



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

I YEAR I SEM

C101	Course Name: English-I
CO	Year of Study: I YEAR I SEM
CO1	Demonstrate real life skills in the light of literature.
CO2	Understand influential personalities, and practice human and professional values
CO3	Explain new versions of technology for effective use of human resources towards development and to avoid risks
CO4	Identify principles and values to build collaborative knowledge and to cultivate social responsibility
CO5	Enhance communication skills through grammar, vocabulary with emphasis on LSRW skills.

C102	Course Name: Mathematics-I
CO	Year of Study: I YEAR I SEM
CO1	Understand the term rank and Elementary Transformations of a Matrix, System of Equations.
CO2	Compute Eigenvalues and corresponding Eigenvectors of a square matrix, finding Inverse and methods of Diagonalization
CO3	Evaluate the Mean value theorems and maxima and minima of functions of two variables
CO4	Evaluate of improper integrals by using beta, gamma functions and evaluation of double and triple integrals by tracing the region of integration
CO5	Apply Laplace transforms of various functions and solve the initial value problems by using Laplace transforms.

C103	Course Name: Engineering Physics-I
CO	Year of Study: I YEAR I SEM
CO1	Analyze the crystal structures and identify defects in crystals
CO2	Explain the diffraction, interference and polarization phenomenon of light
CO3	Understand the basics of statistical mechanics and applications of LASERs in various fields
CO4	Interpret the significance of Magnetic materials
CO5	Explain fundamentals of Dielectrics and their applications

C104	Course Name: C Programming
CO	Year of Study: I YEAR I SEM
CO1	Explain the basics of computers and its Generations
CO2	Solve problems using flowcharts, algorithms and programs



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

CO3	Develop programs on control structures.
CO4	Develop programs using Arrays, Strings and derived data types
CO5	Design programs on functions

C105	Course Name: Engineering Graphics-I
CO	Year of Study: I YEAR I SEM
CO1	Analyze given solids and represent sectional views, developments and their intersections.
CO2	Represent and differentiate Isometric and Orthographic projections
CO3	Generate isometric and corresponding orthographic views of any given component.
CO4	Visualize and draw the perspective view of a given solid.
CO5	Appreciate the concepts of Computer Aided Drafting.

C106	Course Name: Engineering Mechanics -I
CO	Year of Study: I YEAR I SEM
CO1	Understand and apply the concepts of force, moment and their resolutions.
CO2	Develop free body diagrams in system of forces.
CO3	Analyze and apply the concepts of friction.
CO4	Identify centroid for plane figures and centre of gravity for any given topology.
CO5	Calculate area and mass Moment of Inertia for given cross-sections.

C107	Course Name: C Programming Lab
CO	Year of Study: I YEAR I SEM
CO1	Have Fundamental Concept On Basic Commands In Linux.
CO2	Write, Compile And Debug Programs in C Language
CO3	Formulate Problems and Implement in C Language.
CO4	Choose Control Structures and Arrays to Solve Computing Problems in Real-World
CO5	Implement Functions and Recursion

C108	Course Name: English Language Communication Skills Lab-I
CO	Year of Study: I YEAR I SEM
CO1	Facilitate computer-aided multimedia instruction enabling individualized and independent language learning.
CO2	Improve accent and intelligibility in pronunciation of English through Ice breaking and JAM sessions



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

CO3	Use vocabulary, glosses and pronunciation for appropriate usage of the target language.
CO4	Develop learners' communicative ability through frequent exchange of ideas and discussions.
CO5	Explain the concepts of verbal and non-verbal skills of communication useful in day-to-day life

C109	Course Name: Engineering Physics Lab
CO	Year of Study: I YEAR I SEM
CO1	Understand the practical concept of stationary waves using Meld's apparatus
CO2	Study the mechanical properties of material using Torsional pendulum
CO3	Visualize the fundamental optical phenomenon like Interference, diffraction and Dispersion
CO4	Study the basic Electrical characteristics of LED, RC circuits
CO5	Identify the variation of magnetic field by Stewart and Gee's apparatus experimentally

C110	Course Name: Engineering Workshop
CO	Year of Study: I YEAR I SEM
CO1	Study and practice on workshop tools and their operations.
CO2	Manufacture wooden and metallic components using carpentry and foundry respectively.
CO3	Join two or materials using welding equipment.
CO4	Fabricate ferrous components using blacksmith technique
CO5	Demonstrate skills on plumbing and machine shops trades.

I YEAR II SEM

C131	Course Name: English-II
CO	Year of Study: I YEAR II SEM
CO1	Acquire the real life skills in the light of literature.
CO2	Develop managerial skills for successful careers. By making critical decisions
CO3	Demonstrate physical and mental fitness with true sportsman spirit.
CO4	Build collaborative knowledge and cultivate social responsibility.
CO5	Enhance communication skills through grammar, vocabulary with emphasis on LSRW skills.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C132	Course Name: Mathematics-II
CO	Year of Study: I YEAR II SEM
CO1	Solve first order differential equations and their applications.
CO2	Identify different types of higher order differential equations and their applications in engineering problems
CO3	Apply Fourier series and defining it for various types of functions
CO4	Evaluating the Fourier transforms of functions of single variable
CO5	Justify integrals of functions or vector-related quantities over curves, surfaces, and domains in two- and three-dimensional space.

C133	Course Name: Engineering Physics-II
CO	Year of Study: I YEAR II SEM
CO1	Understand the principles of Quantum mechanics & free electron theory.
CO2	Differentiate the types of solids based on band theory of solids and to understand the applications of optical fibers in various fields.
CO3	Explain the basics of semiconductors and semiconductor devices
CO4	Explain superconductivity and their applications in modern technology
CO5	Identify the importance of Nanomaterial's in various fields

C134	Course Name: Applied Chemistry
CO	Year of Study: I YEAR II SEM
CO1	Understand the operating principles and the reaction mechanisms of batteries and fuel cells.
CO2	Apply their knowledge for the protection of different metals from corrosion.
CO3	Apply the concept of adsorption in various industries
CO4	Apply the knowledge of fuels and lubricants in industry.
CO5	Understand the various applications of advanced engineering materials.

