

Annexure A

Amended B.Tech. Curriculum Structure

Department of Mechanical Engineering, TU

1 AICTE Curriculum vs. Proposed Curriculum

SN	Category	AICTE Model Curriculum Credits	Proposed Curriculum Credits
1	Humanities and Social Sciences including Management courses	12	12
2	Basic Science courses	29	23
3	Engineering Science courses	27	29
4	Professional core courses	58	58
5	Professional Elective courses relevant to chosen branch	9	12
6	Open subjects Electives from other technical and /or emerging Subjects	9	9
7	Project work, seminar and internship in industry or elsewhere	16	17
8	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Knowledge Tradition]	0	0
	Total	160	160

2 Proposed Curriculum :: Category-wise distribution of courses

Humanities and Social Sciences including Management courses (HSMC)							
SN	Code	Course	L	T	P	CR	CH
1	SEEC102	English	2	0	0	2	2
2	SEEC103	Language Lab	0	0	1	1	2
3	SEEC104	Universal Human Values	2	1	0	3	3
4	SEEC200	Fundamentals of Economics and Entrepreneurship for Engineers	3	0	0	3	3
5	SEEC300	Professional Practice, Law and Ethics of Engineering	3	0	0	0	3
6	SEEC302	Finance and Accounting	3	0	0	3	3
Basic Science Courses (BSC)							
SN	Code	Course	L	T	P	CR	CH
1	APMS100	Mathematics - I	3	1	0	4	4
2	APCH100	Chemistry	3	0	0	3	3
3	APCH101	Chemistry Lab	0	0	1	1	2
4	APMS101	Mathematics - II	3	1	0	4	4
5	APPH100	Physics	3	1	0	4	4
6	APPH101	Physics Lab	0	0	1	1	2
7	SEEC101	Biology for Engineers	3	0	0	3	3
8	APMS200	Mathematics - III	2	1	0	3	3
Engineering Science Courses (ESC)							
SN	Code	Course	L	T	P	CR	CH
1	CSBT100	Programming for Problem Solving	2	0	0	2	2
2	CSBT101	Programming Lab	0	0	2	2	4
3	MEBT100	Manufacturing Practices Workshop	0	0	2	2	4
4	EEBT100	Basic Electrical Engineering	2	1	0	3	3
5	EEBT101	Basic Electrical Engineering Lab	0	0	1	1	2
6	ECBT102	Basic Electronics	2	0	0	2	2
7	ECBT103	Basic Electronics Lab	0	0	1	1	2
8	CEBT100	Engineering Graphics and Design	1	0	2	3	5
9	DDBD100	Design Thinking	0	0	1	1	2
10	MEBT202	Engineering Mechanics	3	1	0	4	4
11	MEBT203	Basic Thermodynamics	3	1	0	4	4
12	SEEC201	IDEA Lab Workshop	0	0	2	0	4
13	MEBT205	Applied Thermodynamics	3	1	0	4	4
Professional Core Courses (PCC)							
SN	Code	Course	L	T	P	CR	CH
1	MEBT201	Measurement and Metrology	3	0	1	4	5
2	MEBT204	Engineering Materials and Applications	3	1	0	4	4
3	MEBT206	Mechatronics, Robotics and Control	3	0	1	4	5
4	MEBT207	Mechanics of Deformable Solids	3	1	0	4	4
5	MEBT208	Kinematics and Dynamics of Machines	3	1	0	4	4

