Tech.

Study & Evaluation Scheme of

Bachelor of Technology Mechanical Engineering

(Specialization in Mechatronics with honors)

[Applicable w.e.f. Academic Session-2024-25 till revised]

[As per CBCS guidelines given by AICTE]



Accredited with NAAC **A** Grade

12-B Status from UGC

TEERTHANKERMAHAVEERUNIVERSITY

N.H.-24, Delhi Road, Moradabad, Uttar Pradesh-244001

Website: www.tmu.ac.in

for
use



TEERTHANKER MAHAVEER UNIVERSITY
(Established under Govt. of U.P. Act No. 30, 2008).
Delhi Road, Bagarpur, Moradabad (U.P.)

Study & Evaluation Scheme	
SUMMARY	
Institute Name	Faculty of Engineering
Programme	B.Tech. (Mechanical Engineering)
Duration	Four-year full time (Eight Semesters)
Medium	English
Minimum Required Attendance	75%
Credits	
Minimum Credits Required for Degree	219

Assessment:						
Evaluation				Internal	External	Total
Theory				40	60	100
Practical/ Dissertations/ Project Reports/ Viva-Voce				50	50	100
Class Test-1	Class Test-2	Class Test-3		Assignment(s)	Attendance & Participation	Total
Best two out of three						
10	10	10		10	10	40
Duration of Examination				External	Internal	
				3 Hours	1.5 Hours	

To qualify the course a student is required to secure a minimum of 45% marks in aggregate including the semester end examination and teachers continuous evaluation (i.e. both internal and external). A candidate who secures less than 45% of marks in a course shall be deemed to have failed in that course. The student should have at least 45% marks in aggregate to clear the semester.

Provision for delivery of 25% content through online mode.

Policy regarding promoting the students from semester to semester & year to year. No specific condition to earn the credit for promoting the students from one semester to next semester.

Maximum no of years required to complete the program: N+2 (N=No of years for program)

Question Paper Structure	
1	The question paper shall consist of six questions. Out of which first question shall be of short answer type (not exceeding 50 words) and will be compulsory. Question no. 2 to 6 (from Unit-I to V) shall have explanatory answers (approximately 350 to 400 words) along with having an internal choice within each unit.
2	Question No. 1 shall contain 8 parts from all units of the syllabus with at least one question from each unit and students shall have to answer any five, each part will carry 2 marks.
3	The remaining five questions shall have internal choice within each unit; each question will carry 10 marks.
IMPORTANT NOTES:	
1	The purpose of examination should be to assess the Course Outcomes (CO) that will ultimately lead to attainment of Programme Specific Outcomes (PSOs). A question paper must assess the following aspects of learning: Remember, Understand, Apply, Analyze, Evaluate & Create (Reference to Bloom's Taxonomy).
2	Case Study is essential in every question paper (wherever it is being taught as a part of pedagogy) for evaluating higher-order learning. Not all the courses might have case teaching method used as pedagogy.
3	There shall be continuous evaluation of the student and there will be a provision of fortnight progress report.

