S.Y.B.Tech.
(Civil Engineering)
Sem. III & IV
Course Credit System Regulation 18

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

Scheme for S.Y.B.Tech. In Civil Engineering (Semester - III) Academic Year 2022-23 (R18)														
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	Mathematics III	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 anounced at start of the year

Scheme for S.Y.B.Tech. In Civil Engineering (Semester - IV)
Academic Year 2022-23 (R18)

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	3	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
	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	VA-BTC	VA-BTCxxx	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 anounced at start of the year ; *
Assignments during the coursework

NOTES

Notes:

(1) Refer (i) Academic rules and regulations and (ii) Examination rules and regulations for further details

(2) Laboratory course is considered as a separate head of passing.

(3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows: i) Participation 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.

(8) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP.

T.Y.B.Tech.
(Civil Engineering)
Sem. V & VI
Course Credit System Regulation 18

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

Scheme for T.Y.B.Tech.in Civil Engineering, (Semester - V) Year 2023-24 (R18)													
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**	**Points**	**Time (hrs)**			
Core Courses													
1	Structural Engineering	PC-BTC501	3	0	1	4	20	20	100	3	60%	25	125
2	Hydrology & Water Resources Engineering	PC-BTC502	3	0	1	4	20	20	100	3	60%	25	125
3	Soil Mechanics	PC-BTC503	3	0	0	3	20	20	100	3	60%	0	100
4	Highway Engineering	PC-BTC504	2	0	0	2	20	20	100	3	60%	0	100
5	Environmental Engineering-II	PC-BTC506	3	0	0	3	20	20	100	3	60%	0	100
6	Organizational Communication and Interpersonal Skills	HSM-BTC507	2	0	1	3	20	20	100	3	60%	25	125
Laboratory Courses (Note 2&3)													
7	Highway Engineering (Lab)	PC-BTC551	0	2	0	1	0	0	0	0	0	25	25
8	Environmental Engineering (Lab)	PC- BTC552	0	2	0	1	0	0	0	0	0	25	25
9	Soil Mechanics (Lab)	PC- BTC553	0	2	0	1	0	0	0	0	0	25	25
Online Courses (Note 5)													
10	Online Course	OL-BTCxxx	3	0	0	0	0	0	0	0	0	0	0
Value Added Courses (Note7)													
11	Introduction to Offshore Engineering	VA –BTC 572	2	0	0	0	20	20	100	3	60%	0	100
12	Legal Aspects in Projects	VA –BTC 573	1	0	1	0	20	20	100	3	60%	25	125
Value Added Non-Technical Courses (Note10)													
11	Refer Table-VNT	VNT-BTxxx	Refer Table-VNT										
	TOTAL		**17**	**4**	**3**	**22**							

Non-technical value Added Courses-VNT

VN-BT001: Ubuntu
VN-BT002: Performing Arts and Script Writing
VN-BT003: Financial Literacy
VN-BT004: Self Defence Training program
VN-BT005: Yoga health technology for self-management
VN-BT006: Integrated self-management
VN-BT007: Photography

NOTES

(1) Refer (i) Academic rules and regulations and (ii) Examination rules and regulations for further details
(2) Laboratory course is considered as a separate head of passing.
(3) Assessment criteria for laboratory/Tutorial work/Term work. i.e. weightage for assessment shall be as follows: i) Participation 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.
(8) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP

Scheme for T.Y.B.Tech.in Civil Engineering, (Semester - VI) Year 2023-24 (R18)													
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**	**Points**	**Time (Hrs)**		**(Note 3)**	
Core Courses													
1	Construction Engineering & Management	PC-BTC601	3	0	1	4	20	20	100	3	60%	25#	125
2	Design of Steel Structures	PC-BTC602	3	0	1	4	20	20	100	3	60%	25#	125
3	Foundation Engineering	PC-BTC603	3	0	0	3	20	20	100	3	60%	0	100
4	Design of RCC Elements	PC-BTC604	3	0	1	4	20	20	100	3	60%	25#	125
5	Elective - I	REFER TABLE - Professional Elective I	3	0	0	3	20	20	100	3	60%	0/25*	100/125*
6	Elective II	REFER TABLE- -Professional Elective II	3	0	0	3	20	20	100	3	60%	0/25*	100/125*
7	Open Elective-I	REFER TABLE - Open Elective I	3	0	0	3	20	20	100	3	60%	0/25*	100/125*
Mandatory Course													
8	Environmental studies	MC-102	2	0	0	0	20	20	100	3	60%	0	100
Online Courses (Note 5)													
12	Online Course	OL-BTC xxx	3	0	0	0	0	0	0	0	0	0	0
Value Added Courses (Note 7)													
13	Geographic Information System (GIS) and its Applications	VA-BTC671	1	0	1	0	20	20	100	3	60	25	125
14	Business and Professional Communication	VA-BTC672	1	0	1	0	20	20	100	3	60	25	125
Value Added Non-Technical Courses													
15	Refer Table-VNT	VNT-BTxxx	Refer Table-VNT										
	Total		**26**	**0**	**3**	**24**							

