

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**B.E. ELECTRICAL AND ELECTRONICS ENGINEERING**

**Regulation 2019**

**CHOICE BASED CREDIT SYSTEM**

**(I – VIII SEMESTERS CURRICULUM)**



**Sri Eshwar College of Engineering**

(An Autonomous Institution)

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kondampatti (Post), Kinathukadavu,

Coimbatore - 641202.

**B.E. ELECTRICAL AND ELECTRONICS ENGINEERING**  
**Regulation 2019**

**Semester I**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
		Induction Program	-	-	-	-	-	-
1	U19HS101	Technical English	HS	3	3	0	0	3
2	U19MA101	Matrix Algebra and Calculus	BS	4	3	1	0	4
3	U19PH101	Engineering Physics	BS	3	3	0	0	3
4	U19CS101	Problem Solving using C	ES	3	3	0	0	3
5	U19ME101	Engineering Graphics	ES	5	1	0	4	3
<b>PRACTICALS</b>								
6	U19PH111	Physics Laboratory	BS	2	0	0	2	1
7	U19GE111	Engineering Practices Laboratory	ES	4	0	0	4	2
8	U19CS111	Problem Solving using C Laboratory	ES	4	0	0	4	2
9	U19EM101	Soft Skills	EM	2	0	0	2	1
<b>TOTAL</b>				<b>30</b>	<b>13</b>	<b>1</b>	<b>16</b>	<b>22</b>

**Semester II**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19HS11X	Language Elective	HS	3	3	0	0	3
2	U19MA102	Advanced Calculus and Complex Variables	BS	4	3	1	0	4
3	U19CY101	Engineering Chemistry	BS	3	3	0	0	3
4	U19PH102	Semiconductor Physics	BS	3	3	0	0	3
5	U19EE103	Circuit Theory	ES	4	3	1	0	4
6	U19CS103	Data Structures and Algorithms	ES	3	3	0	0	3
<b>PRACTICALS</b>								
7	U19CY111	Chemistry Laboratory	BS	2	0	0	2	1
8	U19CS113	Data Structures and Algorithms Laboratory	ES	4	0	0	4	2
9	U19EE111	Electric Circuits and Electronic Devices Laboratory	ES	2	0	0	2	1
<b>TOTAL</b>				<b>28</b>	<b>18</b>	<b>2</b>	<b>8</b>	<b>24</b>

**Semester III**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19MA201	Transforms and Partial Differential Equations	BS	4	3	1	0	4
2	U19EE201	Field Theory	PC	4	3	1	0	4
3	U19EE202	DC Machines and Transformers	PC	4	3	1	0	4
4	U19EE203	Linear and Digital Electronics	PC	4	3	1	0	4
5	U19EE204	Measurements and Instrumentation	PC	3	3	0	0	3
6	U19MC201	Environmental Science	MC	1	1	0	0	NC
<b>PRACTICALS</b>								
7	U19EE211	DC Machines and Transformers Laboratory	PC	2	0	0	2	1
8	U19EE212	Linear and Digital Electronics Circuits Laboratory	PC	2	0	0	2	1
9	U19ICXXX	Industry Oriented Course I	EM	2	0	0	2	1
<b>TOTAL</b>				<b>26</b>	<b>16</b>	<b>4</b>	<b>6</b>	<b>22</b>

**Semester IV**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19MA205	Statistics and Numerical Methods	BS	4	3	1	0	4
2	U19EE205	AC Machines	PC	4	3	1	0	4
3	U19EE206	Control Systems	PC	4	3	1	0	4
4	U19EE207	Generation, Transmission and Distribution	PC	4	3	1	0	4
5	U19XXXXX	Open Elective I*	OE	3	3	0	0	3
6	U19MC202	Indian Constitution and Tradition	MC	1	1	0	0	NC
<b>PRACTICALS</b>								
7	U19EE213	AC Machines Laboratory	PC	2	0	0	2	1
8	U19EE214	Control and Instrumentation Laboratory	PC	2	0	0	2	1
9	U19EE281	Mini Project	PW	2	0	0	2	1
10	U19EM201	Verbal and Soft Skills	EM	2	0	0	2	1
	U19EM202	Summer Internship	EM	-	-	-	-	NC
<b>TOTAL</b>				<b>28</b>	<b>16</b>	<b>4</b>	<b>8</b>	<b>23</b>

