SRI VASAVI ENGINEERING COLLEGE (AUTONOMOUS)

(Sponsored by Sri Vasavi Educational Society)
Approved by AICTE, New Delhi and Permanently Affiliated to JNTUK, Kakinada
Pedatadepalli, **TADEPALLIGUDEM – 534 101,** W.G. Dist, (A.P.)

Department of Civil Engineering

COURSE STRUCTURE

B.Tech V18 Regulation

I SEMESTER

S.No	Course Code	Course Name	L	T	P	C
1	V18ENT01	English – I	2	-	-	MNC
2	V18MAT01	Engineering Mathematics – I	3	1	-	4
3	V18CHT01	Engineering Chemistry	3	1	-	4
4	V18CST01	Programming in C for problem solving	3	-	-	3
5	V18MET01	Engineering Graphics	1	-	3	2.5
6	V18ENL01	English Communication Skills Lab – I	-	-	2	MNC
7	V18CSL01	Programming lab in C for problem solving	-	-	3	1.5
8	V18CHL01	Engineering Chemistry Lab	-	-	3	1.5
		Total	12	2	11	16.5

Total Contact Hours : 25

Total Credits : 16.5

II SEMESTER

S.No	Course Code	Course Name	L	T	P	C
1	V18ENT02	English – II	2	-	-	2
2	V18MAT02	Engineering Mathematics – II	3	1	-	4
3	V18PHT01	Optics and Waves	3	1	-	4
4	VI8MET03	Engineering Mechanics	3	1	-	4
5	V18ENL02	English Communication Skills Lab – II	-	-	2	1
6	V18CEL01	Computer aided Civil Engineering Drawing Lab	-	-	3	1.5
7	V18PHL01	Optics and Waves Lab	-	-	3	1.5
8	VI8MELO1	Engineering and IT Workshop	-	-	3	1.5
		Total	11	3	11	19.5

Total Contact Hours : 25

Total Credits : 19.5

III SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET04	Strength of Materials-I	3	1	0	4
2	V18CET36	Building Materials Planning & Construction	3	1	0	4
3	V18CET10	Introduction to Fluid Mechanics	3	1	0	4
4	V18CET35	Principles of Environmental Science & Engineering	2	0	0	2
5	V18MAT04	Probability & Statistics	3	1	0	4
6	VI8EET01	Basic Electrical and Electronics Engineering	3	1	0	4
7	V18CEL02	Material Testing Lab	0	0	3	1.5
8	VI8EEL01	Basic Electrical and Electronics Engineering Lab	0	0	2	1
9	V18ENT03	Professional Communication Skills -I	3	0	0	0
		Total	20	3	6	24.5

Total Contact Hours : 29
Total Credits : 24.5

IV SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET13	Strength of Materials-II	3	0	0	3
2	V18CET08	Engineering Geology	2	0	0	2
3	V18CET09	Concrete Technology	3	1	0	4
4	V18CET14	Hydraulic Engineering	3	1	0	4
5	V18CET11	Surveying and Geomatics	2	1	0	3
6	V18MBT51	Managerial Economics & Financial Analysis	3	0	0	3
7	V18CEL03	Concrete Technology Lab	0	0	3	1.5
8	V18CEL04	Surveying Lab	0	0	3	1.5
9	V18CEL05	Fluid Mechanics And Hydraulic Machinery Lab	0	0	3	1.5
10	V18CEL06	Engineering Geology Lab	0	0	2	1
11	V18ENT04	Professional Communication Skills -II	3	0	0	0
		Total	17	4	11	24.5

Total Contact Hours : 32
Total Credits : 24.5

V SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET15	Structural Analysis-I	3	0	0	3
2	V18CET16	Geotechnical Engineering-I	3	0	0	3
3	V18CET17	Hydrology & Water Resources Engineering	3	0	0	3
4	V18CET18	Design of Reinforced Concrete Structures	3	0	0	3
5	V18CET19	Transportation Engineering-I	3	0	0	3
6	V18CET33	Remote Sensing And Geographical Information System	2	0	0	2
7	V18CEL07	Transportation Engineering Lab	0	0	3	1.5
8	V18CEL08	Geotechnical Engineering Lab	0	0	3	1.5
9	V18ENT11	Constitution of India	2	-	-	0
10	V18ENT05	Professional Communication Skills -III	4	0	0	0
		Total	23	0	6	20

Total Contact Hours: 29

Total Credits: 20

VI SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET20	Structural Analysis - II	3	0	0	3
2	V18CET21	Geotechnical Engineering – II	3	0	0	3
3	V18CET22	Design of Steel Structures	3	0	0	3
4	V18CET23	Transportation Engineering – II	3	0	0	3
5	V18CET24	Environmental Engineering - I	3	0	0	3
6		Open Elective I	3	0	0	3
7	V18CEL09	Environmental Engineering Lab	0	0	3	1.5
	V18CEL10	CAD & GIS Lab	0	0	3	1.5
8	V18ENT06	Professional Communication Skills – IV	4	0	0	0
		Total	22	0	6	21

Total Contact Hours: 28

Total Credits: 21

COURSE STRUCTURE PROPOSED FOR APPROVAL IN 4th BOS MEETING

VII SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET25	Estimation, Specification and Contracts	3	0	0	3
2	V18CET26	Environmental Engineering - II	3	0	0	3
3	V18CET27 V18CET28 V18CET29 V18CET30 V18CET31	Professional Elective Course – 1 1. Pavement Analysis and Design 2. Air Pollution and Control 3. Irrigation Engineering 4. Bridge Engineering 5. Advanced Foundation Engineering	3	0	0	3
3	V18CET32 V18CET34 V18CET37 V18CET38 V18CET39	Professional Elective Course – 2 1. Traffic Engineering & Management 2. Construction Project Planning & Systems 3. Solid Waste Management 4. Ground Water Development 5. Earthquake Engineering	3	0	0	3
4		Open Elective Course – 2	3	0	0	3
6	V18CEPWA	Project Work Part - A	0	0	6	3
		Total	15	0	6	18

