EXCEL ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NBA and NAAC with "A+"and Recognized by UGC(2f&12B)
KOMARAPALAYAM - 637303

B.E. ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATIN – 2020
CHOICE BASED CREDIT SYSTEM
I TO VIII SEMESTERS CURRICULUM

I SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20MA104	Mathematics - I for Electrical Sciences	BS	3	2	0	4	40	60	100
20EC101	Basics of Electrical Engineering	ES	3	0	0	3	40	60	100
Theory with Practical Course(s)									
20ENEXX	Language Elective – I*	HSS	2	0	2	3	50	50	100
20PH102	Physics for Electrical Sciences	BS	3	0	2	4	50	50	100
20CS102	Problem Solving Using Python	ES	3	0	2	4	50	50	100
Practical Course									
20EC102	Electrical Engineering Practices Laboratory	ES	0	0	2	1	50	50	100
Mandatory Course									
20MC101	Induction Programme	MC	2	0	0	0	100	0	100
TOTAL			**16**	**2**	**8**	**19**	**380**	**330**	**700**

Language Electives – I									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
20ENE01	Communicative English	HSS	2	0	2	3	50	50	100
20ENE02	Advanced Communicative English	HSS	2	0	2	3	50	50	100

II SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20MA204	Mathematics – II for Electrical Sciences	BS	3	2	0	4	40	60	100
20EC201	Electronic Devices	ES	3	0	0	3	40	60	100
Theory with Practical Course(s)									
20ENEXX	Language Elective – II	HSS	2	0	2	3	50	50	100
20CH202	Chemistry for Electrical Sciences	BS	3	0	2	4	50	50	100
20ME203	Engineering Graphics	ES	1	0	4	3	50	50	100
Practical Course									
20EC202	Electronic Devices and Circuits Laboratory	ES	0	0	4	2	50	50	100
Mandatory Course									
20MC202	Interpersonal Skills	MC	2	0	2	0	100	0	100
Total			**14**	**2**	**14**	**19**	**380**	**320**	**700**

Language Electives – II									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
20ENE02	Advanced Communicative English	HSS	2	0	2	3	50	50	100
20ENE03	Hindi	HSS	2	0	2	3	50	50	100
20ENE04	French	HSS	2	0	2	3	50	50	100
20ENE05	German	HSS	2	0	2	3	50	50	100

III SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20MA302	Partial Differential Equations and Linear Algebra	BS	3	2	0	4	40	60	100
20EC301	Signals & Systems	PC	3	2	0	4	40	60	100
20EC302	Electronic Circuits	ES	3	2	0	4	40	60	100
20EC303	Electromagnetic Fields	PC	3	2	0	4	40	60	100
20EC304	Digital Electronics	ES	3	0	0	3	40	60	100
20CS301	Data Structures & OOPS	ES	3	0	0	3	40	60	100
Practical Course(s)									
20EC305	Analog and Digital Circuits Laboratory	PC	0	0	2	1	50	50	100
20CS302	OOPS Laboratory	ES	0	0	2	1	50	50	100
Mandatory Course									
20MC301	Environmental Sciences	MC	2	0	0	0	100	0	100
Total			**20**	**8**	**4**	**24**	**440**	**460**	**900**

IV SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20MA402	Probability and Stochastic Process	BS	3	2	0	4	40	60	100
20EE401	Control Systems Engineering	PC	3	2	0	4	40	60	100
20CS401	Computer Architecture & Organization	PC	3	0	0	3	40	60	100
20EC401	Principles of Discrete Time Signals	PC	3	2	0	4	40	60	100
20EC402	Linear Integrated Circuits	PC	3	0	0	3	40	60	100
Theory with Practical Course(s)									
20EC403	Microprocessor & Microcontrollers	PC	3	0	2	4	50	50	100
Practical Course									
20EC404	DSP Laboratory	PC	0	0	2	1	50	50	100
20EC405	Linear Integrated Circuits Laboratory	PC	0	0	2	1	50	50	100
Mandatory Course									
20MC401	Soft Skills	MC	2 Weeks			0	100	0	100
Total			**18**	**6**	**6**	**24**	**440**	**460**	**900**

V SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20EC501	VLSI Design	PC	3	0	0	3	40	60	100
20EC502	Transmission Lines and Antennas	PC	3	2	0	4	40	60	100
20ECEXX	Professional Elective-I	PE	3	0	0	3	40	60	100
20YYOXX	Open Elective-I	OE	3	0	0	3	40	60	100
Theory with Practical Course(s)									
20EC503	Analog & Digital Communication	PC	3	0	2	4	50	50	100
20EC504	Communication Networks	PC	3	0	2	4	50	50	100
Practical Course									
20EC505	VLSI Design Laboratory	PC	0	0	2	1	50	50	100
Total			**18**	**2**	**6**	**22**	**310**	**390**	**700**

VI SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20EC601	Wireless & Mobile Communications	PC	3	0	0	3	40	60	100
20EC602	Medical Electronics	PC	3	0	0	3	40	60	100
20EC603	Microwave and Optical Communication	PC	3	0	0	3	40	60	100
20ECEXX	Professional Elective -II	PE	3	0	0	3	40	60	100
20YYOXX	Open Elective -II	OE	3	0	0	3	40	60	100
Theory with Practical Course									
20EC604	Embedded System Technologies	PC	3	0	2	4	50	50	100
Practical Course									
20EC605	Microwave and Optical Communication Laboratory	PC	0	0	2	1	50	50	100
Employability Enhancement Course(s)									
20EEC601	Mini Project	EEC	0	0	2	1	50	50	100
20EEC602	Internship/Implant Training	EEC	2	0	0	1	100	0	100
Total			**18**	**0**	**6**	**22**	**450**	**450**	**900**

VII SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20MG701	Professional Ethics and Project Management	HSS	3	0	0	3	40	60	100
20EC701	IoT System Design and Application	PC	3	0	0	3	40	60	100
20ECEXX	Professional Elective -III	PE	3	0	0	3	40	60	100
20ECEXX	Professional Elective -IV	PE	3	0	0	3	40	60	100
20YYOXX	Open Elective -III	OE	3	0	0	3	40	60	100
Theory with Practical Course									
20EC702	Digital Image Processing	PC	2	0	2	3	50	50	100
Employability Enhancement Course									
0EEC701	Design Project	EEC	0	0	2	1	50	50	100
Total			**17**	**0**	**4**	**19**	**300**	**400**	**700**

VIII SEMESTER									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20ECEXX	Professional Elective -V	PE	3	0	0	3	40	60	100
20ECEXX	Professional Elective -VI	PE	3	0	0	3	40	60	100
Practical Course									
20EC801	Major Project	EEC	0	0	20	10	50	50	100
Total			**6**	**0**	**20**	**16**	**130**	**170**	**300**

PROFESSIONAL ELECTIVES (PE)									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Stream – I NETWORKS & SIGNAL PROCESSING									
20PE001	Next Generation Networks	PE	3	0	0	3	40	60	100
20PE002	High Speed Networks	PE	3	0	0	3	40	60	100
20PE003	Sensors for Health Monitoring	PE	3	0	0	3	40	60	100
20PE004	Fundamentals of MEMS	PE	3	0	0	3	40	60	100
20PE005	Cognitive Radio	PE	3	0	0	3	40	60	100
20PE006	Radar Communication Networks	PE	3	0	0	3	40	60	100
20PE007	Digital Video Processing	PE	3	0	0	3	40	60	100
20PE008	Principles of Speech Processing	PE	3	0	0	3	40	60	100
20PE009	Machine Learning Fundamentals	PE	3	0	0	3	40	60	100
20PE010	Deep learning	PE	3	0	0	3	40	60	100
20PE011	Pattern Recognition	PE	3	0	0	3	40	60	100
20PE012	Multimedia Compression Techniques	PE	3	0	0	3	40	60	100
20PE013	Wavelets and Signal Processing	PE	3	0	0	3	40	60	100
20PE014	Neural Networks& Fuzzy System	PE	3	0	0	3	40	60	100
Stream – II VLSI DESIGN									
20PE021	ASIC Design	PE	3	0	0	3	40	60	100
20PE022	Low Power VLSI	PE	3	0	0	3	40	60	100
20PE023	Testing of VLSI	PE	3	0	0	3	40	60	100
20PE024	CMOS Analog IC	PE	3	0	0	3	40	60	100
20PE025	System-on-Chip Design	PE	3	0	0	3	40	60	100
20PE026	Computer Aided Design for VLSI	PE	3	0	0	3	40	60	100
20PE027	Digital IC Design	PE	3	0	0	3	40	60	100
20PE028	System Design with FPGA	PE	3	0	0	3	40	60	100
20PE029	Micro Sensors and Interface Electronics	PE	3	0	0	3	40	60	100
20PE030	Nano scale Devices and Circuit Design	PE	3	0	0	3	40	60	100
Stream – III EMBEDDED & IoT									
20PE041	Embedded Sensing Technologies	PE	3	0	0	3	40	60	100
20PE042	IoT for Industrial Applications	PE	3	0	0	3	40	60	100

