



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

Civil Engineering

(Based on UGC & AICTE- CBCS)

+

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-CE-D	Professional Core Course
PEC-CE-D	Professional Elective Course
OEC-D	Open Elective Course
CE-DP-I	Project Stage-I
CE-DP-II	Project Stage-II
CE-DP-III	Project Stage-III
CE-DSI-I	Summer Internship-I
CE-DSI-II	Summer Internship-II

Structure of Civil 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	43
5	Professional Elective courses relevant to chosen specialization/branch	12
6	Open subjects – Electives from other technical and /or emerging subjects	9
7	Project work	8
8	Mandatory Courses	2
9	Extra Co-Curricular Activity	2
11	Summer Internship	5
Total:		127

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: Civil Engineering

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	PCC-CE-D201	Construction Materials	3	0	0	3	III
2	PCC-CE-D202	Construction Materials Lab	0	0	2	1	III
3	PCC-CE-D203	Mechanics of Materials	2	0	0	2	III
4	PCC-CE-D204	Mechanics of Materials Lab	0	0	2	1	III
6	PCC-CE-D205	Basic Surveying	2	0	0	2	III
5	PCC-CE-D206	Basic Surveying Lab	0	0	2	1	III
7	PCC-CE-D207	Building Construction	2	0	0	2	III
8	PCC-CE-D208	Building Construction Lab	0	0	2	1	III
9	PCC-CE-D209	Geotechnical Engineering	2	0	0	2	III
10	PCC-CE-D210	Geotechnical Engineering Lab	0	0	2	1	III
11	PCC-CE-D211	Advanced Surveying	2	0	0	2	IV
12	PCC-CE-D212	Advanced Surveying Lab	0	0	2	1	IV
13	PCC-CE-D213	Theory of Structure	2	0	0	2	IV
14	PCC-CE-D214	Hydraulics	2	0	0	2	IV
15	PCC-CE-D215	Hydraulics Lab	0	0	2	1	IV
16	PCC-CE-D216	Transportation Engineering	2	0	0	2	IV
17	PCC-CE-D217	Transportation Engineering Lab	0	0	2	1	IV
18	PCC-CE-D218	Concrete Technology	2	0	0	2	IV
19	PCC-CE-D219	Concrete Technology Lab	0	0	2	1	IV
20	PCC-CE-D220	Building Planning & Drawing Lab	1	0	2	2	IV
21	PCC-CE-D301	Design of Steel & RCC Structures	3	0	0	3	V
22	PCC-CE-D302	Design of Steel & RCC Structures Lab	0	0	2	1	V
23	PCC-CE-D303	Water Resource Engineering	2	0	0	2	V
24	PCC-CE-D304	Estimating & Costing	2	0	0	2	V
25	PCC-CE-D305	Estimating & Costing Lab	0	0	2	1	V
26	PCC-CE-D306	Public Health Engineering	2	0	0	2	VI
Total						43	

PROFESSIONAL ELECTIVE COURSES

Branch: Civil Engineering

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	PEC-CE-D301	Traffic Engineering	3	0	0	3	V/VI
2	PEC-CE-D302	Construction Management	3	0	0	3	V/VI
3	PEC-CE-D303	Precast and Prestressed Concrete	3	0	0	3	V/VI
4	PEC-CE-D304	Solid Waste Management	3	0	0	3	V/VI
5	PEC-CE-D305	Rural Construction Technology	3	0	0	3	V/VI
6	PEC-CE-D306	Advanced Construction Technology	3	0	0	3	V/VI
7	PEC-CE-D307	Pavement Design & Maintenance	3	0	0	3	V/VI
8	PEC-CE-D308	Green Building and Energy Conservation	3	0	0	3	V/VI
9	PEC-CE-D309	Building Services and Maintenance	3	0	0	3	V/VI
10	PEC-CE-D310	Repairs and Maintenance of Structures	3	0	0	3	V/VI
11	PEC-CE-D311	Advanced Design of Structures	3	0	0	3	V/VI
12	PEC-CE-D312	Tendering and Accounts	3	0	0	3	V/VI

OPEN ELECTIVE COURSES

Branch: Civil Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	OEC-EEE-D307	Solar Power Technology	3	0	0	3	V/VI
2	OEC-EEE-D308	Solar Power Technology Lab	0	0	2	1	V/VI
3	OEC-CSE-D319	Fundamentals of Artificial Intelligence	3	0	0	3	V/VI
4	OEC-EEE-D317	Renewable Energy Technologies	3	0	0	3	V/VI

Project Work

Branch: Civil Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. / Week L: T: P	Credits	Preferred Semester
1	CE-DP-I	Project Stage-I (Mini Project)	0:00:04	2	IV
2	CE-DP-II	Project Stage-II (Major Project)	0:00:04	2	V
3	CE-DP-III	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: Civil Engineering (Diploma)

Sl. No.	Course Code	Course Title	Hrs. / Week L: T: P	Credits	Preferred Semester
1	CE-DSI-I	Summer Internship-I	0:00:00	2	Summer Internship-(4 weeks) after II
2	CE-DSI-II	Summer Internship-II	0:00:00	3	Summer Internship- (6 weeks) after IV
		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	I
3	MC-D103	Values & Ethics	2	0	0	0	IV
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: Civil 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 Courses	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: Civil 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 (SECOND YEAR)