Total Contact Hours: 21
Total Credits: 18

VIII SEMESTER

S.No	Course Code	Course Title	Hours per week			Credits
			L	T	P	C
1	V18CET40 V18CET41 V18CET42 V18CET43 V18CET44	Professional Elective Course – 3 1. Highway Construction and Management 2. Repair and Rehabilitation of Structures 3. Rural Water Supply and onsite sanitation Systems. 4. Pre stressed Concrete 5. Engineering with Geo-synthetics	3	0	0	3
2	V18CET45 V18CET46 V18CET47 V18CET48 V18CET49	Professional Elective Course – 4 1. Urban Hydrology and Hydraulics 2. Environmental Impact Assessment and Management 3. Advanced Concrete Technology 4. Finite Element Methods 5. Ground Improvement Techniques	3	0	0	3
3		Open Elective Course – 3	3	0	0	3
4	V18CEPWB	Project Work Part - B	0	0	14	7
		Total	9	0	14	16

Total Contact Hours: 23
Total Credits: 16

COURSE OUTCOMES

S.No	Course Code	Course Name	L	T	P	C
1	V18ENT01	English –I	2	-	-	MNC*

Course Outcomes	**CO-1** Understand human resources and their contribution to the society, listen to and read a text to comprehend, interpret and answer questions, and use prepositions and tenses appropriately. **CO-2** Appraise the problems of transport and the solutions, write the gist of a short-story, know the etymological roots of words, use prefixes and exhibit basic skills in writing. **CO-3** View Solar Energy as a viable alternative source, and read for comprehension, analysis and interpretation and present narratives in writing. **CO-4** Evaluate various alternative sources of energy, spell words appropriately, pronounce them with proper stress, punctuate sentences correctly and narrate instances and stories. **CO-5** Realize the value of our living environment, describe animals, birds, objects, events, processes, etc., writeparagraphs coherently and use connectors effectively. **CO-6** Grasp the vital role of training in industrial organizations, use prepositions, take notes, follow the office etiquette and write impressive narrations.

S.No	Course Code	Course Name	L	T	P	C
1	VI8MAT01	**MATHEMATICS-I**	3	1	-	4

Course Outcomes:	**CO1:** Apply matrix technique to solve system of linear equation. **CO2:** Find Eigen values and Eigen vectors **CO3:** Solve the ordinary differential equations of first order & first degree **CO4:** Solve the linear differential equations of higher order **CO5:** Calculate maxima and minima of functions of two variables **CO6:** Solve first order partial differential equations.

I Year – I Semester   **ENGINEERING CHEMISTRY**
(Common to all branches)

S.No	Course Code	Course Name	L	T	P	C
1	V18CHT01	**ENGINEERING CHEMISTRY**	3	1	-	4
Course Outcomes:		CO1: Apply different plastics and rubbers for various engineering applications. CO2: Assess the quality of fuels and apply the knowledge of fuels for the preservation of natural fuels. CO3: Understand relevant concepts of Electro Chemistry to apply them in designing electrochemical energy systems. CO4: Analyse boiler troubles arising due to poor water quality and suggest suitable water treatment methods for different industrial applications. CO5: Analyse the causes for practical corrosion problems and apply corrosion principles for protection of metallic structures from corrosion. CO6: Identify the important applications of advanced engineering materials.				

I B.Tech – I Semester   **Programming in 'C' for problem Solving**
(Common to all branches)

V18CST01	**Programming in 'C' for problem Solving**	L	P	C
		3	0	3
Course Outcomes:	**CO1:** Describe various problem solving strategies such as Algorithms and Flowcharts **CO2:** Develop various programming constructs using Control Structures. **CO3:** Summarize the process of modular programming approach **CO4:** Illustrate the usage of String handling functions and pointers **CO5:** Construct Programs using Structures and Unions. **CO6:** Distinguish between Sequential files and Random access files.			

I B.Tech- I Semester   **ENGINEERING GRAPHICS**
(Common to all branches)

V18MET01	ENGINEERING GRAPHICS	L	P	C
		1	3	2.5
Course Outcomes:	**CO1:** Demonstrate the usage of drawing instruments and sketch conic sections **(K3)** **CO2:** Construct different types of scales and special curves **(K5** **CO3:** Draw the projections of the points, lines and planes with reference to the principal planes. **(K2)** **CO4:** Develop the projections of solids and its surfaces. **K3)** **CO5:** Draw the Isometric projections of solids. **(K2)** **CO6:** Convert the isometric view to orthographic view and vice versa. **(K2)**			

I B.Tech I Semester   **English Communication Skills Laboratory – I**
(Common to all branches)

Course Code	Course Name	L	T	P	C
V18ENL01	ECS Lab –I	-	-	2	MNC
Course Outcomes	**CO-1**Listen to and make inquiries on phone, thank and respond to thanks in appropriate spoken idiom. **CO-**Make requests, give permissions and directions in fluent English. **CO-3**Articulate well in the contexts of clarifying, inviting, complaining, congratulating, apolozing, advising, agreeing and disagreeing in conversational mode. **CO-**Distinguish and pronounce letters and sounds of English phonetically. **CO-5**Practise and pronounce consonants, vowels and diphthongs and consonant clusters. **CO-6**Listen to and understand different accents in English, and pronounce English words and speak sentences with right stress and intonation				

I B.Tech – II Semester Programming Lab in 'C' for problem Solving
(Common to all branches)

V18CSL01		L	P	C
	Programming Lab in 'C' for problem Solving	**0**	**3**	**1.5**
Course Outcomes:	**CO 1:** Demonstrate problem solving techniques using Control Structures.**(K3)** **CO 2:** Construct Programmers using the concepts of Arrays, Strings and Pointers. **(K3)** **CO3:** Apply the concepts of Functions, Structures and Unions.**(K3)** **CO4:** Use various file processing operations to develop real time applications.			

