



**SARALA**  
**BIRLA**  
**UNIVERSITY**

Established under the Sarala Birla University Act 2017 Govt. of Jharkhand as per Section 2(f) of UGC Act. 1956

**CURRICULUM  
FOR  
Diploma  
in  
Electrical & Electronics Engineering**

**(Based on UGC & AICTE- CBCS)**

**Effective from 2020-21**

## Definition of Credit

1 Hr. Lecture (L) Per Week	1 Credit
1 Hr. Tutorial (T) Per Week	1 Credit
1 Hr. Practical (P) Per Week	0.5 Credit
2 Hr. Practical (P) Per Week	1 Credit

## Course Code Definitions

Course Code	Definitions
<b>BSC-D</b>	Basic Science Course
<b>ESC-D</b>	Engineering Science Course
<b>HSMC-D</b>	Humanities and Social Sciences including Management Course
<b>ECCA-D</b>	Extra Co-Curricular Activities
<b>MC-D</b>	Mandatory Course
<b>PCC-EEE-D</b>	Professional Core Course
<b>PEC-EEE-D</b>	Professional Elective Course
<b>OEC-D</b>	Open Elective Course
<b>EEE-DP1</b>	Project Stage-I
<b>EEE-DP2</b>	Project Stage-II
<b>EEE-DP3</b>	Project Stage-III
<b>EEE-DSI-I</b>	Summer Internship-I
<b>EEE-DSI-II</b>	Summer Internship-II

# Structure of Electrical & Electronics Engineering (Diploma)

## (Breakup of Credits)

Sl. No.	Category	Breakup of Credits
1	Humanities and Social Sciences including Management courses	13
2	Basic Science courses	19
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	14
4	Professional core courses	44
5	Professional Elective courses relevant to chosen specialization/branch	15
6	Open subjects – Electives from other technical and /or emerging subjects	11
7	Project Work	8
9	Summer Internship	5
10	Extra Co-Curricular Activities	2
11	Mandatory Course	2
<b>Total Credits:</b>		<b>133</b>

### CREDITS DISTRIBUTION (SEMESTER-WISE AND COURSE-WISE )

[illegible]

## HUMANITIES AND SOCIAL SCIENCES INCLUDING MANAGEMENT COURSE

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	HSMC-D101	Communication Skills in English	2	0	0	2	I
2	HSMC-D102	Communication Skills in English Lab	0	0	2	1	I
3	HSMC-D103	Technical English	2	0	0	2	II
4	HSMC-D104	French Through Communicative Approach-I	2	0	0	2	III
5	HSMC-D105	French Through Communicative Approach-II	2	0	0	2	IV
6	HSMC-D106	Entrepreneurship & Startups	3	1	0	4	VI
Total Credits:						13	

## BASIC SCIENCE COURSES

Sl. No.	Course Code	Course Title	Hours Per Week			Credits	Preferred Semester
			L	T	P		
1	BSC-D101	Applied Physics-I	2	1	0	3	I
2	BSC-D102	Applied Physics Lab-I	0	0	2	1	I
3	BSC-D103	Applied Physics-II	2	1	0	3	II
4	BSC-D104	Applied Physics Lab-II	0	0	2	1	II
5	BSC-D105	Applied Chemistry	2	1	0	3	II
6	BSC-D106	Applied Chemistry Lab	0	0	2	1	II
7	BSC-D107	Mathematics-I	2	1	0	3	I
8	BSC-D108	Mathematics-II	3	1	0	4	II
Total Credits:						19	

## ENGINEERING SCIENCE COURSES

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	ESC-D101	Introduction to IT Systems	2	1	0	3	I
2	ESC-D102	Introduction to IT Systems Lab	0	0	2	1	I
3	ESC-D103	Engineering Workshop Practice	0	0	3	1.5	I
4	ESC-D104	Fundamentals of Electrical & Electronics Engineering	2	1	0	3	II
5	ESC-D105	Fundamentals of Electrical & Electronics Engineering Lab	0	0	2	1	II
6	ESC-D106	Engineering Graphics	0	0	3	1.5	II
7	ESC-D107	Engineering Mechanics	2	1	0	3	II
Total Credits:						14	

