

**SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY, COIMBATORE-
641008**

**B.E. MECHATRONICS ENGINEERING
REGULATION 2022 (For 2023-27 Batch)**

**CHOICE-BASED CREDIT SYSTEM
I – VIII SEMESTER CURRICULUM AND SYLLABI**

SEMESTER I							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT101	Production Technology	3/0/0	3	3	60/40	PCC
2.	23MT102	Sensors, Measurements, and Instrumentation	3/0/0	3	3	60/40	PCC
3.	23MA101	Mathematics I	3/1/0	4	4	60/40	BSC
4.	23AS101	Applied Science	4/0/0	4	4	60/40	BSC
5.	23TA101	Heritage of Tamils / தமிழர் மரபு	1/0/0	1	1	60/40	HSMC
6.	23IT101	Application Development Practices	1/0/4	5	3	50/50	ESC
7.	23CS101	Problem Solving using C++	1/0/4	5	3	50/50	ESC
8.	23MT103	Production Technology Laboratory	0/0/2	2	1	40/60	PCC
9.	23AS102	Applied Science Laboratory	0/0/4	4	2	40/60	BSC
10.	23MC101	Mandatory Course I: Induction Programme	3 Weeks		0	0/100	MC
Total			16/1/14	31	24	1000	

SEMESTER II							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT201	Applied Mechanics	3/0/0	3	3	60/40	PCC
2.	23EC202	Digital System Design	3/0/0	3	3	60/40	PCC
3.	23MA201	Mathematics II	3/1/0	4	4	60/40	BSC
4.	23TA201	Tamils and Technology / தமிழரும் தொழில்நுட்பமும்	1/0/0	1	1	60/40	HSMC
5.	23EN101	Oral and Written Communication Skills	2/0/2	4	3	50/50	HSMC

6.	23CD201	Database Management Systems	1/0/4	5	3	50/50	ESC
7.	23IT211	Introduction to Python Programming	1/0/4	5	3	50/50	ESC
8.	23MT202	Computer Aided Drawing Laboratory for Mechatronics	0/0/2	2	1	40/60	PCC
9.	23EC303	Digital System Design Laboratory	0/0/2	2	1	40/60	PCC
10.	23MC1XX	Mandatory Course – II (EVS)	1/0/0	1	0	0/100	MC
Total			15/1/14	30	22	1000	

SEMESTER III							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT301	Theory of Machines	3/0/0	3	3	60/40	PCC
2.	23GE301	Universal Human Values	3/0/0	3	3	60/40	HSMC
3.	23MA302	Mathematics III	3/1/0	4	4	60/40	BSC
4.	23MT302	Computer Networks and Cyber Security	3/0/0	3	3	60/40	PCC
5.	23CS311	Fundamentals Java Programming	1/0/4	5	3	50/50	PCC
6.	23EC302	Operating Systems for Electronic Devices	3/0/2	5	4	50/50	PCC
7.	23MT303	Mechanics of Machines and Materials Laboratory	0/0/2	2	1	40/60	PCC
Total			16/1/8	25	21	700	

SEMESTER IV							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT401	Fundamentals of Machine Component Design	3/0/0	3	3	60/40	PCC
2.	23MT402	Electrical Machines & Control	3/0/0	3	3	60/40	PCC
3.	23MT403	Autotronics and Vehicle Intelligence	3/0/0	3	3	60/40	PCC

4.	23MTXXX	Professional Elective-I	3/0/0	3	3	60/40	PEC
5.	23XXXXX	Open Elective-I	1/0/4 (or) 3/0/0	5 (or) 3	3	50/50 (or) 60/40	OEC
6.	23EC404	Embedded C++	3/0/2	5	4	50/50	PCC
7.	23MT404	Electrical Machines & Control Laboratory	0/0/2	2	1	40/60	PCC
8.	23MT405	Mini Project-I	0/0/4	4	2	40/60	PROJ
9.	23MC1XX	Mandatory Course – III	1/0/0	1	0	0/100	MC
Total			17/0/12 (or) 19/0/8	29 (or) 27	22	900	