I Year – II Semester   **ENGINEERING CHEMISTRY LABORATORY**
(Common to all branches)

S.No	Course Code	Course Name	L	T	P	C
1	V18CHL01	ENGINEERING CHEMISTRY LABORATORY	-	-	3	1.5
Course Outcomes:		CO1: Analyze quantitatively a variety of samples using volumetric methods and instrumental methods. CO2: Applying volumetric and instrumental methods for the determination of water quality parameters namely Alkalinity, Hardness and pH. CO3: Prepare polymeric materials and analyse the given coal samples.				

II SEM

English – II (Common to All Branches)

S.No	Course Code	Course Name	L	T	P	C
1	V18ENT02	English –II	2	-	-	2
Course Outcomes		**CO-1** Understand the real import of education and work of noble men, use nouns, verbs and adjectives appropriately, identify and correct common errors in usage and write official letters. **CO-2** Derive inspiration from real life samples, interpret and speak on them, use synonyms and antonyms of words properly and do E-correspondence with required netiquette. **CO-3** Assimilate and adjust to new cultural environments, write on life-sketches, make the right use of tense and aspect and concord in sentences and plan and develop speech-writing. **CO-4** Imbibe ideas from the lives and works of successful men, use adverbs, develop view-points and topics and write different types of essays. **CO-5** Emulate personality-development inputs, elaborate on inspiring scientists use one-word substitutes, develop précis writing and write for the media. **CO-6** Learn from the paradigm of great contributors, use collocations and write professional and technical reports in standard formats.				

I B.Tech II SEMESTER **MATHEMATICS-II**
(Common to All Branches)

S.No	Course Code	Course Name	L	T	P	C
1	VI8MAT02	**MATHEMATICS-II**	3	1	-	4
Course Outcomes		**CO1:** Estimate approximate root of algebraic and transcendental equations **CO2:** Compute interpolating polynomial for the given data **CO3:** Solve ordinary differential equations using numerical methods **CO4:** Evaluate multiple integrals and improper integrals **CO5:** Calculate gradient of a scalar function, divergence and curl of a vector function. **CO6:** Apply the knowledge of vector integral concepts to find characteristics of vector fields				

OPTICS AND WAVES
(For Civil Engineering & Mechanical Engineering)

S.No	Course Code	Course Name	L	T	P	C
1	V18PHT01	**PHYSICS:** OPTICS AND WAVES	3	1	-	4
Course Outcomes:		1. Correlate the engineering concepts based on fundamental Physical Optics with Coherent source. Furthermore, students will be able to solve problems connected with the operation of optical instruments. 2. Study the sound waves & Use modern physics techniques and tools. 3. Illustrate the fundamental concepts of magnetism and dielectrics.				

ENGINEERING MECHANICS
(For ME, CE)

V18MET03	**ENGINEERING MECHANICS**	L	T	P	C
		3	1	0	4
Course Outcomes	**C01:** Compute the resultant force of a given system of forces **(K3)** **CO2:** Calculate the florin the different types of plane trusses **(K3)** **CO3:** Find the Centroid, Center of Gravity and Moment of Inertia for plane figures and bodies **(K3)** **CO4:** Illustrate the different types of plane motions of a particle to compute its velocity, acceleration and force.**(K3)** **CO5:** Illustrate the concept of Work and Energy (**K3**) **CO6:** Apply the principle of Virtual Work to stability of equilibrium of beams and trusses **(K3)**				

I B.Tech II Semester
English Communication Skills Laboratory – II
(Common to all branches)

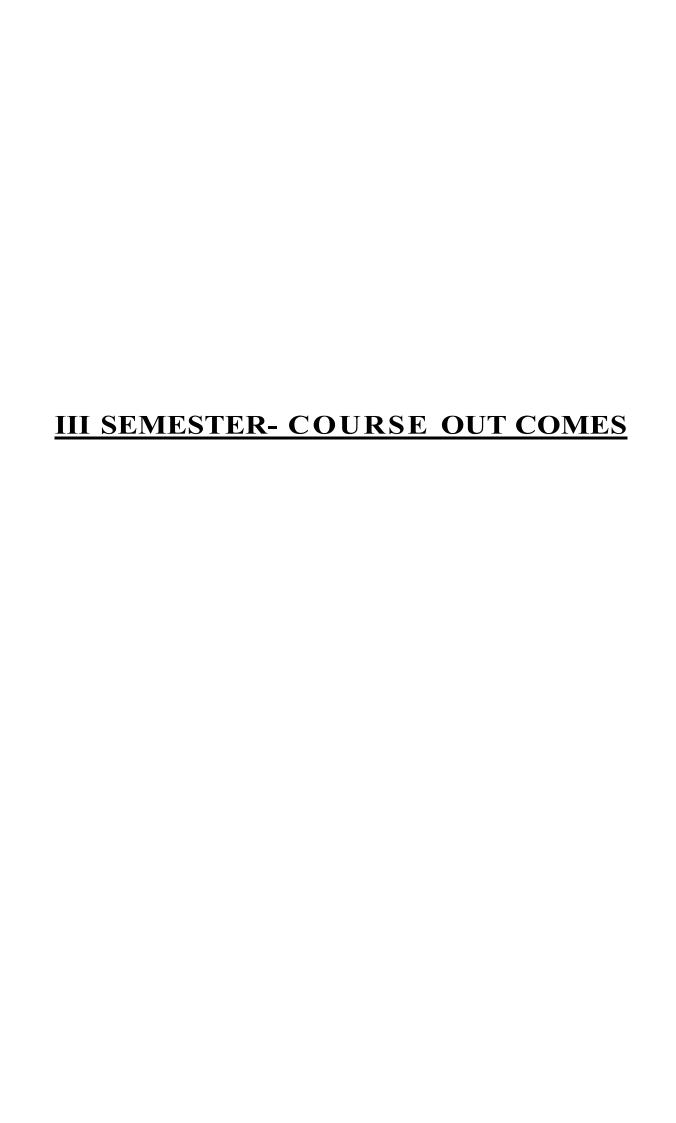| Course Code	Course Name	L	T	P	C
V18ENL02	ECS Lab –II	-	-	2	1
Course outcomes	**CO-1** Listen to people critically and argue rationally to present a view-point confidently in formal debates. **CO-2** Exhibit team spirit and communicative skill and participate effectively in group discussions. **CO-3** Plan, structure and give presentations in professional manner. **CO-4** Face and perform well in interviews with required etiquette. **CO-5** Compose E-mails in standard formats to communicate clearly and write different types of CV in vogue that befit today's career needs. **CO-6** Make apt use of idiomatic expressions and recognize and correct typical errors that Indian speakers of Englishmake in pronunciation, spelling, vocabulary and grammar.				

