

# Study & Evaluation Scheme

of

## Bachelor of Technology (Mechanical Engineering)

[Applicable w.e.f. Academic Session – 2019-20]



**TEERTHANKER MAHAVEER UNIVERSITY**

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<b>B.Tech. Mechanical Engineering: Four-Year (8-Semester) CBCS Programme</b>			
<b>Basic Structure: Distribution of Courses</b>			
<b>S.No.</b>	<b>Type of Course</b>	<b>Credit</b>	<b>Total Credits</b>
1	BSC - Basic Science Courses	4 Courses of 4 Credits each (Total Credit 4X4)	16
2	ESC - Engineering Science Courses	4 Courses of 4 Credits each (Total Credit 4X4) 2 Courses of 3 Credits each (Total Credit 2X3)	22
3	HSMC - Humanities and Social Sciences including Management courses	4 Courses of 3 Credits each (Total Credit 4X3) 1 Course of 2 Credits each (Total Credit 1X2)	14
4	PCC - Professional core courses	9 Courses of 3 Credits each (Total Credit 9X3) 10 Courses of 4 Credits each (Total Credit 10X4)	67
5	PEC - Professional Elective courses	4 Courses of 4 Credits each (Total Credit 4X4) 1 Course of 1 Credits each (Total Credit 1X1)	17
6	OEC - Open Elective courses	2 Course of 3 Credits each (Total Credit 2X3)	06
7	Value Added Course (VAC)	6 Courses of 0 Credits each (Total Credit 6X0)	0
8	LC - Laboratory course	19 Courses of 1 Credits each (Total Credit 19X1) 2 Courses of 2 Credits each (Total Credit 2X2)	23
9	MC-Mandatory Courses	1 Course of 3 Credits each (Total Credit 1X3)	03
10	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
11	MOOC-Optional (credits will consider only in case a student fails to secure minimum required credits for the award of degree)	4 Course of 0 Credits each (Total Credit 4X0)	00
<b>Total Credits</b>			<b>180</b>

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

### **B. Tech (Honours) Programme:**

A new academic programme B.Tech (Hons.) is introduced in order to facilitate the students to choose additionally the specialized courses of their choices and build their competence in a specialized area. The features of the new programme, include:

1. B.Tech Student in regular stream can opt for B.Tech (Hons.), provided he/she passed in all courses with minimum aggregate 75% marks upto the end of second semester.
2. For B. Tech (Hons), Student needs to earn additional 24 credits (over and above the required minimum 180 credits) relevant to her/his discipline as recommended by the faculty advisor.
3. The students opting for this program have to take four additional courses of their specialization of a minimum of 2 credits each from 3rd to 8th semesters.





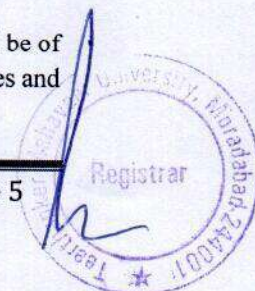
4. The faculty advisor will suggest the additional courses to be taken by the students based on their choice and level of their academic competence.
  5. The list of such additional courses offered by the NPTEL will be approved by the Honourable Vice Chancellor in the beginning of the academic year to facilitate the registration process.
  6. The student can also opt for post graduate level courses.
  7. The students have to submit the NPTEL course completion certificate to exam division for considering as B.Tech (Hons)
- \* Student should have to take permission of registration for the B.Tech. (Hons.) degree from Honourable Vice Chancellor in starting of third semester.

## **B. Choice Based Credit System (CBCS)**

Choice Based Credit System (CBCS) is a versatile and flexible option for each student to achieve his/her target number of credits as specified by the AICTE/UGC and adopted by our University.

The following is the course module designed for the B.Tech. program:

- **Program Core Course (PCC):** Core courses of B.Tech. program will provide a holistic approach to engineering education, giving students an overview of the field, a basis to build and specialize upon. These core courses are the strong foundation to establish technical knowledge and provide broad multi-disciplined knowledge 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 society at large. A wide range of core courses provides groundwork in the field of thermo-fluids, engineering designs, industrial and production engineering etc. We offer core courses in semester III, IV, V, VI, VII & VIII during the B.Tech.- Mechanical program. There will be 3 or 4 credits for each core course offered depending upon the course content.
- **HSMC – (Humanities and Social Sciences including Management courses):** As per the AICTE guidelines of Choice Based Credit System (CBCS) for all Universities, including the private Universities, the *Humanities and Social Sciences including Management courses* are actually Ability Enhancement Compulsory Course (AECC) which is designed to develop the ability of students in communication (especially English) and other related courses where they might find it difficult to communicate at a higher level in their prospective job at a later stage due to lack of practice and exposure in the language, etc. Students are motivated to learn the theories, fundamentals and tools of communication which can help them develop and sustain in the corporate environment and culture. We offered four HSMCs of 2 & 3 credits in I, II, IV, VI semesters.
- **Skill Enhancement Course:** This course may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge. We offer two SECs course as Lab- one each in VII Semester & VIII Semester. One SEC will carry 2 credits each.
- **Open Elective Course (OEC):** Open Elective is an interdisciplinary additional subject that is compulsory in a program. The score of Open Elective is counted in the overall aggregate marks under Choice Based Credit System (CBCS). Each Open Elective paper will be of 3 Credits in VII and VIII semesters. Each student has to take Open/Generic Electives from department other than the parent department. Core / Discipline Specific Electives will not be offered as Open Electives.
- **Mandatory Course (MC):** This is a compulsory course that does not have any choice and will be of 3 credits. Each student of B.Tech. Program has to compulsorily pass the Environmental Studies and acquire 3 credits.





## B.Tech (Mechanical Engineering)-Semester VII

S. No	Category	Course Code	Course	Periods			Evaluation Scheme			
				L	T	P	Credit	Internal	External	Total
1	PCC-17	EME711	Computer Aided Design (CAD)	3	-	-	3	40	60	100
2	PCC-18	EME712	IC Engines	3	-	-	3	40	60	100
3	PEC-1		Program Elective	3	1	-	4	40	60	100
4	PEC-2			3	1	-	4	40	60	100
5	OEC-1		Open Elective	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-1	-	-	10	5	100	-	100
10	DGP-7	EGP711	Discipline & General Proficiency	-	-	-	-	100	-	100
			<b>Total</b>	<b>15</b>	<b>2</b>	<b>14</b>	<b>26</b>	<b>450/460</b>	<b>450/440</b>	<b>900</b>

### MOOC Course:

1	MOOC-3	MOOC03	MOOC Program –III (Optional)	-	-	-	2	-	100	100
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### B.Tech (Mechanical Engineering)-Semester VIII

S. No	Category	Course Code	Course	Periods			Evaluation Scheme				
				L	T	P	Credit	Internal	External	Total	
1	PCC-19	EME811	Computer Aided Manufacturing (CAM)	3	1	-	4	40	60	100	
2	PEC-3		Program Elective	Program Elective-III	3	1	-	4	40	60	100
3	PEC-4			Program Elective-IV	3	1	-	4	40	60	100
4	PEC-5		Program Elective (Lab)	Program Elective-V	-	-	2	1	50	50	100
5	OEC-2		Open Elective	Open Elective-II	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	-	-	6	3	50	50	100	
8	DGP-8	EGP811	Discipline & General Proficiency	-	-	-	-	100	-	100	
			Total	12	3	10	20	310/320	390/380	700	

#### MOOC Course:

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