



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
Electronics & Communication 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
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
MC-D	Mandatory Course
PCC-ECE-D	Professional Core Course
PEC-ECE-D	Professional Electives Course
OEC-D	Open Electives Course
ECE-DP1	Project Stage-I
ECE-DP2	Project Stage-II
ECE-DP3	Project Stage-III
ECE-DSI-I	Summer internship-I
ECE-DSI-II	Summer internship-II

Structure of Electronics & Communication Engineering(Diploma) (Breakup of Credits)

Sl. No.	Category	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	42
5	Professional Elective courses relevant to chosen specialization/branch	15
6	Open subjects – Electives from other technical and /or emerging subjects	10
7	Project Work	8
9	Summer Internship	5
10	Extra Co-Curricular Activities	2
11	Mandatory Courses	2
Total Credits:		130

CREDITS DISTRIBUTION (SEMESTER-WISE AND COURSE-WISE)											
Semester	HSMC	BSC	ESC	PCC	PEC	OEC	PROJECT	ECCA	SUMMER INTERNSH IP	MC	Total Credit Semester-wise
1st	3	7	5.5	0	0	0	0	1	0	2	18.5
2nd	2	12	8.5	0	0	0	0	1	0	0	23.5
3rd	2	0	0	19	0	0	0	0	2	0	23
4th	2	0	0	11	7	0	2	0	0	0	22
5th	0	0	0	12	4	10	2	0	3	0	31
6th	4	0	0	0	4	0	4	0	0	0	12
Total Credit Course- wise	13	19	14	42	15	10	8	2	5	2	130
Total Credit											130

**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
<p style="text-align: right;">Total Credits: 13</p>							

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	2	1	0	3	II
5	ESC-D105	Fundamentals of Electrical & Electronics 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: Electronics & Communication Engineering (Diploma)					
Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-ECE-D201	Analog & Digital Communication System	2:01:00	3	III/IV
2	PCC-ECE-D202	Analog & Digital Communication Lab	0:00:02	1	III/IV
3	PCC-ECE-D203	Electronic Devices	2:01:00	3	III/IV
4	PCC-ECE-D204	Electronic Devices Lab	0:00:02	1	III/IV
5	PCC-ECE-D205	Digital Electronics	2:01:00	3	III/IV
6	PCC-ECE-D206	Digital Electronics Lab	0:00:02	1	III/IV
7	PCC-ECE-D207	Measurements & Instrumentation	2:01:00	3	III/IV
8	PCC-ECE-D208	Measurements & Instrumentation Lab	0:00:02	1	III/IV
9	PCC-ECE-D209	Electric Circuit Analysis	2:01:00	3	III/IV
10	PCC-ECE-D210	Electric Circuit Analysis Lab	0:00:02	1	III/IV
11	PCC-ECE-D211	Microprocessor & Microcontroller	2:01:00	3	III/IV
12	PCC-ECE-D212	Microprocessor & Microcontroller Lab	0:00:02	1	III/IV
13	PCC-ECE-D213	Consumer Electronics	2:01:00	3	III/IV
14	PCC-ECE-D214	Wind Power Technologies	2:01:00	3	III/IV
15	PCC-ECE-D215	Wind Power Technologies Lab	0:00:02	1	III/IV
Total Credits:				31	
Professional Core Courses Branch: Electronics & Communication Engineering (Diploma)					
Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	PCC-ECE-D301	Embedded Systems	2:01:00	3	V/VI
2	PCC-ECE-D302	Embedded Systems Lab	0:00:02	1	V/VI
3	PCC-ECE-D303	Fiber Optics Communication	2:01:00	3	V/VI
4	PCC-ECE-D304	Fiber Optics Communication Lab	0:00:02	1	V/VI
5	PCC-ECE-D305	Computer Networking	2:01:00	3	V/VI
6	PCC-ECE-D306	Computer Networking Lab	0:00:02	1	V/VI
Total Credits:				12	

Professional Elective Courses					
Branch: Electronics & Communication Engineering (Diploma)					
Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits	Preferred Semester
1	PEC-ECE-D201	Electronic Equipment Maintenance	2:01:00	3	III/IV
2	PEC-ECE-D202	Simulation Software	2:01:00	3	III/IV
3	PEC-ECE-D203	Linear Integrated Circuits	2:01:00	3	III/IV
4	PEC-ECE-D204	Linear Integrated Circuits 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-ECE-D301	Industrial Automation	2:01:00	3	V/VI
2	PEC-ECE-D302	Industrial Automation Lab	0:00:02	1	V/VI
3	PEC-ECE-D303	Control System	2:01:00	3	V/VI
4	PEC-ECE-D304	Control System Lab	0:00:02	1	V/VI
5	PEC-ECE-D305	Microwave Engineering	2:01:00	3	V/VI
6	PEC-ECE-D306	Microwave & Antenna Measurment Lab	0:00:02	1	V/VI
7	PEC-ECE-D307	Optical Communication & Networking	2:01:00	3	V/VI
8	PEC-ECE-D308	Optical Communication & Networking Lab	0:00:02	1	V/VI

Open Elective Courses

Branch: Electronics & Communication Engineering(Diploma)

Sl. No.	Course Code	Course Title	Hrs./ Week L: T: P	Credits
1	OEC-EEE-D307	Solar Power Technologies	3:00:00	3
2	OEC-EEE-D308	Solar Power Technologies Lab	0:00:02	1
3	OEC-EEE-D317	Renewable Energy Technologies	3:00:00	3
4	OEC-CSE-D319	Fudamental of Artificial Intelligence	3:00:00	3