Non-technical value Added Courses-VNT

VN-BT001: Ubuntu
VN-BT002: Performing Arts and Script Writing
VN-BT003: Financial Literacy
VN-BT004: Self Defence Training program
VN-BT005: Yoga health technology for self-management
VN-BT006: Integrated self-management
VN-BT007: Photography

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-BTC 632	Introduction to Offshore Engineering
Construction Management	5	PE-BTC641	Special Construction Materials & Methods
Environmental Engg.	6	PE-BTC 651	Solid and Hazardous Waste Management
	7	PE-BTC 652	Air and Noise Pollution Control
Transporatation and Geo-Tech	8	PE-BTC 661	Pavement Subgrade and Materials
	9	PE-BTC 662	Ground Improvement Techniques

Professional Elective II

Specialization	S. No	Code	Elective
Structures	1	PE-BTC 624	Structural Dynamics
Water Resources	2	PE-BTC 633	Open Channel Flow
	3	PE-BTC 634	Ground Water Development and Management
	4	PE-BTC 635	Urban Hydrology and hydraulics
Construction Management	5	PE-BTC 642	Disaster Preparedness , Planning and Management
	6	PE-BTC 644	TQM and MIS in construction
Environmental Engg.	7	PE-BTC 653	Rural Water Supply and Sanitation
	8	PE-BTC 654	Physico chemical processes

Transporatation and Geo-Tech	9	PE-BTC 663	Low Cost Roads
	10	PE-BTC 664	Traffic engineering and control
	11	PE-BTC 665	Introduction to Geotechnical Earthquake Engineering

Open Elective-I		
Sr. No.	**Code**	**Elective**
1	OE-BTC 611	Human Resources Development And Organizational Behavior
2	OE-BTC 612	Sustainable Development
4	OE-BTC 614	Artificial Intelligence Techniques
5	OE-BTC 615	Numerical Computations
6	OE –BTE 601	Project Management
7	OE-BTE 602	Artificial Intelligence
8	OE-BTE 605	Linear Algebra And Matrix Computation
9	OE-BTM 611	Computational Methods
10	OE-BTM 613	Entrepreneurship Development And Start Up
11	OE-BTM 614	Introduction To Optimization Methods

*** Professional elective can be for 2 lectures + 1 tutorial based on course instructor's discretion; For such courses, the total marks will be 125 i.e 25 marks for tutorial added. However, the total credits shall remain same. This should be conveyed to exam section at the start of semester**

Notes:

(1) Refer (i) Academic rules and regulations and (ii) Examination rules and regulations for further details

(2) Laboratory course is considered as a separate head of passing.

(3) Assessment criteria for laboratory/Tutorial work. i.e. weightage for assessment shall be as follows: i) Participation 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

(8) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP

B. Tech. in Civil Engineering Sem. VII & VIII

Academic Evaluation Scheme - Regulation 18

Year 2024-25

Scheme for Final Year B. Tech. in Civil Engineering (Semester - VII) 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	Total Points
			L	P	T		T-I	T-II	Points	Time (Hrs.)		(Note 3)	
Theory Courses													
1	Design of Concrete Structures	PC-BTC701	3	0	0	3	20	20	100	3	60%	0	125
2	Professional Elective III	Refer Elective III Table	3	0	0	3	20	20	100	3	60%	0	100
3	Professional Elective IV	Refer Elective IV Table	3	0	0	3	20	20	100	3	60%	0	100
4	Open Elective II (Note 10)	Refer Open Elective II Table	3	0	0	3	20	20	100	3	60%	0	100
5	Project-Stage I	PROJ-BTC751	0	2+6 (Note 4)	0	4	0	0	0	0	0%	50 (Note 4)	50
Laboratory Courses													
6	Design of Concrete Structures Lab	PC-BTC751	0	2	0	1	-	-	-	-	-	25	25
Online Courses (Note 5)													
7	Online Course	OL-BTCxxx	3	0	0	0	0	0	0	0	0	0	0
Value Added Courses (Note 7)													
8	Environmental Impact Assessment and Management	VA-BTC772	2	0	0	AU	20	20	100	3	60%	0	100
9	Conventional and Nonconventional Materials in Highway Sub-grade	VA-BTC773	2	0	0	AU	20	20	100	3	60%	25	125
Value Added Non-Technical Courses (Note 8)													
10	Non-technical Value Added Course	Refer Table-VNT	Refer Table-VNT										
	TOTAL		**12**	**8**	**1**	**17**							

