



S.Y.B.Tech.
(Civil Engineering)
Sem. III & IV
Course Credit System Regulation 2022

NOTES

- (1) Refer (i) Academic rules and (ii) Examination rules for further details.
- (2) Laboratory course are considered as a separate head of passing.
- (3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows: i) Attendance in Laboratory/Tutorial = 20%, (ii) Journal= 40%, (iii) Practical Examination (and/or) Mini project (and/or) Quiz (and/or) Seminar (and/or) Oral (and/or) Industry visit report= 40%.
- (4) Student can opt for an online course available on <https://swayam.gov.in/> or <https://onlinecourses.nptel.ac.in/> subject to approval from the department. After successful completion of the course, the course title can appear on the grade card of student.
- (5) The Mandatory courses are with Pass (P) and No Pass (NP) grades.
- (6) Department will offer the Value Added courses in a semester subject to availability of resources and enrolment of minimum 20 students opting for the course. Upon completion of the Value Added course, the course title shall appear in the grade card of the student.
- (7) Students can optionally opt for Non-Technical Value Added courses offered by Center for Continuing Education (CCE-SPCE). Upon successful completion of the course, the course title shall appear on student's grade card.



Scheme for S.Y.B.Tech. In Civil Engineering (Semester - III) Academic Year 2023-24														
Sr. No.	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work / Practical	Total Points
			L	P	T		T-I	T-II	IE	Points	Time (Hrs)			
Core Courses														
1	Laplace Linear Algebra and Complex Analysis	BS-BTC301	2	0	0	2	15	15	10	100	3	60%	0	100
2	Mechanics of Materials	ES-BTC302	3	0	0	3	15	15	10	100	3	60%	0	100
3	Basics of Surveying	PC-BTC303	2	0	0	2	15	15	10	100	3	60%	0	100
4	Building Drawing with CAD	ES-BTC304	2	0	0	2	15	15	10	100	3	60%	0	100
5	Engineering Geology	BS-BTC305	2	0	0	2	15	15	10	100	3	60%	0	100
6	Fluid Mechanics	PC-BTC306	3	0	0	3	15	15	10	100	3	60%	0	100
7	Building Materials and Construction	PC-BTC307	2	0	1	3	15	15	10	100	3	60%	25	125
Laboratory Courses														
8	Mechanics of Materials (Lab)	ES-BTC351	0	2	0	1	0	0	0	0	0	0%	25	25
9	Basics of Surveying (Lab.)	PC- BTC352	0	2	0	1	0	0	0	0	0	0%	25	25
10	Fluid Mechanics (Lab.)	PC- BTC353	0	2	0	1	0	0	0	0	0	0%	25	25
11	Materials Testing & Evaluation (Lab.)	PC- BTC354	0	2	0	1	0	0	0	0	0	0%	25	25
12	Building Drawing with CAD (Lab.)	ES-BTC355	0	2	0	1	0	0	0	0	0	0%	25	25
13	Engineering Geology (Lab.)	BS-BTC356	0	2	0	1	0	0	0	0	0	0%	25	25
Online Courses														
14	#Online Course	OL-BTCxxx	0	0	0	0	0	0	0	0	0	0	0	0
Value Added Courses														
15	UHV-I/Or Any other	VA-BTC301	2			0	15	15	10	50	2	0	0	0
	TOTAL		16	12	1	23								

IE: Internal Evaluation

#List of courses to be announced at start of the year



Scheme for S.Y.B.Tech. In Civil Engineering (Semester - IV) Academic Year 2023-24														
Sr. No.	Course Name	Code	Course Plan per Week (Hrs)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work / Practical	Total Points
			L	P	T		T-I	T-II	IE	Points	Time (Hrs)			
Core Courses														
1	Probability, Statistics and Operational Research	BS-BTC401	2	0	0	2	15	15	10	100	3	60%	0	100
2	Structural Mechanics	PC-BTC402	3	0	1	4	15	15	10	100	3	60%	25	125
3	Concrete Technology	PC-BTC403	2	0	0	2	15	15	10	100	3	60%	0	100
4	Surveying & Geomatics	PC-BTC404	3	0	0	3	15	15	10	100	3	60%	0	100
5	Hydraulic Engineering	PC-BTC405	2	0	0	2	15	15	10	100	3	60%	0	100
6	Transportation Engineering	PC-BTC406	2	0	1	3	15	15	10	100	3	60%	25	125
7	Environmental Engineering-I	PC-BTC407	2	0	0	2	15	15	10	100	3	60%	0	100
Laboratory Courses														
8	Concrete Technology (Lab)	PC-BTC451	0	2	0	1	0	0	0	0	0	0	25	25
9	Surveying & Geomatics (Lab.)	PC-BTC452	0	2	0	1	0	0	0	0	0	0	25	25
10	Hydraulic Engineering (Lab.)	PC-BTC453	0	2	0	1	0	0	0	0	0	0	25	25
11	Environmental Engineering -I (Lab)	PC-BTC454	0	2	0	1	0	0	0	0	0	0	25	25
Mandatory Course														
12	Indian Traditional Knowledge	MC-BT002	2	0	0	0	15	15	10	50+50*	3	60%	0	100
Online Courses														
13	#Online Course	OL-BTCxxx	0	0	0	0	0	0	0	0	0	0	0	0
Value Added Courses														
14	UHV-II/or any other	VA-BTC401	2	0	0	0	15	15	10	50	2	0	0	0
TOTAL			18	6	2	22								