\*Open Elective – L T P C for open electives can either be 3 0 0 3 or 2 0 2 3

## Semester V

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19EE301	Power System Analysis	PC	4	3	1	0	4
2	U19EE302	Power Electronics	PC	4	3	1	0	4
3	U19EE303	Microprocessors and Microcontrollers	PC	3	3	0	0	3
4	U19EE5XX	Professional Elective I	PE	3	3	0	0	3
5	U19XXXXX	Open Elective II*	OE	3	3	0	0	3
<b>PRACTICALS</b>								
6	U19EE311	Power Electronics Laboratory	PC	2	0	0	2	1
7	U19EE312	Microprocessor and Microcontroller Laboratory	PC	2	0	0	2	1
8	U19EM301	Aptitude I	EM	2	0	0	2	1
<b>TOTAL</b>				<b>23</b>	<b>15</b>	<b>2</b>	<b>6</b>	<b>20</b>

## Semester VI

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19EE304	Solid State Drives	PC	3	3	0	0	3
2	U19EE305	Power System Protection and Switchgear	PC	3	3	0	0	3
3	U19EE306	Special Electrical Machines	PC	3	3	0	0	3
4	U19EE5XX	Professional Elective II	PE	3	3	0	0	3
5	U19XXXXX	Open Elective III*	OE	3	3	0	0	3
<b>PRACTICALS</b>								
6	U19EE313	Power Systems Laboratory	PC	2	0	0	2	1
7	U19EE381	Innovative/ Multi-Disciplinary Project	PW	2	0	0	2	1
8	U19ICXXX	Industry Oriented Course II	EM	2	0	0	2	1
9	U19EM302	Aptitude II	EM	2	0	0	2	1
10	U19EM303	Design Thinking Laboratory	EM	2	0	0	2	1
<b>TOTAL</b>				<b>25</b>	<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>

\*Open Elective – L T P C for open electives can either be 3 0 0 3 or 2 0 2 3

## Semester VII

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19HS401	Principles of Management and Professional Ethics	HS	3	3	0	0	3
2	U19EE401	Embedded Systems	PC	3	3	0	0	3
3	U19EE5XX	Professional Elective III	PE	3	3	0	0	3
4	U19EE5XX	Professional Elective IV	PE	3	3	0	0	3
<b>PRACTICALS</b>								
5	U19EE481	Project Work – Phase I	PW	6	0	0	6	3
<b>TOTAL</b>				<b>18</b>	<b>12</b>	<b>0</b>	<b>6</b>	<b>15</b>

## Semester VIII

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>THEORY</b>								
1	U19EE5XX	Professional Elective V	PE	3	3	0	0	3
2	U19XXXXX	Open Elective IV*	OE	3	3	0	0	3
<b>PRACTICALS</b>								
3	U19EE482	Project Work – Phase II	PW	16	0	0	16	8
<b>TOTAL</b>				<b>22</b>	<b>6</b>	<b>0</b>	<b>16</b>	<b>14</b>