SEMESTER V							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT501	Power Electronics and Drives	3/0/0	3	3	60/40	PCC
2.	23MT502	Robotic Systems	3/0/0	3	3	60/40	PCC
3.	23EC504	Internet of Things	3/0/0	3	3	60/40	PCC
4.	23MTXXX	Professional Elective-II	3/0/0	3	3	60/40	PEC
5.	23MT503	Hydraulics and Pneumatics System	3/0/2	5	4	50/50	PCC
6.	23XXXXX	Open Elective-II	0/0/6 (or) 3/0/0	6 (or) 3	3	40/60 (or) 60/40	OEC
7.	23MT504	Robotic Systems Laboratory	0/0/2	2	1	40/60	PCC
8.	23MT505	Power Electronics and Drives Laboratory	0/0/2	2	1	40/60	PCC
9.	23MT506	Mini Project-II	0/0/2	2	1	40/60	PROJ
Total			15/0/14 (or) 18/0/8	29 (or) 26	22	900	

SEMESTER VI							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT601	Industrial Automation	3/0/0	3	3	60/40	PCC
2.	23XXXXX	Emerging Elective – I	3/0/0	3	3	60/40	EEC
3.	23MTXXX	Professional Elective – III	3/0/0	3	3	60/40	PEC
4.	23EC611	Wireless Communication	3/0/2	5	4	50/50	PCC
5.	23XXXXX	Open Elective-III	1/0/4 (or) 3/0/0	5 (or) 3	3	50/50 (or) 60/40	OEC
6.	23XXXXX	Open Elective-IV	1/0/4 (or) 3/0/0	5 (or) 3	3	50/50 (or) 60/40	OEC
7.	23MT602	Industrial Automation Laboratory	0/0/2	2	1	40/60	PCC
8.	23MC1XX	Mandatory Course – IV	1/0/0	2	0	0/100	MC
Total			15/0/12 (or) 19/0/4	27 (or) 23	20	800	

SEMESTER VII							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT701	Computer Integrated Manufacturing	3/0/0	3	3	60/40	PCC
2.	23MT702	Industrial Management and Professional Ethics	3/0/0	3	3	60/40	HSMC
3.	23MT703	Artificial Intelligence for Robotics	3/0/0	3	3	60/40	PCC
4.	23MTXXX	Professional Elective – IV	3/0/0	3	3	60/40	PEC
5.	23MTXXX	Professional Elective – V	3/0/0	3	3	60/40	PEC
6.	23MTXXX	Professional Elective – VI	3/0/0	3	3	60/40	PEC
7.	23MT704	Computer Integrated Manufacturing Laboratory	0/0/2	2	1	40/60	PCC

8.	23EES01	Employability Enhancement Skills	-	-	2	0/100	EES
Total			18/0/2	20	21	800	

SEMESTER VIII							
S. No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
1.	23MT801	Industrial Project	0/0/24	24	12	40/60	PROJ
Total			0/0/24	24	12	100	

PROFESSIONAL ELECTIVES (PE):

S. No.	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Stream I: AI & ROBOTICS						
1.	23MT901	IoT based Augmented Reality	3/0/0	3	3	PEC
2.	23MT902	Introduction to Machine Learning	3/0/0	3	3	PEC
3.	23MT903	Mobile Robotics	3/0/0	3	3	PEC
4.	23MT904	Soft and Swarm Robotics	3/0/0	3	3	PEC
5.	23MT905	Bio-Mechatronics	3/0/0	3	3	PEC
6.	23MT906	Robot Operating System	3/0/0	3	3	PEC
7.	23MT907	Robot Control System	3/0/0	3	3	PEC
8.	23MT908	Micro Robotics	3/0/0	3	3	PEC
9.	23MT909	Data Analytics for Robotics and Automation	3/0/0	3	3	PEC

S. No	Course Code	Course Title	L/T/P	Contact Hrs/ Wk	Credits	Category
Stream II: Automation and Networking						
1.	23MT910	Product Design	3/0/0	3	3	PEC
2.	23MT911	Robotic Process Automation	3/0/0	3	3	PEC
3.	23MT912	Industrial Networking	3/0/0	3	3	PEC
4.	23MT913	Embedded System for Automation	3/0/0	3	3	PEC
5.	23MT914	Virtual Instrumentation and its Applications	3/0/0	3	3	PEC
6.	23MT915	Micro and Nano Mechatronics Systems	3/0/0	3	3	PEC

7.	23MT916	Digital Manufacturing	3/0/0	3	3	PEC
8.	23MT917	Adaptive and Predictive Control of Mechatronics Systems	3/0/0	3	3	PEC
9.	23MT918	CNC Machines and Part Programming	3/0/0	3	3	PEC

