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 II: Course Structure & Semester wise Credit Distribution

Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	**T**	**P**	
First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Theory							
1	BS	BS-PH101	Physics	3	1	0	4
2	BS	BS-M101	Mathematics-I	3	1	0	4
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	3	1	0	4
4	HM	HM-HU101	English	2	0	0	2
			Total Theory	**11**	**3**	**0**	**14**
Practical/ Sessional/ Mandatory Course							
1	BS	BS-PH191	Physics Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	3	1.5
3	ES	ES-ME191	Engineering Graphics & Design	1	0	4	3
		Total Practical/ Sessional/ Mandatory Course		**1**	**0**	**10**	**6**
		Total of First Semester		**12**	**3**	**10**	**20**
Second Semester (First Year)							
Sl No.	**Category**	**Course Code**	**Course Name**	**L**	**T**	**P**	**Credits**
Theory							
1	BS	BS-CH201	Chemistry	3	1	0	4
2	BS	BS-M201	Mathematics-II	3	1	0	4
3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
			Total Theory	**9**	**2**	**0**	**11**
Practical/ Sessional/ Mandatory Course							
1	BS	BS-CH291	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Lab	0	0	4	2
3	ES	ES-ME292	Workshop/Manufacturing Practices	1	0	4	3
4	HM	HM-HU291	Language Laboratory	0	0	2	1
		Total Practical/ Sessional/ Mandatory Course		**1**	**0**	**13**	**7.5**
		Total of Second Semester		**10**	**2**	**13**	**18.5**

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Third Semester (Second Year)

Sl No.	Category	Course Code	Course Name	L	T	P	Credits
Theory							
1	PC	PC-EC301	Electron Devices	3	0	0	3
2	PC	PC-EC302	Analog Electronic Circuits	3	0	0	3
3	PC	PC-EC303	Signals and Systems	3	0	0	3
4	PC	PC-EC304	Network Theory	3	0	0	3
5	ES	ES-CS301	Data Structure & Algorithm	3	0	0	3
6	BS	BS-M304	Numerical Methods	2	0	0	2
			Total Theory	**17**	**0**	**0**	**17**
Practical/ Sessional/ Mandatory Course							
1	PC	PC-EC391	Electronic Devices Lab.	0	0	2	1
2	PC	PC-EC392	Analog Electronic Circuits Lab	0	0	2	1
3	ES	ES-CS391	Data Structure Lab	0	0	2	1
4	BS	BS-M394	Numerical Methods Laboratory	0	0	2	1
5.	MC	MC371	Environmental Sciences	2	0	0	0
			Total Practical/ Sessional/ Mandatory Course	**2**	**0**	**8**	**4**
			Total of Third Semester	**19**	**0**	**8**	**21**

Fourth Semester (Second Year)

Sl No.	Category	Course Code	Course Name	L	T	P	Credits
Theory							
1	PC	PC-EC401	Analog Communication	3	0	0	3
2	PC	PC-EC402	Digital System Design	3	0	0	3
3	PC	PC-EC403	Microprocessors& Microcontrollers	3	0	0	3
4	ES	ES-CS401	Operating System	3	0	0	3
5	BS	BS-M402	Mathematics III	3	0	0	3
6	BS	BS-BIO401	Biology	2	0	0	2
			Total Theory	**17**	**0**	**0**	**17**
Practical/ Sessional/ Mandatory Course							
1	PC	PC-EC491	Analog Communication Lab	0	0	2	1
2	PC	PC-EC492	Digital System Design Lab	0	0	2	1
3	PC	PC-EC493	Microprocessors & Microcontrollers Lab	0	0	2	1
4	HM	HM-HU491	Soft Skill Development Lab	0	0	2	1
5	MC	MC472	Constitution of India	2	0	0	0
			Total Practical/ Sessional/ Mandatory Course	**2**	**0**	**8**	**4**
			Total of Fourth Semester	**19**	**0**	**8**	**21**

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Fifth Semester (Third Year)							
Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-EC501	Electromagnetic Waves and Transmission Line	3	0	0	3
2	PC	PC-EC502	Computer Architecture	3	0	0	3
3	PC	PC-EC503	Digital Communication & Stochastic Process	3	0	0	3
4	PC	PC-EC504	Digital Signal Processing	3	0	0	3
5	PE	PE-EC501	Professional Elective-I	3	0	0	3
6	OE	OE-EC501	Open Elective-I	3	0	0	3
			Total Theory	**18**	**0**	**0**	**18**
Practical/ Sessional/ Mandatory Course							
1	PC	PC-EC591	Electromagnetic Wavesand Transmission Line Lab	0	0	2	1
2	PC	PC-EC592	Computer Architecture Lab	0	0	2	1
3	PC	PC-EC593	Digital Communication Lab	0	0	2	1
4	PC	PC-EC594	Digital Signal Processing Lab	0	0	2	1
5	MC	MC571	Aptitude Skill Development-I	2	0	0	0
6	MC	MC573	Essence of Indian Traditional Knowledge	2	0	0	0
			Total Practical/ Sessional/ Mandatory Course	**4**	**0**	**8**	**4**
			Total of Fifth Semester	**22**	**0**	**8**	**22**