C135	Course Name: Engineering Mechanics-II
CO	Year of Study: I YEAR II SEM
CO1	Analyze given system and find reaction forces in each member of Trusses.
CO2	Identify the rigid body motion to compute velocity and acceleration.
CO3	Understand the kinetics of rigid body in translation and rotation.
CO4	Analyze the motion of bodies with and without considering cause of motion. Appreciate and apply the concept of Work Energy method.
CO5	Analyze the free vibration concepts from the fundamentals of Simple Harmonic Motion.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C136	Course Name: Engineering Graphics-II
CO	Year of Study: I YEAR II SEM
CO1	Analyze given solids and represent sectional views, developments and their intersections.
CO2	Represent and differentiate Isometric and Orthographic projections
CO3	Generate isometric and corresponding orthographic views of any given component.
CO4	Visualize and draw the perspective view of a given solid.
CO5	Appreciate the concepts of Computer Aided Drafting.

C137	Course Name: English Language Communication Skills Lab-II/
CO	Year of Study: I YEAR II SEM
CO1	Build the language proficiency in English with emphasis on LSRW skills.
CO2	Develop communication skills through various language learning activities.
CO3	Summarize the nuances of English speech sounds, stress, rhythm, intonation and syllable division.
CO4	Acquire and exhibit acceptable etiquette essential in social & professional settings.
CO5	Improve the fluency in spoken English and neutralize the mother tongue influence.

C138	Course Name: Engineering Physics /Applied Chemistry Lab
CO	Year of Study: I YEAR II SEM
CO1	Experiment on Melde's and Torsional pendulum with knowledge in waves and mechanics
CO2	Visualize the fundamental optical phenomenon like Interference, diffraction and Dispersion
CO3	Identify the basic Electrical characteristics of LED, RC circuits
CO4	Apply Titrimetric analysis for estimating the quantity of the compound accurately.
CO5	Evaluate and record the physical properties like Viscosity and Surface tension



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C139	Course Name: IT & Engineering Workshop
CO	Year of Study: I YEAR II SEM
CO1	Understand the process of assembly/disassembly of computer parts.
CO2	Work on advanced concepts of Microsoft word software.
CO3	Appreciate the usage of advanced options in MS Excel and PowerPoint.
CO4	Apply basic electrical engineering knowledge for house wiring practice.
CO5	Fabricate components using tin smithy and fitting.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B TECH - II YEAR I SEM

C201	Course Name: Numerical Methods
CO	Year of Study: II YEAR I SEM
CO1	Develop skills in solving engineering problems involving Algebraic and transcendental equations.
CO2	Acquires the knowledge of interpolation in predicting future outcomes based on the present knowledge
CO3	Evaluating the Numerical Solutions for Integrals and Fitting of different types of curves to the given data
CO4	Understand the various Numerical Methods to solve Initial Value Problems.
CO5	To solve the initial and boundary value problems of differential equations which are essential in engineering applications.

C202	Course Name: Engineering Geology
CO	Year of Study: II YEAR I SEM
CO1	Classify and compare different rocks and minerals across the construction site.
CO2	Identify and build the knowledge on main and most common igneous, sedimentary and metamorphic rocks encountered by foundations and sites.
CO3	Define And Interpret The Geological Structures In The Geological Maps And Cross Sections
CO4	Understand the importance of graphical studies and various geophysical methods.
CO5	Illustrate the factors which affect the dams, reservoirs and tunnels.

C203	Course Name: Strength Of Materials I
CO	Year of Study: II YEAR I SEM
CO1	Examine stress – strain, elastic constants and strain energy.
CO2	Analyse the shear force and bending moment diagrams of beams and relationship between them.
CO3	Evaluate the flexural and shear stresses for various beam cross sections.
CO4	Calculate principal stresses and strains using analytical and graphical solutions for the safety using failure theories.
CO5	Determine the deflections of beams with various loadings using different methods.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C204	Course Name: Surveying
CO	Year of Study: II YEAR I SEM
CO1	Evaluate the basic principles of surveying and its Classification.
CO2	Determine the contour points and their importance in surveying
CO3	Determine various areas and volumes based on regular and irregular boundaries.
CO4	Understand the advancements in surveying.
CO5	Application of Theodolite in surveying and valuation of it with basic surveying

C205	Course Name: Environmental Science
CO	Year of Study: II YEAR I SEM
CO1	Understand the importance of Ecosystem and its Resources.
CO2	Be aware on the Variety of Living organism and the need to conserve them.
CO3	Understand the impacts of Developmental Activities.
CO4	Understand the Environmental Policies, Management Plan and Regulations.
CO5	Sensitize on a Sustainable Future.

C206	Course Name: Fluid Mechanics
CO	Year of Study: II YEAR I SEM
CO1	Understand the Concepts of fluid properties and the relationship between them and to obtain the principles of continuity, momentum, and energy as applied to fluid motions.
CO2	Differentiate various flow lines and to formulate the Continuity equation for One dimensional, Two dimensional and three dimensional flows.
CO3	Formulate the Euler's and Bernoulli's equation with practical applications, to determine the discharge over notches and weirs and to apply the Momentum equation for a pipe bend.
CO4	Evaluate the head losses in pipes, flow between parallel plates and to solve the pipe network problems.
CO5	Demonstrate Boundary layer concepts and to explain the separation of the boundary layer.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C207	Course Name: Survey Lab
CO	Year of Study: II YEAR I SEM
CO1	Survey of an area using chains and tapes.
CO2	Determine the area of land by using a compass
CO3	Determine the area of a given field of plane table
CO4	Functioning of dumpy level and its applications in leveling.
CO5	Determine the contour points and their importance in surveying

C208	Course Name: Engineering Geology Lab
CO	Year of Study: II YEAR I SEM
CO1	To study the physical properties and identification of minerals referred under the theory.
CO2	Describe and identify the rocks referred under the theory.
CO3	Illustrate the Microscopic study of rocks and minerals.
CO4	Interpret and draw the sections for geological maps showing tilted beds, faults, unconformities etc.,
CO5	Solve the simple structural geological problems.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B TECH – II YEAR II SEM

C231	Course Name: Probability & Statistics
CO	Year of Study: II YEAR II SEM
CO1	To differentiate among random variables involved in the probability models which are useful for all branches of engineering
CO2	Derive the relationship among a variety of performance measures using probability distributions
CO3	Acquire elementary knowledge of parametric and non-parametric tests and understand the use of observing state analysis for predicting future conditions
CO4	Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data.
CO5	Apply proper measurement, Indicators and techniques of correlation and Regression analysis.