B.Tech. Mechanical Engineering: Four-Year (8-Semester) CBCS Programme			
Basic Structure: Distribution of Courses			
S. No.	Type of Course	Credit	Total Credits
1	BSC - Basic Science Courses	4 Courses of 4 Credits each (Total Credit 4X4)	16
2	ESC - Engineering Science Courses	2 Courses of 4 Credits each (Total Credit 2X4) 2 Courses of 3 Credits each (Total Credit 2X3)	14
3	PCC - Professional core courses	8 Courses of 3 Credits each (Total Credit 8X3) 10 Courses of 4 Credits each (Total Credit 10X4)	64
4	PEC - Professional Elective courses	4 Courses of 4 Credits each (Total Credit 4X4) 1 Course of 1 Credits each (Total Credit 1X1)	17
5	OEC - Open Elective courses	2 Course of 3 Credits each (Total Credit 2X3)	06
6	Skill Enhancement Course (SEC)	6 Courses of 1 Credits each (Total Credit 6X1)	06
7	LC - Laboratory course	19 Courses of 1 Credits each (Total Credit 19X1) 2 Courses of 2 Credits each (Total Credit 2X2)	23
8	AECC-Ability Enhancement Compulsory Course	2 Course of 3 Credits each (Total Credit 2X3) 2 Course of 2 Credits each (Total Credit 2X2) 5 Course of 5 Credits each (Total Credit 5X5)	35
9	PROJ-Viva Voce for Dissertation and Skill based practical training & Industrial Training Report	1 Course of 5 Credits each (Total Credit 1X5) 1 Course of 3 Credits each (Total Credit 1X3) 2 Course of 2 Credits each (Total Credit 2X2)	12
10	MOOC-Optional (credits will consider only in case a student fails to secure minimum required credits for the award of degree)	As per the approval of Hon'ble Vice Chancellor	-
11	LPBEI-Learning by Project Based Entrepreneurship Initiative	3 Course of 2 Credits each (Total Credit Hrs. 3X2)	06
12	Minor specialization course	5 Course of 4 Credits each (Total Credit Hrs. 5X4)	20
14	DGP- Discipline & General Proficiency	8 Course of 0 Credits each (Total Credit Hrs. 8X0)	00
Total Credits			219

Contact hours include work related to Lecture, Tutorial and Practical (LTP), where our institution will have flexibility to decide course wise requirements.

for
BESD

Study & Evaluation Scheme

B.Tech. Mechanical Engineering

Semester I

S. No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	BSC-1	EAS116	Engineering Mathematics-I	3	1	-	4	40	60	100
2	BSC-2	EAS112/212	Engineering Physics	3	1	-	4	40	60	100
		EAS113/213	Engineering Chemistry							
3	ESC-1	EEE117/217	Basic Electrical Engineering	3	1	-	4	40	60	100
		EEC111/211	Basic Electronics Engineering							
4	AECC-1	TMU101	Environmental Studies	2	1	-	3	40	60	100
5	AECC-2	TGE103	English Communication- I	1	-	2	2	40	60	100
6	LC-1	EAS162/262	Engineering Physics (Lab)	-	-	2	1	50	50	100
		EAS163/263	Engineering Chemistry (Lab)							
7	LC-2	EEE161/261	Basic Electrical Engineering (Lab)	-	-	2	1	50	50	100
		EEC161/261	Basic Electronics Engineering (Lab)							
8	LC-3	EME161/261	Engineering Drawing (Lab)	-	-	4	2	50	50	100
		EME162/262	Workshop Practice (Lab)							
9	DGP-1	EGP111	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				12	4	10	21	450	450	900

for
use

Semester II

S No	Category	Course Code	Course	Periods			Credit	Evaluation Scheme		
				L	T	P		Internal	External	Total
1	BSC-3	EAS211	Engineering Mathematics-II	3	1	-	4	40	60	100
2	BSC-4	EAS212/112	Engineering Physics	3	1	-	4	40	60	100
		EAS213/113	Engineering Chemistry							
3	ESC-2	EEE217/117	Basic Electrical Engineering	3	1	-	4	40	60	100
		EEEC211/111	Basic Electronics Engineering							
4	ESC-3	ECS212	Computer System & Programming in C++	3	-	-	3	40	60	100
5	AECC-3	TMUTGE201	Business English	1	-	2	2	40	60	100
6	LC-4	EAS262/162	Engineering Physics (Lab)	-	-	2	1	50	50	100
		EAS263/163	Engineering Chemistry (Lab)							
7	LC-5	EEE261/161	Basic Electrical Engineering (Lab)	-	-	2	1	50	50	100
		EEEC261/161	Basic Electronics Engineering (Lab)							
8	LC-6	ECS262	Computer System & Programming in C++ (Lab)	-	-	2	1	50	50	100
9	LC-7	EME261/161	Engineering Drawing (Lab)	-	-	4	2	50	50	100
		EME262/162	Workshop Practice (Lab)							
10	LPBEI-1	BLPBEI201	LPBEI-I*	2	-	-	2	100	0	100
11	DGP-2	EGP211	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				15	3	12	24	600	500	1100

