

SARALA BIRLA UNIVERSITY

RANCHI



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 AICTE- CBCS)

Effective from 2019-20

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
BSC-D	Basic Science Course
ESC-D	Engineering Science Course
HSMC-D	Humanities and Social Sciences including Management Course
ECCA-D	Extra Co-Curricular Activities Courses
MC-D	Mandatory Course
PCC-EEE-D	Professional Core Course
PEC-EEE-D	Professional Electives Course
OEC-D	Open Electives Course
EEE-DP1	Project Stage-I
EEE-DP2	Project Stage-II

Structure of Electrical & Electronics Engineering

Sl. No.	Category	Breakup of Credits
1	Humanities and Social Sciences including Management courses	13
2	Basic Science courses	25
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc	15
4	Professional core courses	64
5	Professional Elective courses relevant to chosen specialization/branch	12
6	Open subjects – Electives from other technical and /or emerging subjects	3
7	Project work, seminar and internship in industry or elsewhere	8
8	Extra Co-Curricular Activities	2
9	Mandatory Courses [Environmental Sciences, Induction Program, Indian Constitution, Essence of Indian Traditional Knowledge]	4
Total Credits:		145

CREDITS DISTRIBUTION (SEMESTER-WISE AND COURSE-WISE)

Semester	HSMC-D	BSC-D	ESC-D	PCC-D	PEC-D	OEC-D	ECCA-D	PROJECT-D	MC-D	Total Credit Semester-wise
1st	3	10	7	0	0	0	1	0	0	21
2nd	3	10	8	0	0	0	1	0	0	22
3rd	3	5	0	15	0	0	0	0	4	27
4th	2	0	0	23	0	0	0	0	0	25
5th	0	0	0	20	4	0	0	2	0	26
6th	2	0		5	8	3	0	6	0	24
Total Credit Course-wise	13	25	15	63	12	3	2	8	4	145
Total Credit										145

HUMANITIES & SOCIAL SCIENCES INCLUDING MANAGEMENT COURSE

Sl. No.	Course Code	Course Title	Hours Per Week			Credits	Preferred Semester
			L	T	P		
1	HSMC-D101	Technical English	3	0	0	3	I
2	HSMC-D102	Communication Skills	2	0	0	2	II
3	HSMC-D103	Life Skills & Professional Practices-I	0	0	2	1	II
4	HSMC-D104	Life Skills & Professional Practices-II	0	0	2	1	III
5	HSMC-D105	French Through Communicative Approach-I	2	0	0	2	III
6	HSMC-D106	French Through Communicative Approach-II	2	0	0	2	IV
7	HSMC-D107	Organisational Behaviour	2	0	0	2	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	Basic Chemistry	3	1	0	4	I
2	BSC-D102	Basic Chemistry Lab	0	0	2	1	I
3	BSC-D103	Basic Physics	3	1	0	4	II
4	BSC-D104	Basic Physics Lab	0	0	2	1	II
5	BSC-D105	Basic Mathematics	4	1	0	5	I
6	BSC-D106	Engineering Mathematics	4	1	0	5	II
7	BSC-D107	Applied Mathematics	4	1	0	5	III
Total Credits:						25	

ENGINEERING SCIENCE COURSES

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	ESC-D101	Fundamentals of Computer	3	0	0	3	I
2	ESC-D102	Fundamentals of Computer Lab	0	0	4	2	I
3	ESC-D103	Workshop Practice	0	0	4	2	I
4	ESC-D104	Fundamentals of Electrical & Electronics	3	1	0	4	II
5	ESC-D105	Fundamentals of Electrical & Electronics Lab	0	0	2	1	II
6	ESC-D106	Engineering Graphics	1	0	4	3	II
Total Credits:						15	

Professional Core Courses (Sem III & IV)

