

CURRICULUM AND DETAILED SYLLABI

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)
MAR IVANIOS VIDYANAGAR, NALANCHIRA, THIRUVANANTHAPURAM – 695015, KERALA. Phone: 0471
2545866

Fax: 0471 2545869

Web: www.mbcet.ac.in

email:

hodec@mbcet.ac.in



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MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

M. TECH DEGREE PROGRAMME

IN

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CURRICULUM AND DETAILED SYLLABI

Items	Board of Studies (BoS)	Academic Council (AC)
Date of Approval	11.08.2022	29.08.2022
		21.11.2022

Sd/-

Head of Department
Chairman, Board of Studies

Sd/-

Principal
Chairman, Academic Council



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 committed professionals, 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 L - T - P	Credits
			CIA	ESE		
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	Estimation and Detection Theory	40	60	3 - 0 - 0	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

Passed in BoS Meetings held on 11/08/2022

Approved in AC Meetings held on 29/08/2022,21/11/2022



22EC262G	Biomedical sensors	3	0	0	3
22EC262H	Principles of Sensors and Signal Conditioning	2	0	2	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
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Passed in BoS Meetings held on 11/08/2022

Approved in AC Meetings held on 29/08/2022,21/11/2022



IEC	22EC065 A	Soft Computing	3	0	0	3
	22EC065 B	Optimization Techniques	3	0	0	3

INDUSTRY ELECTIVE COURSES

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