***Learning by Project based Entrepreneurship Initiative (Stage A, B & C)**

Stage A: Forming a team of Multidisciplinary Background

Stage B: Identifying Business Opportunity, Analysis of current economic, Social & Technology trends

Stage C: Market & Customer Studies

for
1930

B.Tech. Mechanical Engineering - Semester III

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-1	EME311	Engineering Mechanics	3	1	-	4	40	60	100
2	PCC-2	EME312	Engineering Thermodynamics	3	1	-	4	40	60	100
3	PCC-3	EME313	Material Science	3	1	-	4	40	60	100
4	PCC-4	EME314	Industrial Engineering	3	-	-	3	40	60	100
5	AECC (SP)-4	TMUTGE301	Design Thinking	3	1	1	5	40	60	100
6	LC-8	EME361	Machine Drawing (Lab)	-	-	2	1	50	50	100
7	LC-9	EME362	Engineering Thermodynamics (Lab)	-	-	2	1	50	50	100
8	LC-10	EME363	Material Science (Lab)	-	-	2	1	50	50	100
9	SEC-1	TGC307	Foundation in Quantitative Aptitude	-	-	2	1	50	50	100
10	DGP-3	EGP311	Discipline & General Proficiency	-	-	-	-	100	-	100
			Total	15	4	9	24	500	500	1000

Following additional Course for Lateral Entry Students with B.Sc./Polytechnic background to be taken in III semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

1	LC	EME161/261	Engineering Drawing (Lab)	-	-	4	-	50	50	100
2		TMU101	Environmental Studies	2	1	-	-	40	60	100

for
SSB

B.Tech. Mechanical Engineering - Semester IV

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-5	EME411	Strength of Materials	3	1	-	4	40	60	100
2	PCC-6	EME412	Production Technology-I	3	1	-	4	40	60	100
3	PCC-7	EME413	Measurement, Metrology & Control	3	1	-	4	40	60	100
4	PCC-8	EME414	Fluid Mechanics	3	-	-	3	40	60	100
5	AECC (SP)-5	ETS401	CAD for 3D Design	3	1	1	5	40	60	100
6	LC-11	EME461	Production Technology-I (Lab)	-	-	2	1	50	50	100
7	LC-12	EME462	Measurement, Metrology & Control (Lab)	-	-	2	1	50	50	100
8	LC-13	EME463	Fluid Mechanics (Lab)	-	-	2	1	50	50	100
9	SEC-2	TGC407	Analytical Reasoning	-	-	2	1	50	50	100
10	LPBEI-2	BLPBEI401	LPBEI-II*	2	-	-	2	100	0	100
11	DGP-4	EGP411	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				17	4	9	26	600	500	1100

*Skill based Training/Internship of 4 weeks duration from a reputed Industry/organization after completion of 4th semester end-semester examination.

Following additional Courses for Lateral Entry Students with B.Sc./Polytechnic background to be taken in IV semester and all should pass with minimum of 45% marks for obtaining the degree: credits will not be added

1	LC	EME162/262	Workshop Practice (Lab)	-	-	4	-	50	50	100
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*** Learning by Project Based Entrepreneurship Initiatives (Stage D)**