Non-technical Value Added Courses-VNT

Code	Course
VN-BT001	Ubuntu
VN-BT002	Performing Arts and Script Writing
VN-BT003	Financial Literacy
VN-BT004	Self Defence Training program
VN-BT005	Yoga health technology for self-management
VN-BT006	Integrated self-management
VN-BT007	Photography

Professional Elective – III

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

Professional Elective – IV

Specialization	Sr. No.	Code	Elective Course
Structures	1	PE-BTC724	Structural Dynamics
	2	PE-BTC725	Advanced Design of Steel Structures
	3	PE-BTC726	Prestressed Concrete
Water Resources	4	PE-BTC732	Hydraulic Modelling
Environmental Eng.	5	PE-BTC742	Sustainable Engineering and Technology
	6	PE-BTC743	Industrial Wastewater treatment
Construction Management	7	PE-BTC751	Engineering Risk and Uncertainty
	8	PE-BTC752	Infrastructure Planning and Management
Transportation	9	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

Notes:

(1) Refer to (i) Academic rules and regulations and (ii) Examination rules and regulations for further details
(2) Laboratory course is 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) For Project course: contact hours = 2 and self-learning hours = 6. In-semester evaluation for project course shall include one or more in-semester presentations with 25 points for report and 25 points for presentation and viva voce examination, conducted by supervisor and one internal examiner
(5) 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 the successful completion of the course, the course title shall appear on the grade card of student.
(6) Mandatory courses are with "Pass" (P) and "No Pass" (NP) grades.
(7) 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.
(8) Students can optionally opt for Value Added Non-Technical 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.
(9) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP.
(10)For Open Elective courses, students with C.P.I. higher than 8.5 can opt for obtaining the credits by completing an online course (approved by department) offered through SWAYAM or NPTEL portal instead of completing elective courses offered by department/institute. Upon successful completion of course, the score given on certificate issued by SWAYAM/NPTEL will be converted to letter grade as per applicable examination regulation.

Scheme for Final Year B. Tech. in Civil Engineering (Semester - VIII) 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	Total Points
			L	P	T		T-I	T-II	Points	Time (Hrs.)		(Note 3)	
Core Courses													
1	Engineering Economics Estimation and Costing	PC-BTC801	3	0	1	4	20	20	100	3	60%	25	125
2	Elective V	Refer ElectiveV Table	2	0	0	2	20	20	100	3	60%	0	100
3	Elective VI	Refer ElectiveVI Table	3	0	0	3	20	20	100	3	60%	0	100
4	Open Elective III **OR** Internship (5 weeks min.)	Refer Open Elective III Table	3	0	0	3	20	20	100	3	60%	0	100
5	Project –Stage II	PROJ-BTC851	0	(2+12) (Note 4)	0	7	0	0	0	0	0%	100 (Note 4)	100
Online Courses (Note 5)													
6	Online Course	OL-BTCxxx	3	0	0	0	0	0	0	0	0	0	0
Value Added Courses (Note 7)													
7	Low Cost Rural Roads	VA- BTC873	2	0	1	AU	20	20	100	3	60%	25	125
Value Added Non-Technical Courses (Note 8)													
8	Non-technical Value Added Course	Refer Table-VNT	Refer Table-VNT										
	TOTAL		**11**	**14**	**1**	**19**							

Non-technical Value Added Courses-VNT

Code	Course
VN-BT001	Ubuntu
VN-BT002	Performing Arts and Script Writing
VN-BT003	Financial Literacy
VN-BT004	Self Defence Training program
VN-BT005	Yoga health technology for self-management
VN-BT006	Integrated self-management
VN-BT007	Photography

