

Regulation -23

(Under New Education Policy)

Academic Course Credit System and Evaluation Scheme
B.Tech. Civil Engineering Program

(Second Year)



DEPARTMENT OF CIVIL ENGINEERING

Sardar Patel College of Engineering, Mumbai

Scheme for S.Y .B.Tech. In Civil Engineering with Minor in [**], (Semester - III) R23 Academic Year 2026-27**

Sr. No.	Course Name	Code	Course Plan per Week (Hrs.)			SL/ Sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid-Sem Exam (Points)	Mid-Sem Time (Hrs.)	IE Points	Points	Time (Hrs.)		
Theory Courses														
1	Laplace Linear Algebra and Complex Analysis	BS-BTC301	2	0	0	32	2	30	1.5	20	100	3	50%	100
2	Engineering Geology	BS-BTC302	2	0	0	32	2	30	1.5	20	100	3	50%	100
3	Mechanics of Materials	PC-BTC301	3	0	0	48	3	30	1.5	20	100	3	50%	100
4	Basics of Surveying	PC-BTC302	2	0	0	32	2	30	1.5	20	100	3	50%	100
5	Building Drawing with CAD	PC-BTC303	2	0	0	32	2	30	1.5	20	100	3	50%	100
6	Fluid Mechanics	PC-BTC304	3	0	0	48	3	30	1.5	20	100	3	50%	100
7	Concrete Technology	PC-BTC305	2	0	0	32	2	30	1.5	20	100	3	50%	100
Laboratory Courses														
8	Mechanics of Materials Laboratory	PC-BTC351	0	2	0	2	1	-	-	25	25	-	100%	50
9	Basics of Surveying Lab.	PC-BTC352	0	2	0	2	1	-	-	25	25	-	100%	50
10	Fluid Mechanics Lab.	PC-BTC353	0	2	0	2	1	-	-	25	25	-	100%	50
11	Concrete Technology Lab.	PC-BTC354	0	2	0	2	1	-	-	25	25	-	100%	50
12	Building Drawing with CAD Lab.	PC-BTC355	0	2	0	2	1	-	-	25	25	-	100%	50
13	Engineering Geology Lab.	BS-BTC351	0	2	0	2	1	-	-	25	25	-	100%	50
TOTAL			16	12	0		22							

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation

1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for term work and self-learning by students

Scheme for S.Y. B.Tech. In Civil Engineering with Minor in [****], (Semester - IV) R23 Academic Year 2026-27														
Sr. No.	Course Name	Course Code	Course Plan per Week (Hrs.)			SL/ Sem.	Credits	In semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Point s
			L	P	T			Mid Sem Exam (Points)	Mid Sem Exam Time (Hrs)	IE	Points	Time (Hrs)		
Theory courses														
1	Probability and Statistics	BS-BTC401	2	0	1	48	3	30	1.5	20	100	3	50	100
2	Structural Mechanics	PC-BTC402	3	0	1	64	4	30	1.5	20	100	3	50	100
3	Surveying & Geomatics	PC-BTC403	3	0	0	48	3	30	1.5	20	100	3	50	100
4	Hydraulic Engineering	PC-BTC404	2	0	0	32	2	30	1.5	20	100	3	50	100
5	Transportation Engineering	PC-BTC405	2	0	1	48	3	30	1.5	20	100	3	50	100
6	Water Supply Engineering	PC-BTC406	2	0	0	32	2	30	1.5	20	100	3	50	100
Minor														
7	Minor 1	MI-BTXX1	2	0	0	32	2	30	1.5	20	100	3	50	100
Laboratory courses														
8	Surveying &Geomatics Lab.	PC-BTC451	0	2	0	2	1	-	-	25	25	-	100	50
9	Hydraulic Engineering Lab.	PC-BTC452	0	2	0	2	1	-	-	25	25	-	100	50
10	Water Supply Engineering Lab.	PC-BTC453	0	2	0	2	1	-	-	25	25	-	100	50
TOTAL			16	6	3		22							

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation

1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for term work and self-learning by students