Project Work

Branch: Electronics & Communication Engineering (Diploma)

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

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: Electronics & Communication Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	ECE-DSI-I	Summer Internship-I	0:00:00	2	Summer Internship- (4 weeks after II Sem)
2	ECE-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: Electronics & Communication 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: Electronics & Communication 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	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 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: Electronics & Communication Engineering (Diploma)

Sl.	Category	Course Code	Course Title	Hours	Credit	Marks
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No.	Category	Description	Amount	Period			Total	IA	ESE	Total
				L	T	P				

Theory										
1	Professional Core Course	PCC-ECE-D201	Analog & Digital Communication System	3	0	0	3	30	70	100
2	Professional Core Course	PCC-ECE-D203	Electronic Devices	3	0	0	3	30	70	100
3	Professional Core Course	PCC-ECE-D205	Digital Electronics	2	0	0	2	30	70	100
4	Professional Core Course	PCC-ECE-D207	Measurements & Instrumentation	3	0	0	3	30	70	100
5	Professional Core Course	PCC-ECE-D209	Electric Circuit Analysis	2	1	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)							16	180	420	600
Practical/Drawing/Design										
1	Professional Core Course	PCC-ECE-D202	Analog & Digital Communication Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-ECE-D204	Electronic Devices Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-ECE-D208	Measurements & Instrumentation Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-ECE-D210	Electric Circuits Analysis Lab	0	0	2	1	30	20	50
5	Professional Core Course	PCC-ECE-D206	Digital Electronics Lab	0	0	2	1	30	20	50
6	Summer Internship	ECE-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)							23	405	545	950

L-Lecture, T-Tutorial, P-Practical

IA- Internal Assessment, ESE-End Semester Examination

COURSE STRUCTURE										
SEMESTER-IV (2nd YEAR)										
Branch: Electronics & Communication Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-ECE-D211	Microprocessor & Microcontroller	3	0	0	3	30	70	100
2	Professional Core Course	PCC-ECE-D213	Consumer Electronics	3	0	0	3	30	70	100
3	Professional Core Course	PCC-ECE-D214	Wind Power Technologies	3	0	0	3	30	70	100
4	Professional Elective Course	PEC-ECE-D201	Electronic Equipment Maintenance	2	1	0	3	30	70	100
5	Professional Elective Course	PEC-ECE-D203	Linear Integrated Circuits	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-ECE-D212	Microprocessor & Microcontroller	0	0	2	1	30	20	50
2	Professional Core Course	PCC-ECE-D215	Wind Power Technologies Lab	0	0	2	1	30	20	50
3	Professional Elective Course	PEC-ECE-D204	Linear Integrated Circuits Lab	0	0	2	1	30	20	50
4	Project Work	ECE-DP-I	Project Stage-I (Mini Project)	0	0	4	2	75	25	100
Total(B)							5	165	85	250
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)							22	345	505	850
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE										
SEMESTER-V (3rd YEAR)										
Branch: Electronics & Communication Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-ECE-D301	Embedded Systems	3	0	0	3	30	70	100
2	Professional Core Course	PCC-ECE-D303	Fiber Optics Communication	3	0	0	3	30	70	100
3	Open Elective Course	PCC-ECE-D305	Computer Networking	3	0	0	3	30	70	100
4	Professional Elective Course	PEC-ECE-D305	Microwave Engineering	3	0	0	3	30	70	100
5	Open Elective Course	OEC-EEE-D307	Solar Power Technologies	3	0	0	3	30	70	100
Total(A)							15	150	350	500
Practical/Drawing/Design										
1	Professional Elective Course	PCC-ECE-D302	Embedded Systems Lab	0	0	2	1	30	20	50
2	Open Elective Course	OEC-EEE-D308	Solar Power Technologies Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-ECE-D304	Fiber Optics Communication Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-ECE-D306	Computer Networking Lab	0	0	2	1	30	20	50
5	Professional Elective Course	PEC-ECE-D306	Microwave & Antenna Measurment Lab	0	0	2	1	30	20	50
6	Summer Internship	ECE-DSI-II	Summer Internship-II	0	0	0	3	150	50	200
6	Project Work	ECE-DP-II	Project Stage-II (Major Project)	0	0	4	2	75	25	100
Total(B)							10	375	175	550
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-V	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							25	525	525	1050
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE										
SEMESTER-VI (3rd YEAR)										
Branch: Electronics & Communication Engineering (Diploma)										
Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Open Elective Course	OEC-CSE-D319	Fundamental of Artificial Intelligence	3	0	0	3	30	70	100
2	Professional Elective Course	PEC-ECE-D301	Industrial Automation	3	0	0	3	30	70	100
3	Humanities and Social Science Course	HSMC-D107	Entrepreneurship & Startups	3	1	0	4	30	70	100
4	Open Elective Course	OEC-EEE-D317	Renewable Energy Technologies	3	0	0	3	30	70	100
Total(A)							13	120	280	400
Practical/Drawing/Design										
1	Professional Elective Course	PEC-ECE-D302	Industrial Automation Lab	0	0	2	1	30	20	50
2	Project Work	ECE-DP-III	Project Stage-III (Major Project Work & Dissertation)	0	0	8	4	300	100	400
Total(B)							5	330	120	450
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-D109	PDP-VI	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							18	450	400	850
L-Lecture, T-Tutorial, P-Practical										
IA- Internal Assessment, ESE-End Semester Examination										