I YEAR II SEMESTER

COMPUTER AIDED CIVIL ENGINEERING DRAWING

Course Code	Course Name	L	T	P	C
V18CEL01	COMPUTER AIDED CIVILENGINEERING DRAWING	0	0	3	1.5
CURSE OUTCOMES	- Define AUTOCAD and list the applications - Classify various AUTOCAD commands - Explain orthographic projections and draw conventional signs as per IS standards - Identify view points and view ports - Utilize AUTOCAD commands to plan the buildings section and elevation - Discover various 3D modeling concepts				

I B.Tech I/II Semester   ENGINEERING WORKSHOP & IT WORKSHOP PRACTICE LAB

V18MEL01	ENGINEERING WORKSHOP & IT WORKSHOP PRACTICE LAB	L	P	C
CURSE OUTCOMES	**CO1:** prepare different models in the carpentry trade such as Cross lap joint, Dove tail joint. **(K3)** **CO2:** make various basic prototypes in the trade of Tin smithy such as rectangular tray, and open Cylinder **(K3)** **CO3:** model various basic prototypes in the trade of fitting such as Straight fit, V- fit. **(K3) CO4:** prepare different models in the Black smithy such as Round rod to Square, S-Hook.. **(K3)** **CO5:** perform various basic House Wiring techniques such as connecting one lamp with one switch, connecting two lamps with one switch, connecting a fluorescent tube, Series wiring, Go down wiring. **(K3)** **CO6:** prepare various basic prototypes in the trade of Welding such as Lap joint, Butt joint. **(K3)**			

V18MEL01	IT WORKSHOP LAB	L	P	C
		0	3	1.5
CURSE OUTCOMES	- Demonstrate Disassemble and Assemble a Personal Computer and its peripherals(K3) - Practice installation of operating system.(K3) - Connect peripherals and install required drivers(K4) - Demonstrate internet connectivity and usage of internet as per his/her requirement.(K3) - Prepare the Documents for their projects(K3) - Prepare Slide shows for their presentations (K3)			

III SEMESTER- COURSE OUT COMES

Year/Sem	III Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	0	4	V18CET04
Name of the Course	STRENGTH OF MATERIALS-I					
Branch	CIVIL ENGINEERING					
CURSE OUTCOMES	• Understand the basic materials behavior under the influence of differentexternal loading conditions and the support conditions • Draw the diagrams indicating the variation of the key performance featureslike bending moment and shear forces • Understand bending concepts and calculation of section modulus and fordetermination of stresses developed in the beams and torsion. • Assess stresses across section of the thin and thick cylinders to arrive at optimum sections to withstand the internal pressure using Lame's equation					

Year/Sem	III Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	0	4	V18CET36
Name of the Course	BUILDING MATERIALS, PLANNING AND CONSTRUCTION					
Branch	CIVIL ENGINEERING					
CURSE OUTCOMES	• Identify different building materials and their importance in buildingconstruction. • Differentiate brick masonry, stone masonry construction • Use of lime and cement in various constructions. • Describe the importance of building components and finishing's. • Understand building by-laws, ventilation and lightening requirements					

Year/Sem	III Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	0	4	V18CET10
Name of the Course	INTRODUCTION TO FLUID MECHANICS					
Branch	CIVIL ENGINEERING					
CURSE OUTCOMES	• Understand the physical properties of fluids and their influences on fluidmotion • Calculate the forces acting on plane and curved surfaces and solve fluid flowproblems in kinematics. • Solve a variety of problems in fluid dynamics • Solve various pipe flow problems • Solve various laminar flow problems • Assess fluid flow through pipes using different devices					

Year/Sem	III Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	2	0	0	2	V18CET35
Name of the Course	PRINCIPLES OF ENVIRONMENTAL SCIENCE & ENGINEERING					
Branch	CIVIL ENGINEERING					
CURSE OUTCOMES	- Outline the global environmental challenges and environmental legislations. - Interpret various natural resources and associated problems. - Discuss various attributes of environmental pollution. - Interpret quality of water. - Operate sewage water treatment plants. - Illustrate various solid waste management practices.					