Evaluation for R23 : S.Y. B. Tech

1. The Evaluation of any course shall be such that all Course Outcomes are appropriately mapped.
2. Mid term: The courses under the category “Theory courses”, the evaluation is based on Mid Term of 30 points for 1.5 hours duration. Tentatively the first four modules of the course content will be covered in Mid Term. Any change in the same will be informed by the course instructor. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 30 points each.
3. IE: Internal Evaluation will be carried out by the course instructor for 20 points. It is the continuous evaluation throughout the semester. The evaluation will be based on minimum three of the following activities decided by course instructor. The maximum points that can be assigned to one activity will be 07. The course instructor needs to inform the students and head of the department about the activities those will be considered for IE and the points assigned to them in first week of semester. The course instructor will submit the internal evaluation points (out of 20 with activity wise break up) to examination section before the beginning of End Semester examination. List of Activities: 1. Class Involvement 2. Assignments 3. Problem Solving 4. Mini project 5. Quizzes 6. Presentation 7. Oral.
4. End semester evaluation: The course under the category “Theory courses”, the evaluation is based on End semester examination of 100 points. The end semester examination will cover all the modules of the course content. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 50/100 points.
5. The evaluation of the laboratory courses include internal evaluation IE of 25 points and End semester evaluation of 25 points. The internal evaluation is based on [10 points: Laboratory Attendance, 15 points: Laboratory work] and End semester evaluation is based on [25 points: Quizzes/ Presentation/ Practical Examination/ Mini project/Oral may be any two activities]
6. The co-curricular course credits in semester VIII can be earned through participation in various activities during his/ her graduation. The co-curricular course credits are not considered for CPI calculation.
7. The evaluation of Field project/ Project/ Internship shall be as mentioned in Academic Rules.

Note: Refer Academic and Examination rules and regulations for further details.

Exit Courses under B.Tech. in Civil Engineering Program (Regulation-

Courses	Credits
After 1st Year (6 credits) Any two Of three courses	
Building Drawing with CAD	3
Detailing and Drawing of Concrete Structures or Detailing and Drawing of Steel Structures	3
Surveying for Civil Engineering	3
After 2nd Year (6 Credits) Any two Of three choices	
Contracts and Administration	3
Construction Safety or Visual Basics Lab	3
Internship (1 month) (4 weeks)	3
After 3rd Year (6 Credits) Either 2 courses or an internship	
Primavera	3
ETabs	3
Internship (2 months) (8 weeks)	6

Regulation -23
(Under New Education Policy)

Academic Course Credit System and Evaluation Scheme
B.Tech. Civil Engineering Program

(Third Year)



DEPARTMENT OF CIVIL ENGINEERING

Sardar Patel College of Engineering, Mumbai

Scheme for T.Y. B.Tech In Civil Engineering with Minor[****], (Semester-V) R23 Academic Year 2026-27														
Sr. No.	Course Name	Code	Course Plan per Week (Hrs.)			SL/ Sem	Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid Sem Exam (Points)	Mid Sem Time (Hrs)	IE	Points	Time (Hrs.)		
Theory courses														
1	Structural Analysis	PC-BTC501	3	0	1	64	4	30	1.5	20	100	3	50	100
2	Hydrology & Water Resources Engineering	PC-BTC502	3	0	1	64	4	30	1.5	20	100	3	50	100
3	Soil Mechanics	PC-BTC503	3	0	0	48	3	30	1.5	20	100	3	50	100
4	Highway Engineering	PC-BTC504	2	0	0	32	2	30	1.5	20	100	3	50	100
5	Wastewater Engineering and Air Pollution Control	PC-BTC505	2	0	0	32	2	30	1.5	20	100	3	50	100
Minor														
6	Minor 2	MI-BTXX2	4	0	0	64	4	30	1.5	20	100	3	50	100
Laboratory courses														
7	Highway Engineering Lab.	PC-BTC551	0	2	0	2	1	-	-	25	25	-	100	50
8	Wastewater Engineering and Air Pollution Control Lab.	PC-BTC552	0	2	0	2	1	-	-	25	25	-	100	50
9	Soil Mechanics Lab.	PC-BTC553	0	2	0	2	1	-	-	25	25	-	100	50
TOTAL			17	6	2		22							

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation

1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for term work and self-learning by students * Contact Hrs

