

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

**B.E. MECHATRONICS ENGINEERING  
REGULATION 2020(Batch 2021-2025)  
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
<b>Theory cum Practical</b>							
1.	21MA101	Engineering Mathematics – I	2/1/2	5	4	50/50	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	50/50	BSC
3.	21EN101	Technical Communication Skills	2/0/2	4	3	50/50	HSMC
4.	21CS111	Problem Solving Using C Programming	3/0/2	5	4	50/50	ESC
5.	21MT101	Production Technology	3/0/3	6	4.5	50/50	ESC
<b>Practical</b>							
6.	21MT102	Engineering Drawing and Graphics	0/0/3	3	1.5	40/60	ESC
<b>Mandatory Course</b>							
7.	21MC101	Induction Programme	Three Weeks		0	0/100	MC
<b>Total</b>			<b>13/1/15</b>	<b>29</b>	<b>21.5</b>	<b>700</b>	

**SEMESTER II**

S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT201	Applied Mechanics	3/1/0	4	4	60/40	ESC
2.	21GE201	Universal Human Values	3/0/0	3	3	60/40	HSMC
<b>Theory cum Practical</b>							
3.	21MA201	Engineering Mathematics – II	2/1/2	5	4	50/50	BSC
4.	21PH201	Applied Physics	3/0/3	6	4.5	50/50	BSC
<b>Practical</b>							
5.	21MT203	Computer Aided Machine Drawing Laboratory	0/0/2	2	1	40/60	ESC
6.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	40/60	ESC
<b>Mandatory Course</b>							
7.	21MC102	Environmental Sciences	2/0/0	2	0	0/100	MC
<b>Total</b>			<b>13/2/10</b>	<b>25</b>	<b>18</b>	<b>700</b>	

SEMESTER III							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT301	Electrical and Electronic Devices	3/0/0	3	3	60/40	ESC
2.	21MT302	Strength of Solids	3/0/0	3	3	60/40	PCC
3.	21MA301	Engineering Mathematics - III	3/1/0	4	4	60/40	BSC
4.	21MT304	Thermal and Fluid Engineering	3/0/0	3	3	60/40	PCC
<b>Theory cum Practical</b>							
5.	21MT303	Electrical Machines and Power Systems	3/0/3	6	4.5	50/50	PCC
6.	21IT101	Python Programming	3/0/2	5	4	50/50	ESC
<b>Practical</b>							
7.	21MT305	Thermal and Fluid Engineering Laboratory	0/0/3	3	1.5	40/60	PCC
<b>Total</b>			<b>18/1/8</b>	<b>27</b>	<b>23</b>	<b>700</b>	

SEMESTER IV							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT401	Theory of Control Systems	3/0/0	3	3	60/40	PCC
2.	21XX0XX	Open Elective – I	3/0/0	3	3	60/40	OEC
3.	21MA401	Probability and Numerical Methods	3/1/0	4	4	60/40	BSC
4.	21MT402	Theory of Machines	3/0/0	3	3	60/40	PCC
<b>Theory cum Practical</b>							
5.	21MT403	Microcontroller and Its Applications	3/0/3	6	4.5	50/50	PCC
<b>Practical</b>							
6.	21MT404	Theory of Machines Laboratory	0/0/3	3	1.5	40/60	PCC
<b>Mandatory Course</b>							
7.	21MCXXX	Mandatory Course – III	2/0/0	2	0	0/100	MC
<b>Total</b>			<b>17/1/6</b>	<b>24</b>	<b>19</b>	<b>700</b>	

SEMESTER V							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT501	Machine Design	3/1/0	4	4	60/40	PCC
2.	21MT502	Embedded System for Mechatronics	3/0/0	3	3	60/40	EEC
3.	21MT504	Power Electronics and Electrical Drives	3/0/0	3	3	60/40	PCC
4.	21MT9XX	Professional Elective – I	3/0/0	3	3	60/40	PEC
5.	21XX0XX	Open Elective - II	3/0/0	3	3	60/40	OEC
<b>Theory cum Practical</b>							
6.	21MT503	Fluid Power Systems	3/0/3	6	4.5	50/50	PCC
<b>Practical</b>							
7.	21MT505	Power Electronics and Electrical Drives Laboratory	0/0/3	3	1.5	40/60	PCC
<b>Mandatory Course</b>							
8.	21MCXXX	Mandatory Course – IV	2/0/0	2	0	0/100	MC
<b>Project</b>							
9.	21MT506	Industrial Field Training	0/0/2	2	1	0/100	PROJ
<b>Total</b>			<b>20/1/8</b>	<b>29</b>	<b>23</b>	<b>900</b>	

