

# **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**

### **Civil Engineering**

**(Based on AICTE- CBCS)**

**Effective from 2019-20**

## DEFINATION OF CREDITS

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 Hours Practical (Lab)/week	1 credit

## COURSE CODE DEFINATIONS

Course code	Definitions
<b>BSC-D</b>	Basic Science Courses
<b>ESC-D</b>	Engineering Science Courses
<b>HSMC-D</b>	Humanities, Social Science including Management Courses
<b>MC-D</b>	Mandatory Courses
<b>ECCA-D</b>	Extra Co- Curricular Courses
<b>PCC-CE-D</b>	Professional Core Courses
<b>PEC-CE-D</b>	Professional Elective Courses
<b>OEC-CE-D</b>	Open Elective Courses
<b>CE-DP1</b>	Project Stage-I
<b>CE-DP2</b>	Project Stage-II

## STRUCTURE OF CIVIL 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	66
5	Professional Elective courses relevant to chosen specialization/branch	3
6	Open subjects – Electives from other technical and /or emerging subjects	4
7	Project work, seminar and internship in industry or elsewhere	8
8	Mandatory Courses [Environmental Sciences, Induction Program, Essence of Indian Traditional Knowledge]	4
9	Extra Co-Curricular Activity	2
<b>Total:</b>		<b>140</b>

## 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
4	BSC-D103	Basic Physics	3	1	0	4	II
5	BSC-D104	Basic Physics Lab	0	0	2	1	II
6	BSC-D105	Basic Mathematics	4	1	0	5	I
7	BSC-D106	Engineering Mathematics	4	1	0	5	II
8	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 and Electronics	3	1	0	4	II
5	ESC-D105	Fundamentals Electrical and Electronics Lab	0	0	2	1	II
6	ESC-D106	Engineering Graphics	1	0	4	3	II
Total Credits:						15	

## 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 Skill	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	

## 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	2	III
Total Credits:						4	

### EXTRA CO-CURRICULAR ACTIVITIES

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



## PROFESSIONAL CORE COURSES

### Branch: Civil Engineering

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	PCC-CE-D201	Building Construction	3	1	0	4	III
2	PCC-CE-D202	Building Construction Lab	0	0	2	1	III
3	PCC-CE-D203	Surveying & Levelling	3	1	0	4	III
4	PCC-CE-D204	Surveying & Levelling Lab	0	0	2	1	III
6	PCC-CE-D205	Building Drawing	0	0	2	1	III
5	PCC-CE-D206	Concrete Technology	3	0	0	3	IV
7	PCC-CE-D207	Mechanics of Structure	3	1	0	4	IV
8	PCC-CE-D208	Mechanics of Structure Lab	0	0	2	1	IV
9	PCC-CE-D209	Geo-technical Engg.	3	1	0	4	IV
10	PCC-CE-D210	Geo-technical Engg. Lab	0	0	2	1	IV
12	PCC-CE-D211	Hydraulics	3	1	0	4	IV
13	PCC-CE-D212	Hydraulics Lab	0	0	2	1	IV
14	PCC-CE-D301	Theory of Structure	3	1	0	4	V
15	PCC-CE-D302	Theory of Structure Lab	0	0	2	1	V
16	PCC-CE-D303	Design of Steel Structure	3	1	0	4	V
17	PCC-CE-D304	Highway Engineering	3	1	0	4	V
18	PCC-CE-D305	Highway Engineering lab	0	0	2	1	V
19	PCC-CE-D306	Irrigation Engineering	3	1	0	4	V
20	PCC-CE-D307	Estimating and Costing	2	0	0	2	V
21	PCC-CE-D308	Estimating and Costing Lab	0	0	2	1	V
22	PCC-CE-D309	Building Services & Entrepreneurship Development	2	0	0	2	V
23	PCC-CE-D312	Contracts and Accounts	3	0	0	3	VI
24	PCC-CE-D313	Contracts and Accounts Lab	0	0	2	1	VI
25	PCC-CE-D314	Environmental Engineering	3	1	0	4	VI
26	PCC-CE-D315	Environmental Engineering Lab	0	0	2	1	VI