Branch: Electrical & Electronics Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-EEE-D201	Basic Electronics	03:01:00	4	III/IV
2	PCC-EEE-D202	Basic Electronics Lab	00:00:02	1	III/IV
3	PCC-EEE-D203	Measurement & Instrumentation	03:01:00	4	III/IV
4	PCC-EEE-D204	Measurement & Instrumentation Lab	00:00:02	1	III/IV
5	PCC-EEE-D205	Digital Electronics	03:01:00	4	III/IV
6	PCC-EEE-D206	Digital Electronics Lab	00:00:02	1	III/IV
7	PCC-EEE-D207	Network Theory	03:01:00	4	III/IV
8	PCC-EEE-D208	Network Theory Lab	00:00:02	1	III/IV
9	PCC-EEE-D209	Power Electronics	03:01:00	4	III/IV
10	PCC-EEE-D210	Power Electronics Lab	00:00:02	1	III/IV
11	PCC-EEE-D211	Electromagnetic Theory	03:01:00	4	III/IV
12	PCC-EEE-D212	Electrical Machine-I	03:01:00	4	III/IV
13	PCC-EEE-D213	Electrical Machine Lab-I	00:00:02	1	III/IV
14	PCC-EEE-D214	Signal & System	03:01:00	4	III/IV

Total Credi 38

Professional Core Courses (Sem V & VI)

Branch: Electronics & Communication Engineering

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-EEE-D301	Microprocessors & Microcontrollers	03:01:00	4	V/VI
2	PCC-EEE-D302	Microprocessors & Microcontrollers Lab	00:00:02	1	V/VI
3	PCC-EEE-D303	Control System	03:01:00	4	V/VI
4	PCC-EEE-D304	Control System Lab	00:00:02	1	V/VI
5	PCC-EEE-D305	Power System-I	03:01:00	4	V/VI
6	PCC-EEE-D306	Power System Lab-I	00:00:02	1	V/VI
7	PCC-EEE-D307	Electrical Machine-II	03:01:00	4	V/VI

8	PCC-EEE-D308	Electrical Machine Lab-II	00:00:02	1	V/VI
9	PCC-EEE-D309	Power System-II	03:01:00	4	V/VI
10	PCC-EEE-D310	Power System Lab-II	00:00:02	1	V/VI
Total Credits				25	

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-D201	Electronic Devices & Circuits	03:00:00	3	III/IV
2	PEC-EEE-D202	Electronic Devices & Circuits Lab	00:00:02	1	III/IV
3	PEC-EEE-D203	Digital Techniques	03:00:00	3	III/IV
4	PEC-EEE-D204	Digital Techniques Lab	00:00:02	1	III/IV
5	PEC-EEE-D205	Industrial Instrumentation & Condition Monitoring	03:00:00	3	III/IV
6	PEC-EEE-D206	Industrial Instrumentation & Condition Monitoring Lab	00:00:02	1	III/IV
7	PEC-EEE-D207	Industrial Automation & Control	03:00:00	3	III/IV
8	PEC-EEE-D208	Industrial Automation & Control Lab	00:00:02	1	III/IV
9	PEC-EEE-D209	Industrial Drives	03:00:00	3	III/IV
10	PEC-EEE-D210	Industrial Drives Lab	00:00:02	1	III/IV
11	PEC-EEE-D211	Communication Technologies	03:00:00	3	III/IV
12	PEC-EEE-D212	Communication Technologies Lab	00:00:02	1	III/IV
13	PEC-EEE-D213	Electrical Testing and Commissioning	03:00:00	3	III/IV
14	PEC-EEE-D214	Electrical Testing and Commissioning Lab	00:00:02	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	03:00:00	3	V/VI
2	PEC-EEE-D302	Electrical Estimation & Contracting Lab	00:00:02	1	V/VI
3	PEC-EEE-D303	Illumination Practices	03:00:00	3	V/VI
4	PEC-EEE-D304	Illumination Practices Lab	00:00:02	1	V/VI
5	PEC-EEE-D305	Switchgear & Protection	03:00:00	3	V/VI
6	PEC-EEE-D306	Switchgear & Protection Lab	00:00:02	1	V/VI
7	PEC-EEE-D307	Solar Power Technologies	03:00:00	3	V/VI
8	PEC-EEE-D308	Solar Power Technologies Lab	00:00:02	1	V/VI
9	PEC-EEE-D309	Wind Power Technologies	03:00:00	3	V/VI
10	PEC-EEE-D310	Wind Power Technologies Lab	00:00:02	1	V/VI
11	PEC-EEE-D311	Biomass & Micro-hydro Power Plants	03:00:00	3	V/VI
12	PEC-EEE-D312	Biomass & Micro-hydro Power Plants Lab	00:00:02	1	V/VI
13	PEC-EEE-D313	Electric Vehicles	03:00:00	3	V/VI
14	PEC-EEE-D314	Electric Vehicles Lab	00:00:02	1	V/VI