## Professional Core Courses

### Branch: Electrical & Electronics Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-EEE-D201	Introduction to Electric Generation Systems	3:00:00	3	III/IV
2	PCC-EEE-D202	Introduction to Electric Generation Systems Lab	0:00:02	1	III/IV
3	PCC-EEE-D203	Electrical Circuits	3:00:00	3	III/IV
4	PCC-EEE-D204	Electrical Circuits Lab	0:00:02	1	III/IV
5	PCC-EEE-D205	Electrical & Electronics Measurements	3:00:00	3	III/IV
6	PCC-EEE-D206	Electrical & Electronics Measurements Lab	0:00:02	1	III/IV
7	PCC-EEE-D207	Electric Motors & Transformers	3:00:00	3	III/IV
8	PCC-EEE-D208	Electric Motors & Transformers Lab	0:00:02	1	III/IV
9	PCC-EEE-D209	Wind Power Technologies	3:00:00	3	III/IV
10	PCC-EEE-D210	Wind Power Technologies Lab	0:00:02	1	III/IV
11	PCC-EEE-D211	Fundamentals of Power Electronics	3:00:00	3	III/IV
12	PCC-EEE-D212	Fundamentals of Power Electronics Lab	0:00:02	1	III/IV
13	PCC-EEE-D213	Electric Power Transmission & Distribution	3:00:00	3	III/IV
14	PCC-EEE-D214	Electric Power Transmission & Distribution Lab	0:00:02	1	III/IV
15	PCC-EEE-D215	Induction, Synchronous & FHP Machines	3:00:00	3	III/IV
16	PCC-EEE-D216	Induction, Synchronous & FHP Machines Lab	0:00:02	1	III/IV

**Total Credits: 32**

## Professional Core Courses

### Branch: Electronics & Communication Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-EEE-D301	Microcontroller Applications	3:00:00	3	V/VI
2	PCC-EEE-D302	Microcontroller Applications Lab	0:00:02	1	V/VI
3	PCC-EEE-D303	Energy Conservation & Audit	3:00:00	3	V/VI
4	PCC-EEE-D304	Energy Conservation & Audit Lab	0:00:02	1	V/VI
5	PCC-EEE-D305	Building Electrification	3:00:00	3	V/VI
6	PCC-EEE-D306	Building Electrification Lab	0:00:02	1	V/VI

**Total Credits: 12**



## Professional Elective Courses

### Branch: Electrical & Electronics Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits	Preferred Semester
1	PEC-EEE-D201	Electronic Devices & Circuits	3:00:00	3	III/IV
2	PEC-EEE-D202	Electronic Devices & Circuits Lab	0:00:02	1	III/IV
3	PEC-EEE-D203	Digital Techniques	3:00:00	3	III/IV
4	PEC-EEE-D204	Digital Techniques Lab	0:00:02	1	III/IV
5	PEC-EEE-D205	Industrial Instrumentation & Condition Monitoring	3:00:00	3	III/IV
6	PEC-EEE-D206	Industrial Instrumentation & Condition Monitoring Lab	0:00:02	1	III/IV
7	PEC-EEE-D207	Industrial Drives	3:00:00	3	III/IV
8	PEC-EEE-D208	Industrial Drives Lab	0:00:02	1	III/IV
9	PEC-EEE-D209	Communication Technologies	3:00:00	3	III/IV
10	PEC-EEE-D210	Communication Technologies Lab	0:00:02	1	III/IV
11	PEC-EEE-D211	Electrical Testing & Commissioning	3:00:00	3	III/IV
12	PEC-EEE-D212	Electrical Testing & Commissioning Lab	0:00:02	1	III/IV