SEMESTER VI							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT601	Industrial Automation	3/0/0	3	3	60/40	PCC
2.	21MT9XX	Professional Elective – II	3/0/0	3	3	60/40	PEC
3.	21MT9XX	Professional Elective – III	3/0/0	3	3	60/40	PEC
4.	21MTXXX	Emerging Elective- I	3/0/0	3	3	60/40	EEC
<b>Theory cum Practical</b>							
5.	21MT602	Virtual Instrumentation and Its Application	3/0/3	6	4.5	50/50	PCC
6.	21MT603	Sensors, Measurements and Instrumentation	3/0/3	6	4.5	50/50	PCC
<b>Practical</b>							
7.	21MT604	Industrial Automation Laboratory	0/0/3	3	1.5	40/60	PCC

<b>Project</b>							
8.	21MT605	Mini Project	0/0/2	2	1	40/60	PROJ
<b>Mandatory Course</b>							
9.	21MCXXX	Mandatory Course – V	2/0/0	2	0	0/100	MC
<b>Total</b>			<b>20/0/11</b>	<b>31</b>	<b>23.5</b>	<b>900</b>	
<b>SEMESTER VII</b>							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Theory</b>							
1.	21MT701	Industrial Management and Work Ethics	3/0/0	3	3	60/40	HSMC
2.	21MT703	Robotics and Machine Vision System	3/0/0	3	3	60/40	PCC
3.	21MT9XX	Professional Elective – IV	3/0/0	3	3	60/40	PEC
4.	21MT9XX	Professional Elective – V	3/0/0	3	3	60/40	PEC
5.	21MT9XX	Professional Elective – VI	3/0/0	3	3	60/40	PEC
6.	21MTXXX	Emerging Elective – II	3/0/0	3	3	60/40	EEC
<b>Theory cum Practical</b>							
7.	21MT702	Computer Integrated Manufacturing	3/0/2	5	4	50/50	PCC
<b>Practical</b>							
8.	21MT704	Robotics and Machine Vision System Laboratory	0/0/2	2	1	40/60	PCC
<b>Employability Enhancement Skills</b>							
9.	21EES01	Employability Enhancement Skills	-	-	2	0/100	EES
<b>Total</b>			<b>21/0/4</b>	<b>25</b>	<b>25</b>	<b>900</b>	

<b>SEMESTER VIII</b>							
S No.	Course Code	Course	L/T/P	Contact hrs/week	Credit	Ext/Int	Category
<b>Project</b>							
1.	21MT801	Industrial Project	0/0/24	24	12	40/60	PROJ
<b>Total</b>			<b>0/0/24</b>	<b>24</b>	<b>12</b>	<b>100</b>	

**EMPLOYABILITY ENHANCEMENT SKILL:**

S. No	Course Code	Course Title	L/T/P	Contact hrs/Wk	Credits	Category
1.	21EES01	International Conference/Journal Publication (National/ International)/ IPR	-	-	2	EES

**PROFESSIONAL ELECTIVES (PE):**

S. No	Course Code	Course Title	L/T/P	Contact hrs/Wk	Credits	Category
<b>Stream I: Manufacturing and Design</b>						
1.	21MT901	Advanced Manufacturing Processes	3/0/0	3	3	PEC
2.	21MT902	Micro and Nano Manufacturing	3/0/0	3	3	PEC
3.	21MT903	Additive Manufacturing Processes	3/0/0	3	3	PEC
4.	21MT904	Integrated Product and Process Development	3/0/0	3	3	PEC
5.	21MT905	Product Design and Manufacturing	3/0/0	3	3	PEC
6.	21MT906	CNC Machines and Programming	3/0/0	3	3	PEC
7.	21MT907	Robotic System Design	3/0/0	3	3	PEC
8.	21MT908	Industrial Metrology	3/0/0	3	3	PEC
9.	21MT909	Mechanical Cost Estimation	3/0/0	3	3	PEC

S. No	Course Code	Course Title	L/T/P	Contact hrs/Wk	Credits	Category
<b>Stream II: Automobile and Robotics</b>						
1.	21MT910	Theory of Automobile Engineering	3/0/0	3	3	PEC
2.	21MT911	Autotronics	3/0/0	3	3	PEC
3.	21MT912	Autonomous Vehicle Guidance System	3/0/0	3	3	PEC
4.	21MT913	Basics of Machine Learning	3/0/0	3	3	PEC