Professional Elective – V

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC824	Finite Element Analysis
	2	PE-BTC825	Advanced Structural Mechanics
Water Resources	3	PE-BTC832	Water Resources Economics Planning and Management
Environmental Eng.	4	PE-BTC842	Environmental Law and Policy
Construction Management	5	PE-BTC853	Valuation and Value Engineering
	6	PE-BTC854	Risk and Disaster Management
Transportation and Geo-Tech	7	PE-BTC863	Transportation Planning and Economics

Professional Elective – VI

Specialization	Sr. No.	Code	Elective
Structures	1	PE-BTC821	Earthquake Engineering
	2	PE-BTC822	Bridge Engineering
	3	PE-BTC823	Decision and Risk Analysis
Water Resources	4	PE-BTC831	Introduction to Offshore Engineering
Construction Management	5	PE-BTC 851	Construction Productivity & Cost analysis
	6	PE-BTC 852	Contracts Management
Transportation and Geotech	7	PE-BTC 861	Conventional and Nonconventional Materials in Highways
	8	PE-BTC862	Soil Dynamics
	9	PE-BTC864	Ground Improvement Techniques

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

Notes:

(1) Refer to (i) Academic rules and regulations and (ii) Examination rules and regulations for further details
(2) Laboratory course is 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) For Project course: contact hours = 2 and self-learning hours = 12. In-semester evaluation for project course shall include one or more in-semester presentations with 50 points for report and 50 points for presentation and viva voce examination, conducted by supervisor and one internal examiner
(5) 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 the successful completion of the course, the course title shall appear on the grade card of student.
(6) Mandatory courses are with "Pass" (P) and "No Pass" (NP) grades.
(7) 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.
(8) Students can optionally opt for Value Added Non-Technical 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.
(9) The contents of core courses are aligned with the latest GATE syllabus. The mapping between GATE syllabus topics and core courses is given in Table GATE-MAP.
(10) For Open Elective courses, students with C.P.I. higher than 8.5 can opt for obtaining the credits by completing an online course (approved by department) offered through SWAYAM or NPTEL portal instead of completing elective courses offered by department/institute. Upon successful completion of course, the score given on certificate issued by SWAYAM/NPTEL will be converted to letter grade as per applicable examination regulation.

Table GATE-MAP: Alignment of Course Content with GATE Syllabus (2024),B. Tech. in Civil Engineering

No.	Section	Core courses in SPCE Curriculum 2024-25	Topics From GATE Syllabus (2023)
1	S	Eng. Mechanics I Eng. Mechanics II	Engineering Mechanics
2	S	Mechanics of Materials	Solid Mechanics
3	S	Structural Mechanics	Structural Analysis
4	S	Structural Engineering	
5	S	Building Materials and Construction	Construction Materials andManagement
6		Concrete Technology	
7		Construction Engineering & Management	
8		Engineering economics, estimation and costing	
9	S	Design of RCC Elements (Limit State Method)	Concrete Structures
10	S	Design of Reinforced Concrete Structures	
11	S	Design of Steel Structures	Steel Structures
12	G	Soil Mechanics	Soil Mechanics
13	G	Foundation Engineering	Foundation Engineering
14	W	Fluid Mechanics	Fluid Mechanics
15	W	Hydraulic Engineering	Hydraulics
16	W	Hydrology & Water Resources Engineering	Hydrology
17	W	Water Resources Engineering	Irrigation
18	E	Environmental Engineering-I	Water and Waste Water
19	E	Environmental Engineering-II	Air Pollution
20	E	Environmental Engineering-I & II	Municipal Solid Waste
21	E	Environmental Engineering-II	Noise Pollution
22	T	Transportation Engineering	Transportation Infrastructure
23	T	Highway Engineering	Highway Pavements
24	T	Highway Engineering	Traffic Engineering
25	G	Basics of Surveying	Principles of surveying
26	G	Surveying & Geomatics	Photogrammetry
27	MATH	Differential calculus and complex numbers, Integral calculus and differential equations, Engineering mathematics III, Probability and statistics	Linear Algebra, Calculus, Differential Equations, Complex variables, Probability and Statistics, NumericalMethods

Note:
S: Structural Eng., G: Geotechnical Eng., W: Water Resource Eng., E: Environmental Eng., T: Transportation Eng.,
G: Geomatics Eng., MATH: Engineering Mathematics