## Professional Elective Courses

### Branch: Electronics & Communication Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits	Preferred Semester
1	PEC-EEE-D301	Electrical Estimation & Contracting	3:00:00	3	V/VI
2	PEC-EEE-D302	Electrical Estimation & Contracting Lab	0:00:02	1	V/VI
3	PEC-EEE-D303	Illumination Practices	3:00:00	3	V/VI
4	PEC-EEE-D304	Illumination Practices Lab	0:00:02	1	V/VI
5	PEC-EEE-D305	Switchgear & Protection	3:00:00	3	V/VI
6	PEC-EEE-D306	Switchgear & Protection Lab	0:00:02	1	V/VI
7	PEC-EEE-D307	Solar Power Technologies	3:00:00	3	V/VI
8	PEC-EEE-D308	Solar Power Technologies Lab	0:00:02	1	V/VI
9	PEC-EEE-D309	Control System	3:00:00	3	V/VI
10	PEC-EEE-D310	Control System Lab	0:00:02	1	V/VI
11	PEC-EEE-D311	Biomass & Micro-hydro Power Plants	3:00:00	3	V/VI
12	PEC-EEE-D312	Biomass & Micro-hydro Power Plants Lab	0:00:02	1	V/VI
13	PEC-EEE-D313	Electric Vehicles	3:00:00	3	V/VI
14	PEC-EEE-D314	Electric Vehicles Lab	0:00:02	1	V/VI
15	PEC-EEE-D315	Electric Traction	3:00:00	3	V/VI
16	PEC-EEE-D316	Electric Traction Lab	0:00:02	1	V/VI
17	PEC-EEE-D317	Renewable Energy Technologies	3:00:00	3	V/VI
18	PEC-EEE-D318	Internet of Things	0:00:02	1	V/VI
19	PEC-EEE-D319	Robotics	3:00:00	3	V/VI
20	PEC-EEE-D320	Mechatronics	3:00:00	3	V/VI
21	PEC-EEE-D321	Artificial Intelligence	3:00:00	3	V/VI
22	PEC-EEE-D322	Product Design	3:00:00	3	V/VI

## Open Elective Courses

**Branch: Electrical & Electronics Engineering (Diploma)**

Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits
1	OEC-ECE-D203	Linear Integrated Circuits	2:01:00	3
2	OEC-ECE-D204	Linear Integrated Circuits Lab	0:00:02	1
3	OEC-ECE-D201	Electronic Equipment Maintenance	2:01:00	3
4	OEC-ECE-D301	Industrial Automation	2:01:00	3
5	OEC-ECE-D302	Industrial Automation Lab	0:00:02	1

# Project Work

**Branch: Electrical & Electronics Engineering (Diploma)**

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	EEE-DP1	Project Stage-I (Mini Project)	0:00:04	2	IV
2	EEE-DP2	Project Stage-II (Major Project)	0:00:04	2	V
3	EEE-DP3	Project Stage-III (Major Project Work & Dissertation)	0:00:08	4	VI
<b>Total Credit:</b>				<b>8</b>	

### Extra Co-Curricular Activities

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	ECCA-D101	Sports & Yoga-I	0	0	2	1	I
2	ECCA-D102	Sports & Yoga-II	0	0	2	1	II
Total Credits:						2	

# Summer Internship

**Branch: Electrical & Electronics Engineering (Diploma)**

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	EEE-DSI-I	Summer Internship-I	0:00:00	2	Summer Internship- (4 weeks after II Sem)
2	EEE-DSI-II	Summer Internship-II	0:00:00	3	Summer Internship- (6 weeks after IV Sem)
Total Credit:				5	

## Mandatory Courses

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	MC-D101	Induction Programme	0	0	0	0	I
2	MC-D102	Environmental Science	2	0	0	2	III
3	MC-D103	Values & Ethics	2	0	0	0	III
4	MC-D104	PDP-I	2	0	0	0	I
5	MC-D105	PDP-II	2	0	0	0	II
6	MC-D106	PDP-III	2	0	0	0	III
7	MC-D107	PDP-IV	2	0	0	0	IV
8	MC-D108	PDP-V	2	0	0	0	V
9	MC-D109	PDP-VI	2	0	0	0	VI
Total Credits:						2	

