CURRICULUM

FOR

M. TECH DEGREE PROGRAMME

IN

IoT and Sensor Systems

2022 SCHEME

(AUTONOMOUS)

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

(Approved by AICTE, Autonomous Institution Affiliated to APJ Abdul Kalam Technological University)
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MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M.TECH DEGREE PROGRAMME

In

IoT and Sensor Systems

CURRICULUM AND DETAILED SYLLABI

Items	Board of Studies (BoS)	Academic Council (AC)
Date of Approval	25.11.2021	22.04.2022
	11.08.2022	29.08.2022
	24.02.2023	26.03.2023

Head of Department
Chairman, Board of Studies

Principal
Chairman, Academic Council

Passed in BoS Meetings held on 25/11/2021, 11/8/2022 & 24/2/2023

Approved in AC Meetings held on 22/4/2022, 29/8/2022 & 26/3/2023

MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

Vision and Mission of the Institution

Vision:

To be an Institution moulding globally competent professionals as epitomes of Noble Values.

Mission:

To transform the Youth as technically competent, ethically sound and socially committedprofessionals, by providing a vibrant learning ambience for the welfare of humanity.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Vision and Mission of the Department

Vision:

To be a Centre of Excellence in Electronics and Communication Engineering Education and Research for the service of humanity.

Mission:

To provide quality Engineering Education and to carry out Research in the field of Electronics and Communication Engineering addressing the challenges faced by the society.

CURRICULUM

Semester I (M1)

Slot	Course Type	Course	Marks		Hours	Credits
			CIA	ESE	L - T - P	
A	DCC	Random Process and Applications	40	60	3 - 0 - 0	3
B	PCC	IoT Fundamentals and Architecture	40	60	3 - 0 - 0	3
C	PCC	Signal Processing and Data Analytics	40	60	3 - 0 - 0	3
D	PEC	Program Elective 1	40	60	3/2 - 0/0- 0/2	3
E	PEC	Program Elective 2	40	60	3/2 - 0/0- 0/2	3
S	RM	Research Methodology & IPR	40	60	2 - 0 - 0	2
T	LBC	IoT Data Acquisition and Analysis Lab	100	-	0 - 0 - 2	1
Total			**340**	**360**	**19**	**18**

Teaching Assistance: 6 hours

Semester II (M2)

Slot	Course Type	Course	Marks		Hours L - T - P	Credits
			CIA	ESE		
A	DCC	Principles of Sensors and Signal Conditioning	40	60	2 - 0 - 2	3
B	PCC	Microcontrollers for IoT	40	60	3 - 0 - 0	3
C	PEC	Program Elective 3	40	60	3/2 - 0/0- 0/2	3
D	PEC	Program Elective 4	40	60	3/2 - 0/0 - 0/2	3
E	IEC	Industry/Interdisciplinary Elective	40	60	3 - 0 - 0	3
S	PR	Mini project	100	-	0 - 0 - 4	2
T	LBC	IoT and Sensor Systems Lab	100	-	0 - 0 - 2	1
Total			**400**	**300**	**21**	**18**

Teaching Assistance: 6 hours

Semester III (M3)

Slot	Course Type	Course	Marks		Hours L - T - P	Credits
			CIA	ESE		
TRACK 1						
A*	MOOC	MOOC	To be successfully completed		-	2
B	AC	Audit Course	40	60	3 - 0 - 0	-
C	PR	Internship	50	50	-	3
D	PR	Dissertation Phase I	100	-	0 - 0 - 17	11
TRACK 2						
A*	MOOC	MOOC	To be successfully completed		-	2
B	AC	Audit Course	40	60	3 - 0 - 0	-
C	PR	Internship	50	50	-	3
D	PR	Research project Phase I	100	-	0 - 0 - 17	11
Total			**190**	**110**	**20**	**16**

Teaching Assistance: 6 hours

*MOOC must be successfully completed before the commencement of fourth semester. This course can be carried out at any time from M1 to M3.

Semester IV (M4)

Slot	Course Type	Course	Marks		Hours L - T - P	Credits
			CIA	ESE		
TRACK 1						
D	PR	Dissertation Phase II	100	100	0 - 0 - 24	16
TRACK 2						
D	PR	Research project Phase II	100	100	0 - 0 - 24	16
Total			**100**	**100**	**24**	**16**

Teaching Assistance: 5 hours

List of Program Elective courses

Category Code	Course Number	Course Name	L	T	P	Credit
PEC	22EC262A	Flexible and Wearable Sensors	3	0	0	3
	22EC262B	Micro and Nano Fluidics	3	0	0	3
	22EC262C	Machine Learning	3	0	0	3
	22EC262D	Automotive Sensors and in-Vehicle Networking	2	0	2	3
	22EC262E	Cloud and Fog Computing	3	0	0	3
	22EC262F	IoT Security and Trust	3	0	0	3
	22EC262G	Biomedical sensors	3	0	0	3
	22EC262H	Estimation and Detection Theory	3	0	0	3
	22EC262I	RF MEMS	3	0	0	3
	22EC262J	Wireless Sensor Networks and IoT	3	0	0	3
	22EC262K	IoT Applications and Web development	3	0	0	3
	22EC262L	Chemical and Environmental Sensor	3	0	0	3
	22EC262M	Nano Sensors	3	0	0	3
	22EC262N	Deep Learning	2	0	2	3

	22EC262O	Embedded Systems Design	2	0	2	3
	22EC262P	RF and Microwave Sensors	3	0	0	3
	22EC262Q	Micro Systems and Hybrid Technology	3	0	0	3
	22EC262R	Digital VLSI Design	3	0	0	3
	22EC262S	Fiber optic Sensors	3	0	0	3

INTERDISCIPLINARY COURSES (to be offered by the department)

Category Code	Course Number	Course Name	L	T	P	Credit
IEC	22EC065A	Soft Computing	3	0	0	3
	22EC065B	Optimization Techniques	3	0	0	3

INDUSTRY ELECTIVE COURSES

Category Code	Course Number	Course Name	L	T	P	Credit
IEC	22EC166A	Automotive Electronics	3	0	0	3