27	PCC-CE-D316	Design of Structure	3	1	0	4	VI
28	PCC-CE-D317	Design of Structure lab	0	0	2	1	VI
<b>Total</b>						<b>66</b>	

## PROFESSIONAL ELECTIVE COURSES

**Branch: Civil Engineering**

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	PEC-CE-D301	Transportation Engineering	3	0	0	3	VI
2	PEC-CE-D302	Micro Irrigation	3	0	0	3	VI
3	PEC-CE-D303	Water Shade Management	3	0	0	3	VI
4	PEC-CE-D304	Advanced Construction Techniques & Equipments	3	0	0	3	VI
5	PEC-CE-D305	Earthquake Resistant Designs & Construction	3	0	0	3	VI
6	PEC-CE-D306	Maintenance & Rehabilitation of structures	3	0	0	3	VI
7	PEC-CE-D307	Plumbing services	3	0	0	3	VI
8	PEC-CE-D308	Architectural Practices & Interior Design	3	0	0	3	VI

## OPEN ELECTIVE COURSES

**Branch: Civil Engineering**

Sl. No.	Course Code	Course Title	Hours			Credit	Semester
			L	T	P		
1	OEC-CSE-D205	Computer Hardware	3	0	0	3	IV
2	OEC-CSE-D206	Computer Hardware Lab	0	0	2	1	IV
3	OEC-ECE-D201	Basic Electronics	3	0	0	3	IV
4	OEC-ECE-D202	Basic Electronics Lab	0	0	2	1	IV
5	OEC-ECE-D206	Digital Electronics	3	0	0	3	IV
6	OEC-ECE-D207	Digital Electronics Lab	0	0	2	1	IV

## PROJECT FOR CIVIL ENGG.

Sl. No.	Course Code	Course Title	Hrs. /Week L: T: P	Credits	Preferred Semester
1	CE-DP1	Project Stage-I	00:00:04	2	V
2	CE-DP2	Project Stage-II	00:00:12	6	VI
Total Credits:				8	

# COURSE STRUCTURE

## SEMESTER I (FIRST YEAR)

**Branch: Civil Engineering**

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P			IA	ESE
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 & Social Science including Management	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 Activity	ECCA-D101	PT and Games/NSS/NCC /CA	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: Civil Engineering**

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P			IA	ESE
Theory										
1	Humanities & Social Science including Management	HSMC-D103	Communication Skills	2	0	0	2	30	70	100
2	Basic Science Course	BSC-D103	Basic Physics	3	1	0	4	30	70	100
3	Basic Science Course	BSC-D106	Engg. Mathematics	4	1	0	5	30	70	100
4	Engineering Science Course	ESC-D104	Funamentals of Elcetrical & Electronics	3	1	0	4	30	70	100
Total(A)							15	120	280	400
Practical/Drawing/Design										
1	Engineering Science Course	ESC-D106	Engg. Graphics	1	0	4	3	30	20	50
2	Basic Science Course	BSC-D104	Basic Physics Lab	0	0	2	1	30	20	50
3	Engineering Science Course	ESC-D105	Funamentals of Elcetrical & Electronics Lab	0	0	2	1	30	20	50
4	Humanities & Social Science including Management	HSMC-D103	Life Skills& Professional Practice-I	0	0	2	1	30	20	50
5	Extra Co-Curricular Activity	ECCA-D102	PT and 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 (SECOND YEAR)

Branch: Civil Engineering

Sl. No.	Category	Course Code	Course Title	Hours			Credit	Marks		
				L	T	P			IA	ESE
Theory										
1	Basic Science Course	BSC-D107	Applied Mathematics	4	1	0	5	30	70	100
2	Professional Core Courses	PCC-CE-D201	Building Construction	3	1	0	4	30	70	100
3	Professional Core Courses	PCC-CE-D203	Surveying & Levelling	3	1	0	4	30	70	100
4	Mandatory Courses	MC-D103	Values & Ethics	2	0	0	2	30	70	100
5	Mandatory Courses	MC-D102	Environmental Science	2	0	0	2	30	70	100
6	Humanities & Social Science including Management		Foreign Language-I	2	0	0	2	30	70	100
Total(A)							19	180	420	600
Practical/Drawing/Design										
1	Professional Core Courses	PCC-CE-D202	Building Construction Lab	0	0	2	1	30	20	50
2	Professional Core Courses	PCC-CE-D204	Surveying & Levelling Lab	0	0	2	1	30	20	50
3	Professional Core Courses	PCC-CE-D205	Building Drawing	0	0	2	1	30	20	50
4	Humanities & Social Science including Management	HSMC-D104	Life Skills& Professional Practice-II	0	0	2	1	30	20	50
Total(B)							4	120	80	200
Grand Total (A+B)							23	300	500	800