Stage D: Project formulation, analysis & Evaluation Phase

for
1950

B.Tech. Mechanical Engineering - Semester V

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-9	EME511	Production Technology –II	3	1	-	4	40	60	100
2	PCC-10	EME512	Dynamics of Machines	3	-	-	3	40	60	100
3	PCC-11	EME513	Heat & Mass Transfer	3	-	-	3	40	60	100
4	PCC-12	EME517	Power Plant Engineering	3	-	-	3	40	60	100
5	AECC (SP)-6	ETS501	Design for Additive Manufacturing	3	1	1	5	40	60	100
6	AECC-7	EHM513	Human values & Professional Ethics	3	-	-	3	40	60	100
7	LC-14	EME561	Production Technology-II (Lab)	-	-	2	1	50	50	100
8	LC-15	EME562	Dynamics of Machines (Lab)	-	-	2	1	50	50	100
9	LC-16	EME563	Heat & Mass Transfer (Lab)	-	-	2	1	50	50	100
10	PROJ-1	EME592	Skill based Practical Training & Presentation	-	-	-	2	50	50	100
11	SEC-3	TGC507	Modern Algebra and Data Management	-	-	2	1	50	50	100
12	SEC-4	TGC502	Self Management for Engineers	-	-	2	1	50	50	100
13	DGP-5	EGP511	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				18	2	11	28	640	660	1300

MOOC Course:

1	MOOC-1	MOOC01	MOOC Program -I (Optional)	-	-	-	2	-	100	100
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for
HOD

B.Tech. Mechanical Engineering - Semester VI

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-13	EME611	Refrigeration & Air Conditioning	3	1	-	4	40	60	100
2	PCC-14	EME612	Mechanical Vibrations	3	-	-	3	40	60	100
3	PCC-15	EME613	Design of Machine Elements	3	-	-	3	40	60	100
4	AECC (SP)-8	ETS601	Industrial Mechatronics System	3	1	1	5	40	60	100
5	PCC-16	EME614	Renewable Energy Resources	3	1	-	4	40	60	100
6	ESC-4	EHM611	Operations Management	3	-	-	3	40	60	100
7	LC-17	EME661	Refrigeration & Air Conditioning (Lab)	-	-	2	1	50	50	100
8	LC-18	EME662	Solid Works (Lab)	-	-	2	1	50	50	100
9	SEC-5	TGC607	Advance Algebra and Geometry	-	-	2	1	50	50	100
10	SEC-6	TGC602	Workplace Management for Engineers	-	-	2	1	50	50	100
11	LPBEI-3	BLPBEI601	LPBEI-III*	2	-	-	2	100	0	100
12	DGP-6	EGP611	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				20	3	9	28	640	560	1200

*Industrial Training of 6 weeks duration from a reputed Industry/organization after completion of 6th semester end-semester examination.

MOOC Course:

1	MOOC-2	MOOC02	MOOC Program –II (Optional)	-	-	-	2	-	100	100
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* Learning by Project Based Entrepreneurship Initiatives (Stage E & F)

Stage E: Entrepreneurial Activity

Stage F: Project Outcomes

for
1932

B.Tech. Mechanical Engineering - Semester VII

Mechanical Engineering - Semester VII											
S. No	Category	Course Code	Course		Periods			Evaluation Scheme			
					L	T	P	Credit	Internal	External	Total
1	AECC (SP)-9	ETS701	Robotics for Real World Applications		3	1	1	5	40	60	100
2	PCC-17	EME712	IC Engines		3	-	-	3	40	60	100
3	PEC-1		Program Elective	Program Elective-I	3	1	-	4	40	60	100
4	PEC-2			Program Elective-II	3	1	-	4	40	60	100
5	OEC-1		Open Elective	Open Elective-I	3	-	-	3	40/50	60/50	100
6	LC-19	EME761	Computer Aided Design (Lab)		-	-	2	1	50	50	100
7	LC-20	EME762	IC Engines (Lab)		-	-	2	1	50	50	100
8	PROJ-2	EME792	Industrial Training & Presentation		-	-	-	2	50	50	100
9	PROJ-3	EME798	Project Work Phase-I		1	-	8	5	100	-	100
10	DGP-7	EGP711	Discipline & General Proficiency		-	-	-	-	100	-	100
			Total		16	3	13	28	550/560	450/440	1000

MOOC Course:

1	MOOC-3	MOOC03	MOOC Program -III (Optional)	-	-	-	2	-	100	100
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for
1989