15	PEC-EEE-D315	Electric Traction	03:00:00	3	V/VI
16	PEC-EEE-D316	Electric Traction Lab	00:00:02	1	V/VI
17	PEC-EEE-D317	Renewable Energy Technologies	03:00:00	3	V/VI
18	PEC-EEE-D318	Internet of Things	03:00:00	3	V/VI
19	PEC-EEE-D319	Robotics	03:00:00	3	V/VI
20	PEC-EEE-D320	Mechatronics	03:00:00	3	V/VI
21	PEC-EEE-D321	Artificial Intelligence	03:00:00	3	V/VI
22	PEC-EEE-D322	Product Design	03:00:00	3	V/VI

Open Elective Course

Branch:Electrical & Electronics Engineering(Diploma)

Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits
1	OEC-ME-D309	Wind & Solar Energy System	03:00:00	3

Extra Co-Curricular Activities Courses

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	ECCA-D101	PT & Games/NSS/NCC/CA	0	0	2	1	I
2	ECCA-D102	PT & Games/NSS/NCC/CA	0	0	2	1	II
Total Credits:						2	

Mandatory Courses

Sl. No.	Course Code	Course Title	Hours per week			Credits	Preferred Semester
			L	T	P		
1	MC-D101	Induction Program	0	0	0	0	I
2	MC-D102	Environmental Science	2	0	0	2	III
3	MC-D103	Values & Ethics	2	0	0	2	III
Total Credits:						4	

Project

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/ Industrial Training)	00:00:04	2	V
2	EEE-DP2	Project Stage-II (Major Project Work & Dissertation)	00:00:12	6	VI
Total Credits:				8	

