



# 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 Electronics and Communication 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	11	12
2	Basic Science Courses	27	25
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	23.5	24
4	Professional Core Courses	50	48
5	Professional Elective Courses relevant to chosen specialization/ branch	18	18
6	Open Elective Courses from other technical and / or emerging subjects	16	18
7	Project Work, Seminar and Internship in Industry or elsewhere	14.5	15
8	Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge, Aptitude Skill]	0	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 Category:

Humanities and Social Sciences including Management Courses							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	HM-HU101	English	2	0	0	2
2	VI	HM-HU601	Economics for Engineers	3	0	0	3
3	VI	HM-HU602	Value and Ethics in Profession	2	0	0	2
4	VII	HM-HU701	Principles of Management	2	0	0	2
Total Theory				9	0	0	9
Practical/ Sessional							
1	II	HM-HU291	Language Laboratory	0	0	2	1
2	IV	HM-HU491	Soft Skill Development Lab	0	0	2	1
Total Practical/ Sessional				0	0	4	2
Total				9	0	4	11

Basic Science Courses							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	BS-PH101	Physics	3	1	0	4
2	I	BS-M101	Mathematics-I	3	1	0	4



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3	II	BS-CH201	Chemistry	3	1	0	4
4	II	BS-M201	Mathematics-II	3	1	0	4
5	IV	BS-M304	Numerical Methods	2	0	0	2
6	III	BS-M402	Mathematics-III	3	0	0	3
7	IV	BS-BIO401	Biology	2	0	0	2
<i>Total Theory</i>				<b>19</b>	<b>4</b>	<b>0</b>	<b>23</b>
<b>Practical/ Sessional</b>							
1	I	BS-PH191	Physics Laboratory	0	0	3	1.5
2	II	BS-CH291	Chemistry Laboratory	0	0	3	1.5
3	III	BS-M394	Numerical Methods Lab	0	0	2	1
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>
<b>Total</b>				<b>19</b>	<b>4</b>	<b>8</b>	<b>27</b>

## 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-EE101	Basic Electrical and Electronics Engineering	3	1	0	4
2	II	ES-CS201	Programming for Problem Solving	3	0	0	3
3	III	ES-CS301	Data Structure & Algorithm	3	0	0	3
4	IV	ES-CS401	Operating System	3	0	0	3
Total Theory				12	1	0	13
Practical/ Sessional							
1	I	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	3	1.5
2	I	ES-ME191	Engineering Graphics & Design	1	0	4	3
3	II	ES-CS291	Programming for Problem Solving Lab	0	0	4	2
4	II	ES-ME292	Workshop/Manufacturing Practices	1	0	4	3
5	III	ES-CS391	Data Structure Lab	0	0	2	1
Total Practical/ Sessional				2	0	17	10.5
Total				14	1	17	23.5

## Professional Core Courses

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



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1	III	PC-EC301	Electronic Devices	3	0	0	3
2	III	PC-EC302	Analog Electronic Circuits	3	0	0	3
3	III	PC-EC303	Signals and Systems	3	0	0	3
4	III	PC-EC304	Network Theory	3	0	0	3
5	IV	PC-EC401	Analog Communication	3	0	0	3
6	IV	PC-EC402	Digital System Design	3	0	0	3
7	IV	PC-EC403	Microprocessors & Microcontrollers	3	0	0	3
8	V	PC-EC501	Electromagnetic Waves and Transmission Line	3	0	0	3
9	V	PC-EC502	Computer Architecture	3	0	0	3
10	V	PC-EC503	Digital Communication & Stochastic Process	3	0	0	3
11	V	PC-EC504	Digital Signal Processing	3	0	0	3
12	VI	PC-EC601	Control System	3	0	0	3
13	VI	PC-EC602	Computer Network	3	0	0	3
<i>Total Theory</i>				<b>39</b>	<b>0</b>	<b>0</b>	<b>39</b>
<b>Practical/ Sessional</b>							
1	III	PC-EC391	Electronic Devices Lab	0	0	2	1
2	III	PC-EC392	Analog Electronic Circuits Lab	0	0	2	1
3	IV	PC-EC491	Analog Communication Lab	0	0	2	1
4	IV	PC-EC492	Digital System Design Lab	0	0	2	1
5	IV	PC-EC493	Microprocessors & Microcontrollers Lab	0	0	2	1
6	V	PC-EC591	Electromagnetic Waves and Transmission Line Lab	0	0	2	1
7	V	PC-EC592	Computer Architecture Lab	0	0	2	1
8	V	PC-EC593	Digital Communication Lab	0	0	2	1
9	V	PC-EC594	Digital Signal Processing Lab	0	0	2	1
10	VI	PC-EC691	Control System Lab	0	0	2	1
11	VI	PC-EC692	Computer Network Lab	0	0	2	1
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>22</b>	<b>11</b>
<b>Total</b>				<b>38</b>	<b>0</b>	<b>22</b>	<b>50</b>

Professional Elective Courses relevant to chosen specialization/ branch							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	V	PE-EC501	Professional Elective-I	3	0	0	3
2	VI	PE-EC601	Professional Elective-II	3	0	0	3



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3	VII	PE-EC701	Professional Elective-III	3	0	0	3
4	VII	PE-EC702	Professional Elective-IV	3	0	0	3
5	VIII	PE-EC801	Professional Elective-V	3	0	0	3
6	VIII	PE-EC802	Professional Elective-VI	3	0	0	3
<i>Total Theory</i>				<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>				<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>

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-EC501	Open Elective-I	3	0	0	3
2	VI	OE-EC601	Open Elective-II	3	0	0	3
3	VII	OE-EC701	Open Elective-III	3	0	0	3
4	VII	OE-EC702	Open Elective-IV	3	0	0	3
5	VIII	OE-EC801	Open Elective-V	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional							
1	VI	OE-EC691	Open Elective-II (Lab)	0	0	2	1
Total Practical/ Sessional				0	0	2	1
Total				15	0	2	16

Project Work, Seminar and Internship in Industry or elsewhere							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1							
Total Theory				0	0	0	0
Practical/ Sessional							
1	VI	PW-EC681	Mini Project/ Electronic Design Workshop	0	0	4	2
2	VII	PW-EC781	Industrial Training	During Semester Break(6 <sup>th</sup> & 7 <sup>th</sup> )			1
3	VII	PW-EC782	Project-I	0	0	6	3
4	VIII	PW-EC881	Project-II	0	0	15	7.5
5	VIII	PW-EC882	Comprehensive Viva Voce	0	0	0	1



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<i>Total Practical/ Sessional</i>	<b>0</b>	<b>0</b>	<b>25</b>	<b>14.5</b>
<b>Total</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>14.5</b>

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							
Total Theory				0	0	0	0
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Practical/ Sessional							
1	III	MC371	Environmental Sciences	2	0	0	0
2	IV	MC472	Constitution of India	2	0	0	0
3	V	MC571	Aptitude Skill Development-I	2	0	0	0
4	V	MC573	Essence of Indian Traditional Knowledge	2	0	0	0
5	VI	MC671	Aptitude Skill Development-II	2	0	0	0
Total Theory				10	0	0	0
Total Practical/ Sessional				0	0	0	0
Total				10	0	0	0