C232	Course Name: Structural Analysis I
CO	Year of Study: II YEAR II SEM
CO1	Analyze propped cantilever, fixed beams for external loadings and support settlements.
CO2	Understand the concept of Slope deflection, moment distribution method and analysis of continuous beams.
CO3	Calculate the deflection of beams by different methods for determining slope and deflection and understand the concept of three hinged arches
CO4	Analyze the pin-jointed plane frames.
CO5	Draw the influence line diagram for moving loads and calculate critical stress resultants.

C233	Course Name: Strength of Materials II
CO	Year of Study: II YEAR II SEM
CO1	Realize the basic concepts of torsion and locate the bending stress
CO2	Identify the types of columns and calculate the failure load for various end conditions
CO3	Understand the basic concepts of direct and bending stresses and calculate the bending moment
CO4	Differentiate about thin and thick cylinders and calculate the various stresses
CO5	Determine the stresses due to Unsymmetrical bending of beams and locate the shear



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C234	Course Name: Concrete Technology
CO	Year of Study: II YEAR II SEM
CO1	Understanding the properties of cements and admixtures.
CO2	Analyse the properties of aggregates.
CO3	Evaluate the properties of fresh concrete.
CO4	Analyse the behavior of hardened concrete and durability of concrete.
CO5	Design the concrete mix using IS Code and describe the special concretes.

C235	Course Name: Hydraulics & Hydraulic Machinery
CO	Year of Study: II YEAR II SEM
CO1	Explain the concept of different types of flows, designing of most Economical section of open channel & to understand the concept of specific energy
CO2	Demonstrate the concept of dimensional quantities and the application of similitude concepts in designing a model and prototype.
CO3	Understand the concept, working applications of impact of jets with the importance of Constructing velocity triangles.
CO4	Compare the design concept of Pelton, Francis and Kaplan turbines, Centrifugal pumps along with the most economical designs.
CO5	Determine the working mechanism of different types of the pumps with their important characteristic curves

C236	Course Name: Building Materials, Construction and Planning
CO	Year of Study: II YEAR II SEM
CO1	Develop knowledge of material science and behavior of various building materials used in construction.
CO2	Provide procedural knowledge of the simple testing methods of cement, lime and Admixtures.
CO3	List the building components and Importance of building services.
CO4	Classify Masonry and finishing work.
CO5	Applications of Building Bye Laws & formwork.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C237	Course Name: Survey Lab II
CO	Year of Study: II YEAR II SEM
CO1	Evaluate horizontal and vertical angles by different methods using a theodolite
CO2	Assess heights and distances using trigonometric levelling and tachometric survey.
CO3	Develop skills to set out curves.
CO4	Develop skills to setting out works for building & pipe lines.
CO5	Develop skills in using total station.

C238	Course Name: Strength of Material Lab
CO	Year of Study: II YEAR II SEM
CO1	Predict the behavior of materials under impact, hardness, tensile and compressive loads
CO2	Determine elastic constants by flexural and torsion test.
CO3	Determine the spring constants under various loadings.
CO4	Understand the deflection of materials under bending
CO5	Understand basic material properties stress and strain



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B TECH - III YEAR I SEM

C301	Course Name: Managerial Economics and Financial Analysis
CO	Year of Study: III YEAR I SEM
CO1	Describe the economic activities for profit earning and also understand the significance of demand and its forecasting
CO2	Evaluate the production function through the Cobb Douglas Production Function.
CO3	Design and implement different structures of market coverage how price is determined under different market structures.
CO4	Understand the Ratio analysis to give an idea about financial forecasting, financial planning, controlling the business and decision making.
CO5	Describe and demonstrate the concepts of capital budgeting and allocation of the resources through capital budgeting methods

C302	Course Name: Design of Reinforced Concrete Structures
CO	Year of Study: III YEAR I SEM
CO1	Understand the various design concepts and design a beam under flexure and draw the reinforcement details.
CO2	Design the beam under shear and torsion, Calculate the anchorage and development length and check the serviceability requirements for RC structural elements.
CO3	Analyze and solve various RC slabs and draw the reinforcement details
CO4	Classify short, long columns and draw the reinforcement details
CO5	Explore the design concept of footing & staircase.

C303	Course Name: Geo-Technical Engineering
CO	Year of Study: III YEAR I SEM
CO1	Illustrate the soil formation and classification.
CO2	Explain the Hydrostatic effect in soil mass.
CO3	Illustrate the stress distribution mechanism and compaction in soil mass.
CO4	Illustrate the mechanism of consolidation.
CO5	Identify the Shear strength parameters through analytical and experimental approach.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C304	Course Name: Water Resources Engineering –I
CO	Year of Study: III YEAR I SEM
CO1	Describe the components in the hydrologic cycle and all hydrological processes and methods.
CO2	Analyze the flood analysis and its measurement by means of hydrograph.
CO3	Analyze the phenomenon of Ground water occurrence by means of aquifers.
CO4	Assess the methods of irrigation and its quality with help of duty delta relationship.
CO5	Design the canals by using standard theories.