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	Basic Chemistry	3	1	0	4	30	70	100
2	Basic Science Course	BSC-D105	Basic Mathematics	4	1	0	5	30	70	100
3	Humanities and Social Sciences including Management Course	HSMC-D101	Technical English	3	0	0	3	30	70	100
4	Engineering Science Course	ESC-D101	Fundamentals of Computer	3	0	0	3	30	70	100
Total(A)							15	120	280	400
Practical/Drawing/Design										
1	Basic Science Course	BSC-D102	Basic Chemistry Lab	0	0	2	1	30	20	50
2	Engineering Science Course	ESC-D102	Fundamentals of Computer Lab	0	0	4	2	30	20	50
3	Engineering Science Course	ESC-D103	Workshop Practice	0	0	4	2	30	20	50
4	Extra Co-Curricular Activities Course	ECCA-D101	PT and Games/NSS/NCC/CA Lab	0	0	2	1	30	20	50
Total(B)							6	120	80	200
Grand Total (A+B)							21	240	360	600
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-D103	Basic Physics	3	1	0	4	30	70	100
2	Basic Science Course	BSC-D106	Engineering Mathematics	4	1	0	5	30	70	100
3	Humanities and Social Sciences including Management Course	HSMC-D102	Communication Skills	2	0	0	2	30	70	100
4	Engineering Science Course	ESC-D104	Fundamentals of Electrical & Electronics	3	1	0	4	30	70	100
Total(A)							15	120	280	400
Practical/Drawing/Design										
1	Basic Science Course	BSC-D104	Basic Physics Lab	0	0	2	1	30	20	50
2	Engineering Science Course	ESC-D105	Fundamentals of Electrical & Electronics Lab	0	0	2	1	30	20	50
3	Engineering Science Course	ESC-D106	Engineering Graphics	1	0	4	3	30	20	50
4	Humanities and Social Sciences including Management Course	HSMC-D103	Life Skills & Professional Practices-I	0	0	2	1	30	20	50
5	Extra Co-Curricular Activities Course	ECCA-D102	PT & Games/NSS/NCC/CA	0	0	2	1	30	20	50
Total(B)							7	150	100	250
Grand Total (A+B)							22	270	380	650
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	Basic Science Course	BSC-D107	Applied Mathematics	4	1	0	5	30	70	100
2	Professional Core Course	PCC-EEE-D201	Basic Electronics	3	1	0	4	30	70	100
3	Professional Core Course	PCC-EEE-D203	Measurement & Instrumentation	3	1	0	4	30	70	100
4	Professional Core Course	PCC-EEE-D205	Digital Electronics	3	1	0	4	30	70	100
5	Mandatory Course	MC-D103	Values & Ethics	2	0	0	2	30	70	100
6	Mandatory Course	MC-D102	Environmental Science	2	0	0	2	30	70	100
7	Humanities and Social Sciences including Management Course	HSMC-D105	French Through Communicative Approach-I	2	0	0	2	30	70	100
Total(A)							23	210	490	700
Practical/Drawing/Design										
1	Professional Core Course	PCC-EEE-D202	Basic Electronics Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-EEE-D204	Measurement & Instrumentation Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-EEE-D206	Digital Electronics Lab	0	0	2	1	30	20	50
4	Humanities and Social Sciences including Management Course	HSMC-D104	Life skill & Professional Practice-II	0	0	2	1	30	20	50
Total(B)							4	120	80	200
Grand Total (A+B)							27	330	570	900
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-D214	Signal & System	3	1	0	4	30	70	100
2	Professional Core Course	PCC-EEE-D207	Network Theory	3	1	0	4	30	70	100
3	Professional Core Course	PCC-EEE-D209	Power Electronics	3	1	0	4	30	70	100
4	Professional Core Course	PCC-EEE-D212	Electrical Machine-I	3	1	0	4	30	70	100
5	Professional Core Course	PCC-EEE-D211	Electromagnetic Theory	3	1	0	4	30	70	100
6	Humanities and Social Sciences including Management Course	HSMC-D106	French Through Communicative Approach-II	2	0	0	2	30	70	100
Total(A)							22	180	420	600
Practical/Drawing/Design										
1	Professional Core Course	PCC-EEE-D213	Electrical Machine Lab-I	0	0	2	1	30	20	50
2	Professional Core Course	PCC-EEE-D208	Network Theory Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-EEE-D210	Power Electronics Lab	0	0	2	1	30	20	50
Total(B)							3	90	60	150
Grand Total (A+B)							25	270	480	750
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 Elective Course	PCC-EEE-D301	Microprocessors & Microcontrollers	3	1	0	4	30	70	100
2	Professional Core Course	PCC-EEE-D303	Control System	3	1	0	4	30	70	100
3	Professional Core Course	PCC-EEE-D305	Power System-I	3	1	0	4	30	70	100
4	Professional Core Course	PCC-EEE-D307	Electrical Machine-II	3	1	0	4	30	70	100
5	Professional Elective Course	PEC-EEE-D301	Electrical Estimation & Contracting	3	0	0	3	30	70	100
Total(A)							19	150	350	500
Practical/Drawing/Design										
1	Professional Elective Course	PCC-EEE-D302	Microprocessors & Microcontrollers Lab	0	0	2	1	30	20	50
2	Professional Elective Course	PCC-EEE-D308	Electrical Machine Lab-II	0	0	2	1	30	20	50
3	Professional Elective Course	PEC-EEE-D302	Electrical Estimation & Contracting Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-EEE-D306	Power System Lab-I	0	0	2	1	30	20	50
5	Professional Core Course	PCC-EEE-D304	Control System Lab	0	0	2	1	30	20	50
6	Project Work	EEE-DP1	Project Stage-I (Mini Project/ Industrial Training)	0	0	4	2	75	25	100
Total(B)							7	225	125	350
Grand Total (A+B)							26	375	475	850
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE

SEMESTER VI (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 Elective Course	PEC-EEE-D313	Electric Vehicles	3	0	0	3	30	70	100
2	Professional Elective Course	PEC-EEE-D305	Switchgear & Protection	3	0	0	3	30	70	100
3	Open Elective Course	OEC-ME-D309	Wind & Solar Energy System	3	0	0	3	30	70	100
4	Professional Core Course	PCC-EEE-D308	Power System-II	3	1	0	4	30	70	100
5	Humanities and Social Sciences including Management Course	HSMC-D107	Organisational Behaviour	2	0	0	2	30	70	100
Total(A)							15	150	350	500
Practical/Drawing/Design										
1	Project Work	EEE-DP2	Project Stage-II (Major Project Work & Dissertation)	0	0	12	6	150	50	200
2	Professional Elective Course	PEC-EEE-D314	Electric Vehicles Lab	0	0	2	1	30	20	50
3	Professional Elective Course	PEC-EEE-D306	Switchgear & Protection Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-EEE-D309	Power System Lab-II	0	0	2	1	30	20	50
Total(B)							9	240	110	350
Grand Total (A+B)							24	390	460	850
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										