IE: Internal Evaluation

#List of courses to be announced at start of the year

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B. Tech. (Civil Engineering) Sem. V & VI Course Credit System Regulation 2022

Notes:

- (1) Refer (i) Academic rules and (ii) Examination rules for further details.
- (2) Laboratory course are considered as a separate head of passing.
- (3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows:
 - Participation in Laboratory/Tutorial = 20%,
 - Journal= 40%,
 - Practical Examination (and/or) Mini project (and/or) Quiz (and/or) Seminar (and/or) Oral (and/or) Industry visit report= 40%.
- (4) Students can opt for an online course available on <https://swayam.gov.in/> or <https://onlinecourses.nptel.ac.in/> subject to approval from the department. After successful completion of the course, the course title shall appear on the grade card of student.
- (5) Mandatory courses are with Pass (P) and No Pass (NP) grades.
- (6) The department will offer the Value Added courses in a semester subject to availability of resources and enrolment of minimum 20 students opting for the course. Upon completion of the Value Added course, the course title shall appear in the grade card of the student.
- (7) Students can optionally opt for Non-Technical Value Added courses offered by Centre for Continuing Education (CCE-SPCE). Upon successful completion of the course, the course title shall appear on student's grade card.



**Scheme for T. Y. B. Tech. in Civil Engineering (Semester - V)
Academic Year 2024-25**

Sr. No.	CourseName	Code	Course Plan per Week (Hrs.)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work/ Practical (Note 3)	Total Points
			L	P	T		T- I	T-II	IE	Points	Time (Hrs.)			
Theory Courses														
1	Structural Engineering	PC-BTC501	3	0	1	4	15	15	10	100	3	60%	25	125
2	Hydrology & Water Resources Engineering	PC-BTC502	3	0	1	4	15	15	10	100	3	60%	25	125
3	Soil Mechanics	PC-BTC503	3	0	0	3	15	15	10	100	3	60%	0	100
4	Highway Engineering	PC-BTC504	2	0	0	2	15	15	10	100	3	60%	0	100
5	Environmental Engineering-II	PC-BTC506	3	0	0	3	15	15	10	100	3	60%	0	100
6	Organizational, Communication and Interpersonal Skills	HSM-BTC507	2	0	1	3	15	15	10	100	3	60%	25	125
Laboratory Courses (Note 2)														
7	Highway Engineering (Lab)	PC-BTC551	0	2	0	1	0	0	0	0	0	0	25	25
8	Environmental Engineering II (Lab)	PC-BTC552	0	2	0	1	0	0	0	0	0	0	25	25
9	Soil Mechanics (Lab)	PC-BTC553	0	2	0	1	0	0	0	0	0	0	25	25
Skill Based Course														
10	Skill based Course	SK-BTC501	Based on Performance (14-20 hrs course with P/NP based on performance of instructor)										P/NP	
Online Course (Note 4)														
11	#Online Course	OL-BTCxxx	3	0	0	0	0	0		0	0	0	0	0
Value Added Courses (Notes 6 and 7)														
12	#Value Added Technical /Non-Technical Courses	VA- BTCxxx VN- BTCxxx	Courses offered by CCE											
	TOTAL		16	6	3	22								