Professional Electives – 1

C305	Course Name: Indeterminate Structural Analysis
CO	Year of Study: III YEAR I SEM
CO1	Apply the methods of slope deflection and moment distribution to carry out the structural analysis of Continuous beams and Portal frames.
CO2	Analyze the continuous beams, portal frames by Kani's method and pin jointed frames by Castiglione's second theorem.
CO3	Evaluate the shear forces and bending moments in Two-Hinged arches and to execute secondary stresses due to rise of temperature and Elastic Shortening of rib.
CO4	Analyze the Multi-storey frames by approximate methods for gravity (vertical) and horizontal loads.
CO5	Understand the concept of Matrix method for the analysis of continuous beams and Pin jointed plane frames.

C306	Course Name: Groundwater Hydrology
CO	Year of Study: III YEAR I SEM
CO1	Understand different types of aquifers and their characteristics
CO2	Analysis the pumping test data for different aquifers
CO3	Distinguish the surface and subsurface investigation methods of ground water.
CO4	Discuss the methods of artificial recharging of ground water.
CO5	Evaluation and control of saline water intrusion.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C307	Course Name: Rock Mechanics
CO	Year of Study: III YEAR I SEM
CO1	Illustrate the physical properties of rocks.
CO2	Explain the elastic behavior of rocks.
CO3	Describe the methods of laboratory testing of rocks.
CO4	Analysis the stress distribution matrix insitu and around the rock opening.
CO5	Apply the basic rock design principles in the tunneling design system.

Open Elective – 1

	Course Name: Remote Sensing & GIS
CO	Open Elective - 1
CO1	Select the type of remote sensing technique / data for required purpose.
CO2	Identify the earth surface features from satellite images.
CO3	Analyze the energy interactions in the atmosphere and earth surface features.
CO4	Prepare thematic maps.
CO5	Interpretations of satellite data for various applications.

	Course Name: Smart City
CO	Open Elective - 1
CO1	Understand the necessity of smart infrastructure and to promote cities that provide quality of life to citizens.
CO2	Explain technology-based solution on smart mobility.
CO3	Illustrate & introduce the smart and sustainable waste and water management for smart cities.
CO4	Evaluate economical models for smart infrastructure solution.
CO5	Create healthy and waste ridden environment.

C315	Course Name: Geotechnical Engineering Laboratory
CO	Year of Study: III YEAR I SEM
CO1	Understand the procedure to classify the coarse grained and fine grained soil.
CO2	Evaluate the index properties of soil.
CO3	Evaluate the engineering properties of soil.
CO4	Apply the concept of MDD and OMC to control compaction in the field.
CO5	Compute the shear strength of cohesive and cohesion less soil.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C316	Course Name: Fluid Mechanics And Hydraulic Machinery Laboratory
CO	Year of Study: III YEAR I SEM
CO1	Examine the calibration of different flow meters.
CO2	Illustrate flow measuring devices used in pipes, channels and Notches.
CO3	Determine major and minor losses in pipes.
CO4	Analyze the energy equation for problems on in pipes flow.
CO5	Examine the performance characteristics of turbines and pumps.
C349	Course Name: PERSONALITY DEVELOPMENT AND BEHAVIORAL SKILLS
CO	At the end of the completion of the course a student is expected-
CO1	Practice optimistic attitude for an efficient, socially viable and multi-faceted personality.
CO2	Demonstrate functions of non-verbal communication in formal context.
CO3	Build effective individual & team dynamics for professional accomplishments.
CO4	Analyze appropriate strategic Interpersonal Skills for productive workplace relationships.
CO5	Correspond in multiple contexts, for varied audiences, across genres and modalities.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B TECH - III YEAR II SEM

C331	Course Name: Environmental Engineering
CO	Year of Study: III YEAR II SEM
CO1	Predict the population forecasting and test the quality of water.
CO2	Design the filter and apply disinfection practices for water treatment.
CO3	Design water distribution system and examine sewage.
CO4	Analysis and design sewerage system.
CO5	Design different units of sewage treatment plant and trickling filters.

C332	Course Name: Steel Structure Design and Drawing
CO	Year of Study: III YEAR II SEM
CO1	Classify the types of connections and specifications as per IS: 800-2007.
CO2	Apply the provisions of IS: 800-2007 to design tension members.
CO3	Analyze and design compression members.
CO4	Illustrate behaviour of beams and design strengths as per IS code.
CO5	Adapt IS code procedures to design welded plate girder.

C333	Course Name: Highway Engineering
CO	Year of Study: III YEAR II SEM
CO1	Summarize the road developments in India from different periods.
CO2	Apply the concept of geometric design in real time engineering.
CO3	Make use of parameters related to traffic studies.
CO4	Design & model the intersections with specific standards.
CO5	Evaluate the different pavement design methods using IRC standards.

C334	Course Name: Foundation Engineering
CO	Year of Study: III YEAR II SEM
CO1	Organize the preparation and Programme of soil investigation.
CO2	Examine the earth pressure theories and stability of retaining walls.
CO3	Evaluate the bearing capacity of soil and allowable settlement.
CO4	Analyse the capacity and settlement of pile foundation.
CO5	Analyse the stability of finite and infinite slopes using various methods.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Professional Electives – 2

C335	Course Name: Ground Improvement Techniques
CO	Year of Study: III YEAR II SEM
CO1	Illustrate the several Ground modification mechanisms
CO2	Illustrate the Ground Improvement Techniques through mechanical approach.
CO3	Identify the different Hydraulic ground improvement techniques through Dewatering techniques.
CO4	Explain the quick settlement techniques through chemical and physical modification.
CO5	Distinguish the inclusion and confinement techniques of ground improvement.

C336	Course Name: Earthquake Engineering
CO	Year of Study: III YEAR II SEM
CO1	Quantify mechanical behaviour of earth's surface, seismic hazards and its effects.
CO2	Identify, formulate and solves engineering problems subjected to dynamic loading conditions.
CO3	Understand the internal parameters of the structures for seismic design source.
CO4	Assess the design component or process to meet desired needs within realistic constraints.
CO5	Analyze and design the members for earthquake resisting parameters.

