

BE (Civil Engineering) Curriculum – Regulation 2023

Minimum Credits to be Earned: 160

Semester I								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
THEORY								
1	23SEN101	Heritage of Tamils	HS	1	1	0	0	1
2	23SEN103	Technical English – I	HS	4	3	1	0	4
3	23SMA101	Matrices and Calculus	BS	4	3	1	0	4
4	23SPH111	Physics for Civil Engineers	BS	3	3	0	0	3
5	23CER101	Building By Laws	ES	3	3	0	0	3
6	23ADR106	Python Programming for Civil Engineers	ES	3	3	0	0	3
LABORATORY								
7	23CER105	Engineering Practices Laboratory for Civil Engineers	ES	2	0	0	2	1
8	23ADR112	Python Programming Laboratory for Civil Engineers	ES	2	0	0	2	1
TOTAL				22	16	2	4	20

Semester II								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
THEORY								
1	23SEN202	Tamils and Technology	HS	1	1	0	0	1
2	23SEN205	Technical English – II	HS	3	3	0	0	3
3	23SMA204	Transforms and its Applications	BS	4	3	1	0	4
4	23SCH219	Chemistry for Civil Engineers	BS	3	3	0	0	3
5	23CER202	Engineering Mechanics for Civil Engineers	ES	4	3	1	0	4
6	23CER304	Mechanics of Fluids	ES	4	3	1	0	4
LABORATORY								
7	23SEN217	Communication Skills Laboratory	HS	2	0	0	2	1
8	23SPH122	Physical Sciences Laboratory	BS	2	0	0	2	1
9	23CER207	Engineering Drawing Laboratory	ES	2	0	0	2	1
10	23CER208	Computer Applications in Civil Engineering Lab - I	ES	2	0	0	2	1
TOTAL				27	16	3	8	23

Semester III								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23SMA307	Numerical Methods	BS	4	3	1	0	4
2	23CER306	Construction Materials	ES	3	3	0	0	3
3	23CER309	Geology and Disaster Management for Civil Engineers	ES	3	3	0	0	3
4	23CER314	Surveying	PC	5	3	0	2	4
5	23CER315	Concrete Technology	PC	5	3	0	2	4
6	23EXC204	Life Skills – I	EEC	2	0	0	2	1
7	23SMX301	Indian Constitution	MC	1	1	0	0	-
TOTAL				23	16	1	6	19

Semester IV								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CER411	Mechanics of Solids	ES	5	3	0	2	4
2	23CER417	Soil Mechanics	PC	5	3	0	2	4
3	23CER418	Design of Reinforced Concrete Elements	PC	3	3	0	0	3
4	23CER419	Water Supply and Wastewater Engineering	PC	5	3	0	2	4
5	23CEPXXX	Professional Elective – I	PE	3	3	0	0	3
6	23CEPXXX	Professional Elective – II	PE	3	3	0	0	3
7	23EXC305	Life Skills – II	EEC	2	0	0	2	1
8	23EXC511	Design Thinking	EEC	1	1	0	0	1
9	23SMX402	Essence of Indian Traditional Knowledge	MC	1	1	0	0	-
TOTAL				28	20	0	8	23

Semester V								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CER520	Structural Analysis	PC	3	3	0	0	3
2	23CER521	Foundation Engineering	PC	3	3	0	0	3
3	23CER522	Hydraulic Engineering	PC	5	3	0	2	4
4	23CER523	Highway Planning, Design and Operation	PC	3	3	0	0	3
5	23CER524	Hydrology and Water Resource Engineering	PC	3	3	0	0	3
6	23CER525	Building Drawing and Detailing Laboratory	PC	4	0	0	4	2
7	23CEPXXX	Professional Elective – III	PE	3	3	0	0	3
8	23XXXXXX	Open Elective – I	OE	3	3	0	0	3
9	23EXC506	Life Skills – III	EEC	2	0	0	2	1
10	23EXCXXX	Internship – I/Mini Project – I	EEC	2	0	0	2	1
TOTAL				31	21	0	10	26