\*Open Elective – L T P C for open electives can either be 3 0 0 3 or 2 0 2 3

**Total Number of Credits: 160**

## SUMMARY

Sl. No.	Course Category	Credits per Semester								Credits	Credit %
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	3	-	-	-	-	3	-	9	5.6
2	BS	8	11	4	4	-	-	-	-	27	16.9
3	ES	10	10	-	-	-	-	-	-	20	12.5
4	PC	-	-	17	14	13	10	3	-	57	35.6
5	PE	-	-	-	-	3	3	6	3	15	9.4
6	OE	-	-	-	3	3	3	-	3	12	7.5
7	PW	-	-	-	1	-	1	3	8	13	8.1
8	EM	1	-	1	1	1	3	-	-	7	4.4
9	NC	-	-	-	√	-	-	-	-	-	-
10	MC	-	-	√	√	-	-	-	-	-	-
<b>Total</b>		<b>22</b>	<b>24</b>	<b>22</b>	<b>23</b>	<b>20</b>	<b>20</b>	<b>15</b>	<b>14</b>	<b>160</b>	<b>100</b>

**HUMANITIES AND SOCIAL SCIENCES (HS)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19HS101	Technical English	HS	3	3	0	0	3
2	U19HS11X	Language Elective	HS	3	3	0	0	3
3	U19HS401	Principles of Management and Professional Ethics	HS	3	3	0	0	3

**LANGUAGE ELECTIVES (HS)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19HS111	Business English	HS	3	3	0	0	3
2	U19HS112	Basic Japanese	HS	3	3	0	0	3
3	U19HS113	Basic German	HS	3	3	0	0	3
4	U19HS114	Basic French	HS	3	3	0	0	3

**BASIC SCIENCES (BS)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19MA101	Matrix Algebra and Calculus	BS	5	3	1	0	4
2	U19PH101	Engineering Physics	BS	3	3	0	0	3
3	U19PH111	Physics Laboratory	BS	2	0	0	2	1
4	U19MA102	Advanced Calculus and Complex Variables	BS	4	3	1	0	4
5	U19CY101	Engineering Chemistry	BS	3	3	0	0	3
6	U19PH102	Semiconductor Physics	BS	3	3	0	0	3
7	U19CY111	Chemistry Laboratory	BS	2	0	0	2	1
8	U19MA201	Transforms and Partial Differential Equations	BS	4	3	1	0	4
9	U19MA205	Statistics and Numerical Methods	BS	4	3	1	0	4

**ENGINEERING SCIENCES (ES)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19CS101	Problem Solving using C	ES	3	3	0	0	3
2	U19ME101	Engineering Graphics	ES	5	1	0	4	3
3	U19GE111	Engineering Practices Laboratory	ES	4	0	0	4	2
4	U19CS111	Problem Solving using C Laboratory	ES	4	0	0	4	2
5	U19EE103	Circuit Theory	ES	4	3	1	0	4
6	U19CS103	Data Structures and Algorithms	ES	3	3	0	0	3
7	U19CS113	Data Structures and Algorithms Laboratory	ES	4	0	0	4	2
8	U19EE111	Electronic Devices and Circuits Laboratory	ES	2	0	0	2	1

**PROFESSIONAL CORE (PC)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE201	Field Theory	PC	4	3	1	0	4
2	U19EE202	DC Machines and Transformers	PC	4	3	1	0	4
3	U19EE203	Linear and Digital Electronics	PC	4	3	1	0	4
4	U19EE204	Measurements and Instrumentation	PC	3	3	0	0	3
5	U19EE211	DC Machines and Transformers Laboratory	PC	2	0	0	2	1
6	U19EE212	Linear and Digital Electronics Laboratory	PC	2	0	0	2	1
7	U19EE205	AC Machines	PC	4	3	1	0	4
8	U19EE206	Control Systems	PC	4	3	1	0	4
9	U19EE207	Generation, Transmission and Distribution	PC	4	3	1	0	4
10	U19EE213	AC Machines Laboratory	PC	2	0	0	2	1
11	U19EE214	Control and Instrumentation Laboratory	PC	2	0	0	2	1
12	U19EE301	Power System Analysis	PC	4	3	1	0	4
13	U19EE302	Power Electronics	PC	4	3	1	0	4
14	U19EE303	Microprocessor and Microcontrollers	PC	3	3	0	0	3
15	U19EE311	Power Electronics Laboratory	PC	2	0	0	2	1
16	U19EE312	Microprocessor and Microcontrollers Laboratory	PC	2	0	0	2	1
17	U19EE304	Solid State Drives	PC	3	3	0	0	3
18	U19EE305	Power System Protection and Switchgear	PC	3	3	0	0	3
19	U19EE306	Special Electrical Machines	PC	3	3	0	0	3
20	U19EE313	Power Systems Laboratory	PC	2	0	0	2	1
21	U19EE401	Embedded Systems	PC	3	3	0	0	3