Professional Core Courses (PCC)							
SN	Code	Course	L	T	P	CR	CH
6	MEBT209	Fluid Mechanics and Hydraulic Machines	3	1	0	4	4
7	MEBT210	Mech. Engg. Lab 1	0	0	2	2	4
8	MEBT301	Machine Element and System Design	3	1	0	4	4
9	MEBT302	Heat Transfer	3	1	0	4	4
10	MEBT303	Manufacturing Processes	3	1	0	4	4
11	MEBT304	Production and Operation Management	3	1	0	4	4
12	MEBT305	Mech. Engg. Lab 2	0	0	2	2	4
13	MEBT306	Computer-Aided Engineering	2	0	2	4	6
14	MEBT307	Manufacturing Automation	3	0	1	4	5
15	MEBT308	Product Innovation, Marketing and Finance	3	1	0	4	4
16	MEBT309	Mech. Engg. Lab 3	0	0	2	2	4
Professional Elective Courses (PEC)							
SN	Code	Course	L	T	P	CR	CH
1	MEBT3XX	Professional Elective – 1	3	0	0	3	3
2	MEBT4XX	Professional Elective – 2	3	0	0	3	3
3	MEBT4XX	Professional Elective – 3	3	0	0	3	3
4	MEBT4XX	Professional Elective – 4	3	0	0	3	3
Open Elective Courses (OE)							
SN	Code	Course	L	T	P	CR	CH
1	OEBT4XX	Open Elective – 1	3	0	0	3	3
2	OEBT4XX	Open Elective – 2	3	0	0	3	3
3	OEBT4XX	Open Elective – 3	3	0	0	3	3
Project work, seminar and internship in industry or elsewhere (Pr)							
SN	Code	Course	L	T	P	CR	CH
1	MEBT310	Engineering Project 1 (Literature Review)	0	0	2	2	4
2	MEBT401	Engineering Project 2 (Design and Analysis)	0	0	6	6	12
3	MEBT403	Engineering Project 3 (Prototype and Testing)	0	0	8	8	16
4	MEBT402	Seminar	0	0	1	1	2
Mandatory Non-credit Courses (MNC)							
SN	Code	Course	L	T	P	CR	CH
1	SEIP100	Induction Program	0	0	4	0	8
2	SEEC100 SESP100	Environmental Sciences	2	0	1	0	4
3	SENS100 SENC100	Sports and Yoga/NSS/NCC	0	0	2	0	4
4	SEEC303	Essence Of Indian Knowledge Tradition	1	0	0	0	1
5	SEEC301	Constitution of India	1	0	0	0	1

3 Proposed Curriculum :: Semester-wise distribution of courses

Sem	Code	Course	L	T	P	CR	CH	CR _{sem}
I	APMS100	Mathematics - I	3	1	0	4	4	20
	APCH100	Chemistry	3	0	0	3	3	
	APCH101	Chemistry Lab	0	0	1	1	2	
	CSBT100	Programming for Problem Solving	2	0	0	2	2	
	CSBT101	Programming Lab	0	0	2	2	4	
	MEBT100	Manufacturing Practices Workshop	0	0	2	2	4	
	SEEC102	English	2	0	0	2	2	
	SEEC103	Language Lab	0	0	1	1	2	
	SEEC104	Universal Human Values	2	1	0	3	3	
	SEIP100	Induction Program	0	0	4	0	8	
II	APMS101	Mathematics - II	3	1	0	4	4	23
	APPH100	Physics	3	1	0	4	4	
	APPH101	Physics Lab	0	0	1	1	2	
	EEBT100	Basic Electrical Engineering	2	1	0	3	3	
	EEBT101	Basic Electrical Engineering Lab	0	0	1	1	2	
	ECBT102	Basic Electronics	2	0	0	2	2	
	ECBT103	Basic Electronics Lab	0	0	1	1	2	
	CEBT100	Engineering Graphics and Design	1	0	2	3	5	
	DDBD100	Design Thinking	0	0	1	1	2	
	SEEC100	Environmental Sciences	2	0	1	0	3	
	SEEC101	Biology for Engineers	3	0	0	3	3	
	SESP100 or SENS100 or SENC100	Sports and Yoga or NSS or NCC	0	0	2	0	4	
III	MEBT201	Measurement and Metrology	3	0	1	4	5	22
	APMS200	Mathematics - III	2	1	0	3	3	
	MEBT202	Engineering Mechanics	3	1	0	4	4	
	MEBT203	Basic Thermodynamics	3	1	0	4	4	
	MEBT204	Engineering Materials and Applications	3	1	0	4	4	
	SEEC200	Fundamentals of Economics and Entrepreneurship for Engineers	3	0	0	3	3	
IV	SEEC201	IDEA Lab Workshop	0	0	2	0	4	22
	MEBT205	Applied Thermodynamics	3	1	0	4	4	
	MEBT206	Mechatronics, Robotics and Control	3	0	1	4	5	
	MEBT207	Mechanics of Deformable Solids	3	1	0	4	4	
	MEBT208	Kinematics and Dynamics of Machines	3	1	0	4	4	
	MEBT209	Fluid Mechanics and Hydraulic Machines	3	1	0	4	4	
	MEBT210	Mech. Engg. Lab 1	0	0	2	2	4	