C337	Course Name: Building, Planning, Design and Drawing
CO	Year of Study: III YEAR II SEM
CO1	Identify various building components, conventional signs and symbols.
CO2	Illustrate the building bye-laws and the principles of planning.
CO3	Understand about the building services and safety.
CO4	Design and Sketch the plans of various types of buildings and detailing of doors, windows, etc.
CO5	Understand the elements of perspective drawing involving simple problems.

Open Elective – 2

	Course Name: Environmental Pollution & Control Methods
CO	Open Elective – 2
CO1	Understanding about the various air pollutants and effect on environment.
CO2	Analyze quality of air in the form of air quality index and dispersion modeling.
CO3	Determine sampling and measurements of air Pollutants.
CO4	Analysis and measurement of soil contamination.
CO5	Predict types of noise and problems arise due to noise pollution.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Geen Building Technologies	
CO	Open Elective – 2
CO1	Understand the Green building concept and focus on approaches that makes building sustainable.
CO2	Illustrate Green building assessment and accreditation system.
CO3	Able to apply low energy building strategies.
CO4	Designing green building and improve sustainability of infrastructure.
CO5	Classify the economic benefits of green buildings.

Course Name: Computer Aided Drafting of Building Lab	
CO	Year of Study: III YEAR II SEM
CO1	Assess the Software with aiding source
CO2	Draft the Plan of a building.
CO3	Draw the sectional and elevation view of the building.
CO4	Develop the components of the building.
CO5	Replicate the detailing of roof trusses and buildings.

Course Name: Advance English Communication Skills Lab	
CO	Year of Study: III YEAR II SEM
CO1	Develop sound communication skills in various situations with the help of (enriched) vocabulary.
CO2	Practice reading techniques for a faster and better comprehension.
CO3	Exhibit strong writing skills to express ideas effectively.
CO4	Demonstrate effective presentation skills.
CO5	Use appropriate verbal and non-verbal skills for a successful career.

Course Name: QUANTITATIVE METHODS & LOGICAL REASONING (QMLR)	
CO	Year of Study: III YEAR II SEM
CO1	To perform well in various competitive exams and placement drives.
CO2	To solve basic and complex mathematical problems in short time.
CO3	To become strong in Quantitative Aptitude and Reasoning which can be applied for GRE, GATE, GMAT or CAT exam also
CO4	To develop problem solving skills and analytical abilities, which play a great role in corporate and industry set up.
CO5	To perform well in various competitive exams and placement drives.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B.Tech IV YEAR I SEM

C401	Course Name: Estimating & Costing
CO	Year Of Study : IV YEAR I SEM
CO1	Summarize the basic principal and standard methods for working out quantities in estimating.
CO2	Determine the earthwork estimate of buildings, roads and canals.
CO3	Estimate the rate analysis of the various items of work.
CO4	Understand the process of contracting for roads and buildings.
CO5	Evaluate the valuation of buildings and provide practical knowledge of standard specifications of items of building construction.

C402	Course Name: Water Resources Engineering-II
CO	Year Of Study : IV YEAR I SEM
CO1	Estimate the capacity of reservoir, life of the reservoir and selection of type of dam along with its site.
CO2	Determine the forces on Gravity dam, practical profile, and limiting the height of Gravity dam with galleries.
CO3	Design the Earthen dam and spillways along with measures to control seepage through hydraulic structures.
CO4	Design the Diversion head work and its components along with weir, barrage, silt exclude and silt ejector.
CO5	Design the Canal falls and other regulatory works along with cross drainage work at required site.

C403	Course Name: Railways, Airports and Harbours Engineering
CO	Year Of Study : IV YEAR I SEM
CO1	Define and understand the various components of railways.
CO2	Understand and solve the geometric elements needed for the design of permanent way.
CO3	Define, understand, and design the various components of the airport.
CO4	Define, understand the planning and requirements of a harbor.
CO5	Improve and Visualize the working of intelligent transportation system.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C404	Course Name: Finite Element Methods
CO	Year Of Study : IV YEAR I SEM
CO1	Explain plane stress-plane strain equations and develop displacement functions.
CO2	Analyze one-dimensional problems using stiffness matrix.
CO3	Examine the different elements based on continuity and compatibility.
CO4	Illustrate quadrilateral elements using nodal points and shape functions.
CO5	Determine displacements, strains and stresses for static loads.

C405	Course Name: Advanced Foundation Engineering
CO	Year Of Study : IV YEAR I SEM
CO1	Identify the suitable bearing capacities theories for different foundation analysis.
CO2	Analyze the design of pile foundation.
CO3	Evaluate the of pressure theories in foundation design.
CO4	Analyze and design to sheet pile and cofferdam.
CO5	Examine and discuss the various expansive soil problems.

C406	Course Name: Solid Waste Management
CO	Year Of Study : IV YEAR I SEM
CO1	Illustrate the hierarchical structure in solid waste management and a requirement for an integrated solution.
CO2	Apply the legal legislation related to solid waste management and make an economical analysis of the solid waste management system.
CO3	Identity route optimization for a solid waste collection and transport system.
CO4	Evaluate the subject from the technical, legal and economical points by learning of all terms related to general solid waste management.
CO5	Plan site selection for a landfill.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C407	Course Name: Remote Sensing & GIS
CO	Year Of Study : IV YEAR I SEM
CO1	Understand the concepts of Photogrammetry and compute the heights of the objects using parallax.
CO2	Understand the principles of aerial Photogrammetry and remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies.
CO3	Analyze the basic concept of GIS and its applications, able to work with GIS software in various application fields.
CO4	Illustrate spatial and non-spatial data features in GIS and understand the map projections and coordinate systems.
CO5	Understand the application of vector and raster data structure to the real world, the importance of source map and learning the on-screen digitization.

C408	Course Name: Advanced Structural Design
CO	Year Of Study : IV YEAR I SEM
CO1	Analyze and design of cantilever retaining wall.
CO2	Apply the provision of IS :3370-2009 to design water tank.
CO3	Apply the provision of IS 456-2000 for designing flat slab.
CO4	Adapt the provision of IRC 21-1987 to class AA loading to design T beam girder.
CO5	Summarize the force components and design principles of RCC Chimney.

