Curriculum for Undergraduate Degree B.Tech. in Mechanical Engineering (w.e.f. AY: 2025-26)

Part I: Category wise Credit Distribution

A. DefinitionofCredit:

Sl.No.	Description	Credit
1	1Hr.Lecture(L)Per Week	1
2	1Hr.Tutorial(T)Per Week	1
3	1Hr.Practical/Lab(P) Per Week	0.5
4	2Hrs.Practical/Lab(P)Per Week	1

B. RangeofCredits:

As per AICTE, a student covering 160 credits during 4 years of studies as per curriculum of the Institute will be eligible to get Under Graduate B.Tech. degree with one major specialization as opted by the student from a list of major specializations as specified in the program curriculum. Over and above, a student will have to earn additional 20 credits (including the credits transferred from SWAYAM platform) and the same shall be mentioned as minor specialization. A student may opt any minor specialization offered by any department of the institute with the constraints that (i) the papers included in that specific specialization should not be same with any of the papers of his/her mandated curriculum and (ii) the student should have the knowledge of the prerequisites w.r.t. the papers of that specialization.

C. Categorywise Credit Distribution:

Sl.No.	Category	Credit Allotted	Credit as perAICTE
1	Humanities and Social Sciences including Management Courses	16	12
2	Basic Science Courses	29	29
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	24	27
4	Professional Core Courses	59	58
5	Professional Elective Courses relevant to chosen specialization/ branch	12	9
6	Open Elective Courses from other technical and / or emerging subjects	9	9
7	Project Work, Seminar and Internship in Industry or elsewhere	11	16
8	Audit Courses [Environmental Sciences, Induction Training]	Non-Credit	Non-Credit
Total		**160**	**160**

D. CourseCodeandDefinition:

Sl. No.	Course Code	Definitions
1	L	Lecture
2	T	Tutorial
3	P	Practical
4	BS	Basic Science Courses
5	ES	Engineering Science Courses
6	HM	Humanities and Social Sciences including Management Courses
7	PC	Professional Core Courses
8	PE	Professional Elective Courses
9	OE	Open Elective Courses
10	AU	Audit Courses
11	PW	Project/ Internships/ Sessional
12	MN	Minor Courses

E. Courses in different Category:

HumanitiesandSocialSciencesincludingManagementCourses							
Sl.No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	HM-HU101	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
2	I	HM-HU102	Introduction to IKS (Indian Knowledge Systems-I)	2	0	0	2
3	II	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Pravah)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
5	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
6	VI	HM-HU671	Aptitude Skill Development-II	1	0	0	1
7	VIII	HM-HU801	Universal Human Value-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				**12**	**0**	**0**	**12**
Practical/ Sessional/ Mandatory Course							
1	I	HM-HU191	Language Laboratory	1	0	2	2
2	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
TotalPractical/Sessional/ Mandatory Course				**2**	**0**	**4**	**4**
Total				**14**	**0**	**4**	**16**

Basic Science Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	BS-M101	Mathematics-I	3	1	0	4
2	I	BS-CH101	Chemistry	3	0	0	3
3	II	BS-M201	Mathematics-II	3	1	0	4
4	II	BS-PH201	Physics	3	1	0	4
5	III	BS-M301	Mathematics-III	2	1	0	3
6	IV	BS-BIO401	Biology for Engineers	2	0	0	2
7	IV	BS-M401	Vedic Mathematics (Indian Knowledge Systems-II)	2	0	0	2
8	V	BS-M501	Astronomy (Indian Knowledge Systems-III)	2	0	0	2
9	VIII	BS-M801	Astronomy (Indian Knowledge Systems-IV)	2	0	0	2
Total Theory				**22**	**4**	**0**	**26**
Practical/ Sessional/ Mandatory Course							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
TotalPractical/Sessional/ Mandatory Course				**0**	**0**	**6**	**3**
Total				**22**	**4**	**6**	**29**