Year/Sem	III & IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	-	4	V18MAT04
Name of the Course	PROBABILITY AND STATISTICS					
Branches	CIVIL, EEE, ME & CSE					
CURSE OUTCOMES	CO1: Find measures of central tendency and dispersion for real data sets. CO2: Find parameters of given function CO3: Apply probability distribution to real time problems CO4: Plot a best fit curve to an experimental data and find the correlation and regression CO5: Create good estimators to various parameters CO6: Apply the principles of Statistical Inference to practical problems					

Year/Sem	III Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	0	0	3	1.5	V18CEL02
Name of the Course	MATERIAL TESTING LAB					
Branch	CIVIL					
CURSE OUTCOMES	- Identify the engineering properties of materials in the laboratory - Assess torsion test to determine elastic constants - Assess spring test to determine elastic constants - Assess flexural test to determine elastic constants - Determine hardness of metals - Determine Impact strength of metals					

IV SEMESTER COURSE OUT COMES

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	0	0	3	V18CET13
Name of the Course	STRENGTH OF MATERIALS – II					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Understand the basic concepts of Principal stresses developed in a memberwhen it is subjected to stresses along different axes and design the sections. • Asses stresses in different engineering applications like shafts, springs,columns and struts subjected to different loading conditions • Assess forces in different types of trusses used in Construction.					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	2	0	0	2	V18CET08
Name of the Course	ENGINEERING GEOLOGY					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Relate the features of geological agents. • Review the types of minerals and rocks • Interpret hazard zonation with reference to secondary structures • Review the landslides and their resulting subsidence. • Assess the ground conditions using geophysical explorations • Examine the engineering geological conditions of the strata and its suitability to major projects like Dams, Tunnels and Reservoirs etc.					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	0	4	V18CET09
Name of the Course	CONCRETE TECHNOLOGY					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Understand the basic concepts of concrete. • Realize the importance of quality of concrete. • Familiarize the basic ingredients of concrete and their role in the production of concrete and its behavior in the field. • Test the fresh concrete properties and the hardened concrete properties. • Evaluate the ingredients of concrete through lab test results and design the concrete mix by BIS method. • Familiarize the basic concepts of special concrete and their production and applications and understand the behavior of concrete in various environments.					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	3	1	0	4	V18CET14
Name of the Course	HYDRAULIC ENGINEERING					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Solve uniform open channel flow problems • Solve Non-uniform open channel flow problems • Apply the principles of dimensional analysis and similitude in hydraulicmodel Testing • Estimate the impact of jet on plane and curved surfaces using momentumPrinciple. • Develop performance characteristics of turbines using velocity triangles • Calculate work done and efficiency of centrifugal and reciprocating pumps					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	2	1	0	3	V18CET11
Name of the Course	SURVEYING AND GEOMATICS					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Demonstrate the basic surveying skills • Use various surveying instruments. • Perform different methods of surveying • Compute various data required for various methods of surveying. • Integrate the knowledge on surveying to the new frontiers of science likeGlobal positioning System, Remote sensing					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	0	0	3	1.5	V18CEL03
Name of the Course	CONCRETE TECHNOLOGY LAB					
COURSE OUTCOMES	• Find some properties of cement by consistency, fineness, setting times,specific gravity, soundness and compressive strength. • Determine the workability of cement concrete by compaction factor, slumpand Vee – Bee tests. • Determine properties of self-compacting concrete by Slump cone, V funnel,L Box • Determine the specific gravity of coarse aggregate and fine aggregate bySieve analysis. • Determine the flakiness and elongation index of coarse aggregates. • Determine the bulking of sand. • Understand the non-destructive testing procedures on concrete					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	0	0	3	1.5	V18CEL04
Name of the Course	SURVEYING LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Use different Survey instruments to collect filed data - Calculate distances, levels and angles from collected data - Transfer points on ground to drawing sheet - Interpret survey data to compute areas and volumes by using differentmethods - Prepare profile of land from the collected survey data					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	0	0	3	1.5	V18CEL05
Name of the Course	FLUID MECHANICS AND HYDRAULIC MACHINERY LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Show the verification of Bernoulli's equation - Find the discharge through an orifice and mouth piece by using constanthead and variable head methods. - Calculate coefficient of discharge for Venturimeter and Orifice meter - Find loss of head due to friction and minor losses in pipes - Calculate the force exerted by the jet on the vanes. - Calculate efficiency and sketch performance curves for turbines andpumps.					

Year/Sem	IV Sem	L	T	P	C	COURSE CODE
Regulation Year	2018-2019	0	0	2	1	V18CEL06
Name of the Course	ENGINEERING GEOLOGY LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Understand the importance of geology in civil engineerin - Identify the geological process of any region to carry civil engineering works - Evaluate the formation and properties of minerals, rocks and soil - Develop the ability to prepare geological maps and section to interpret siteconditions					