C409	Course Name: Air Pollution and Control Methods
CO	Year Of Study : IV YEAR I SEM
CO1	Find the sources, causes & effects of air pollution.
CO2	Understand the meteorological components and the plume behavior for atmospheric stability conditions.
CO3	Identify the types of equipment's to control the particulates at sources.
CO4	Minimize the control measures of NOX, SOX and other gaseous emissions.
CO5	Examine the SPM, SO _x , NO _x and CO emission standards.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

C410	Course Name: Water Resources Systems Analysis
CO	Year Of Study : IV YEAR I SEM
CO1	Understand the concept of water resource systems and techniques involved in it.
CO2	Formulate the linear programming models and examine their application in water resource.
CO3	Measure the sensitivity of formulated models and revised simplex techniques.
CO4	Apply the dynamic programming for resource allocation.
CO5	Analyze various factors involved in water resource economics and compare the alternate principles of economics for analysis.

C411	Course Name: Industrial Waste Water Treatment
CO	Year Of Study : IV YEAR I SEM
CO1	Define the Physical, chemical, organic and biological properties of industrial wastes.
CO2	Illustrate the Pre and primary treatment methods of wastewater.
CO3	Explain the various methods for „Oil separation by floatation“ while wastewater treatment process.
CO4	Distinguish the different types of Industrial Wastes.
CO5	Summarize the Common effluent treatment plant's location, design, and operation and maintenance problems.

	Course Name: Elements of Civil Engineering
CO	Open Elective - 3
CO1	Understand Geological properties and Geotechnical aspect of civil engineering.
CO2	Plan the concept of different building byelaws and planning principles.
CO3	Analyse the concept of stress-strain and to identify the properties of the fluid changes treatment process.
CO4	Apply modern tools of surveying and understand basic concepts of concrete.
CO5	Evaluate the principles of highway geometric designs and types of pavements as per IRC standards.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Introduction to Earthquake Engineering	
CO	Open Elective -3
CO1	Understand the Interior Earth' surface, fault attenuation, different wave propagation in Earthquake events.
CO2	Classify different earthquake hazards and its effects.
CO3	Examine the mechanical behavior of earth surface and its significance.
CO4	Evaluate the quantification of Hazard effects - approach methods.
CO5	Predict the vibration motion and how it influences the earth's surface.

C419	Course Name: Concrete & Highway Materials Lab
CO	Year Of Study : IV YEAR I SEM
CO1	Examine the experimental strength of aggregate materials as per codal provisions.
CO2	Illustrate the stability & properties of bituminous materials & mixes by conducting tests.
CO3	Determine the properties of cement by conducting the test.
CO4	Define the workability of fresh concrete by conducting tests.
CO5	Estimate the strength of hardened concrete by conducting destructive and nondestructive testing.

C420	Course Name: Environmental Engineering Lab
CO	Year Of Study : IV YEAR I SEM
CO1	Summarize the solutions using titration, conductivity meter, pH meter, turbidity meter, alkalinity and acidity.
CO2	Estimate the chloride, nitrate, iron content and dissolved oxygen demand in waste water sample.
CO3	Determine the optimum dose of coagulant.
CO4	Determine the chlorine demand of water sample.
CO5	Determine the bacterial presence and oxygen demand in waste water.

C421	Course Name: Industry Oriented Mini Project
CO	Year Of Study : IV YEAR I SEM
CO1	Interpret the literature and develop solutions for framing problem statement.
CO2	Select software techniques for identifying problems.
CO3	Analysis and test the modules of planned project.
CO4	Design technical report and deliver presentations.
CO5	Apply engineering and management principles to achieve project goals.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

IV YEAR II SEM

C431	Course Name: Construction Management
CO	Year Of Study : IV YEAR II SEM
CO1	Understand the behavioral aspect of entrepreneurs, various approaches of time management, their strength and weakness.
CO2	Apply the concepts of project management during the construction phase, project organization, project planning and control using CPM, PERT techniques.
CO3	Analysis various materials and equipment's for construction work.
CO4	Examine the on different types of contracts and specifications.
CO5	Outline the Labour regulations and safety in construction.

C432	Course Name: Rehabilitation and Retrofitting of Structures
CO	Year Of Study : IV YEAR II SEM
CO1	Understand the causes and prevention of deterioration in structures.
CO2	Identify the types of damages and the mechanisms of corrosion in steel reinforcement and fire induced damages.
CO3	Examine to inspect and assess the structures using techniques of visual inspection and NDT.
CO4	Estimate the structural damage and recommend suitable repair and strengthening methods.
CO5	Apply the latest health monitoring and building instrumentation methods.

C433	Course Name: Pre-stressed Concrete Structures
CO	Year Of Study : IV YEAR II SEM
CO1	Classify the concepts, principles, types and methods of PSC structures.
CO2	Evaluate the losses of PSC structures.
CO3	Analysis and design of PSC slabs and beams using IS:1343 (2012).
CO4	Explain transmission of prestressing force, end block analysis by different methods.
CO5	Analyse the stress distribution of composite beams and asses the deflection of beams.

C434	Course Name: Technical Seminar
CO	Year Of Study : IV YEAR II SEM
CO1	Demonstrate the skills in identifying, analyzing, and presenting a research topic.
CO2	Demonstrate the quality of knowledge gained from the literature survey on recent technologies.
CO3	Demonstrate the skills developed to communicate effectively on engineering activities with the engineering community.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

CO4	Demonstrate ability to effectively manage time in presentation skills.
CO5	Design a technical report with the principal of ethics.

C435	Course Name: Major Project
CO	Year Of Study : IV YEAR II SEM
CO1	Identify, Analyse and apply suitable current techniques and tools to solve a problem in the civil engineering domain and societal issues.
CO2	Function effectively in teams to accomplish a common goal.
CO3	Organize the technical report writing and communication effectively.
CO4	Extend in lifelong activity.
CO5	Define and analyze a problem to assess health, safety and legal issues.

