

Program: B.Tech. in Civil Engineering

Table 1: Overall Credit Distribution

Division	Sub-division	Credits
Institute Core	IC Compulsory	39
	IC Baskets	6
	HSS	12
	IKSHMA	3
Discipline	Discipline Core	49
	Discipline Electives	17
Electives	Free Electives	22
	MTP + ISTP or Equivalent	12
	Total	160

Table 2: List of IC Compulsory Courses

Sl. No.	Course Code	Course Name	Credits
1	ICXXX	Calculus	2
2	ICXXX	Complex Variables and Vector Calculus	2
3	ICXXX	Linear Algebra	2
4	ICXXX	ODE & Integral Transforms	2
5	IC010	Internship	2
6	IC102P	Foundations of Design Practicum	4
7	IC140	Engineering Graphics	4
8	IC152	Introduction to Python and Data Science	4
9	IC161	Applied Electronics	3
10	IC161P	Applied Electronics Lab	2
11	IC201P	Design Practicum	3
12	IC222P	Physics Practicum	2
13	IC252	Probability and Statistics	4
14	IC272	Machine Learning	3
		Total	39

Table 3: IC Basket Courses

Sl. No.	Basket	Course Code	Course Name	Credits
1	IC-I	IC230	Environmental Science	3
2	IC-II	IC240	Mechanics of Rigid Bodies	3

Table 4: Discipline Core Courses

Sl. No.	Course Code	Course Name	Credits
1	CE201	Surveying Traditional and Digital	2-0-4-4
2	CE251#	Hydraulics Engineering	3-0-0-3
3	CE252	Geology and Geomorphology	2-0-2-3
4	CE202*	Introduction to Civil Engineering Profession	1-0-0-1
5	CE203*	Construction Materials	3-0-0-3
6	CE203P*	Building Materials Lab	0-0-2-1
7	CE301#	Strength of Materials and Structures	3-0-0-3
8	CE301P#	Strength of Materials and Structures Lab	0-0-2-1
9	CE302#	Geotechnical Engineering I	3-0-0-3
10	CE302P#	Geotechnical Engineering Lab	0-0-2-1
11	CE303#	Water Resources Engineering	3-0-0-3
12	CE304P	Hydraulics Engineering Lab	0-0-2-1
13	CE305P#&	Environmental Engineering Lab	0-0-2-1
14	CE351	Design of Reinforced Concrete Structures	2-1-0-3
15	CE352	Transportation Engineering	3-0-0-3
16	CE352P*	Transporting Engineering Lab	0-0-2-1
17	CE353P	Civil Engineering Drawing	0-0-2-1
18	CE403#&	Water and Wastewater Engineering	3-0-0-3
19	CE401	Design of Steel Structures	2-1-0-3
20	CE402	Geotechnical Engineering II	3-0-0-3
21	CE404	Analysis of Structures	3-0-0-3
22	CEXXX	Reverse Engineering	0-0-2-1
		Total	49

*New course

#minor modifications of contents in existing course

& course title change

Table 5: Summary of Recommended Credit Distribution Across the Semesters

	Institute Core	Discipline Core and Electives	Free Electives	Other Electives	Total
Semester 1	22	0	0	0	18
Semester 2	21	0	0	0	23
Semester 3	9	12	0	0	21
Semester 4	3	15	3	0	21
Semester 5	3	14	3	0	22
Semester 6	0	14	6	0	20
Semester 7	2	6	6	7	21
Semester 8	0	6	6	5	17
	60	66~67*	22~24*	12	160~163*

*1 extra for DE (3×6 instead of 17), 2 extra for FE (3×8 instead of 22) credits are shown in the semesterwise distribution. Students can have the flexibility to choose suitable courses to complete the categorywise credits.