Semester VI								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CER626	Construction Management	PC	3	3	0	0	3
2	23CER627	Design of Steel Structural Elements	PC	3	3	0	0	3
3	23CER628	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3
4	23CEPXXX	Professional Elective – IV	PE	3	3	0	0	3
5	23CEPXXX	Professional Elective – V	PE	3	3	0	0	3
6	23XXXXXX	Open Elective – II	OE	3	3	0	0	3
7	23XXXXXX	Open Elective – III	OE	3	3	0	0	3
8	23XXXXXX	Open Elective – IV	OE	3	3	0	0	3
9	23EXCXXX	Internship – II/Mini Project – II	EEC	2	0	0	2	1
10	23EXC615	Survey Camp	EEC	2	0	0	2	1
TOTAL				28	24	0	4	26

Semester VII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23SGE713	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
2	23CEPXXX	Professional Elective – VI	PE	3	3	0	0	3
3	23CEPXXX	Professional Elective – VII	PE	3	3	0	0	3
4	23EXC713	Project Work – Phase I	EEC	8	0	0	8	4
5	23EXC716	Building Information Modelling in Construction	EEC	6	0	0	6	3
TOTAL				23	9	0	14	16

Semester VIII								
S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23EXC814	Project Work – Phase II	EEC	16	0	0	16	8
TOTAL				16	0	0	16	8

TOTAL CREDITS	161
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GROUPING OF COURSES**1. Humanities and Social Sciences (HS)**

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23SEN101	Heritage of Tamils	HS	1	1	0	0	1
2	23SEN202	Tamils and Technology	HS	1	1	0	0	1
3	23SEN103	Technical English – I	HS	4	3	1	0	4
4	23SEN104	Business English – I	HS	4	4	0	0	4
5	23SEN205	Technical English – II	HS	3	3	0	0	3
6	23SEN206	Business English – II	HS	4	4	0	0	4
7	23SEN307	Basics of French	HS	4	3	1	0	4
8	23SEN408	Functional French	HS	4	3	1	0	4
9	23SEN309	Basics of German	HS	4	3	1	0	4
10	23SEN410	Functional German	HS	4	3	1	0	4
11	23SEN311	Basics of Japanese	HS	4	3	1	0	4
12	23SEN412	Functional Japanese	HS	4	3	1	0	4
13	23SGE713	Principles of Management and Engineering Ethics	HS	3	3	0	0	3
14	23SGE714	Professional Practice, Law and Ethics	HS	3	3	0	0	3
15	23SGE815	Organizational Behavior	HS	3	3	0	0	3
16	23SGE816	Finance and Accounting	HS	3	3	0	0	3
17	23SEN217	Communication Skills Laboratory	HS	2	0	0	2	1

2. Basic Sciences (BS)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23SMA101	Matrices and Calculus	BS	4	3	1	0	4
2	23SMA202	Graph Theory	BS	4	3	1	0	4
3	23SMA203	Computational Methods for Engineers	BS	4	3	1	0	4
4	23SMA204	Transforms and its applications	BS	4	3	1	0	4
5	23SMA305	Discrete Mathematics and Stochastic Process	BS	4	3	1	0	4
6	23SMA306	Numerical Linear Algebra	BS	4	3	1	0	4
7	23SMA307	Numerical Methods	BS	4	3	1	0	4
8	23SMA408	Statistics and Optimization Techniques	BS	4	3	1	0	4
9	23SMA409	Probability and Statistics	BS	4	3	1	0	4
10	23SPH110	Engineering Physics	BS	5	3	0	2	4
11	23SPH111	Physics for Civil Engineers	BS	3	3	0	0	3
12	23SPH112	Physics for Mechanical Sciences	BS	3	3	0	0	3
13	23SPH113	Physics for Electrical Sciences	BS	3	3	0	0	3
14	23SPH214	Physics for Computing Sciences	BS	3	3	0	0	3

