GRBT – 20

DEPARTMENT OF CIVIL ENGINEERING
4 Years B.Tech. (Civil Engineering) Course Structure: GRBT-20

I YEAR I SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C
				L	T	P	
1	201HB101	BSC	Mathematics -I	3	0	0	3
2	201HB102	HSSC	Communicative English - I	3	0	0	3
3	201HB103B	BSC	Engineering Chemistry	3	0	0	3
4	201EE104	ESC	Basic Electrical & Electronics Engineering	3	0	0	3
5	201ME105	ESC	Engineering Graphics	3	0	0	3
6	201HB111B	BSCL	Engineering Chemistry Laboratory	0	0	3	1.5
7	201EE112	ESCL	Basic Electrical & Electronics Engineering Laboratory	0	0	3	1.5
8	201ME113D	ESCL	Basic Engineering Workshop (Lab)	0	0	3	1.5
TOTAL				15	0	9	19.5

I YEAR II SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C
				L	T	P	
1	201HB201	BSC	Mathematics -II	3	0	0	3
2	201HB202B	BSC	Engineering Physics	3	0	0	3
3	201ME203A	ESC	Fundamentals of Computer Programming	3	0	0	3
4	201CS204A	ESC	Engineering Mechanics	3	0	0	3
5	201CE205	ESCL	Materials Technology	3	0	0	3
6	201HB296	BSCL	Engineering Physics Laboratory	0	0	3	1.5
7	201HB211B	ESCL	Fundamentals of Computer Programming Laboratory	0	0	3	1.5
8	201HB212	HSCL	Communicative English Lab	0	0	3	1.5
	201CS213A	MS	Environmental Science	2	0	0	0
TOTAL				17	0	9	19.5

II YEAR I SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201HB301	BSC	Mathematics -III	3	0	0	3	30	70	100
2	201CE302	ESC	Strength of Materials	3	0	0	3	30	70	100
3	201CE303	ESC	Fluid Mechanics	3	0	0	3	30	70	100
4	201CE304	PCC	Surveying and Geomatics	3	0	0	3	30	70	100
5	201CE305	PCC	Environmental Engineering	3	0	0	3	30	70	100
6	201CE311	PCC	Material Testing Lab	0	0	3	1.5	50	50	100
7	201CE312	ESC	Building Planning and Drawing Lab	0	0	3	1.5	50	50	100
8	201CE313	PCC	Surveying Field Work (Lab)	0	0	3	1.5	50	50	100
9	201CE381	SOC-I	Skill oriented course-1	0	1	2	2	-	50	50
10	201CE391	MC	Constitution of India	2	0	0	0	30	70*	100
TOTAL				17	1	11	21.5	330	620	950
BSC = 3	ESC = 7.5	PCC = 9	MC=0	SOC-I=2						

II YEAR II SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201HB401	BSC	Probability and Statistics	3	0	0	3	30	70	100
2	201CE402	PCC	Mechanics of Materials	3	0	0	3	30	70	100
3	201CE403	PCC	Hydraulics and Hydraulic Machinery	3	0	0	3	30	70	100
4	201CE404	PCC	Concrete Technology	3	0	0	3	30	70	100
5	201CE405	OEC	Managerial Economics and Financial Analysis	3	0	0	3	30	70	100
6	201CE411	PCC	Environmental Engineering Lab	0	0	3	1.5	50	50	100
7	201CE412	PCC	Concrete Technology Lab	0	0	3	1.5	50	50	100
8	201CE413	PCC	Fluid Mechanics & Hydraulic Machinery Lab	0	0	3	1.5	50	50	100
9	201HB481	SOC-II	English For Career (Skill oriented course-II)	0	1	2	2	-	50	50
TOTAL				15	0	11	21.5	300	550	850
BSC = 3	OEC = 3	PCC = 14.5	SOC-II=2							
HONOURS/MINOR COURSES				4	0	0	4	30	70	100

*AT THE END OF II YEAR II SEMESTER STUDENTS MUST COMPLETE SUMMER INTERNSHIP

III YEAR I SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CE501	PCC	Engineering Geology	3	0	0	3	30	70	100
2	201CE502	PCC	Soil Mechanics	3	0	0	3	30	70	100
3	201CE503	PCC	Structural Analysis	3	0	0	3	30	70	100
4	201CE565	OEC	Open Elective – I/Job Oriented Course	3	0	0	3	30	70	100
5	201CE564	PEC	Professional Elective - I	3	0	0	3	30	70	100
6	201CE511	PCCL	Engineering Geology Lab	0	0	3	1.5	50	50	100
7	201CE512	PCCL	Soil Mechanics Lab	0	0	3	1.5	50	50	100
8	201CE581	SAC/SSC	Software Applications in CIVIL ENGINEERING Lab (GIS, STAAD)	1	0	2	2	50	50	100
9	201MB591	MC	IPR and Patents	2	0	0	0	30	70*	100
Summer Internship/Mini project-I (Mandatory)				0	0	0	1.5	100	-	100
Total							21.5	430	570	1000
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4			