Branch: Civil Engineering

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-CE-D201	Construction Materials	3	0	0	3	30	70	100
2	Professional Core Course	PCC-CE-D203	Mechanics of Materials	2	0	0	2	30	70	100
3	Professional Core Course	PCC-CE-D205	Basic Surveying	2	0	0	2	30	70	100
4	Professional Core Course	PCC-CE-D207	Building Construction	2	0	0	2	30	70	100
5	Professional Core Course	PCC-CE-D209	Geotechnical Engineering	2	0	0	2	30	70	100
6	Humanities and Social Science including Management	HSMC-D104	French Through Communicative Approach-I	2	0	0	2	30	70	100
Total(A)							13	150	350	500
Practical/Drawing/Design										
1	Professional Core Course	PCC-CE-D202	Construction Materials Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-CE-D204	Mechanics of Materials Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-CE-D206	Basic Surveying Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-CE-D208	Building Construction Lab	0	0	2	1	30	20	50
5	Professional Core Course	PCC-CE-D210	Geotechnical Engineering Lab	0	0	2	1	30	20	50
6	Summer Internship- (4 weeks) after II	CE-DSI-I	Summer Internship-I	0	0	0	2	75	25	200
Total(B)							7	120	80	200
Grand Total (A+B)							20	270	430	700
Mandatory Courses										
1	Mandatory Courses	MC-D106	PDP-III	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							20	300	450	700
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE

SEMESTER IV (SECOND YEAR)

Branch: Civil Engineering

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-CE-D211	Advanced Surveying	2	0	0	2	30	70	100
2	Professional Core Course	PCC-CE-D213	Theory of Structure	2	0	0	2	30	70	100
3	Professional Core Course	PCC-CE-D214	Hydraulics	2	0	0	2	30	70	100
4	Professional Core Course	PCC-CE-D216	Transportation Engineering	2	0	0	2	30	70	100
5	Professional Core Course	PCC-CE-D218	Concrete Technology	2	0	0	2	30	70	100
6	Humanities & Social Science including Management	HSMC-105	French Through Communicative Approach-II	2	0	0	2	30	70	100
Total(A)							12	180	420	600
Practical/Drawing/Design										
1	Professional Core Course	PCC-CE-D212	Advanced Surveying Lab	0	0	2	1	30	20	50
2	Professional Core Course	PCC-CE-D219	Concrete Technology Lab	0	0	2	1	30	20	50
3	Professional Core Course	PCC-CE-D215	Hydraulics Lab	0	0	2	1	30	20	50
4	Professional Core Course	PCC-CE-D217	Transportation Engineering Lab	0	0	2	1	30	20	50
5	Professional Core Course	PCC-CE-D220	Building Planning & Drawing Lab	1	0	2	2	30	20	50
6	Project Work	CE-DP1	Project Stage-I (Mini Project)	0	0	4	2	75	25	100
Total(B)							8	120	80	200
Grand Total (A+B)							20	300	500	800
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Courses	MC-D103	Values & Ethics	2	0	0	0	0	0	0
2	Mandatory Courses	MC-D107	PDP-IV	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							20	330	520	850
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE

SEMESTER V (THIRD YEAR)

Branch: Civil Engineering

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core Course	PCC-CE-D301	Design of Steel & RCC Structures	3	0	0	3	30	70	100
2	Professional Core Course	PCC-CE-D303	Water Resource Engineering	2	0	0	2	30	70	100
3	Professional Core course	PCC-CE-D304	Estimating & Costing	2	0	0	2	30	70	100
4	Professional Elective Course	PEC-CE-D301	Traffic Engineering	3	0	0	3	30	70	100
5	Professional Elective Course	PEC-CE-D302	Construction Management	3	0	0	3	30	70	100
6	Open Elective Course	OEC-EEE-D307	Solar Power Technology	3	0	0	3	30	70	100
Total(A)							16	180	420	600
Practical/Drawing/Design										
1	Professional Core Courses	PCC-CE-D302	Design of Steel & RCC Structures Lab	0	0	2	1	30	20	50
2	Professional Core courses	PCC-CE-D305	Estimating & Costing Lab	0	0	2	1	30	70	100
3	Open Elective Course	OEC-EEE-D308	Solar Power Technology Lab	0	0	2	1	30	70	100
4	Summer Internship-(6 weeks) after IV	CE-DSI-I	Summer Internship-II	0	0	0	3	75	25	100
5	Project Work	CE-DP2	Project Stage-II (Major Project)	0	0	4	2	75	25	100
Total(B)							8	120	80	200
Grand Total (A+B)							23	300	500	800
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Courses	MC-D108	PDP-V	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							23	300	500	800
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										

COURSE STRUCTURE

SEMESTER VI (THIRD YEAR)

Branch: Civil Engineering

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P		IA	ESE	Total
Theory										
1	Professional Core courses	PCC-CE-D306	Public Health Engineering	2	0	0	2	30	70	100
2	Professional Elective Course	PEC-CE-D303	Solid Waste Management	3	0	0	3	30	70	100
3	Professional Elective Course	PEC-CE-D304	Precast & Prestressed Concrete	3	0	0	3	30	70	100
4	Open Elective Course	OEC-CSE-D319	Fundamentals of Artificial Intelligence	3	0	0	3	30	70	100
5	Open Elective Course	OEC-EEE-D317	Renewable Energy Technologies	3	0	0	3	30	70	100
6	Humanities & Social Science including Management	HSMC-D107	Entrepreneurship & Startups	3	1	0	4	30	70	100
Total(A)							18	180	420	600
Practical/Drawing/Design										
1	Project Work	CE-DP3	Project Stage-III (Major Project Work & Dissertation)	0	0	8	4	75	25	100
Grand Total (A+B)							22	255	445	700
Mandatory Courses/Extra Co-Curricular Activities Courses										
1	Mandatory Courses	MC-D109	PDP-VI	2	0	0	0	0	0	0
Total(C)							0	0	0	0
Grand Total (A+B+C)							22	225	445	700
L-Lecture, T-Tutorial, P-Practical IA- Internal Assessment, ESE-End Semester Examination										