Semester-wise Course Distribution

Semester - I

Sl. No.	Course Code	Course Name	Credits
1	IC140	Engineering Graphics	4
2	ICXXX	Math 1	2
3	ICXXX	Math 2	2
4	IC152	Introduction to Python and Data Science	4
5	IC230	Environmental Science	3
6	HSXXX/IKXXX	HSS Course/IKSHMA Course	3
7	IC102P	Foundations of Design Practicum	4
		Total Credit	22

Semester - II

Sl. No.	Course Code	Course Name	Credits
1	IC222P	Physics Practicum	2
2	ICXXX	Math 3	2
3	ICXXX	Math 4	2
4	IC161	Applied Electronics	3
5	IC161P	Applied Electronics Lab	2
6	IC240	Mechanics of Rigid Bodies	3
7	IC252	Probability and Statistics	4
8	IKXXX/HSXXX	IKSHMA Course/HSS Course	3
		Total Credit	21

Semester - III

Sl. No.	Course Code	Course Name	Credits
1	CE202	Introduction to Civil Engineering	1-0-0-1
2	CE252	Geology and Geomorphology	2-0-2-3
3	CE203	Construction Materials	3-0-0-3
4	CE203P	Building Materials Lab	0-0-2-1
5	CE301	Strength of Materials and Structures	2-1-0-3
6	CE301P	Strength of Materials and Structures Lab	0-0-2-1
7	IC201P	Design Practicum	3
8	IC272	Machine Learning	3
9	HSXXX	HSS Course	3
		Total Credit	21

Semester - IV

Sl. No.	Course Code	Course Name	Credits
1	CE201	Surveying Traditional and Digital	2-0-3-4
2	CE251	Hydraulics Engineering	3-0-0-3
3	CE302	Geotechnical Engineering I	3-0-0-3
4	CE302P	Geotechnical Engineering Lab	0-0-2-1
5	CE304P	Hydraulics Engineering Lab	0-0-2-1
6	CE404	Analysis of Structures	3-0-0-3
7	FE-1	Free Elective	3
8	HSXXX	HSS Course	3
Total Credit			21

Semester - V

Sl. No.	Course Code	Course Name	Credits
1	CE303	Water Resources Engineering	3-0-0-3
2	CE 351	Design of Reinforced Concrete Structures	2-1-0-3
3	CE352	Transportation Engineering	3-0-0-3
4	CE352P	Transporting Engineering Lab	0-0-2-1
5	CE353P	Civil Engineering Drawing	0-0-2-1
6	CE402	Geotechnical Engineering II	3-0-0-3
7	FE-2	Free Elective	3
8	HSXXX	HSS Course	3
Total Credit			20

Semester - VI

Sl. No.	Course Code	Course Name	Credits
1	CE305P	Environmental Engineering Lab	0-0-2-1
2	CE401	Design of Steel Structures	2-1-0-3
3	CE403	Water and Wastewater Engineering	3-0-0-3
4	CEXXX	Reverse Engineering	1
5	DE-1	Discipline Elective	3
6	DE-2	Discipline Elective	3
7	FE-3	Free Elective	3
8	FE-4	Free Elective	3
Total Credit			20

Internship Credit During Any Suitable Break Period After Semester - V

(To be added with 7th Semester)

Sl. No.	Course Code	Course Name	Credits
1	IC 010	Internship	2

Semester - VII

Sl. No.	Course Code	Course Name	Credits
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1	DE-3	Discipline Elective	3
2	DE-4	Discipline Elective	3
3	FE-5	Free Elective	3
4	FE-6	Free Elective	3
5	MTP-1 or Equivalent	Major Technical Project	3
6	DP 301P or Equivalent	ISTP	4
		Total Credit	19

Semester - VIII

Sl. No.	Course Code	Course Name	Credits
1	DE-5	Discipline Elective	3
2	DE-6	Discipline Elective	3
3	FE-7	Free Elective	3
4	FE-8	Free Elective	3
5	MTP-2 or Equivalent	Major Technical Project	5
		Total Credit	17