**PROFESSIONALELECTIVES (PE)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
<b>POWER SYSTEMS</b>								
1	U19EE501	Energy Auditing and Management	PE	3	3	0	0	3
2	U19EE502	Power System Transients	PE	3	3	0	0	3
3	U19EE503	Power System Operation and Control	PE	3	3	0	0	3
4	U19EE504	High Voltage Engineering	PE	3	3	0	0	3
5	U19EE505	HVDC and EHVAC Systems	PE	3	3	0	0	3
6	U19EE506	Electrical Energy Utilization and Conservation	PE	3	3	0	0	3
7	U19EE507	Power System Planning and Reliability	PE	3	3	0	0	3
8	U19EE508	Restructured Power Systems	PE	3	3	0	0	3
9	U19EE509	Digital Protection of Power Systems	PE	3	3	0	0	3
10	U19EE510	Power System Security	PE	3	3	0	0	3

<b>ELECTRICAL MACHINES AND POWER ELECTRONICS</b>								
11	U19EE511	Design of Electrical Machines	PE	3	3	0	0	3
12	U19EE512	Electrical Machine Analysis	PE	3	3	0	0	3
13	U19EE513	Advanced Power Semiconductor Devices	PE	3	3	0	0	3
14	U19EE514	Modern Power Converters	PE	3	3	0	0	3
15	U19EE515	Flexible AC Transmission Systems	PE	3	3	0	0	3
16	U19EE516	Power Quality	PE	3	3	0	0	3
17	U19EE517	Application of Power Electronics to Power Systems	PE	3	3	0	0	3
18	U19EE518	Microprocessor Applications in Power Electronics	PE	3	3	0	0	3
19	U19EE519	Micro Electro Mechanical Systems	PE	3	3	0	0	3
20	U19EE520	Switched Mode Power Conversion	PE	3	3	0	0	3
<b>RENEWABLE ENERGY SYSTEMS</b>								
21	U19EE521	Non-conventional Energy Sources	PE	3	3	0	0	3
22	U19EE522	Solar and Wind Energy Conversion Systems	PE	3	3	0	0	3
23	U19EE523	Design of Solar Photovoltaic Systems	PE	3	3	0	0	3
24	U19EE524	Distributed Generation and Microgrid	PE	3	3	0	0	3
25	U19EE525	Smart Grid	PE	3	3	0	0	3
26	U19EE526	Electric Vehicles and Power Management	PE	3	3	0	0	3
27	U19EE527	Energy Storage Systems	PE	3	3	0	0	3
28	U19EE528	Grid Integration of Renewable Energy Systems	PE	3	3	0	0	3
29	U19EE529	Power Electronics for Renewable Energy System	PE	3	3	0	0	3
30	U19EE530	Energy Conservation Practices	PE	3	3	0	0	3
<b>CONTROL AND AUTOMATION</b>								
31	U19EE531	Advanced Control Systems	PE	3	3	0	0	3
32	U19EE532	Advanced Microprocessors and Microcontrollers	PE	3	3	0	0	3
33	U19EE533	Microcontroller Based System Design	PE	3	3	0	0	3
34	U19EE534	PLC and SCADA	PE	3	3	0	0	3
35	U19EE535	Virtual Instrumentation	PE	3	3	0	0	3
36	U19EE536	Process Control and Instrumentation	PE	3	3	0	0	3
37	U19EE537	Nano Electronics	PE	3	3	0	0	3
38	U19EE538	Embedded Networked systems	PE	3	3	0	0	3
39	U19EE539	Electric Vehicle Mechanics and Control	PE	3	3	0	0	3
40	U19EE540	Control of Electrical Machines	PE	3	3	0	0	3