Scheme for T.Y. B.Tech In Civil Engineering with Minor[****], (Semester-VI) R23 Academic Year 2026-27														
Sr. No.	Course Name	Cour se Cod e	Course Plan per Week (Hrs.)			SL/ sem	Credits	In semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T			Mid Sem Exam (Points)	Mid Sem Time (Hrs)	IE (Points)	Points	Time (Hrs.)		
Theory courses														
1	Construction Engineering & Management	PC-BTC601	3	0	0	48	3	30	1.5	20	100	3	50	100
2	Design of Steel Structures	PC-BTC602	3	0	0	48	3	30	1.5	20	100	3	50	100
3	Foundation Engineering	PC-BTC603	2	0	0	32	2	30	1.5	20	100	3	50	100
4	Design of RCC Elements	PC-BTC604	2	0	1	48	3	30	1.5	20	100	3	50	100
5	Professional Elective - I	PE-BTC6xx	3	0	0	48	3	30	1.5	20	100	3	50	100
Minor														
6	Minor 3	MI-BTXX3	3	0	1	64	4	30	1.5	20	100	3	50	100
Community Engagement Project/ Field Project														
7	Community Engagement/Field Project	FP-BTC601	2*+32				2	-	-	50	50	-	100	100
Laboratory courses														
8	Foundation Engineering Lab	PC-BTC651	0	2	0	2	1	-	-	25	25	-	100	50
9	Design and Drawing of Steel Structures Lab.	PC-BTC652	0	2	0	2	1	-	-	25	25	-	100	50
	TOTAL		16	8	2		22							

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation 1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for term work and self-learning by students * Contact Hrs

Professional Elective – I

Sr. No.	Course Code	Course Name	Specialization
1	PE-BTC621	Analysis of Indeterminate Structures	Structural Engineering
2	PE-BTC622	Structural Dynamics	
3	PE-BTC623	Repair and Rehabilitation of Structures	
4	PE-BTC624	Geographic Information System Science and Application	
5	PE-BTC631	Hydraulic Structures & Irrigation Engineering	Water Resources Engineering
6	PE-BTC632	Introduction to Offshore Engineering	
7	PE-BTC633	Open Channel Flow	
8	PE-BTC634	Ground Water Development and Management	
9	PE-BTC641	Solid and Hazardous Waste Management	Environmental Engineering
10	PE-BTC642	Air and Noise Pollution Control	
11	PE-BTC643	Rural Water Supply and Sanitation	
12	PE-BTC651	Special Construction Materials & Methods	Construction Management
13	PE-BTC652	Appraisal and Implementation of Infrastructure Projects	
14	PE-BTC653	TQM and MIS in Construction	
15	PE-BTC654	Engineering Risk and Uncertainty	Transportation Engineering
16	PE-BTC661	Pavement Subgrade and Materials	
17	PE-BTC662	Low Cost Roads	
18	PE-BTC663	Traffic Engineering and Control	Geotechnical Engineering
19	PE-BTC671	Ground Improvement Techniques	

Evaluation for R23 : T.Y. B. Tech

1. The Evaluation of any course shall be such that all Course Outcomes are appropriately mapped.
2. Mid term: The courses under the category “Theory courses”, the evaluation is based on Mid Term of 30 points for 1.5 hours duration. Tentatively the first four modules of the course content will be covered in Mid Term. Any change in the same will be informed by the course instructor. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 30 points each.
3. IE: Internal Evaluation will be carried out by the course instructor for 20 points. It is the continuous evaluation throughout the semester. The evaluation will be based on a minimum three of the following activities decided by the course instructor. The maximum points that can be assigned to one activity will be 07. The course instructor needs to inform the students and head of the department about the activities those will be considered for IE and the points assigned to them in first week of semester. The course instructor will submit the internal evaluation points (out of 20 with activity wise break up) to the examination section before the beginning of End Semester examination. List of Activities: 1. Class Involvement 2. Assignments 3. Problem Solving 4. Mini project 5. Quizzes 6. Presentation 7. Oral.
4. End semester evaluation: The course under the category “Theory courses”, the evaluation is based on End semester examination of 100 points. The end semester examination will cover all the modules of the course content. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 50/100 points.
5. The evaluation of the laboratory courses include internal evaluation IE of 25 points and End semester evaluation of 25 points. The internal evaluation is based on [10 points: Laboratory Attendance, 15 points: Laboratory work] and End semester evaluation is based on [25 points: Quizzes/ Presentation/ Practical Examination/ Mini project/Oral may be any two activities]
6. The co-curricular course credits in semester VIII can be earned through participation in various activities during his/ her graduation. The co-curricular course credits are not considered for CPI calculation.
7. The evaluation of Field project/ Project/ Internship shall be as mentioned in Academic Rules.

Note: Refer Academic and Examination rules and regulations for further details.