S. No	Course Code	Course Title	L/T/P	Contact Hrs/Wk	Credits	Category
Stream III: Autonomous and E-Vehicle						
1.	23MT919	AI for Electric and Hybrid Vehicles	3/0/0	3	3	PEC
2.	23MT920	Advanced Driver Assistance Systems	3/0/0	3	3	PEC
3.	23MT921	Vehicle Ergonomics and Human Comfort	3/0/0	3	3	PEC
4.	23MT922	Unmanned Aerial Vehicles	3/0/0	3	3	PEC
5.	23MT923	Battery Management System	3/0/0	3	3	PEC
6.	23MT924	Autonomous Underwater Vehicles	3/0/0	3	3	PEC
7.	23MT925	Automotive Materials and Metallurgy	3/0/0	3	3	PEC
8.	23MT926	Design of Lightweight Electric Hybrid Vehicles	3/0/0	3	3	PEC
9.	23MT927	Internet of Things for Mechatronics	3/0/0	3	3	PEC

OPEN ELECTIVES (OE): Offered to other departments

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23MT001	Basics of Robotics	3/0/0	3	3	OEC
2.	23MT002	Basics of Automation Systems	3/0/0	3	3	OEC
3.	23MT003	Smart Sensors for IoT	3/0/0	3	3	OEC
4.	23MT004	Drone Technology	3/0/0	3	3	OEC
5.	23MT005	Basics of Arduino and Raspberry pi	3/0/0	3	3	OEC

EMERGING ELECTIVES (EE): Offered to MCT

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23MT006	Industry X.0 for Mechatronics	3/0/0	3	3	EEC
2.	23MT007	Quantum Computing in Robotics	3/0/0	3	3	EEC

3.	23MT008	Humanoid Robots	3/0/0	3	3	EEC
4.	23MT009	Blockchain Technology for Robotics Applications	3/0/0	3	3	EEC
5.	23MT010	Cognitive Robotics	3/0/0	3	3	EEC
6.	23MT011	Image Processing and Machine Vision System	3/0/0	3	3	EEC

MANDATORY COURSES (MC):

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23MC101	Induction Programme	3 weeks		0	MC
2.	23MC102	Environmental Sciences	1/0/0	1	0	MC
3.	23MC103	Soft Skills	1/0/0	1	0	MC
4.	23MC104	Management Organizational Behavior	1/0/0	1	0	MC
5.	23MC105	General Aptitude	1/0/0	1	0	MC
6.	23MC106	Life Skills and Ethics	1/0/0	1	0	MC
7.	23MC107	Stress Management	1/0/0	1	0	MC
8.	23MC108	Constitution of India	1/0/0	1	0	MC
9.	23MC109	Essence of Indian Traditional Knowledge	1/0/0	1	0	MC
10.	23MC110	Biology	1/0/0	1	0	MC

VALUE ADDED COURSES (VAC):

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1	23VA600	Solidworks	0/0/2	2	1	VAC
2	23VA601	MATLAB programming	0/0/2	2	1	VAC
3	23VA602	Android Studio	0/0/2	2	1	VAC
4	23VA603	Intellectual Property Rights & Entrepreneurship	2/0/0	2	2	VAC
5	23VA604	Financial Literacy	2/0/0	2	2	VAC
6	23VA605	Automation Studio	0/0/2	2	1	VAC
7	23VA606	Electric Vehicle Design & Fabrication	2/0/0	2	2	VAC

HUMANITIES AND MANAGEMENT COURSES (11 Credits)

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23EN101	Oral and Written Communication Skills	2/0/2	4	3	HSMC
2.	23TA101	Heritage of Tamils / தமிழர் மரபு	1/0/0	1	1	HSMC
3.	23TA201	Tamils and Technology / தமிழரும் தொழில்நுட்பமும்	1/0/0	1	1	HSMC
4.	23GE301	Universal Human Values	3/0/0	3	3	HSMC
5.	23MT702	Industrial Management and Professional Ethics	3/0/0	3	3	HSMC

BASIC SCIENCE COURSES (18 Credits)

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23MA101	Mathematics I	3/1/0	4	4	BSC
2.	23AS101	Applied Sciences	4/0/0	4	4	BSC
3.	23AS102	Applied Sciences Laboratory	0/0/4	4	2	BSC
4.	23MA201	Mathematics II	3/1/0	4	4	BSC
5.	23MA302	Linear Algebra	3/1/0	4	4	BSC

ENGINEERING SCIENCE COURSES (12 Credits)