* Internal Evaluation

III YEAR II SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CE601	PCC	Hydrology, Irrigation & Water Resources Engineering.	3	0	0	3	30	70	100
2	201CE602	PCC	Theory of Structures	3	0	0	3	30	70	100
3	201CE603	PCC	Design of Reinforced Concrete Structures	3	0	0	3	30	70	100
4	201CE606	PCC	Transportation Engineering	3	0	0	3	30	70	100
5	201CE664	PEC	Professional Elective - II	3	0	0	3	30	70	100
6	201CE665	OEC	Open Elective - II	3	0	0	3	30	70	100
7	201CE611	PCCL	Transportation Engineering Lab	0	0	3	1.5	50	50	100
8	201CE681	SAC/SSC	Design & Detailing Lab	1	0	2	2	50	50	100
9	201HB691	MC	Quantitative Aptitude and Reasoning	2	0	0	0	30	70*	100
Total							21.5	310	590	900
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4			
Industrial/Research Internship/Mini project-II (Mandatory) after Third year (to be evaluated during VII semester)										

* Internal Evaluation

IV YEAR I SEMESTER

S. No.	Course Code	Course Type	Course Title	Periods per week			C	Scheme of Examination Maximum Marks		
				L	T	P		Int.	Ext.	Total
1	201CE761	PEC	Professional Elective - III	3	0	0	3	30	70	100
2	201CE762	PEC	Professional Elective – IV	3	0	0	3	30	70	100
3	201CE763	PEC	Professional Elective - V	3	0	0	3	30	70	100
4	201CE761	OEC	Open Elective – III/ Job Oriented Course	3	0	0	3	30	70	100
5		OEC	Open Elective - IV/ Job Oriented Course	3	0	0	3	30	70	100
6	201HB796	HSSE	Universal Human Values -2: ''Understanding Harmony''	3	0	0	3	30	70	100
7	201CE781	SAC/SSC	Prerequisites for Consultancy and Authorized Valuation	1	0	2	2	50	50	100
Industrial/Research Internship/Mini project-II (Mandatory)				0	0	0	3	100	-	100
Total							23	330	470	800
Honors/Minor courses (The hours distribution can be 3-0-2 or 3-1-0 also)				4	0	0	4			

IV YEAR II SEMESTER

S. No	Category	Code	Course Title	Hours			Credits
				L	T	P	
1	Major Project		Project work	0	0	0	12
				Total credits			12

Professional Electives Offered by Department of Civil Engineering

Branch / PE.No.	Structural Engineering	Soil Mechanics/ Geotechnical Engg.	Transport Engineering	Water Resources & Environmental Engineering
Professional Elective - I	Construction Technology & Management	Green Technologies	Railway Engineering	Industrial Pollution Control & Management
Professional Elective - II	Repair & Rehabilitation of Structures	Foundation Engineering	Airports, Docks & Harbor Engineering	Environmental Impact Assessment
Professional Elective - III	Estimation, Specification & Contracts	Expansive Soils	Traffic Engineering	Watershed Management
Professional Elective – IV	Prestressed Concrete	Ground Improvement Techniques	Transportation Planning	Remote Sensing & GIS
Professional Elective - V	Design of Steel Structures	Soil Dynamics and Machine Foundation	Pavement Analysis, Design & Evaluation	Industrial Waste & Waste-Water Engineering

Open Electives Offered by Department of Civil Engineering

Department	Open Electives - I	Open Electives - II	Open Electives - III	Open Electives - IV
Civil Engineering	Environmental Pollution & Control	Solid Waste Management	Building Technology	Safety Engineering

Open Electives Offered by other Departments

Branch	Open Elective 1 (III B.Tech I Sem)	Open Elective 2 (III B.Tech II Sem)	Open Elective 3 (IV B.Tech I Sem)	Open Elective 4 (IV B.Tech I Sem)
EEE	Fundamentals of Utilization of Electrical Energy	Concepts of Power System Engineering	Fundamentals of smart grid technologies	Basics of Electrical Measurements and Instrumentation
MECH	Robotics	Introduction to MEMS	Nano Technology and its Applications	Introduction to Operations Research
ECE	Microprocessors and its interfacing	IoT and its Applications	Introduction to Embedded Systems	Fundamentals of Digital Image Processing
Petroleum	Fundamentals of petroleum engineering	Basic concepts in petroleum drilling engineering	Introduction to petroleum production engineering	Basic concepts in petroleum reservoir engineering
MINING Engg	Elements of Mining Technology	Open Pit Slope Analysis and Design	Mining and Its Importance	Remote Sensing & GIS in Mining
Automobile Engg	Basic Automobile Engineering	Hybrid and Electric Vehicles	Modern Vehicle Technology	Alternative Energy Resources for Automotives
CSE, CSC, CSM	Foundations of Operating Systems	Fundamentals of Databases	Information Security	Human Computer Interaction
MBA	Principles of Management	Operations Management	Digital Marketing	Entrepreneurship for Engineers