20PE043	Robotics and Automation	PE	3	0	0	3	40	60	100
20PE044	Artificial Intelligence with IoT	PE	3	0	0	3	40	60	100
20PE045	ARM Based Embedded System	PE	3	0	0	3	40	60	100
20PE046	Advanced Microcontroller Architecture and Organization	PE	3	0	0	3	40	60	100
20PE047	Real Time Operating System	PE	3	0	0	3	40	60	100
20PE048	IoT applications and Biomedical Sensors	PE	3	0	0	3	40	60	100
20PE049	Wireless sensor Networks and IoT	PE	3	0	0	3	40	60	100

OPEN ELECTIVE COURSES (For Other Branches)									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
NETWORKS									
20ECO01	Industrial Electronics	OE	3	0	0	3	40	60	100
20ECO02	Microprocessor and Microcontroller Applications	OE	3	0	0	3	40	60	100
20ECO03	Digital Image Processing	OE	3	0	0	3	40	60	100
20ECO04	Wireless Network	OE	3	0	0	3	40	60	100
20ECO05	Embedded and Real Time Systems	OE	3	0	0	3	40	60	100
20ECO06	Robotics & it's Industrial Application	OE	3	0	0	3	40	60	100

ONE CREDIT COURSES									
Code No.	**Course**	**Category**	**Periods / Week**			**C**	**Maximum Marks**		
			L	**T**	**P**		**CA**	**FE**	**Total**
Theory Course(s)									
20ECA01	Android Mobile Trouble Shooting	EEC	0	0	2	1	100	0	100
20ECA02	Programming in PIC Microcontroller	EEC	0	0	2	1	100	0	100
20ECA03	MATLAB Programming	EEC	0	0	2	1	100	0	100
20ECA04	System Design Using FPGA	EEC	0	0	2	1	100	0	100
20ECA05	PCB Design Using Cadence EDA Tool	EEC	0	0	2	1	100	0	100
20ECA06	PC Hardware Assemble & Trouble Shooting	EEC	0	0	2	1	100	0	100

SUMMARY

S.No	CATEGORY	CREDITS PER SEMESTER								TOTAL CREDIT (AICTE)	CREDITS in %
		I	II	III	IV	V	VI	VII	VIII		
1	HSS	3	3					3		9 (10-14)	5.45%
2	BS	8	8	4	4					24 (22-28)	14.54%
3	ES	8	8	11						27 (24)	16.36%
4	PC			9	20	16	14	6		65 (48)	39.39%
5	PE					3	3	6	6	18 (18)	10.90%
6	OE					3	3	3		9	5.45%
7	EEC						2	1	10	13 (12-16)	7.87%
8	MC	0	0	0	0						0%
Total		19	19	24	24	22	22	19	16	165	100.00 %

HSS - Humanities and Social Sciences

BS - Basic Sciences

ES - Engineering Sciences

PC - Professional Core

PE - Professional Electives

OE - Open Electives

EEC - Employability Enhancement Courses

MC - Mandatory Courses (Non-Credit Courses)

CA - Continuous Assessment

FE - Final Examination