



गति शक्ति विश्वविद्यालय

GATI SHAKTI VISHWAVIDYALAYA

(A Central University under the Ministry of Railways, Government of India)

लालबाग, वडोदरा, गुजरात / Lalbaug, Vadodara, Gujarat 390004

B.Tech. in Civil Engineering
(Specialization: Rail Engineering)
As per BOS

PROGRAMME CURRICULAM

YEAR-I
SEMESTER-I

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	IDL3101	Introduction to Mechanical and Civil Engineering	2	0	0	2
2	IDP	Engineering Graphics	2	0	2	2
3	IDP3102	Workshop Practice	0	0	2	1
4	CSB3101	Computer Programming - I (Python)	2	0	2	2
5	HST3101	Design Thinking	2	0	0	2
6	RET3101	Introduction to Rail Systems Engineering	2	0	0	2
7	MAT3101	Engineering Mathematics-I	3	1	0	4
8	PHT3101	Engineering Physics	3	0	0	3
9	PHP3102	Engineering Physics Lab	0	0	2	1
10	HSP3102	Health, Wellness and Yoga	0	0	2	1
TOTAL			16	11	8	20

SEMESTER-II

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	IDL3103	Engineering Mechanics	2	1	0	3
2	IDP3104	Engineering Mechanics Lab	0	0	2	1
3	IDL3105	Introduction to Electrical and Electronics Engineering	3	0	0	3
4	IDP3106	Basic Electrical and Electronics Engineering Lab	0	0	2	1
5	CSB3102	Computer Programming - II (C Language)	1	0	2	2
6	IDT3107	Introduction to Multimodal Transportation Ecosystem	1	0	0	1
7	MAT3102	Engineering Mathematics-II (Including Statistics)	3	1	0	4
8	CYL3101	Engineering Chemistry	3	0	0	3
9	CYP3102	Engineering Chemistry Lab	0	0	2	1
10	INI3102	Summer Internship - I (2 - 3 Weeks)	0	0	2	1
TOTAL			13	2	10	20



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YEAR-II
SEMESTER-III

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	MAT3203	Numerical Methods using MATLAB	2	0	2	3
2	CET3201	Building materials and Concrete Technology	3	0	0	3
3	CEP3202	Building Materials & Concrete Technology Lab	0	0	2	1
4	IDT3208	Strength of Materials	3	0	0	3
5	IDP3209	Strength of Materials Lab	0	0	2	1
6	IDT3210	Fluid Mechanics and Hydraulics	3	0	0	3
7	IDT3211	Fluid Mechanics and Hydraulics Lab	0	0	2	1
8	CET3203	Surveying-I	3	0	0	3
9	CEP3204	Surveying Lab	0	0	2	1
10	CEP3205	Environmental Engineering	3	0	0	3
TOTAL			17	0	10	22

SEMESTER-IV

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	RET3203	Principles of Railway Operations	2	0	0	2
2	RET3204	Railway Track Technology-I	3	0	0	3
3	CET3206	Water Resources and Irrigation Engineering	3	0	0	3
4	CET3207	Surveying-II (Geomatics)	3	0	0	3
5	CET3208	Structural Analysis	3	0	0	3
6	CEP3209	Structural Analysis Lab	0	0	2	1
7	CET3210	Geology and Geotechnical Engineering	4	0	0	4
8	CEP3211	Geology and Geotechnical Engineering Lab	0	0	2	1
9	CET3312	Construction Management	2	0	0	2
10	INI3203	Summer Internship - II (4 to 6 Weeks)	0	0	4	2
TOTAL			20	0	8	24



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YEAR-III
SEMESTER-V

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	HST3303	Ethics in Engineering Practice	2	0	0	2
2	IDT3313	Engineering Economics, Costing, Estimation, and Tendering	3	0	0	3
3	CEP3313	Building Information Modelling Lab	0	0	2	1
4	CET3314	High Speed Rail Infrastructure Systems	3	0	0	3
5	CEL3315	Foundation Engineering	3	0	0	3
6	CEL3316	Design of RCC Structures	2	1	0	3
7	CET3318	Analysis of Indeterminate Structures	2	0	0	2
8	RET0000	Railway Track Technology-II	3	0	0	3
9	CET3319	Highway and Airport Engineering	3	0	0	3
TOTAL			21	1	2	23

SEMESTER-VI

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	RET3306	Railway Station and Terminal Design	2	0	0	2
2		Prestressed Concrete	3	0	0	3
4	CET3320	Design of Steel Elements	2	1	0	3
5		Design Studio	0	0	2	2
6		Traffic Engineering	2	0	0	2
7	CET3322	Core Elective-I	3	0	0	3
8		Entrepreneurship and Innovation	2	0	0	2
9		Transportation Engineering Lab	0	0	2	1
10		Reliability and Safety	3	0	0	3
11	IDT3314	Artificial Intelligence and Machine Learning	3	0	0	3
12	INI3304	Summer Internship - III (6 to 8 Weeks)	0	0	6	3
TOTAL			18	1	10	27



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YEAR-IV
SEMESTER-VII

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	CET3423	Railway Bridge Engineering	3	0	0	3
3	IDT3415	Urban Rail Transport System, Maglev & Hyperloop	2	0	0	2
5	CED3425	B.Tech. Project-I	0	0	4	2
7	IDT3418	Operations Research	2	1	0	3
8	CET3426	Core Elective-II	3	0	0	3
TOTAL			11	1	4	13

SEMESTER-VIII

Sr. No.	COURSE CODE	COURSE TITLE	L	T	P	C
1	CED424	B.Tech. Project-II	0	0	16	12
TOTAL			0	0	16	12



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SUMMARY OF CREDITS DISTRIBUTION

S.No.	Total Credits in Odd Semester (Nos.)	Total Credits in Even Semester (Nos.)	Year	Total Credits in Year
1	I Semester: 20	II Semester: 20	Year -I	40
2	III Semester: 22	IV Semester: 24	Year -II	46
3	V Semester: 22	VI Semester: 27	Year -III	50
4	VII Semester: 13	VIII Semester: 12	Year -IV	25
Total number of credits of the Programme				161

1 Credit = 15 Hrs. for Theory courses and 1 Credit = 30 Hrs. for practical courses.