Exit Courses under B.Tech. in Civil Engineering Program (Regulation-

Courses	Credits
After 1st Year (6 credits) Any two Of three courses	
Building Drawing with CAD	3
Detailing and Drawing of Concrete Structures or Detailing and Drawing of Steel Structures	3
Surveying for Civil Engineering	3
After 2nd Year (6 Credits) Any two Of three choices	
Contracts and Administration	3
Construction Safety or Visual Basics Lab	3
Internship (1 month) (4 weeks)	3
After 3rd Year (6 Credits) Either 2 courses or an internship	
Primavera	3
ETabs	3
Internship (2 months) (8 weeks)	6

Regulation -23

(Under New Education Policy)

Academic Course Credit System and Evaluation Scheme
B.Tech. Civil Engineering Program
(Final Year)



DEPARTMENT OF CIVIL ENGINEERING

Sardar Patel College of Engineering, Mumbai

Scheme for B. Tech in Civil Engineering with Minor[****], (Semester-VII) R23 Academic Year 2026-27														
Sr No	Course Name	Code	Course Plan per Week (Hrs.)				Credits	In Semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T	S L		Mid Sem (Pts)	Mid Sem Time (Hrs)	IE	Pts	Time (Hrs.)		
Theory courses														
1	Design of concrete structures	PC-BTC701	3	0	0	3.5	3	30	1.5	20	100	3	50	100
2	Engg. Economics, Estimation, and Costing	PC-BTC702	3	0	1	4.5	4	30	1.5	20	100	3	50	100
3	Professional Elective - II	PE-BTCxxx	3	0	1	4.5	4	30	1.5	20	100	3	50	100
4	Open Elective - I	OE-BTCxxx	3	0	0	3.5	3	30	1.5	20	100	3	50	100
5	Inst. Compul. Course Research Methodology & Ethics (Online)	IC-BT701	2	0	0	2.5	2	TBD	TBD					
Minor														
6	Minor 4	MI-BTXX4	3	0	1	4.5	4	30	1.5	20	100	3	50	100
BTech Project														
7	Project	PR-BTC701	2+6*				4			50	50		100	100
Laboratory														
8	Design and Drawing of Concrete Structures Lab	PC-BTC751	0	2	0	2.5	1	-	-	25	25	-	100	50
TOTAL			17	2	3	25.5	25							650

L: Lecture T: Tutorial P: Practical SL: Self Learning IE : Internal Evaluation Pts: Points

1 credit corresponds to 30 Hours of student engagement in a semester. Apart from actual contact hours (L T P), the remaining hours are used for

term work and self-learning by students

PROFESSIONAL ELECTIVE II

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC721	Advanced Structural Analysis
	2	PE-BTC722	Finite Element Analysis
	3	PE-BTC723	Advanced Design of Steel Structures
	4	PE-BTC724	Prestressed Concrete
Water Resources	5	PE-BTC731	Surface Hydrology
Environmental Engg.	6	PE-BTC741	Water and Air Quality Modelling
	7	PE-BTC742	Industrial Wastewater treatment
Construction Management	8	PE-BTC751	Valuation and Value Engineering
	9	PE-BTC752	Contracts Management
Transportation	10	PE-BTC761	Pavement Design & Construction
Geotechnical Engineering	11	PE-BTC771	Advanced Foundation Engineering
	12	PE-BTC772	Rock Mechanics
	13	PE-BTC773	Ground Improvement Techniques

OPEN ELECTIVE-I

Sr. No.	Code	Elective Course
1	OE-BTC711	Economic Policies of India
2	OE-BTC712	Entrepreneurship, Innovation and Design Thinking*
3	OE-BTC713	Disaster Management and Preparedness*
4	OE-BTC714	Engineering System and Development
5	OE-BTE701	Computer network
6	OE-BTE702	Engineering economics
7	OE-BTE703	Embedded system
8	OE-BTE704	Internet of Things
9	OE-BTM714	Introduction to Micro-Electro-Mechanical Systems (MEMS)
10	OE-BTM715	Solar and Wind Technology
11	OE-BTM717	Introduction to Augmented Reality
12	OE-BTM718	Fundamental of Artificial Intelligence (AI) and Machine Learning

*The end sem evaluation will be based on mini project (50 marks (Presentation and Report)) and final end semester written evaluation of 50 marks

Scheme for B. Tech in Civil Engineering with Minor[**], (Semester-VIII) R23 Academic Year 2026-27**