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
Theory										
1	Professional Core Courses	PCC-CE-D206	Concrete Technology	3	0	0	3	30	70	100
2	Professional Core Courses	PCC-CE-D207	Mechanics of Structure	3	1	0	4	30	70	100
3	Professional Core Courses	PCC-CE-D209	Geo-technical Engg.	3	1	0	4	30	70	100
4	Professional Core Courses	PCC-CE-D211	Hydraulics	3	1	0	4	30	70	100
5	Open Elective Courses		Open Elective	3	0	0	3	30	70	100
6	Humanities & Social Science including Management		Foreign Language-II	2	0	0	2	30	70	100
Total(A)							20	180	420	600
Practical/Drawing/Design										
1	Professional Core Courses	PCC-CE-D208	Mechanics of Structure Lab	0	0	2	1	30	20	50
2	Professional Core Courses	PCC-CE-D210	Geo-technical Engg. Lab	0	0	2	1	30	20	50
3	Professional Core Courses	PCC-CE-D212	Hydraulics Lab	0	0	2	1	30	20	50
4	Open Elective Courses		Open Elective Lab	0	0	2	1	30	20	50
Total(B)							4	120	80	200
Grand Total (A+B)							24	300	500	800

**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 Courses	PCC-CE-D301	Theory of Structure	3	1	0	4	30	70	100
2	Professional Core Courses	PCC-CE-D303	Design of Steel Structure	3	1	0	4	30	70	100
3	Professional Core Courses	PCC-CE-D304	Highway Engineering	3	1	0	4	30	70	100
4	Professional Core Courses	PCC-CE-D306	Irrigation Engineering	3	1	0	4	30	70	100
5	Professional Core Courses	PCC-CE-D307	Estimating and Costing	2	0	0	2	30	70	100
6	Professional Core Courses	PCC-CE-D309	Building Services & Entrepreneurship Development	2	0	0	2	30	70	100
Total(A)							20	180	420	600
Practical/Drawing/Design										
1	Professional Core Courses	PCC-CE-D308	Estimating and Costing Lab	0	0	2	1	30	20	50
2	Professional Core Courses	PCC-CE-D302	Theory of Structure Lab	0	0	2	1	30	20	50
3	Professional Core Courses	PCC-CE-D305	Highway Engineering lab	0	0	2	1	30	20	50
4	Project	CE-DP1	Project Stage I	0	0	4	2	30	20	50
Total(B)							5	120	80	200
Grand Total (A+B)							25	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	Humanities & Social Science including Management	HSMC-D107	Organisational Behaviour	2	0	0	2	30	70	100
2	Professional Core courses	PCC-CE-D312	Contracts and Accounts	3	0	0	3	30	70	100
3	Professional Core courses	PCC-CE-D314	Environmental Engineering	3	1	0	4	30	70	100
4	Professional Core courses	PCC-CE-D316	Design of Structure	3	1	0	4	30	70	100
5	Professional Elective courses		Professional Elective I	2	1	0	3	30	70	100
Total(A)							16	150	350	500
Practical/Drawing/Design										
1	Professional Core courses	PCC-CE-D313	Contracts and Accounts Lab	0	0	2	1	30	20	50
2	Professional Core courses	PCC-CE-D315	Environmental Engineering Lab	0	0	2	1	30	20	50
3	Professional Core courses	PCC-CE-D317	Design of Structure Lab	0	0	2	1	30	20	50
4	Project	CE-DP2	Project Stage II	0	0	12	6	150	50	200
Total(B)							9	240	110	350
Grand Total (A+B)							25	390	460	850

**L-Lecture, T-Tutorial, P-Practical**

**IA- Internal Assessment, ESE-End Semester Examination**