**SEMESTER V**  
**PROFESSIONAL ELECTIVE I**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE501	Energy Auditing and Management	PE	3	3	0	0	3
2	U19EE502	Power System Transients	PE	3	3	0	0	3
3	U19EE511	Design of Electrical Machines	PE	3	3	0	0	3
4	U19EE512	Electrical Machine Analysis	PE	3	3	0	0	3
5	U19EE521	Non-conventional Energy Sources	PE	3	3	0	0	3
6	U19EE522	Solar and Wind Energy Conversion Systems	PE	3	3	0	0	3
7	U19EE531	Advanced Control Systems	PE	3	3	0	0	3
8	U19EE532	Advanced Microprocessors and Microcontrollers	PE	3	3	0	0	3

**SEMESTER VI**  
**PROFESSIONAL ELECTIVE II**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE503	Power System Operation and Control	PE	3	3	0	0	3
2	U19EE504	High Voltage Engineering	PE	3	3	0	0	3
3	U19EE513	Advanced Power Semiconductor Devices	PE	3	3	0	0	3
4	U19EE514	Modern Power Converters	PE	3	3	0	0	3
5	U19EE523	Design of Solar Photovoltaic Systems	PE	3	3	0	0	3
6	U19EE524	Distributed Generation and Microgrid	PE	3	3	0	0	3
7	U19EE533	Microcontroller Based System Design	PE	3	3	0	0	3
8	U19EE534	PLC and SCADA	PE	3	3	0	0	3

**SEMESTER VII**  
**PROFESSIONAL ELECTIVE III**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE505	HVDC and EHVAC Systems	PE	3	3	0	0	3
2	U19EE506	Electrical Energy Utilization and Conservation	PE	3	3	0	0	3
3	U19EE515	Flexible AC Transmission Systems	PE	3	3	0	0	3
4	U19EE516	Power Quality	PE	3	3	0	0	3
5	U19EE525	Smart Grid	PE	3	3	0	0	3
6	U19EE526	Electric Vehicles and Power Management	PE	3	3	0	0	3
7	U19EE535	Virtual Instrumentation	PE	3	3	0	0	3
8	U19EE536	Process Control and Instrumentation	PE	3	3	0	0	3

**SEMESTER VII  
PROFESSIONAL ELECTIVE IV**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE507	Power System Planning and Reliability	PE	3	3	0	0	3
2	U19EE508	Restructured Power Systems	PE	3	3	0	0	3
3	U19EE517	Application of Power Electronics to Power Systems	PE	3	3	0	0	3
4	U19EE518	Microprocessor Applications in Power Electronics	PE	3	3	0	0	3
5	U19EE527	Energy Storage Systems	PE	3	3	0	0	3
6	U19EE528	Grid Integration of Renewable Energy Systems	PE	3	3	0	0	3
7	U19EE537	Nano Electronics	PE	3	3	0	0	3
8	U19EE538	Embedded Networked systems	PE	3	3	0	0	3

**SEMESTER VIII  
PROFESSIONAL ELECTIVE V**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE509	Digital Protection of Power Systems	PE	3	3	0	0	3
2	U19EE510	Power System Security	PE	3	3	0	0	3
3	U19EE519	Micro Electro Mechanical Systems	PE	3	3	0	0	3
4	U19EE520	Switched Mode Power Conversion	PE	3	3	0	0	3
5	U19EE529	Power Electronics for Renewable Energy System	PE	3	3	0	0	3
6	U19EE530	Energy Conservation Practices	PE	3	3	0	0	3
7	U19EE539	Electric Vehicle Mechanics and Control	PE	3	3	0	0	3
8	U19EE540	Control of Electrical Machines	PE	3	3	0	0	3