List of Elective Courses	
PE-EC501	**Professional Elective-I**
PE-EC501A	Nano Electronics
PE-EC501B	Speech and Audio Processing
PE-EC501C	Power Electronics
PE-EC501D	Scientific Computing
OE-EC501	**Open Elective-I**
OE-EC501A	Soft Skill and interpersonal communication
OE-EC501B	Cyber law and intellectual Property right
OE-EC501C	Human Resource Management

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Sixth Semester (Third Year)							
Sl No.	**Category**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	PC	PC-EC601	Control System	3	0	0	3
2	PC	PC-EC602	Computer Network	3	0	0	3
3	PE	PE-EC601	Professional Elective-II	3	0	0	3
4	OE	OE-EC601	Open Elective-II	3	0	0	3
5	HM	HM-HU601	Economics for Engineers	3	0	0	3
6	HM	HM-HU602	Value and Ethics in Profession	2	0	0	2
			Total Theory	**17**	**0**	**0**	**17**
Practical/ Sessional/ Mandatory Course							
1	PC	PC-EC691	Control System Lab	0	0	2	1
2	PC	PC-EC692	Computer Network Lab	0	0	2	1
3	OE	OE-EC691	Open Elective-II (Lab)	0	0	2	1
4	PW	PW-EC681	Mini Project/ Electronic Design Workshop	0	0	4	2
5	MC	MC671	Aptitude Skill Development-II	2	0	0	0
		Total Practical/ Sessional/ Mandatory Course		**2**	**0**	**10**	**5**
		Total of Sixth Semester		**19**	**0**	**10**	**22**

List of Elective Courses	
PE-EC601	**Professional Elective-II**
PE-EC601A	Introduction to MEMS
PE-EC601B	Bio-Medical Electronics
PE-EC601C	CMOS VLSI Design
PE-EC601D	Information Theory and Coding
OE-EC601	**Open Elective-II**
OE-EC601A	Electronic Measurement and Instrumentation
OE-EC601B	Design and Analysis of Algorithm
OE-EC601C	Object Oriented Programming
OE-EC691	**Open Elective-II (Lab)**
OE-EC691A	Electronic Measurement and Instrumentation Lab
OE-EC691B	Algorithm Lab
OE-EC691C	Object Oriented Programming Lab

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Seventh Semester (Fourth Year)							
Sl No.	**Category**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	PE	PE-EC701	Professional Elective-III	3	0	0	3
2	PE	PE-EC702	Professional Elective-IV	3	0	0	3
3	OE	OE-EC701	Open Elective-III	3	0	0	3
4	OE	OE-EC702	Open Elective-IV	3	0	0	3
5	HM	HM-HU701	Principles of Management	2	0	0	2
Total Theory				**14**	**0**	**0**	**14**
Practical/ Sessional/ Mandatory Course							
1	PW	PW-EC781	Industrial Training	During Semester Break(6th & 7th)			1
2	PW	PW-EC782	Project-I	0	0	6	3
Total Practical/ Sessional/ Mandatory Course				**0**	**0**	**6**	**4**
Total of Seventh Semester				**14**	**0**	**6**	**18**

List of Elective Courses	
PE-EC701	**Professional Elective-III**
PE-EC701A	Microwave Theory and Techniques
PE-EC701B	Error Correcting Codes
PE-EC701C	Industrial Automation and Control
PE-EC702	**Professional Elective-IV**
PE-EC702A	Embedded System
PE-EC702B	Wireless Sensor Networks
PE-EC702C	Renewable Energy
OE-EC701	**Open Elective-III**
OE-EC701A	Adaptive Signal Processing
OE-EC701B	Digital Image and Video Processing
OE-EC701C	Neural Network and Fuzzy Logic Control
OE-EC701D	Big Data Analysis
OE-EC702	**Open Elective-IV**
OE-EC702A	Web Technology
OE-EC702B	Cyber Security
OE-EC702C	Operation Research and Optimization Techniques (or AI based Optimization Techniques)
OE-EC702D	Entrepreneurship

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Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	**T**	**P**	
Eighth Semester (Fourth Year)							
Theory							
1	PE	PE-EC801	Professional Elective-V	3	0	0	3
2	PE	PE-EC802	Professional Elective-VI	3	0	0	3
3	OE	OE-EC801	Open Elective-V	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Practical/ Sessional/ Mandatory							
1	PW	PW-EC881	Project-II	0	0	15	7.5
2	PW	PW-EC882	Comprehensive Viva Voce				1
Total Practical/ Sessional/ Mandatory Course				**0**	**0**	**15**	**8.5**
Total of Eighth Semester				**9**	**0**	**15**	**17.5**

List of Elective Courses	
PE-EC801	**Professional Elective-V**
PE-EC801A	Antennas and Propagation
PE-EC801B	Fiber Optic Communication
PE-EC801C	Satellite Communication
PE-EC802	**Professional Elective-VI**
PE-EC802A	Mixed Signal Design
PE-EC802B	Mobile Communication & Network
PE-EC802C	VLSI Design Automation
OE-EC801	**Open Elective-V**
OE-EC801A	Internet of Things (IoT)
OE-EC801B	Artificial Intelligence
OE-EC801C	Organisational Behaviour