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
15	23SCH115	Environmental Science for Engineers	BS	3	3	0	0	3
16	23SCH116	Chemistry for Computing Sciences	BS	3	3	0	0	3
17	23SCH217	Chemistry for Electrical Sciences	BS	3	3	0	0	3
18	23SCH218	Chemistry for Mechanical Sciences	BS	3	3	0	0	3
19	23SCH219	Chemistry for Civil Engineering	BS	3	3	0	0	3
20	23SPH120	Engineering Physics Laboratory	BS	2	0	0	2	1
21	23SCH121	Chemistry Laboratory	BS	2	0	0	2	1
22	23SPH122	Physical Sciences Laboratory	BS	2	0	0	2	1
23	23SPH123	Physics for Computing Engineers	BS	5	3	0	2	4
24	23SPH124	Semiconductor Physics	BS	5	3	0	2	4
25	23SPH225	Physics for Mechanical Engineers	BS	3	3	0	0	3
26	23SCH126	Environmental Chemistry	BS	5	3	0	2	4
27	23SCH127	Environmental Studies	BS	3	3	0	0	3
28	23SCH228	Engineering Chemistry	BS	5	3	0	2	4

3. Engineering Sciences (ES)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CER101	Building by Laws	ES	4	0	0	4	2
2	23CER202	Engineering Mechanics for Civil Engineers	ES	4	3	1	0	4
3	23MER202	Engineering Graphics	ES	3	3	0	0	3
4	23CER304	Mechanics of Fluids	ES	4	3	1	0	4
5	23CER105	Engineering Practices Laboratory for Civil Engineers	ES	2	0	0	2	1
6	23ADR106	Python Programming for Civil Engineers	ES	3	3	0	0	3
7	23EER206	Basics of Electrical and Electronic Engineering	ES	3	3	0	0	3
8	23CER306	Construction Materials	ES	3	3	0	0	3
9	23ADR107	Problem Solving using Python	ES	5	3	0	2	4
10	23MER107	Engineering Practices Laboratory	ES	4	0	0	4	2
11	23CER207	Engineering Drawing Laboratory	ES	2	0	0	2	1
12	23CER208	Computer Applications in Civil Engineering Lab-I	ES	2	0	0	2	1
13	23CER309	Geology and Disaster Management for Civil Engineers	ES	3	3	0	0	3
14	23CER411	Mechanics of Solids	ES	5	3	0	2	4
15	23ADR112	Python Programming Laboratory	ES	2	0	0	2	1

4. Professional Core (PC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CER314	Surveying	PC	5	3	0	2	4
2	23CER315	Concrete Technology	PC	5	3	0	2	4
4	23CER417	Soil Mechanics	PC	5	3	0	2	4
5	23CER418	Design of Reinforced Concrete Structural Elements	PC	3	3	0	0	3
6	23CER419	Water Supply and Wastewater Engineering	PC	5	3	0	2	4
7	23CER520	Structural Analysis	PC	3	3	0	0	3
8	23CER521	Foundation Engineering	PC	3	3	0	0	3
9	23CER522	Hydraulic Engineering	PC	5	3	0	2	4
10	23CER523	Highway Planning, Design and Operation	PC	3	3	0	0	3
11	23CER524	Hydrology and Water Resources Engineering	PC	3	3	0	0	3
12	23CER525	Building Drawing and Detailing Laboratory	PC	4	0	0	4	2
13	23CER626	Construction Management	PC	3	3	0	0	3
14	23CER627	Design of Steel Structural Elements	PC	3	3	0	0	3
15	23CER628	Estimation, Costing and Valuation Engineering	PC	3	3	0	0	3

5. Professional Electives (PE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
INFRASTRUCTURE ENGINEERING								
1	23CEP101	Pre-stressed Concrete Structures	PE	3	3	0	0	3
2	23CEP102	Town Planning and Urban Development	PE	3	3	0	0	3
3	23CEP103	Airports and Seaports Engineering	PE	3	3	0	0	3
4	23CEP104	Metro Rail Transportation System and Construction	PE	3	3	0	0	3
5	23CEP105	Disaster Resistant Structures	PE	3	3	0	0	3
6	23CEP106	Bridge Engineering and Design Practices	PE	3	3	0	0	3
7	23CEP107	Traffic Engineering	PE	3	3	0	0	3
8	23CEP108	Prefabricated Structures	PE	3	3	0	0	3
GEOTECHNICAL ENGINEERING								
1	23CEP201	Earth and Rock Fill Dams	PE	3	3	0	0	3
2	23CEP202	Ground Improvement Techniques	PE	3	3	0	0	3
3	23CEP203	Soil Dynamics and Machine Foundations	PE	3	3	0	0	3
4	23CEP204	Rock Mechanics	PE	3	3	0	0	3
5	23CEP205	Earth and Earth Retaining Structures	PE	3	3	0	0	3
6	23CEP206	Design of Execution of Pile Foundation	PE	3	3	0	0	3
7	23CEP207	Tunnelling Engineering	PE	3	3	0	0	3
8	23CEP208	Geoenvironmental Engineering	PE	3	3	0	0	3