COURSE STRUCTURE										
SEMESTER-I (FIRST YEAR)										
Branch: Electrical & Electronics Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Basic Science Course	BSC-D101	Applied Physics-I	2	1	0	3	30	70	100
2	Basic Science Course	BSC-D107	Mathematics-I	2	1	0	3	30	70	100
3	Humanities and Social Sciences including Management Course	HSMC-D101	Communication Skills in English	2	0	0	2	30	70	100
4	Engineering Science Course	ESC-D101	Introduction to IT Systems	2	1	0	3	30	70	100
Total(A)							11	120	280	400
Practical/Drawing/Design										
1	Basic Science Course	BSC-D102	Applied Physics Lab-I	0	0	2	1	30	20	50
2	Engineering Science Course	ESC-D102	Introduction to IT Systems Lab	0	0	2	1	30	20	50
3	Humanities and Social Sciences including Management Course	HSMC-D102	Communication Skills in English Lab	0	0	2	1	30	20	50
4	Engineering Science Course	ESC-D103	Engineering Workshop Practice	0	0	3	1.5	30	20	50
Total(B)							4.5	120	80	200
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Course	MC-D101	Induction Programme	0	0	0	0	0	0	0
2	Mandatory Course	MC-D102	Environmental Science	2	0	0	2	30	70	100
3	Extra Co-Curricular Activities Course	ECCA-D101	Sports & Yoga-I	0	0	2	1	30	20	50
4	Mandatory Course	MC-D104	PDP-I	2	0	0	0	0	0	0
Total(C)							3	60	90	150
Grand Total (A+B+C)							18.5	300	450	750
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE										
SEMESTER-II (FIRST YEAR)										
Branch: Electrical & Electronics Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Basic Science Course	BSC-D105	Applied Chemistry	2	1	0	3	30	70	100
2	Basic Science Course	BSC-D108	Mathematics-II	3	1	0	4	30	70	100
3	Humanities and Social Sciences including Management Course	HSMC-D103	Technical English	2	0	0	2	30	70	100
4	Basic Science Course	BSC-D103	Applied Physics-II	2	1	0	3	30	70	100
5	Engineering Science Course	ESC-D107	Engineering Mechanics	2	1	0	3	30	70	100
6	Engineering Science Course	ESC-D104	Fundamentals of Electrical & Electronics Engineering	2	1	0	3	30	70	100
Total(A)							18	180	420	600
Practical/Drawing/Design										
1	Basic Science Course	BSC-D106	Applied Chemistry Lab	0	0	2	1	30	20	50
2	Basic Science Course	BSC-D104	Applied Physics Lab-II	0	0	2	1	30	20	50
3	Engineering Science Course	ESC-D105	Fundamentals of Electrical & Electronics Engineering Lab	0	0	2	1	30	20	50
4	Engineering Science Course	ESC-D106	Engineering Graphics	0	0	3	1.5	30	20	50
Total(B)							4.5	120	80	200
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Extra Co-Curricular Activities Course	ECCA-D102	Sports & Yoga-II	0	0	2	1	30	20	50
2	Mandatory Course	MC-D105	PDP-II	2	0	0	0	0	0	0
Total(C)							1	30	20	50
Grand Total (A+B+C)							23.5	330	520	850
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										



# COURSE STRUCTURE

### SEMESTER-III (2nd YEAR)

**Branch: Electrical & Electronics Engineering (Diploma)**

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-EEE-D201	Introduction to Electric Generation Systems	3	0	0	3	30	70	100
2	Professional Core Course	PCC-EEE-D203	Electrical Circuits	3	0	0	3	30	70	100
3	Professional Core Course	PCC-EEE-D205	Electrical & Electronics Measurements	3	0	0	3	30	70	100
4	Professional Core Course	PCC-EEE-D207	Electric Motors & Transformers	3	0	0	3	30	70	100
5	Professional Elective Course	PEC-EEE-D201	Electronic Devices & Circuits	3	0	0	3	30	70	100
6	Humanities and Social Sciences including Management Course	HSMC-D104	French Through Communicative Approach-I	2	0	0	2	30	70	100
Total(A)							17	180	420	600
Practical/Drawing/Design										
1	Professional Core Course	PCC-EEE-D202	Introduction to Electric Generation Systems Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-EEE-D204	Electrical Circuits Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-EEE-D206	Electrical & Electronics Measurements Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-EEE-D208	Electric Motors & Transformers Lab	0	0	2	1	30	20	50
5	Professional Elective Course	PEC-EEE-D202	Electronic Devices & Circuits Lab	0	0	2	1	30	20	50
6	Summer Internship	EEE-DSI-I	Summer Internship-I	0	0	0	2	75	25	100
Total(B)							7	225	125	350
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Course	MC-D106	PDP-III	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							24	405	545	950
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