V SEMESTER- COURSE OUT COMES

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET15
Name of the Course	STRUCTURAL ANALYSIS – I					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Illustrate Shear Force, Bending Moment and Deflection of Propped Cantilevers fordifferent fixity conditions (K3) • Calculate Shear Force, Bending Moment and Deflections of fixed beams for differentfixity conditions (K3) • Calculate Shear Force, Bending Moment and Deflections of Continuous beams fordifferent fixity conditions (K3) • Apply Slope Deflection Equation to Continuous beams (K3) • Understand the concepts of Energy Theorems (K2) • Assess Maximum Shear Force, Bending Moment and Deflections at a given section whenloads of varying spans are passing over truss (K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET16
Name of the Course	GEOTECHNICAL ENGINEERING –I					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Show the inter-relationships of various parameters related to soil mechanics (K1) • Describe various index properties of soils and classify them (K2) • Assess the permeability of different soils having different properties (K3) • Employ different methods to know the stress distribution in soils (K3) • Interpret different parameters related to consolidation of soil (K3) • Examine the stress strain behavior of different soils under various drainage conditions(K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET17
Name of the Course	HYDROLOGY & WATER RESOURCES ENGINEERING					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Identify the physical processes in hydrology and components of the hydrologic cycle.(K2) • Estimate the different components of the hydrologic cycle.(K2) • Compute the runoff of a catchment using Hydrographs. (K3) • Compute the flood frequency, design flood, flood routing. (K3) • Discuss the concepts of groundwater movement and well hydraulics.(K2) • Describe the advanced concepts of Runoff modeling .(K2)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET18
Name of the Course	DESIGN OF REINFORCED CONCRETE STRUCTURES					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Understand the concepts and methods for elements design (K2) • Solve the elements of structure like flexural members (K3) • Illustrate the design concepts structures subjected to shear, bond and torsion (K3) • Apply design principles in the design of slabs (K3) • Choose suitable design principle in the design of columns (K3) • Apply suitable design procedure in the design of foundations (K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18 CET 19
Name of the Course	TRANSPORTATION ENGINEERING – I					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Identify engineering surveys and can decide the alignment(K2) • Analyze and design highway geometric elements.(K3) • Analyze and design of traffic infrastructure(K3) • Analyze and design of flexible, rigid pavements (K3) • Examine pavement construction activities and also conduct quality control at site(K3) • Evaluate pavement condition and can identify and suggest remedial measures(K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	2	0	0	2	V18CET33
Name of the Course	REMOTE SENSING AND GEOGRAPHICAL INFORMATION SYSTE					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Define the basic principles of Remote Sensing and GIS, including ground, air and satellitebased sensor platforms (K1) • Interpret the aerial photographs and satellite imageries (K2) • Relate the process of input spatial data entry and its types (K3) • Examine the Spatial Data for a variety of applications (K3) • Employ RS and GIS for diverse applications (K3) • Apply RS and GIS concepts in water resources engineering (K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	0	0	3	1.5	V18CEL07
Name of the Course	TRANSPORTATION ENGINEERING LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Assess the suitability of different materials for the road construction(K3) • Examine the given bitumen samples and judge their suitability for road construction(K3) • Find the Optimum Bitumen content for the Bituminous mix (K3) • Develop the gradation of Bituminous mix for stability and flow properties (K3)					

Year/Sem	V Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	0	0	3	1.5	V18CEL08
Name of the Course	GEOTECHNICAL ENGINEERING LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Employ index properties required for classification of soils (K3) • Find the permeability of different soils using different tests (K3) • Predict the compaction, consolidation and swelling characteristics of the soils (K3) • Compute the strength properties of soils (K3)					

VI SEMESTER – COURSE OUT COMES

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	1	0	3	V18CET20
Name of the Course	STRUCTURAL ANALYSIS - II					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Illustrate the concepts of Arches (K3) • Solve the structure for Lateral loads using approximate methods (K3) • Illustrate the concepts Cables and Suspension bridges (K3) • Employ Moment distribution method for analyzing beams/frames (K3) • Employ Kanni's method for analyzing beams/frames (K3) • Compute the moments/forces using matrix methods (K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET21
Name of the Course	GEOTECHNICAL ENGINEERING-II					
COURSE OUTCOMES	• Use the field test data and arrive at the bearing capacity(K3) • Examine the stability of slope and find earth pressures in layered soils(K3) • Determine the bearing capacity of shallow foundations using analytical methods(K3) • Compute the magnitude of foundation settlement and decide on the size of the foundationaccordingly(K3) • Apply the principles of bearing capacity of piles and design them accordingly • Demonstration of the well foundations and their construction (K3					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	1	0	3	V18CET22
Name of the Course	DESIGN OF STEEL STRUCTURES					
COURSE OUTCOMES	• Estimate the strength of the riveted and welded joints (K3) • Select suitable flexural member by using concept of design (K3) • Understand the design concepts of tension and compression members in roof trusses (K3) • Apply design principles in the design of columns and built up columns (K3) • Choose suitable design principle in the design of column bases (K3) • Apply suitable design procedure in the design of plate and gantry girder(K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18 CET 23
Name of the Course	TRANSPORTATION ENGINEERING – II					
COURSE OUTCOMES	• Understand the Historical development of Railways in India (K2) • Analyze and Design the Railway Track Geometric Elements (K3) • Apply turnouts and controllers on Railway Track (K3) • Analyze and design geometric elements of Airport Runway and Taxiway (K3) • Analyze design of flexible and Rigid Highway pavements (K3) • Classify the various components of Dock & Harbors (K2)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET24
Name of the Course	ENVIRONMENTAL ENGINEERING-I					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Describe the importance of protected water supply (K1) • Identify the water source and select proper intake structure (K2) • Examine the Characteristics of water (K3) • apply a suitable process to treat raw water collected from source (K3) • Select suitable Disinfection methods to treat water from primary treatment units (K3) • Demonstrate various appurtenances used in the water supply (K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	0	0	2	1	V18CEL09
Name of the Course	ENVIRONMENTAL ENGINEERING LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Find some important characteristics of water and waste water in the laboratory (K3) • Prepare some conclusion and decide whether the water is potable or not (K3) • Examine whether the water body is polluted or not with reference to the state parametersin the list of experiments (K3) • Find the strength of the sewage in terms of BOD and COD (K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	0	0	2	1	V18CEL10
Name of the Course	CAD & GIS LAB					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Employ structural analysis software to analyze and design 2D and 3D frames (K3) • Prepare design and analyze retaining wall and simple towers using CADD software (K3) • Demonstrate to digitize and create thematic map and extract important features (K3) • Develop digital elevation models using GIS software (K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	3	0	0	3	V18CET30
Name of the Course	REPAIR AND REHABILITATION OF STRUCTURES					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Describe the deterioration of concrete in structures (K1) • Estimate the degree of deterioration using Non Destructive Test methods (K2) • Assess the failures and causes of failures in structures (K3) • Relate different materials used for repair and rehabilitation of structures (K3) • Employ and suggest suitable retrofitting techniques (K3) • Organize the case studies and report the condition of structures (K3)					