**OPEN ELECTIVES (OE)  
(Offered by Department of Computer and Communication Engineering)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19CC601	Multi-Core Architecture and Programming	OE	3	3	0	0	3
2	U19CC602	Service Oriented Architecture	OE	3	3	0	0	3
3	U19CC603	Network Protocols	OE	3	3	0	0	3
4	U19CC604	Software Defined Networks	OE	3	3	0	0	3
5	U19CC605	GPU Architecture and Programming	OE	3	3	0	0	3
6	U19CC606	High Speed Networks	OE	3	3	0	0	3
7	U19CC607	Introduction to Industrial Networking	OE	3	3	0	0	3
8	U19CC608	Basics of Mobile Communication	OE	3	3	0	0	3
9	U19CC609	Basics of Video Analytics	OE	3	3	0	0	3
10	U19CC610	Introduction to Wireless Communication Networks	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)**  
**(Offered by Department of Computer Science and Engineering)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19CS601	Database Technologies	OE	4	2	0	2	3
2	U19CS602	Java Programming	OE	4	2	0	2	3
3	U19CS603	Operating System Internals	OE	3	3	0	0	3
4	U19CS604	Introduction to Artificial Intelligence	OE	3	3	0	0	3
5	U19CS605	Machine Learning Techniques	OE	3	3	0	0	3
6	U19CS606	Advanced Data Structures	OE	3	3	0	0	3
7	U19CS607	Free and Open Source Software	OE	3	3	0	0	3
8	U19CS608	Fundamentals of Python Programming	OE	4	2	0	2	3
9	U19CS609	Fundamentals of Data Structures	OE	4	2	0	2	3
10	U19CS610	Introduction to Augmented Reality (AR)/Virtual Reality (VR)	OE	3	3	0	0	3
11	U19CS611	Introduction to Data Science	OE	3	3	0	0	3
12	U19CS612	Quantum Computing Technologies	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)**  
**(Offered by Department of Electronics and Communication Engineering)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EC601	Discrete Time Signal Processing	OE	3	3	0	0	3
2	U19EC602	Principles of Analog and Digital Communication	OE	3	3	0	0	3
3	U19EC603	Digital Systems and VLSI Design	OE	3	3	0	0	3
4	U19EC604	Introduction to IoT	OE	4	2	0	2	3
5	U19EC605	Basics of Biomedical Instrumentation	OE	3	3	0	0	3
6	U19EC606	Introduction to Image processing	OE	3	3	0	0	3
7	U19EC607	Microcontroller and Embedded Systems	OE	4	2	0	2	3
8	U19EC608	Introduction to Wireless Sensor Networks	OE	3	3	0	0	3
9	U19EC609	Introduction to Robotics and Automation	OE	3	3	0	0	3
10	U19EC610	Embedded C	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)**  
**(Offered by Department of Information Technology)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19IT601	Basics of Software Engineering	OE	3	3	0	0	3
2	U19IT602	Web Programming	OE	3	3	0	0	3