Sem	Code	Course	L	T	P	CR	CH	CR _{sem}
V	MEBT301	Machine Element and System Design	3	1	0	4	4	21
	MEBT302	Heat Transfer	3	1	0	4	4	
	MEBT303	Manufacturing Processes	3	1	0	4	4	
	MEBT304	Production and Operation Management	3	1	0	4	4	
	MEBT305	Mech. Engg. Lab 2	0	0	2	2	4	
	SEEC302	Finance and Accounting	3	0	0	3	3	
	SEEC303	Essence Of Indian Knowledge Tradition	1	0	0	0	1	
VI	MEBT306	Computer-Aided Engineering	2	0	2	4	6	19
	MEBT307	Manufacturing Automation	3	0	1	4	5	
	MEBT308	Product Innovation, Marketing and Finance	3	1	0	4	4	
	MEBT309	Mech. Engg. Lab 3	0	0	2	2	4	
	SEEC300	Professional Practice, Law and Ethics of Engineering	3	0	0	0	3	
	MEBT310	Engineering Project 1 (Literature Review)	0	0	2	2	4	
	MEBT3XX	Professional Elective – 1	3	0	0	3	3	
	SEEC301	Constitution of India	1	0	0	0	1	
VII	MEBT4XX	Professional Elective – 2	3	0	0	3	3	19
	MEBT4XX	Professional Elective – 3	3	0	0	3	3	
	OEBT4XX	Open Elective – 1	3	0	0	3	3	
	OEBT4XX	Open Elective – 2	3	0	0	3	3	
	MEBT401	Engineering Project 2 (Design and Analysis)	0	0	6	6	12	
	MEBT402	Seminar	0	0	1	1	2	
VIII	MEBT4XX	Professional Elective – 4	3	0	0	3	3	14
	OEBT4XX	Open Elective – 3	3	0	0	3	3	
	MEBT403	Engineering Project 3 (Prototype and Testing)	0	0	8	8	16	

Industry internship: Internship in industry, start-up, or R&D lab in 2nd/3rd year summer is compulsory (audit). Longer internships for 6 months or full year including summer can be taken in the 7th/8th semester, in lieu of Engineering Project and Seminar. The internship must be properly evaluated. In case of the students who undergo Industry Internship for the full 7th/8th semester, the credits for the Elective Courses in the corresponding semester shall be covered through MOOCS prescribed by the Department.

4 Course Approval Status as Per AICTE and External BoS Members

Code	Course	Designed As Per AICTE	External BoS Members' Comments	Other Experts' Comments
MEBT100	Manufacturing Practices Workshop	NO	YES	YES
MEBT201	Measurement and Metrology	NO	NA	YES
MEBT202	Engineering Mechanics	NO	NA	YES
MEBT203	Basic Thermodynamics	NO	YES	YES
MEBT204	Engineering Materials and Applications	NO	NA	YES
MEBT205	Applied Thermodynamics	YES	YES	NA
MEBT206	Mechatronics, Robotics and Control	YES	NA	NA
MEBT207	Mechanics of Deformable Solids	YES	NA	NA
MEBT208	Kinematics and Dynamics of Machines	YES	NA	NA
MEBT209	Fluid Mechanics and Hydraulic Machines	YES	YES	NA
MEBT210	Mech. Engg. Lab 1	YES	NA	YES
MEBT301	Machine Element and System Design	YES	NA	YES
MEBT302	Heat Transfer	NO	YES	NO
MEBT303	Manufacturing Processes	NO	NA	YES
MEBT304	Production and Operation Management	YES	NA	NA
MEBT305	Mech. Engg. Lab 2	NO	NA	NA
MEBT306	Computer-Aided Engineering	NO	YES	NA
MEBT307	Manufacturing Automation	YES	NA	NA
MEBT308	Product Innovation, Marketing and Finance	YES	YES	NA
MEBT309	Mech. Engg. Lab 3	YES	NA	YES
MEBT310	Engineering Project 1	YES	NA	NA
MEBT401	Engineering Project 2	YES	NA	NA
MEBT402	Seminar	YES	NA	NA
MEBT403	Engineering Project 3	YES	NA	NA