Sr. No	Course Name	Course Code	Course Plan per Week (Hrs.)				Credits	In-semester Evaluation			End Semester Evaluation		End semester weightage (%)	Total Points
			L	P	T	S L		Mid Sem (Pts)	Mid Sem Time (Hrs)	IE (Pts)	Pts	Time (Hrs.)		
Theory courses														
1	Open Elective -II (online)	OE-BTCxxx	3	0	0	3.5	3	30	1.5	20	100	3	50	100
2	Professional Elective - III (Online)	PE-BTCxxx	3	0	0	3.5	3	30	1.5	20	100	3	50	100
Community Engagement Project/ Field Project														
3	Internship	IN-BTC801	14 weeks internship				10	100	--	--	200	--	100	300
Co-curricular activities														
4	CCA	CC-BTC801					2	Based on all 7-semester participation in co/ extra-curricular activities						100
Ability Enhancement Courses														
6	AES [Modern Indian Language]	AE-BT801-803	Can be done online NPTEL Course				1	--	---	50	50	---	100	100
	TOTAL		6	0	0	7	19							700

L: Lecture T: Tutorial P: Practical SL: Self Learning IE: Internal Evaluation Pts: Points

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Professional Elective III

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC825	Earthquake Engineering
Water Resources	2	PE-BTC832	Hydraulic Modelling
	3	PE-BTC833	Watershed Development and Management
Construction Management	4	PE-BTC854	Infrastructure Planning and Management
Env Engg	5	PE-BTC841	Environmental Law and Policy
Surveying and Geomatics	6	PE-BTC861	GIS Sc and Application

OPEN ELECTIVE II

Sr. No.	Code	Elective
1	OE-BTC812	Human Resource Development & Organizational Behaviour*
2	OE-BTC815	Environmental Impact Assessment*
3	OE-BTE801	Robotics
4	OE-BTE802	Power Plant Engineering
5	OE-BTE803	Electrical engineering materials
6	OE-BTE804	Medical Electronics
7	OE-BTE805	Image processing
8	OE-BTM719	Value Engineering

*The end sem evaluation will be based on mini project (50 marks (Presentation and Report)) and final end semester written evaluation of 50 marks

Ability Enhancement Course (Modern Indian Language)

Sr. No.	Course Code	Course Title
1	AE BT801	Hindi
2	AE-BT802	Sanskrit
3	AE-BT803	Marathi

Evaluation for R23

- The Evaluation of any course shall be such that all Course Outcomes are appropriately mapped.**
- Mid term: The courses under the category “Theory courses”, the evaluation is based on Mid Term of 30 points for 1.5 hours duration. Tentatively the first four modules of the course content will be covered in Mid Term. Any change in the same will be informed by the course instructor. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 30 points each.
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- End semester evaluation: The course under the category “Theory courses”, the evaluation is based on End semester examination of 100 points. The end semester examination will cover all the modules of the course content. The courses under the category “Skill Enhancement”, “Value Education”, the evaluation is based on activity (Presentation, Test, Mini project, Field project, Practical Examination) of 50/100 points.
- The evaluation of the laboratory courses include internal evaluation IE of 25 points and End semester evaluation of 25 points. The internal evaluation is based on [10 points: Laboratory Attendance, 15 points: Laboratory work] and End semester evaluation is based on [25 points: Quizzes/ Presentation/ Practical Examination/ Mini project/Oral may be any two activities]

6. The co-curricular course credits in semester VIII can be earned through participation in various activities during his/ her graduation. The co-curricular course credits are not considered for CPI calculation.
7. The evaluation of Field project/ Project/ Internship shall be as mentioned in Academic Rules.

Note: Refer [Academic](#) and [Examination rules and regulations](#) for further details.

Exit Courses under B.Tech. in Civil Engineering Program (Regulation-23)
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Courses	Credits
After 1st Year (6 credits) Any two Of three courses	
Building Drawing with CAD	3
Detailing and Drawing of Concrete Structures or Detailing and Drawing of Steel Structures	3
Surveying for Civil Engineering	3
After 2nd Year (6 Credits) Any two Of three choices	
Contracts and Administration	3
Construction Safety or Visual Basics Lab	3
Internship (1 month) (4 weeks)	3
After 3rd Year (6 Credits) Either 2 courses or an internship	
Primavera	3
ETabs	3
Internship (2 months) (8 weeks)	6