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23IT101	Application Development Practices	1/0/4	5	3	ESC
2.	23CS101	Problem Solving using C++	1/0/4	5	3	ESC
3.	23CD201	Database Management Systems	1/0/4	5	3	ESC
4.	23IT211	Introduction to Python Programming	1/0/4	5	3	ESC

PROFESSIONAL CORE COURSES (73 Credits)

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	23MT101	Production Technology	3/0/0	3	3	PCC
2.	23MT102	Sensors, Measurements, and Instrumentation	3/0/0	3	3	PCC

3.	23MT103	Production Technology Laboratory	0/0/2	2	1	PCC
4.	23MT201	Applied Mechanics	3/0/0	3	3	PCC
5.	23MT202	Computer Aided Drawing Laboratory for Mechatronics	0/0/2	2	1	PCC
6.	23EC202	Digital System Design	3/0/0	3	3	PCC
7.	23EC304	Digital System Design Laboratory	0/0/2	2	1	PCC
8.	23MT301	Theory of Machines	3/0/0	3	3	PCC
9.	23MT302	Computer Networks and Cyber Security	3/0/0	3	3	PCC
10.	23CS311	Fundamentals of Java Programming	1/0/4	5	3	PCC
11.	23EC302	Operating Systems for Electronic Devices	3/0/2	5	4	PCC
12.	23MT303	Mechanics of Machines and Materials Laboratory	0/0/2	2	1	PCC
13.	23MT401	Fundamentals of Machine Component Design	3/0/0	3	3	PCC
14.	23MT402	Electrical Machines & Control	3/0/0	3	3	PCC
15.	23MT403	Autotronics and Vehicle Intelligence	3/0/0	3	3	PCC
16.	23EC404	Embedded C++	3/0/2	5	4	PCC
17.	23MT404	Electrical Machines & Control Laboratory	0/0/2	2	1	PCC
18.	23MT501	Power Electronics and Drives	3/0/0	3	3	PCC
19.	23MT502	Robotic Systems	3/0/0	3	3	PCC
20.	23EC504	Internet of Things	3/0/0	3	3	PCC
21.	23MT503	Hydraulics and Pneumatics System	3/0/2	5	4	PCC
22.	23MT504	Robotic Systems Laboratory	0/0/2	2	1	PCC
23.	23MT505	Power Electronics and Drives Laboratory	0/0/2	2	1	PCC
24.	23MT601	Industrial Automation	3/0/0	3	3	PCC
25.	23EC611	Wireless Communication	3/0/2	5	4	PCC
26.	23MT602	Industrial Automation Laboratory	0/0/2	2	1	PCC
27.	23MT701	Computer Integrated Manufacturing	3/0/0	3	3	PCC
28.	23MT703	Artificial Intelligence for Robotics	3/0/0	3	3	PCC
29.	23MT704	Computer Integrated Manufacturing Laboratory	0/0/2	2	1	PCC

Category wise Comparison of Courses and Credits

S. No.	Category	AICTE- MCT 2020		SKCET-MCT R2022	
		No of Courses	No. of Credits	No of Courses	No. of Credits
1.	Humanities (HSMC)	4	12	5	11
2.	Basic Sciences (BSC)	5	21	5	18
3.	Engineering Sciences (ESC)			4	12
4.	Professional Core (PCC)	44	101	29	73
5.	Professional Electives (PEC)	2	6	6	18
6.	Open Electives (OEC)/ Emerging Elective (EEC)	2	6	5	15
7.	Project Work (PROJ)	7	17	3	15
8.	Employability Enhancement Skill (EES)			1	2
9.	Mandatory Courses (MC)	3	-	4	-
Total		67	163	62	164

Scheme of Credit Distribution- Summary

S. No	Stream	Credits/Semester								Credits	%
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities (HSMC)	1	4	3				3		11	6.71
2.	Basic Sciences (BSC)	10	4	4						18	10.98
3.	Engineering Sciences (ESC)	6	6							12	7.32
4.	Professional Core (PCC)	7	8	14	14	15	8	7		73	44.51
5.	Professional Electives (PEC)				3	3	3	9		18	10.98
6.	Open Electives (OEC)/ Emerging Elective (EEC)				3	3	9			15	9.15
7.	Project Work (PROJ)				2	1			12	15	9.15
8.	Employability Enhancement Skill (EES)							2		2	1.22
9.	Mandatory Courses (MC)										
Total		24	22	21	22	22	20	21	12	164	100