# COURSE STRUCTURE

## SEMESTER-IV (2nd YEAR)

**Branch: Electrical & Electronics Engineering (Diploma)**

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-EEE-D211	Fundamentals of Power Electronics	3	0	0	3	30	70	100
2	Professional Core Course	PCC-EEE-D213	Electric Power Transmission & Distribution	3	0	0	3	30	70	100
3	Professional Core Course	PCC-EEE-D215	Induction, Synchronous & FHP Machines	3	0	0	3	30	70	100
4	Professional Core Course	PCC-EEE-D209	Wind Power Technologies	3	0	0	3	30	70	100
5	Professional Elective Course	PEC-EEE-D203	Digital Techniques	3	0	0	3	30	70	100
6	Humanities and Social Sciences including Management Course	HSMC-D105	French Through Communicative Approach-II	2	0	0	2	30	70	100
Total(A)							17	180	420	600
Practical/Drawing/Design										
1	Professional Core Course	PCC-EEE-D212	Fundamentals of Power Electronics Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-EEE-D214	Electric Power Transmission & Distribution Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-EEE-D210	Wind Power Technologies Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-EEE-D216	Induction, Synchronous & FHP Machines Lab	0	0	2	1	30	20	50
5	Professional Elective Course	PEC-EEE-D204	Digital Techniques Lab	0	0	2	1	30	20	50
6	Project Work	EDE-DP-I	Project Stage-I (Mini Project)	0	0	4	2	75	25	100
Total(B)							7	225	125	350
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Course	MC-D103	Values & Ethics	2	0	0	0	0	0	0
2	Mandatory Course	MC-D107	PDP-IV	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							24	405	545	950
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE										
SEMESTER-V (3rd YEAR)										
Branch: Electrical & Electronics Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-EEE-D301	Microcontroller Applications	3	0	0	3	30	70	100
2	Professional Core Course	PCC-EEE-D303	Energy Conservation & Audit	3	0	0	3	30	70	100
3	Open Elective Course	OEC-ECE-D203	Linear Integrated Circuits	3	0	0	3	30	70	100
4	Professional Elective Course	PEC-EEE-D307	Solar Power Technologies	3	0	0	3	30	70	100
5	Open Elective Course	OEC-ECE-D201	Electronic Equipment Maintenance	3	0	0	3	30	70	100
Total(A)							15	150	350	500
Practical/Drawing/Design										
1	Professional Core Course	PCC-EEE-D302	Microcontroller Applications Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-EEE-D304	Energy Conservation & Audit Lab	0	0	2	1	30	20	50
3	Open Elective Course	OEC-ECE-D204	Linear Integrated Circuits Lab	0	0	2	1	30	20	50
4	Professional Elective Course	PEC-EEE-D308	Solar Power Technologies Lab	0	0	2	1	30	20	50
5	Summer Internship	EEE-DSI-II	Summer Internship-II	0	0	0	3	75	25	100
6	Project Work	EEE-DP2	Project Stage-II (Major Project)	0	0	4	2	75	25	100
Total(B)							9	270	130	400
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Course	MC-D103	Values & Ethics	2	0	0	0	0	0	0
2	Mandatory Course	MC-D108	PDP-IV	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							24	420	480	900
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

**SEMESTER-VI (3rd YEAR)**  
**Branch: Electrical & Electronics Engineering (Diploma)**

**L-Lecture, T-Tutorial, P-Practical**  
**IA- Internal Assessment, ESE-End Semester Examination**