Year/Sem	VI Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2020-2021	2	0	0	2	V18CET33
Name of the Course	**REMOTE SENSING AND GEOGRAPHICAL INFORMATIONSYSTEM**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Define the basic principles of Remote Sensing and GIS, including ground, air and satellitebased sensor platforms (K1) • Interpret the aerial photographs and satellite imageries (K2) • Relate the process of input spatial data entry and its types (K3) • Examine the Spatial Data for a variety of applications (K3) • Employ RS and GIS for diverse applications (K3) • Apply RS and GIS concepts in water resources engineering (K3)					

VII SEMESTER - COURSE OUT COMES

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation Year	V18 / 2021-2022	3	0	0	3	V18CET25
Name of the Course	**ESTIMATION, SPECIFICATION & CONTRACTS**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Explain to student for understanding different construction works and can estimateapproximate cost required for a building (K2) - Develop the student to a position for finding the cost of various building components(K3) - Illustrate the calculation of quantities for earthwork of roads and canals to students(K3) - Discuss to students about contracts and their types ,value a property(K2) - Describe the students in calculating the approximate costs of building using varioustechniques(K2) - Demonstrate the students in determining the quantities of different components ofbuildings(K3)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET26
Name of the Course	**ENVIRONMENTAL ENGINEERING-II**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Estimate the sewage and storm water flow and design the sewerage system (K3) - Relate the appropriate pumps in the sewerage systems (K3) - Analyze sewage quality and design suitable primary treatment units (K3) - Employ the secondary treatment units (K3) - Employ miscellaneous treatment units (K3) - Identify suitable disposable method with respect to effluent standards.(K2)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET27
Name of the Course	**PAVEMENT ANALYSIS AND DESIGN**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Understand the factors influencing the design methodologies.(K2) - Analyze stresses and strains in a flexible pavement using multi-layered elastic theory(K3) - Analyze stresses and strains in a rigid pavement using Westergaard"s theory (K3) - Design a flexible pavement using IRC, Asphalt Institute, and AASHTO methods (K3) - Design a rigid pavement using IRC, and AASHTO methods (K3) - Design of joints, Dowel & tie bars.(K3)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET28
Name of the Course	**AIR POLLUTION AND CONTROL**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Understand the ambient air quality based on the analysis of air pollutants(K1) • Employ particulate and gaseous control measures for an industry(K3) • Illustrate the plume behavior in a prevailing environmental condition(K3) • Estimate carbon credits for various day to day activities(K2) • Operate air pollution gases methods(K3) • Classify the air pollution controlling methods(K4)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET29
Name of the Course	**IRRIGATION ENGINEERING**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	• Explain the importance, type and quality of Irrigation Water (K2) • Estimate the Irrigation water requirements (K2) • Asses different parameters needed for the design of irrigation canal networks (K3) • Asses different irrigation canal structures (K3) • Asses different diversion head works (K3) • Assess the stability of gravity and earth dams (K3)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET30
Name of the Course	**BRIDGE ENGINEERING**					
COURSE OUTCOMES	• Generalize different types of Bridges with diagrams and Loading standards (K2) • Asses the moments in the girders (K3) • Illustrate different sub structural works of bridges (K3) • Illustrate different parameters of Well Foundations (K3) • Report the effectiveness of different Bearings of a Bridge (K2) • Generalize the suspension bridge and cable stayed bridge (K2)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET31
Name of the Course	**ADVANCED FOUNDATION ENGINEERING**					
COURSE OUTCOMES	• Illustrate the safe bearing capacity of footings subjected to different types of loadingon varied soil strata using different methods (K3) • Compute the settlements of foundations using advanced methods (K3) • Employ different techniques for proportioning of foundations laid on different soilsstrata (K3) • Assess the forces acting on Earth Retaining Structures using different Earth Pressure Theories (K3) • Predict the load carrying capacity, pull-out capacity, negative skin friction of piles and their settlements (K3) • Interpret different foundation practices in expansive soils (K3)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET32
Name of the Course	**TRAFFIC ENGINEERING & MANAGEMENT**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Understand basics principles of Traffic Engineering(K2) - Analyze parking data and model accidents(K3) - Determine capacity and LOS(K3) - Design of Signalized systems at congested intersections(K3) - Design of interchanges and Rotary Intersections(K3) - To provide engineering techniques to achieve Safe and efficient movement of peopleand goods on roadways(K2)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation Year	V18 / 2021-2022	3	0	0	3	V18CET34
Name of the Course	**CONSTRUCTION PROJECT PLANNING & SYSTEMS**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Identify the importance of Project Manager, Project Planning & scheduling and different charts (K3) - Solve the networks by using different network analysis methods such as PERT &CPM (K2) - Discuss the functioning of various Construction equipment & Earthwork equipment (K2) - Discuss the functioning of various Hoisting equipment (K2) - Discuss the methods of production of Aggregate products and concreting (K2) - Describe the Quality control, Safety Engineering and construction techniques (K2)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET37
Name of the Course	**SOLID WASTE MANAGEMENT**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Generalize Solid Waste and its management (K2) - Assess different elements for managing Solid Waste (K3) - Employ different methods for transfer and transport of solid waste (K3) - Employ different methods for Separation and Transformation of Solid waste (K3) - Organize different methods for processing and treatment of municipal solid waste (K3) - Identify suitable disposal methods with respect to solid waste (K2)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET38
Name of the Course	**GROUND WATER DEVELOPMENT**					
COURSE OUTCOMES	- Analyse radial flow towards wells in confined and unconfined aquifers (K3) - Design wells and understand the construction practices (K5) - Construct the wells and development of ground water (K2) - Determine the process of artificial recharge for increasing groundwater potential (K4) - Employ different geo physical methods to explore ground water (K3) - Apply appropriate measures for groundwater management (K3)					

