MCKV INSTITUTE OF ENGINEERING
NAAC Accredited "A" Grade Autonomous Institute under UGC Act 1956
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Curriculum for Undergraduate Degree (B.Tech.) in Mechanical Engineering (w.e.f. AY: 2020-21)

Part I: Introduction, Theme & Category wise Credit Distribution

A. Definition of Credit:

Sl. No.	Description	Credit
1	1 Hr. Lecture (L) Per Week	1.0
2	1 Hr. Tutorial (T) Per Week	1.0
3	1 Hr. Practical/ Lab (P) Per Week	0.5
4	2 Hrs. Practical/ Lab (P) Per Week	1.0

B. Range of Credits:

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. A student will be eligible to get B.Tech. degree with Honours, if he/ she completes an additional 20 credits. These could be acquired through MOOCs prescribed by the Institute. Every student admitted to the 4 years B.Tech programme is required to earn a minimum of 100 Activity Points under Mandatory Additional Requirement (MAR), in addition to the required academic grades, for getting B.Tech./ B.Tech. (Honours) degree.

C. Category wise Credit Distribution:

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	13	12
2	Basic Science Courses	26	25
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	24	24
4	Professional Core Courses	57.5	48
5	Professional Elective Courses relevant to chosen specialization/ branch	18	18
6	Open Elective Courses from other technical and / or emerging subjects	9	18
7	Project Work, Seminar and Internship in Industry or elsewhere	12.5	15
8	Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge, Aptitude Skill]	Non-Credit	Non-Credit
Total		160	160

D. Course Code and Definition:

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	MC	Mandatory Courses
11	PW	Project/ Internships/ Sessional

E. Courses in different Category:

Humanities and Social Sciences including Management Courses							
Sl No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	II	HM-HU201	English	2	0	0	2
2	V	HM-HU503	Principles of Management	2	0	0	2
3	VI	HM-HU 601	Humanities-II (Operations Research)	4	0	0	4
4	VII	HM-HU701	Economics for Engineers	3	0	0	3
Total Theory				**11**	**0**	**0**	**11**
Practical/ Sessional							
1	I	HM-HU191	Language Laboratory	0	0	2	1
2	VI	HM-HU691	Soft skill Development Lab	0	0	3	1
Total Practical/ Sessional				**0**	**0**	**5**	**2**
Total				**11**	**0**	**5**	**13**

Basic Science Courses							
Sl No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	BS-CH101	Chemistry	3	1	0	4
2	I	BS-M101	Mathematics- I	3	1	0	4
3	II	BS-PH201	Physics	3	1	0	4
4	II	BS-M201	Mathematics - II	3	1	0	4
5	III	BS-M303	Mathematics- III	2	1	0	3
6	III	BS-BIO301	Biology	2	0	0	2
7	IV	BS- M404	Numerical methods	2	0	0	2
Total Theory				**18**	**5**	**0**	**23**
Practical/ Sessional							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
Total Practical/ Sessional				**0**	**0**	**6**	**3**
Total				**18**	**5**	**6**	**26**

Engineering Science Courses including 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-CS101	Programming for Problem Solving	3	0	0	3
2	II	ES-EE201	Basic Electrical & Electronics Engineering	4	0	0	4
3	III	ES-ME301	Materials Engineering	3	0	0	3
4	III	ES-ME302	Engineering Mechanics	3	1	0	4
Total Theory				**13**	**1**	**0**	**14**
Practical/ Sessional							
1	I	ES-CS191	Programming for Problem Solving Lab	0	0	4	2
2	I	ES-ME192	Workshop/ Manufacturing Practices	1	0	4	3
3	II	ES-EE291	Basic Electrical & Electronics Engineering Lab	0	0	4	2
4	II	ES-ME291	Engineering Graphics & Design	1	0	4	3
Total Practical/ Sessional				**2**	**0**	**16**	**10**
Total				**15**	**1**	**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	Applied Thermodynamics	3	1	0	4
4	IV	PC-ME402	Fluid Mechanics & Fluid Machines	3	1	0	4
5	IV	PC-ME403	Strength of Materials	3	1	0	4
6	IV	PC-ME404	Metrology and Instrumentation	3	1	0	4
7	V	PC-ME501	Heat Transfer	3	1	0	4
8	V	PC-ME502	Solid Mechanics	3	1	0	4
9	V	PC-ME503	Kinematics & Theory of Machines	3	1	0	4
10	VI	PC-ME601	Manufacturing Technology	4	0	0	4
11	VI	PC-ME602	Design of Machine Elements	3	1	0	4
12	VII	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
Total Theory				**38**	**9**	**0**	**47**
Practical/ Sessional							
1	III	PC-ME391	Basic Manufacturing Processes Lab	0	0	3	1.5
2	IV	PC-ME491	Metrology and Instrumentation Lab	0	0	3	1.5
3	IV	PC-ME492	Machine Drawing- I	0	0	3	1.5
4	V	PC-ME591	Mechanical Engineering Laboratory I (Thermal)	0	0	3	1.5
5	V	PC-ME592	Machine Drawing-II	0	0	3	1.5
6	VI	PC-ME691	Mechanical Engineering Laboratory II (Design)	0	0	3	1.5
7	VII	PC-ME791	Mechanical Engineering Laboratory III (Manufacturing)	0	0	3	1.5
Total Practical/ Sessional				**0**	**0**	**22**	**10.5**
Total				**38**	**9**	**22**	**57.5**

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	Elective-I	3	0	0	3
2	VI	PE-ME602	Elective-II	3	0	0	3
3	VII	PE-ME701	Elective III	3	0	0	3
4	VII	PE-ME702	Elective-IV	3	0	0	3
5	VIII	PE-ME801	Elective V	3	0	0	3
6	VIII	PE-ME802	Elective VI	3	0	0	3
Total Theory				**18**	**0**	**0**	**18**
Practical/ Sessional							
1							
Total Practical/ Sessional							
Total				**18**	**0**	**0**	**18**

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	OE-ME 701	Open Elective- I	3	0	0	3
2	VIII	OE-ME 801	Open Elective-II	3	0	0	3
3	VIII	OE-ME 802	Open Elective- III	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Practical/ Sessional							
1							
Total Practical/ Sessional							
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							
Practical/ Sessional							
1	VIII	PW-ME882	Comprehensive viva	0	0	0	1.5
2	V	PW-ME581	Project-I (30 hrs. Total)	0	0	2	1
3	VI	PW-ME681	Project-II (90 hrs. Total)	0	0	4	2
4	VII	PW-ME781	Project-III	0	0	6	3
5	VIII	PW-ME881	Project-IV	0	0	10	5
Total Practical/ Sessional							
Total				**0**	**0**	**22**	**12.5**

Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Aptitude Skill]							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Practical/Sessional/Mandatory Courses							
1	IV	MC471	Environmental Science	2	0	0	0
2	V	MC571	Aptitude Skill Development-I	2	0	0	0
3	VI	MC671	Aptitude Skill Development-II	2	0	0	0
4	VI	MC672	Constitution of India	2	0	0	0
Total Practical/ Sessional/Mandatory Course				**8**	**0**	**0**	**0**
Total							
Total				**8**	**0**	**0**	**0**