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
ENVIRONMENTAL ENGINEERING AND MANAGEMENT								
1	23CEP301	Solid Waste Management	PE	3	3	0	0	3
2	23CEP302	Plastic Waste Management	PE	3	3	0	0	3
3	23CEP303	Irrigation Engineering	PE	3	3	0	0	3
4	23CEP304	Air Pollution Control and Management	PE	3	3	0	0	3
5	23CEP305	Wealth from Waste	PE	3	3	0	0	3
6	23CEP306	Environmental Impact Assessment	PE	3	3	0	0	3
7	23CEP307	Hazard Waste Management	PE	3	3	0	0	3
8	23CEP308	Industrial Wastewater Management	PE	3	3	0	0	3
CONSTRUCTION MANAGEMENT AND TECHNIQUES								
1	23CEP401	Building Services	PE	3	3	0	0	3
2	23CEP402	Repair and Rehabilitation of Structures	PE	3	3	0	0	3
3	23CEP403	Construction Techniques and Management	PE	3	3	0	0	3
4	23CEP404	Formwork Engineering	PE	3	3	0	0	3
5	23CEP405	Engineering Economics and Cost Analysis	PE	3	3	0	0	3
6	23CEP406	Sustainable Construction and Lean Construction	PE	3	3	0	0	3
7	23CEP407	Advanced Construction Techniques	PE	3	3	0	0	3
8	23CEP408	Fire Safety Engineering	PE	3	3	0	0	3

6. Employability Enhancement Courses (EEC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23EXC204	Life Skills – I	EEC	2	0	0	2	1
2	23EXC305	Life Skills – II	EEC	2	0	0	2	1
3	23EXC407	Internship – I	EEC	4	0	0	4	2
4	23EXC508	Internship – II	EEC	4	0	0	4	2
5	23EXC506	Life Skills – III	EEC	2	0	0	2	1
6	23EXC409	Mini Project – I	EEC	2	0	0	2	1
7	23EXC510	Mini Project – II	EEC	2	0	0	2	1
8	23EXC511	Design Thinking	EEC	1	1	0	0	1
9	23EXC712	Comprehension	EEC	-	-	-	-	-
10	23EXC713	Project Work – Phase I	EEC	8	0	0	8	4
11	23EXC814	Project Work – Phase II	EEC	16	0	0	16	8
12	23EXC615	Survey Camp	EEC	2	0	0	2	1
13	23EXC716	Building Information Modelling in Construction	EEC	6	0	0	6	3

7. Mandatory Courses (MC)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23MXC301	Indian Constitution	MC	1	1	0	0	-
2	23MXC402	Essence of Indian Traditional Knowledge	MC	1	1	0	0	-

8. Open Electives (OE)

S. No.	Course Code	Course Title	Category	Contact Hours	Instruction Hours/Week			C
					L	T	P	
1	23CEO101	Rainwater Harvesting	OE	3	3	0	0	3
2	23CEO102	Fundamentals of Soil and Water Conservation Engineering	OE	3	3	0	0	3
3	23CEO103	Basics of Green Building	OE	3	3	0	0	3
4	23CEO104	Environment, Health and Safety	OE	3	3	0	0	3
5	23CEO105	Sustainable Technologies and Circular Economy	OE	3	3	0	0	3
6	23CEO106	Introduction to Finite Element Method	OE	3	3	0	0	3
7	23CEO107	Solid and Hazard Waste Management	OE	3	3	0	0	3
8	23CEO108	Basics of Civil Engineering	OE	3	3	0	0	3