IE: Internal Evaluation

#List of courses to be announced at start of the year

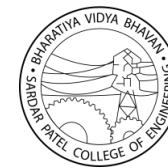


Scheme for T. Y. B. Tech. in Civil Engineering (Semester - VI) Academic Year 2024-25														
Sr. No.	Course Name	Code	Course Plan per Week (Hrs.)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work/ Practical (Note 3)	Total Points
			L	P	T		T-I	T-II	IE	Points	Time (Hrs.)			
Theory Courses														
1	Construction Engineering & Management	PC-BTC601	3	0	1	4	15	15	10	100	3	60%	25	125
2	Design of Steel Structures	PC-BTC602	3	0	0	3	15	15	10	100	3	60%	25	125
3	Foundation Engineering	PC-BTC603	3	0	0	3	15	15	10	100	3	60%	0	100
4	Design of RCC Elements	PC-BTC604	3	0	1	4	15	15	10	100	3	60%	25	125
5	#Professional Elective – I	PE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
6	#Professional Elective II	PE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
7	#Open Elective-I	OE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
Lab Courses														
8	Design of Steel Structures	PC-BTC651	0	2	0	1	-	-	-	-	-	-	25	25
Mandatory Course (Note 5)														
9	Environmental Studies	MC-102	2	0	0	0	15	15	10	50+50*	2	60%	0	100
Project Course														
10	Project Stage I	PR-BTC601	2			1	One or more In Sem. and one End Sem. Evaluation					100	100	
Online Courses/Skill based courses (Note 4)														
11	#Online Course	OL-BTCxxx	3	0	0	0	0	0		0	0	0	0	0
Value Added Courses (Notes 6 and 7)														
12	#Value Added Technical / Non-Technical Courses	VA- BTCxxx VN- BTCxxx	Courses offered by CCE											
TOTAL			23	2	3	25								

IE: Internal Evaluation

#List of courses to be announced at start of the year as per respective tables for Professional/Open Elective

*Presentation/Report/Assignment/Visit



Professional Elective I

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC621	Analysis of Indeterminate Structures
	2	PE-BTC622	Geographic Information System Science and Application
Water Resources	3	PE-BTC631	Hydraulic Structures & Irrigation Engineering
	4	PE-BTC632	Introduction to Offshore Engineering
Construction Management	5	PE-BTC641	Special Construction Materials & Methods
Environmental Eng.	6	PE-BTC651	Solid and Hazardous Waste Management
	7	PE-BTC652	Air and Noise Pollution Control
Transportation and Geotech.	8	PE-BTC661	Pavement Subgrade and Materials
	9	PE-BTC662	Ground Improvement Techniques

Professional Elective II

Specialization	Sr. No	Code	Elective
Structures	1	PE-BTC624	Structural Dynamics
	2	PE-BTC626	Maintenance, Repair and Rehabilitation of Structures
Water Resources	3	PE-BTC633	Open Channel Flow
	4	PE-BTC634	Ground Water Development and Management
	5	PE-BTC635	Urban Hydrology and Hydraulics
	6	PE-BTC636	Watershed Development and Management
Construction Management	7	PE-BTC642	Disaster Preparedness, Planning and Management
	8	PE-BTC644	TQM and MIS in Construction
Environmental Eng.	9	PE-BTC653	Rural Water Supply and Sanitation
	10	PE-BTC654	Physico-chemical Processes
Transportation and Geotech.	11	PE-BTC663	Low Cost Roads
	12	PE-BTC664	Traffic Engineering and Control
	13	PE-BTC665	Introduction to Geotechnical Earthquake Engineering



Open Elective-I

Sr. No.	Code	Elective
1	OE-BTC611	Human Resources Development And Organizational Behaviour
2	OE-BTC612	Sustainable Development
3	OE-BTC613	Watershed Development And Management
4	OE-BTC614	Artificial Intelligence Techniques
5	OE-BTC615	Numerical Computations
5	OE-BTC616	Career Planning and Interpersonal Skills for Business
6	OE-BTE601	Project Management
7	OE-BTE602	Artificial Intelligence
8	OE-BTE605	Linear Algebra And Matrix Computation
9	OE-BTM611	Computational Methods
10	OE-BTM613	Entrepreneurship Development And Start Up
11	OE-BTM614	Introduction To Optimization Methods
12	OE-BTS6CX	Online Course from SWAYAM/NPTEL

SK-BTC501: Introduction and Hands on Training on Jal Vishwa and Life Cycle costing software application



B. Tech.

(Civil Engineering)

Sem. VII & VIII

Course Credit System Regulation 2022

Notes:

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- (3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows:
 - Participation in Laboratory/Tutorial = 20%,
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- (4) Student can opt for an online course available on <https://swayam.gov.in/> or <https://onlinecourses.nptel.ac.in/> subject to approval from the department. After successful completion of the course, the course title shall appear on the grade card of student.
- (5) The Mandatory courses are with Pass (P) and No Pass (NP) grades.
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- (7) Students can optionally opt for Non-Technical Value Added courses offered by Centre for Continuing Education (CCE-SPCE). Upon successful completion of the course, the course title shall appear on student's grade card.
- (8) If Open Elective -III is chosen from those offered by the college, then T-I, T-II and IE will be considered similar to previous semesters. If NPTEL/ SWAYAM is chosen then their marking scheme will be followed and grades will be allotted as per Academic and/or Examination rules.