C436	Course Name: Comprehensive Viva Voce
CO	Year of Study: IV YEAR II SEM
CO1	Explain comprehensively to answer questions from all the courses.
CO2	Test Oral Presentation skills by answering questions in a precise and concise manner
CO3	Build confidence and interpersonal skills
CO4	Support the students to face interview both in the academic and the industrial sector
CO5	Improve placements and better performers in their future.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

MC	Course Name: DISASTER MANAGEMENT
CO	Year of Study: II YEAR
CO1	Develop an understanding of the key concepts, definitions a key perspectives of all Hazards Emergency Management
CO2	Understand the Emergency/Disaster Management Cycle
CO3	Have a basic understanding for the history of Emergency Management
CO4	Develop a basic under understanding of Prevention, Mitigation, Preparedness, Response and Recovery
CO5	Develop a basic understanding for the role of public and private partnerships

MC	Course Name: INTELLECTUAL PROPERTY RIGHTS AND CYBER LAWS
CO	Year of Study: II YEAR
CO1	Define various terms related to Intellectual Property Rights.
CO2	Understand the process of patent, copyrights and related procedures.
CO3	Analyze the situation of IPR in the Indian context with that of global scenario.
CO4	Understand the patenting process through various case studies.

MC	Course Name: PROFESSIONAL COMMUNICATION
CO	Year of Study: II YEAR
CO1	Speak and write appropriate English
CO2	Acquire enhanced personality
CO3	Exhibit appropriate professional etiquette
CO4	Develop problem solving skills and decision-making
CO5	Demonstrate effective presentation skills

MC	Course Name: PROFESSIONAL ETHICS, HUMAN VALUES AND SELF DEVELOPMENT
CO	Year of Study: II YEAR
CO1	Cultivate the habit of Introspection; Inspirations from within and outside and journal Writing to become Successful Engineers with hopes of a better human being
CO2	Ethical Responsibilities of Engineers while - dealing with the issues.
CO3	To maintain work life –balance and societal well being
CO4	Develop Right thinking and understanding



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech II year I Sem

Course Name: Numerical Methods

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3				1	1	1		1	2	2
CO2	3	3	3	3	2			1	2	1		1	2	2
CO3	3	3	3	3		2		1	2	1		1	2	2
CO4	3	3	3	3	1			1	1	1		1	2	2
CO5	3	3	3	3				1	1	1		1	2	2
AVG	3.00	3.00	3.00	3.00	1.50	2.00		1.00	1.40	1.00		1.00	2.00	2.00

Course Name: Engineering Geology

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	3	2	2	2	3	2	2	2	2
CO2	3	3	3	2	2	3	2	2	2	3	2	2	2	2
CO3	3	3	3	3	3	3	3	2	2	2	3	3	2	2
CO4	3	3	3	3	3	3	3	2	2	2	3	3	2	2
CO5	3	3	3	3	3	3	3	3	2	2	3	3	2	2
AVG	3.00	3.00	3.00	2.80	2.60	3.00	2.60	2.20	2.00	2.40	2.60	2.60	2.00	2.00

Course Name: Strength of Materials - I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3		1	1	1	1	2	2	3	3
CO2	3	3	3	3	3	2		1	1	1	2	2	3	3
CO3	3	3	3	3	3			1	1	1	2	2	3	3
CO4	3	3	3	3	3	2		1	1	1	2	2	2	3
CO5	3	3	3	3	3	1	2	1	1	1	2	2	2	2
AVG	3.00	3.00	3.00	3.00	3.00	1.67	1.50	1.00	1.00	1.00	2.00	2.00	2.60	2.80

Course Name: Surveying

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO3	3	3	3	3	3	2	2	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AVG	3.00	3.00	3.00	3.00	3.00	2.80	2.80	3.00	3.00	3.00	3.00	3.00	2.80	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech II year II Sem

Course Name: Probability and Statistics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	1	1	1	1	2	1	2	3	2	2
CO2	3	3	2	2	1	1	1	1	2	1	2	3	2	2
CO3	3	3	3	2	1	1	2	1	1	2	3	2	2	2
CO4	3	3	3	2	3	1	1	1	2	3	2	2	2	1
CO5	3	3	3	2		1	2	1	1	2	2	2	2	3
AVG	3.00	3.00	2.60	2.00	1.50	1.00	1.40	1.00	1.60	1.80	2.20	2.40	2.00	2.00

Course Name: Structural Analysis - I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	2	2	3	1	1	2	3	3
CO2	3	3	3	3	3	2	2	2	3	1	2	2	3	3
CO3	3	3	3	3	3	2	2	2	3	1	1	2	3	3
CO4	3	3	3	3	3	2	2	2	3	1	2	2	3	3
CO5	3	3	3	3	3	2	2	2	3	1	1	1	3	3
AVG	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00	1.00	1.40	1.80	3.00	3.00

Course Name: Strength of Materials - II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3		1	1	1	1	2	2	3	3
CO2	3	3	3	3	3	2		1	1	1	2	2	3	3
CO3	3	3	3	3	3			1	1	1	2	2	3	3
CO4	3	3	3	3	3	2		1	1	1	2	2	3	3
CO5	3	3	3	3	3	1	2	1	1	1	2	2	3	2
AVG	3.00	3.00	3.00	3.00	3.00	1.67	1.50	1.00	1.00	1.00	2.00	2.00	3.00	2.80

Course Name: Concrete Technology

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	2	2	1	1	3	3	2
CO2	3	3	3	2	3	1	2	1	1	1	2	2	2	3
CO3	3	3	3	2	3	1	2	1	2	1	2	2	2	3
CO4	3	3	3	2	3	1	2	1	2	1	2	2	2	3
CO5	3	3	3	2	3	1	2	1	1	1	1	2	2	3
AVG	3.00	3.00	3.00	2.20	2.80	1.20	2.00	1.20	1.60	1.00	1.60	2.20	2.20	2.80



