



MCKV INSTITUTE OF ENGINEERING

NAAC Accredited "A" Grade Autonomous Institute under UGC Act 1956
Approved by AICTE & affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

243 G.T. Road (N), Liluah, Howrah- 711204, West Bengal, India

Ph: +91 33 26549315/17 Fax +91 33 26549318 Web: www.mckvie.edu.in/

Curriculum for Undergraduate Degree (B.Tech.) in Electrical 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. Also some non-credit mandatory courses are there included in the curriculum. Like theory courses, students are required to appear in the semester examination for all mandatory courses and must get a minimum of pass marks in those courses to be eligible to get the final degree.

C. Category wise Credit Distribution:

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	11	12
2	Basic Science Courses	27	25
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	20	24
4	Professional Core Courses	53.5	48
5	Professional Elective Courses relevant to chosen specialization/ branch	15	18
6	Open Elective Courses from other technical and / or emerging subjects	18	18
7	Project Work, Seminar and Internship in Industry or elsewhere	15.5	15
8	Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge, Aptitude Skill]	Non-Credit	Non-Credit
Total		160	160



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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 Categories:

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	IV	HM-HU402	Values and Ethics in profession	2	0	0	2
3	V	HM-HU501	Economics for Engineers	3	0	0	3
4	VII	HM-HU702	Principles of Management	2	0	0	2
<i>Total Theory</i>				9	0	0	9
Practical/ Sessional							
1	I	HM-HU191	Language Laboratory	0	0	2	1
2	VI	HM-HU691	Soft Skill Development Lab	0	0	2	1
<i>Total Practical/ Sessional</i>				0	0	4	2
Total				9	0	4	11



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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-M302	Mathematics-III	3	0	0	3
6	III	BS-M304	Numerical Methods	2	0	0	2
7	III	BS-BIO301	Biology	2	0	0	2
<i>Total Theory</i>				19	4	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
3	III	BS-M394	Numerical Methods Laboratory	0	0	2	1
<i>Total Practical/ Sessional</i>				1	0	8	4
Total				20	4	8	27

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 and Electronics Engineering	3	1	0	4
3	IV	ES-ME401	Engineering Mechanics	3	0	0	3
<i>Total Theory</i>				9	1	0	10
Practical/ Sessional							
1	I	ES-CS191	Programming for Problem Solving Laboratory	0	0	4	2
2	I	ES-ME192	Workshop/ Manufacturing Practices	1	0	4	3
3	II	ES-EE291	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
4	II	ES-ME291	Engineering Graphics and Design	1	0	4	3
<i>Total Practical/ Sessional</i>				2	0	16	10
Total				11	0	16	20



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Professional Core Courses							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-EE301	Electric Circuit Theory	3	1	0	4
2	III	PC-EE302	Analog Electronics	3	0	0	3
3	III	PC-EE303	Electromagnetic Field Theory	3	0	0	3
4	IV	PC-EE401	Electric Machine-I	3	1	0	4
5	IV	PC-EE402	Digital Electronics	3	0	0	3
6	IV	PC-EE403	Electrical and Electronics Measurement	3	0	0	3
7	V	PC-EE501	Electric machine-II	3	1	0	4
8	V	PC-EE502	Power System-I	3	1	0	4
9	V	PC-EE503	Control System	3	0	0	3
10	VI	PC-EE601	Power Electronics	3	1	0	4
11	VI	PC-EE602	Power System-II	3	1	0	4
12	VII	PC-EE701	Electric Drives	3	0	0	3
<i>Total Theory</i>				36	6	0	42
Practical/ Sessional							
1	III	PC-EE391	Electric Circuit Theory Lab	0	0	2	1
2	III	PC-EE392	Analog Electronics Lab	0	0	2	1
3	IV	PC-EE491	Electric Machine-I Lab	0	0	2	1
4	IV	PC-EE492	Digital Electronics Lab	0	0	2	1
5	IV	PC-EE493	Electrical and Electronics Measurement Lab	0	0	3	1.5
6	V	PC-EE591	Electric Machine-II Lab	0	0	2	1
7	V	PC-EE592	Power System-I Lab	0	0	2	1
8	V	PC-EE593	Control system Lab	0	0	2	1
9	VI	PC-EE601	Power Electronics Lab	0	0	2	1
10	VI	PC-EE692	Power System-II Lab	0	0	2	1
11	VII	PC-EE791	Electric Drives Lab	0	0	2	1
<i>Total Practical/ Sessional</i>				0	0	23	11.5
Total				39	6	23	53.5



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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-EE601	Professional Elective-I	3	0	0	3
2	VII	PE-EE701	Professional Elective-II	3	0	0	3
3	VII	PE-EE702	Professional Elective-III	3	0	0	3
4	VIII	PE-EE801	Professional Elective-IV	3	0	0	3
5	VIII	PE-EE802	Professional Elective-V	3	0	0	3
Total				15	0	0	15

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	V	OE-EE501	Open Elective-I	3	0	0	3
2	VI		Open Elective-II	3	0	0	3
3	VI		Open Elective-III	3	0	0	3
4	VII		Open Elective-IV	3	0	0	3
5	VIII		Open Elective-V	3	0	0	3
<i>Total Theory</i>				15	0	0	15
Practical/ Sessional							
1	V		Open Elective-I	0	0	2	1
2	VI		Open Elective-II	0	0	2	1
3	VII		Open Elective-IV	0	0	2	1
<i>Total Practical/ Sessional</i>				0	0	6	3
Total				15	0	6	18

Project Work, Seminar and Internship in Industry or elsewhere							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Practical/ Sessional							
1	V	PW-EE581	Technical Seminar	0	0	0	1
2	VII	PW-EE781	Electrical and Electronic Design Lab-I	1	0	2	2
3	VII	PW-EE782	Project Stage-I	0	0	4	2
4	VII	PW-EE783	Industrial Training Evaluation	0	0	0	1



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5	VIII	PW-EE881	Electrical and Electronic Design Lab-II	0	0	2	1
6	VIII	PW-EE882	Project Stage-II	0	0	16	7.5
7	VIII	PW-EE883	Comprehensive Viva Voce	0	0	0	1
Total				1	0	24	15.5

Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge, Aptitude Skill]							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MC372	Indian Constitution	2	0	0	0
2	IV	MC471	Environmental Science	2	0	0	0
3	V	MC571	Aptitude Skill Development-I	2	0	0	0
4	VI	MC671	Aptitude Skill Development-II	2	0	0	0
Total				8	0	0	0