5.	21MT914	Robotic Control System	3/0/0	3	3	PEC
6.	21MT915	Medical Mechatronics	3/0/0	3	3	PEC
7.	21MT916	Mobile Robotics	3/0/0	3	3	PEC
8.	21MT917	Cognitive Robotics	3/0/0	3	3	PEC
9.	21MT918	Cloud Robotics	3/0/0	3	3	PEC

S. No	Course Code	Course Title	L/T/P	Contact hrs/Wk	Credits	Category
<b>Stream III: Intelligent Control System</b>						
1.	21MT919	Integrated Electronic Circuit	3/0/0	3	3	PEC
2.	21MT920	Consumer Electronics	3/0/0	3	3	PEC
3.	21MT921	Wireless Sensor Networks for Robotics	3/0/0	3	3	PEC
4.	21MT922	Principles of AI and Expert Systems	3/0/0	3	3	PEC
5.	21MT923	Embedded System in Automation	3/0/0	3	3	PEC
6.	21MT924	Internet of Things for Mechatronics	3/0/0	3	3	PEC
7.	21MT925	Image Analytics	3/0/0	3	3	PEC
8.	21MT926	Intelligent Control System	3/0/0	3	3	PEC
9.	21MT927	Neural Network and Deep Learning	3/0/0	3	3	PEC

**OPEN ELECTIVES (OE): Offered to other departments**

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21MT001	Basics of Robotics	3/0/0	3	3	OEC
2.	21MT002	Mechatronics Engineering Applications	3/0/0	3	3	OEC
3.	21MT003	Concepts of Virtual Instrumentation	3/0/0	3	3	OEC

4.	21MT004	Field and Service Robotics	3/0/0	3	3	OEC
5.	21MT005	Automation System	3/0/0	3	3	OEC
6.	21MT006	Intelligent Automotive Systems	3/0/0	3	3	OEC

### EMERGING ELECTIVES (EE): Offered to MCT

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21MT007	Basics of Digital Signal Processing	3/0/0	3	3	EEC
2.	21MT008	Industry 4.0 for Mechatronics	3/0/0	3	3	EEC
3.	21MT009	Soft Robotics	3/0/0	3	3	EEC
4.	21MT010	Design and Modelling of Mechatronics Systems	3/0/0	3	3	EEC
5.	21MT011	Robot Operating System	3/0/0	3	3	EEC
6.	21MT012	Supply Chain Management	3/0/0	3	3	EEC

### MANDATORY COURSES (MC):

SL. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21MC101	Induction Programme	3 weeks		0	MC
2.	21MC102	Environmental Sciences	2/0/0	2	0	MC
3.	21MC103	Soft Skills	2/0/0	2	0	MC
4.	21MC104	Management Organizational Behaviour	2/0/0	2	0	MC
5.	21MC105	General Aptitude	2/0/0	2	0	MC
6.	21MC106	Life Skills and Ethics	2/0/0	2	0	MC
7.	21MC107	Stress Management	2/0/0	2	0	MC
8.	21MC108	Constitution of India	2/0/0	2	0	MC
9.	21MC109	Essence of Indian Traditional Knowledge	2/0/0	2	0	MC
10.	21MC110	Biology	2/0/0	2	0	MC

**VALUE ADDED COURSES (VAC):**

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1	21VA600	Solidworks	0/0/2	2	1	VAC
2	21VA601	MATLAB programming	0/0/2	2	1	VAC
3	21VA602	Android Studio	0/0/2	2	1	VAC
4	21VA603	Intellectual Property Rights & Entrepreneurship	2/0/0	2	2	VAC
5	21VA604	Financial Literacy	1/0/0	1	1	VAC
6	21VA605	Automation Studio	0/0/2	2	1	VAC
7	21VA606	Electric Vehicle Design & Fabrication	2/0/0	2	2	VAC

**HUMANITIES AND MANAGEMENT COURSES (9 Credits)**

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21EN101	Technical Communication Skills	2/0/2	4	3	HSMC
2.	21GE201	Universal Human Values	3/0/0	3	3	HSMC
3.	21MT701	Industrial Management and Work Ethics	3/0/0	3	3	HSMC

**BASIC SCIENCE COURSES (25 Credits)**

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21MA101	Engineering Mathematics – I	2/1/2	5	4	BSC
2.	21CH101	Engineering Chemistry	3/0/3	6	4.5	BSC
3.	21MA201	Engineering Mathematics – II	2/1/2	5	4	BSC
4.	21PH201	Applied Physics	3/0/3	6	4.5	BSC
5.	21MA301	Engineering Mathematics - III	3/1/0	4	4	BSC
6.	21MA401	Probability and Numerical Methods	3/1/0	4	4	BSC