Year/Sem	VII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET39
Name of the Course	**EARTHQUAKE ENGINEERING**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Differentiate types of lodes and it's characteristic(K2) - Recognize foundations of many basic engineering concepts related earthquake engineering(K2) - Examine the strong ground motion and seismic hazard(K3) - Assess the frequency of wave propagation in different mediums(K3) - Find the behavior of structures during earthquake and earthquake resistant Features ofstructure(K3) - Relate the properties of liquefaction and soil improvement for remediation of seismichazards(K3)					

VIII SEM COURSE OUT COMES

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET40
Name of the Course	**HIGHWAY CONSTRUCTION & MANAGEMENT**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Understand the concepts of PMS and evaluate strategies for pavement maintenance(K2) - Evaluate the pavements based on the functional and structural characteristics(K3) - Understand constructions of Construction methods of Base, Subbase, Shoulders anddrains(K2) - Understand constructions of bituminous pavements(K2) - Understand the concepts of construction of cement concrete pavements(K2) - Evaluate the concepts of maintenance of cement concrete pavements(K3)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET41
Name of the Course	**REPAIR AND REHABILITATION OF STRUCTURES**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Develop various maintenance and repair strategies(K2) - Evaluate the existing buildings through field investigations(K2) - Understand and use the different techniques for structural rehabilitation(K2) - To assess damage to structures and various repair techniques(K2) - To understand the importance of maintenance of structures(K2) Understand the importance of advanced concretes mixes(K2)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET42
Name of the Course	**RURAL WATER SUPPLY AND ONSITE SANITATIONSYSTEMS**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Relate various approaches for planning the water supply systems in rural areas (K3) - Apply suitable methods of water treatment for rural areas(K3) - Develop distribution system in rural areas (K3) - Apply the sanitary engineering concept and principals(K3) - Apply the different public sanitation methods in rural areas(K3) - Apply different solid waste methods in rural areas(K3)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET43
Name of the Course	**PRESTRESSED CONCRETE**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Generalize the basic concepts of prestressed concrete (K2) - Compute prestress and bending stresses (K3) - Estimate effective prestress including the short- and long-term losses (K2) - Analyze and design prestressed concrete beams under flexure (K4) - Analyze and design prestressed concrete beams under Shear and torsion (K4) - Generalize the end zone of prestressed concrete members (K2)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET44
Name of the Course	**ENGINEERING WITH GEO-SYNTHETICS**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Relate the need and demand of geo-synthetic materials in the field of geotechnicalconstruction works (K3) - Employ various parameters related to the use and application of geotextiles, geogrids(K3) - Examine the use and field testing of geo-synthetics in road construction (K3) - Design reinforced earth retaining walls with strip, sheet and gird reinforcement (K5) - Distinguish survivability requirements of geo-composites and could design geowebs,geocells, and moisture barriers and natural geotextiles etc. (K4) - Employ other methods to use the natural geotextiles like jute fibres, coir, bamboo andtheir combination (K3)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET45
Name of the Course	**URBAN HYDROLOGY & HYDRAULICS**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Generalize the effect of urbanization on hydrological cycle (K2) - Develop intensity duration frequency curves for urban drainage systems (K3) - Calculate runoff parameters in urban drainage system (K3) - Develop design storms to size the various components of drainage systems (K3) - Apply best management practices to manage urban flooding (K3) - Prepare master drainage plan for an urbanized area (K3)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET46
Name of the Course	ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Prepare EMP, EIS, and EIA report (K3) - Select the an appropriate EIA methodologies (K2) - Assess the Impact of development activities and land use (K3) - Employ in procuring the natural resources for assessing the environment (K3) - Assess the ecosystem (K3) - Develop the EIA notifications and reports (K3)					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET47
Name of the Course	ADVANCED CONCRETE TECHNOLOGY					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- Relate material characteristics and their influence on microstructure of concrete(K3) - Predict concrete behavior based on its durability properties(K3) - Illustrate proportioning of different types of concrete mixes for required fresh andhardened properties using professional codes(K3) - Select a suitable type of concrete based on specific application(K3) - Employ suitable concreting methods to place the concrete based on requirement(K3) - Illustrate different types of concrete tests for hardened properties(K3					

Year/Sem	VIII Sem	L	T	P	C	COURSE CODE
Regulation / Year	V18 / 2021-2022	3	0	0	3	V18CET48
Name of the Course	FINITE ELEMENT METHOD					
COURSE OUTCOMES	- Apprise the students about the basics of the Finite Element Technique(K2) - Describe the finite element method, identify different types of finite elements andapply to respective engineering problems(K3) - Analyze one dimensional solid elements of various engineering problems(K3) - Illustrate frame structures of various engineering problems (K3). - Analyze 2-D and 3-D engineering problems using finite element method(K3) - Examine finite element for elastic stability, fluid mechanics and dynamic analysis(K3)					

Year/Sem	VIII	L	T	P	C	COURSE CODE
Regulation Year	V18 / 2021-2022	3	0	0	3	V18CET49
Name of the Course	**GROUND IMPROVEMENT TECHNIQUES**					
Branch	CIVIL ENGINEERING					
COURSE OUTCOMES	- To make the student appreciate the need for different ground improvement methodsadopted for improving the properties of remoulded and in-situ soils (K2) - The student should be in a position to understand the importance of dewatering anddifferent dewatering techniques (K3) - The student should be in a position to know the importance of stabilization of soilsand types of stabilizations (K3) - To make the student understand how the reinforced earth technology and soil nailingcan obviate the problems posed by the conventional retaining walls (K3) - To enable the students to know how geotextiles and geosynthetics can be used to improve the engineering performance of soils (K2) - To make the student learn the concepts, purpose and effects of grouting (K2)					