Engineering Science Coursesincluding Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
2	II	ES-CS201	Programming for Problem Solving	3	0	0	3
3	III	ES-ME301	Materials Engineering	3	0	0	3
4	III	ES-ME302	Engineering Mechanics	3	1	0	4
5	V	ES-ME501	Operation Research	3	0	0	3
Total Theory				**14**	**2**	**0**	**16**
Practical/ Sessional							
1	I	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
2	I	ES-ME192	Workshop/ Manufacturing Practices	0	0	4	2
3	II	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
4	II	ES-ME291	Engineering Graphics and Design	0	0	4	2
TotalPractical/Sessional				**0**	**0**	**16**	**8**
Total				**14**	**2**	**16**	**24**

Professional Core Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	III	PC-ME301	Thermodynamics	3	1	0	4
2	III	PC-ME302	Basic Manufacturing Processes	4	0	0	4
3	IV	PC-ME401	Heat Transfer	3	1	0	4
4	IV	PC-ME402	Fluid Mechanics and Hydraulic Machines	3	1	0	4
5	IV	PC-ME403	Strength of Materials	3	1	0	4
6	IV	PC-ME404	Metrology and Instrumentation	4	0	0	4
7	V	PC-ME501	Applied Thermodynamics	3	1	0	4
8	V	PC-ME502	Machine Design-I	3	1	0	4
9	V	PC-ME503	Kinematics and Theory of Machines	3	1	0	4
10	VI	PC-ME601	Manufacturing Technology	4	0	0	4
11	V	PC-ME602	Machine Design-II	3	1	0	4
12	VI	PC-ME602	Production and Operation Management	3	0	0	3
13	VII	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
Total Theory				**42**	**8**	**0**	**50**
Practical/ Sessional							
1	III	PC-ME391	Basic Manufacturing Processes Laboratory	0	0	3	1.5
2	IV	PC-ME491	Metrology and Instrumentation Laboratory	0	0	3	1.5
3	V	PC-ME591	Mechanical Engineering Laboratory-I (Design)	0	0	3	1.5
4	V	PC-ME592	Mechanical Engineering Laboratory-II (Thermal and Fluid)	0	0	3	1.5
5	VI	PC-ME691	Mechanical Engineering Laboratory-III (Applied Mechanics and Kinematics)	0	0	3	1.5
6	VII	PC-ME791	Mechanical Engineering Laboratory- IV (Manufacturing)	0	0	3	1.5
TotalPractical/Sessional				**0**	**0**	**18**	**9**
Total				**42**	**8**	**18**	**59**

Professional Elective Courses relevant to chosen specialization/branch

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	VI	PE-ME601	Professional Elective-I	3	0	0	3
2	VI	PE-ME602	Professional Elective-II	3	0	0	3
3	VII	PE-ME701	Professional Elective-III	3	0	0	3
4	VII	PE-ME702	Professional Elective-IV	3	0	0	3
TotalTheory				**12**	**0**	**0**	**12**
Practical/Sessional							
TotalPractical/Sessional				**0**	**0**	**0**	**0**
Total				**12**	**0**	**0**	**12**

Open Elective Courses from other technical and/or emerging subjects

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	VII	Based on the papers opted from the list of papers offered by other depts.	Open Elective-I	3	0	0	3
2	VII		Open Elective-II	3	0	0	3
3	VIII		Open Elective-III	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Practical/ Sessional							
Total Practical/ Sessional				**0**	**0**	**0**	**0**
Total				**9**	**0**	**0**	**9**

Project Work, Seminar and Internship in Industry or elsewhere

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
Total Theory				**0**	**0**	**0**	**0**

Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-ME481	Project-I	0	0	2	1
3	V	PW-ME581	Internship	0	0	2	1
4	VI	PW-ME681	Project-II	0	0	2	1
5	VII	PW-ME781	Project-III	0	0	4	2
6	VIII	PW-ME881	Project-IV	0	0	8	4
7	VIII	PW-ME882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				**0**	**0**	**20**	**11**
Total				**0**	**0**	**20**	**11**

Audit Courses [Environmental Sciences, Induction Training etc.]							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
Total Theory				**0**	**0**	**0**	**0**
Practical/ Sessional							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Sciences	2	0	0	0
Total Practical/ Sessional				**4**	**0**	**0**	**0**
Total				**4**	**0**	**0**	**0**