**Sri Eshwar College of Engineering (Autonomous)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
3	U19IT603	Basics of Software Testing	OE	3	3	0	0	3
4	U19IT604	Fundamentals of Software Project Management	OE	3	3	0	0	3
5	U19IT605	Introduction to Agile Software Development	OE	3	3	0	0	3
6	U19IT606	Introduction to Blockchain Technology	OE	3	3	0	0	3
7	U19IT607	Soft Computing Techniques	OE	3	3	0	0	3
8	U19IT608	Fundamentals of IT Infrastructure Management	OE	3	3	0	0	3
9	U19IT609	Mobile Application Development	OE	3	3	0	0	3
10	U19IT610	Introduction to Computer Networks	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)  
(Offered by Department of Mechanical Engineering)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19ME601	Product Design and Innovation	OE	3	3	0	0	3
2	U19ME602	3D Printing and Tooling	OE	3	3	0	0	3
3	U19ME603	Quality Management	OE	3	3	0	0	3
4	U19ME604	Enterprise Resource Planning	OE	3	3	0	0	3
5	U19ME605	Micro Electro Mechanical Systems	OE	3	3	0	0	3
6	U19ME606	Quality Control Tools and Techniques	OE	3	3	0	0	3
7	U19ME607	World Class Manufacturing	OE	3	3	0	0	3
8	U19ME608	Industrial Safety Engineering	OE	3	3	0	0	3
9	U19ME609	Introduction to Industry 4.0	OE	3	3	0	0	3
10	U19ME610	Lean Six Sigma and Supply Chain Management	OE	3	3	0	0	3
11	U19ME611	Business Organisation and Development	OE	3	3	0	0	3
12	U19ME612	Product Distribution and Promotion Management	OE	3	3	0	0	3
13	U19ME613	Business Ethics, Corporate Social Responsibility and Governance	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)  
(Offered by Department of Chemistry)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19CY601	Chemical Sensors and Biosensors	OE	3	3	0	0	3
2	U19CY602	Energy Storing Devices	OE	3	3	0	0	3
3	U19CY603	Forensic Science	OE	3	3	0	0	3
4	U19CY604	Industrial and Material Chemistry	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)****(Offered by Department of Humanities and Social Sciences)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19HS601	English for Competitive Examinations	OE	3	3	0	0	3
2	U19HS602	Personality Development and Interpersonal Skills	OE	3	3	0	0	3
3	U19HS603	Communication Techniques for Employability	OE	3	3	0	0	3
4	U19HS604	Mass Communication	OE	3	3	0	0	3
5	U19HS605	Operational Research	OE	3	3	0	0	3

**OPEN ELECTIVES (OE)****(Offered by Department of Physics)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19PH601	Laser Technology	OE	3	3	0	0	3
2	U19PH602	Nanomaterials and Applications	OE	3	3	0	0	3
3	U19PH603	Physics for Solar PV Systems	OE	3	3	0	0	3
4	U19PH604	Medical Physics	OE	3	3	0	0	3

**PROJECT WORK (PW)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EE281	Mini Project	PW	2	0	0	2	1
2	U19EE381	Innovative / Multi-Disciplinary Project	PW	2	0	0	2	1
3	U19EE481	Project Work – Phase I	PW	6	0	0	6	3
4	U19EE482	Project Work – Phase II	PW	16	0	0	16	8

**EMPLOYABILITY ENHANCEMENT COURSES (EM)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19EM101	Soft Skills	EM	2	0	0	2	1
2	U19ICXXX	Industry Oriented Course I	EM	2	0	0	2	1
3	U19EM201	Verbal and Soft Skills	EM	2	0	0	2	1
4	U19EM202	Summer Internship	EM	-	-	-	-	NC
5	U19EM301	Aptitude I	EM	2	0	0	2	1
6	U19EM302	Aptitude II	EM	2	0	0	2	1
7	U19EM303	Design Thinking Laboratory	EM	2	0	0	2	1
8	U19ICXXX	Industry Oriented Course II	EM	2	0	0	2	1

**INDUSTRY ORIENTED COURSES**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19IC308	OCJP Certification	EM	2	0	0	2	1
2	U19IC501	Electrical Estimation, Cost and Auditing	EM	2	0	0	2	1
3	U19IC502	Solar PV Systems: Design, Simulation, and Monitoring and Control	EM	2	0	0	2	1
4	U19IC503	Automotive Electrical Systems	EM	2	0	0	2	1
5	U19IC504	Electronics Design and Automation	EM	2	0	0	2	1
6	U19IC505	Industrial Automation using PLC	EM	2	0	0	2	1
7	U19IC506	Industrial Robotics	EM	2	0	0	2	1

**MANDATORY COURSES (MC)**

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1	U19MC201	Environmental Science	MC	1	1	0	0	NC
2	U19MC202	Indian Constitution and Tradition	MC	1	1	0	0	NC