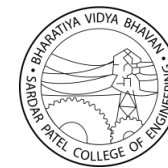


Scheme for B. Tech. in Civil Engineering (Semester - VII)
Academic Year 20xx-xx

Sr. No.	Course Name	Code	Course Plan per Week (Hrs.)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work/ Practical (Note 3)	Total Points
			L	P	T		T-I	T-II	IE	Points	Time (Hrs.)			
Core Courses														
1	Design of Concrete Structures	PC-BTC701	3	0	0	3	15	15	10	100	3	60%	25	125
2	Engineering Economics, Estimation, and Costing	PC-BTC702	3	0	1	4	15	15	10	100	3	60%	25	125
3	#Professional Elective III	PE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
4	#Professional Elective IV	PE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
5	#Open Elective II	OE-BTCxxx	3	0	0	3	15	15	10	100	3	60%	0	100
6	Project-Stage II	PR-BTCxxx	0	(2+6)	0	4	One or more In Sem. and one End Sem. Evaluation					100	100	
Lab Courses														
7	Design of Concrete Structures	PC-BTC751	-	2	-	1	-	-	-	-	-	-	25	25
Online Courses (Note 4)														
7	#Online Course	OL-BTCxxx	3	0	0		0	0		0	0	0	0	0
Value Added Courses (Notes 6 and 7)														
8	#Value Added Technical/ Non-Technical Courses	VA-BTCxxx VN- BTCxxx	3	0	0		0	0		0	0	0	0	0
TOTAL			15	8	2	21								

IE: Internal Evaluation

#List of courses to be announced at start of the year

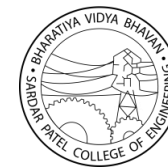


Professional Elective III

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC721	Advanced Structural Analysis
	2	PE-BTC722	Structural Analysis by Matrix Methods
	3	PE-BTC723	Repair and Rehabilitation of Structures
Water Resources	4	PE-BTC731	Surface Hydrology
Environmental Eng.	5	PE-BTC741	Water and Air Quality Modelling
	6	PE-BTC761	Pavement Design & Construction
Transportation and Geotech	7	PE-BTC762	Advanced Foundation Engineering
	8	PE-BTC763	Rock Mechanics

Professional Elective IV

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC724	Structural dynamics
	2	PE-BTC725	Advanced Design of Steel Structures
Water Resources	3	PE-BTC732	Hydraulic Modelling
Environmental Eng.	4	PE-BTC742	Sustainable Engineering and technology
	5	PE-BTC743	Industrial Wastewater treatment
Construction Management	6	PE-BTC751	Engineering risk and uncertainty
	7	PE-BTC752	Infrastructure Planning and Management
Transportation	8	PE-BTC764	Design and Construction of Rigid Pavements



Open Elective-II

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



BHARTIYA VIDYA BHAVAN'S
SARDAR PATEL COLLEGE OF ENGINEERING
Munshi Nagar Andheri (W)



Scheme for Final Year B. Tech. in Civil Engineering (Semester - VIII)
Academic Year 20xx-xx

Sr. No.	Course Name	Code	Course Plan per Week (Hrs.)			Credits	In semester Evaluation (Points)			End Semester Evaluation (Points)		End semester weightage (%)	Term work/ Practical (Note 3)	Total Points
			L	P	T		T-I	T-II	IE	Points	Time (Hrs.)			
Open Elective Course (Note 8)														
1	#Open Elective –III (Refer Open Elective –III Table and Note 8)	OE-BTCxxx	SWAYAM / NPTEL Course of 12 weeks			3	15	15	10	100	3	60	-	100
Internship														
2	External / Internal Internship	PR-BTCxxx				9	Refer institute academic book for details				200	200		
TOTAL						12								

Open Elective-III

Sr. No.	Code	Elective
1	OE-BTC811	Mechanics of Water Waves
2	OE-BTC812	Human Resource Development & Organizational Behaviour
3	OE-BTC814	Disaster Management and Preparedness
4	OE-BTC815	Environmental Impact Assessment
5	OE-BTE801	Robotics
6	OE-BTE802	Power Plant Engineering
7	OE-BTE803	Electrical engineering materials
8	OE-BTE804	Medical Electronics
9	OE-BTE805	Image processing
10	OE-BTM712	Introduction to Research Methodology
11	OE-BTM719	Value Engineering
12	OE-BTI7C1	Internship (5 weeks) in lieu of Open Elective III