B.Tech. Mechanical Engineering - Semester VIII

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-18	EME811	Computer Aided Manufacturing (CAM)	3	1	-	4	40	60	100
2	PEC-3		Program Elective	3	1	-	4	40	60	100
3	PEC-4			3	1	-	4	40	60	100
4	PEC-5		Program Elective (Lab)	-	-	2	1	50	50	100
5	OEC-2		Open	3	-	-	3	40/50	60/50	100
6	LC-21	EME861	Computer Aided Manufacturing (CAM) (Lab)	-	-	2	1	50	50	100
7	PROJ-4	EME898	Project Work Phase -II	1	-	4	3	50	50	100
8	DGP-8	EGP811	Discipline & General Proficiency	-	-	-	-	100	-	100
Total				13	3	08	20	410/420	390/380	800

MOOC Course:

1	MOOC-4	MOOC04	MOOC Program -IV (Optional)	-	-	-	2	-	100	100
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for
1980

ELECTIVE COURSES OFFERED

S. No	Code	Course	L	T	P	Credit
Semester VII- Program Elective I (Thermal Engineering) (Any one)						
			3	1	0	4
1	EME716	Automobile Engineering	3	1	0	4
2	EME717	Energy Conservation	3	1	0	4
3	EME715	Gas Dynamics	3	1	0	4
Semester VII- Program Elective II (Any one)						
			3	1	0	4
4	EME714	Hydraulic Machines	3	1	0	4
5	EHM735	Industrial Sociology	3	1	0	4
6	EHM736	Principles of Management and Organizational Behaviour	3	1	0	4
7	EHM734	Engineering and Managerial Economics	3	1	0	4
Semester VIII- Program Elective III (Advanced Manufacturing Systems) (Any one)						
			3	1	0	4
8	EME812	Unconventional Manufacturing Process	3	1	0	4
9	EME813	Mechatronics	3	1	0	4
Semester VIII- Program Elective IV (Product development and Quality control) (Any one)						
			3	1	0	4
10	EME814	Product Design and Value Engineering	3	1	0	4
11	EHM832	Total Quality Management	3	1	0	4
12	EME816	Maintenance Engineering	3	1	0	4
Semester VIII- Program Elective V (Advanced Manufacturing systems Labs) (Any one)						
			0	0	2	1
13	EME862	Unconventional Manufacturing Process (Lab)	0	0	2	1
14	EME863	Mechatronics (Lab)	0	0	2	1

for
lab

Minor specializations offered by Mechanical Engineering for the B.Tech. Honours Programme

S. No.	Minor Specialization offered by ME	Credits
1	Honours in Machine learning and Automation	20
2	Honours in Artificial Intelligence in Additive Manufacturing	20

1. Honours in Machine learning and Automation

S. No.	Course Code	Title of Course	Contact Hours				Credits	Sem.
			L	T	P	Total		
1.	EME MA 24 0101	Introduction to python programming	3	1	0	4	4	III
2	EME MA 24 0102	Lean Enterprises and New Manufacturing Technology	3	1	0	4	4	IV
3	EME MA 24 0103	Machine Learning and AI	3	1	0	4	4	V
4	EME MA 24 0104	Industrial Corrosion and Tribology	3	1	0	4	4	VI
5	EME MA 24 0105	Micro and Nano Machining	3	1	0	4	4	VII
Total						20	20	

2. Honours in Artificial Intelligence in Additive Manufacturing

S. No.	Course Code	Title of Course	Contact Hours				Credits	Sem.
			L	T	P	Total		
1.	EME AM 24 0101	Additive manufacturing technology	3	1	0	4	4	III
2.	EME AM 24 0101	Product Design and Development	3	1	0	4	4	IV
3.	EME AM 24 0101	AI for Advance Manufacturing	3	1	0	4	4	V
4.	EME AM 24 0101	Design And Modelling Aspects of AM	3	1	0	4	4	VI
5.	EME AM 24 0101	Industrial IoT and Cloud Computing	3	1	0	4	4	VII
Total						20	20	

for EME