**ENGINEERING SCIENCE COURSES (23.5 Credits)**

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21CS111	Problem Solving Using C Programming	3/0/2	5	4	ESC
2.	21MT101	Production Technology	3/0/3	6	4.5	ESC
3.	21MT102	Engineering Drawing and Graphics	0/0/3	3	1.5	ESC
4.	21MT201	Applied Mechanics	3/1/0	4	4	ESC
5.	21MT203	Computer Aided Machine Drawing Laboratory	0/0/2	2	1	ESC
6.	21ME103	Engineering Practices Laboratory	0/0/3	3	1.5	ESC
7.	21MT301	Electrical and Electronic Devices	3/0/0	3	3	ESC
8.	21IT101	Python Programming	3/0/2	5	4	ESC

**PROFESSIONAL CORE COURSES (58.5 Credits)**

S. No.	Course Code	Course Title	L/T/P	Contact hrs./Wk.	Credits	Category
1.	21MT302	Strength of Solids	3/0/0	3	3	PCC
2.	21MT303	Electrical Machines and Power Systems	3/0/3	6	4.5	PCC
3.	21MT304	Thermal and Fluid Engineering	3/0/0	3	3	PCC
4.	21MT305	Thermal and Fluid Engineering Laboratory	0/0/3	3	1.5	PCC
5.	21MT401	Theory of Control Systems	3/0/0	3	3	PCC
6.	21MT402	Theory of Machines	3/0/0	3	3	PCC
7.	21MT403	Microcontroller and Its Applications	3/0/3	6	4.5	PCC
8.	21MT404	Theory of Machines Laboratory	0/0/3	3	1.5	PCC
9.	21MT501	Machine Design	3/1/0	4	4	PCC
10.	21MT503	Fluid Power Systems	3/0/3	6	4.5	PCC
11.	21MT504	Power Electronics and Electrical Drives	3/0/0	3	3	PCC
12.	21MT505	Power Electronics and Electrical Drives Laboratory	0/0/3	3	1.5	PCC
13.	21MT601	Industrial Automation	3/0/0	3	3	PCC

14.	21MT602	Virtual Instrumentation and Its Application	3/0/3	6	4.5	PCC
15.	21MT603	Sensors, Measurements and Instrumentation	3/0/3	6	4.5	PCC
16.	21MT604	Industrial Automation Laboratory	0/0/3	3	1.5	PCC
17.	21MT702	Computer Integrated Manufacturing	3/0/2	5	4	PCC
18.	21MT703	Robotics and Machine Vision System	3/0/0	3	3	PCC
19.	21MT704	Robotics and Machine Vision System Laboratory	0/0/2	2	1	PCC

### Category wise Comparison of Courses and Credits

S.No	Category	AICTE- MECH R2018		SKCET-MCT R2021	
		No of Courses	No. of Credits	No of Courses	No. of Credits
1	Humanities (HSMC)	3	9	3	9
2	Basic Sciences (BSC)	7	30	6	25
3	Engineering Sciences (ESC)	6	24	8	23.5
4	Professional Core (PCC)	16	53.5	19	58.5
5	Professional Electives (PEC)	6	18	6	18
6	Open Electives (OEC)/ Emerging Elective (EEC)	3	9	5	15
7	Project Work (PROJ)	4	15	3	14
8	Employability Enhancement Skill (EES)			1	2
9	Mandatory Courses (MC)	3	0	5	Non credit
<b>Total</b>		<b>48</b>	<b>158.5</b>	<b>56</b>	<b>165</b>

### Scheme of Credit Distribution- Summary

S. No	Stream	Credits/Semester								Credits	%
		I	II	III	IV	V	VI	VII	VIII		
1.	Humanities (HSMC)	3	3					3		9	5.45
2.	Basic Sciences (BSC)	8.5	8.5	4	4					25	15.15
3.	Engineering Sciences (ESC)	10	6.5	7						23.5	14.24
4.	Professional Core (PCC)			12	12	13	13.5	8		58.5	35.45
5.	Professional Electives (PEC)					3	6	9		18	10.9
6.	Open Electives (OEC)/ Emerging Elective (EEC)				3	6	3	3		15	9.09
7.	Project Work (PROJ)					1	1		12	14	8.48
8.	Employability Enhancement Skill (EES)							2		2	1.21
9.	Mandatory Courses (MC)										
<b>Total</b>		<b>21.5</b>	<b>18</b>	<b>23</b>	<b>19</b>	<b>23</b>	<b>23.5</b>	<b>25</b>	<b>12</b>	<b>165</b>	<b>100</b>