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Hydraulics & Hydraulic Machinery

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3			2	3	1	2	2	2	2
CO2	3	3	3	3	3			2	3	1	2	2	3	3
CO3	3	3	3	3	3			2	3	1	2	2	3	3
CO4	3	3	3	3	3	1	3	2	3	1	2	2	2	2
CO5	3	3	3	3	3	1		2	3	1	2	2	2	2
AVG	3.00	3.00	3.00	3.00	3.00	1.00	3.00	2.00	3.00	1.00	2.00	2.00	2.40	2.40

Course Name: Building Materials, Construction and Planning

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AVG	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Course Name: Survey Lab II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO2	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO3	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO4	3	3	3	3	3	3	2	3	3	3	3	2	3	3
CO5	3	3	3	3	3	3	2	3	3	3	3	2	3	3
AVG	3.00	3.00	3.00	3.00	3.00	3.00	2.00	3.00	3.00	3.00	3.00	2.00	3.00	3.00

Course Name: Strength of Materials Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	3	3	3	3	1	1	1	2	3	3
CO2	3	3	3	3	3	3	3	3	1	1	1	3	3	3
CO3	3	3	3	3	2	3	2	3	2	2	2	2	3	3
CO4	3	3	3	2	3	3	2	3	2	1	2	3	3	3
CO5	3	3	3	3	3	3	3	3	1	2	2	2	3	3
AVG	3.00	3.00	3.00	2.60	2.80	3.00	2.60	3.00	1.40	1.40	1.60	2.40	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech III year I Sem

Course Name: Managerial Economics and Financial Analysis

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	1	1		1		1	1	1	1	
CO2	2	2	2	2	1	1		1		1	1	1		
CO3	2	2	2	2	1	1		1		1	2	1	1	1
CO4	2	2	2	2	1	1		1		1	1	1	1	1
CO5	2	2	2	2	1	1		1		1	1	1		
AVG	2.00	2.00	2.00	2.00	1.00	1.00		1.00		1.00	1.20	1.00	1.00	1.00

Course Name: Design of Reinforced Concrete Structures

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	2	2	2	2	2	3	3
CO2	3	3	3	3	2	2	2	2	2	2	2	2	3	3
CO3	3	3	3	3	2	2	2	2	2	2	2	2	3	3
CO4	3	3	3	3	2	2	2	2	2	2	2	2	2	3
CO5	3	3	3	3	2	2	2	2	2	2	2	2	3	3
AVG	3.00	3.00	3.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.80	3.00

Course Name: Geotechnical Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	1	2	1		2	2	2	3	3
CO2	3	3	1	2	2	1	2	1		2	2	1	2	3
CO3	3	3	3	3	2	2	1	1	1	1	2	1	2	2
CO4	3	3	3	3	2	1	2	1		2	2	2	2	2
CO5	3	3	3	3	2	3	2	1	2	2	3	2	3	3
AVG	3.00	3.00	2.60	2.60	2.00	1.60	1.80	1.00	1.50	1.80	2.20	1.60	2.40	2.60

Course Name: Water Resources Engineering -I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	2	2	2	1	1	1	1	1	2	2
CO2	3	3	3	3	3	1	2	2	2	2	1	2	3	3
CO3	3	3	3	3	2	1	1	1	1	2	1	1	3	3
CO4	3	3	3	3	2	2	2	2	1	2	1	1	3	3
CO5	3	3	3	3	3	2	2	2	1	2	2	2	3	3
AVG	3.00	3.00	2.80	2.80	2.40	1.60	1.80	1.60	1.20	1.80	1.20	1.40	2.80	2.80



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Indeterminate Structural Analysis (PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	2	2	3	1	1	1	3	3
CO2	3	3	3	3	3	2	2	2	3	1	1	1	3	3
CO3	3	3	3	3	3	2	2	2	3	1	1	1	3	3
CO4	3	3	3	3	3	2	2	2	3	1	1	1	3	3
CO5	3	3	3	3	3	2	2	2	3	1	1	1	3	3
AVG	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00	1.00	1.00	1.00	3.00	3.00

Course Name: Groundwater Hydrology (PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	3	2	1	2	1	1	2	1	2	2	2
CO2	3	3	3	3	3	1	2	1	2	2	2	1	2	2
CO3	3	3	3	3	2	1	2	1	3	1	1	1	2	2
CO4	3	3	3	3	2	1	2	2	3	1	1	1	2	2
CO5	3	3	3	3	3	1	2	1	3	1	1	1	2	3
AVG	3.00	3.00	2.60	3.00	2.40	1.00	2.00	1.20	2.40	1.40	1.20	1.20	2.00	2.20

Course Name: Rock Mechanics (PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2	2	1	2	1	2	2	2	1	2	2
CO2	3	3	2	2	2	2	2	1	2	2	2	1	2	3
CO3	3	3	3	3	3	1	2	1	3	1	1	1	3	2
CO4	3	3	3	3	3	1	2	2	3	1	1	1	2	3
CO5	3	3	3	3	3	1	2	1	3	1	1	1	3	3
AVG	3.00	3.00	2.75	2.60	2.60	1.20	2.00	1.20	2.60	1.40	1.40	1.00	2.40	2.60

Course Name: Remote Sensing & GIS (OE 1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3		3	2	3	2		2	2		2	2	3
CO2	3	1		2	2		3		1			2	3	2
CO3	3	2	2	1	2		2			3		2	1	2
CO4	1	3	3	2	3	2	2		2	2	2	3	1	2
CO5	2	2		3	2	2	2		1			2	2	1
AVG	2.3	2.2	2.5	2.2	2.2	2.3	2.2		1.5	2.3	2.0	2.2	1.8	2



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Smart City (OE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1		1	2	2	2	1		2	3	3
CO2	3	3	3	2	3	2	2	1	2	2	1	2	2	3
CO3	2	2	3	3	3	3	3	2	3	1		3	1	1
CO4	2	2	1	2	2	1	3	2	1	1		2	1	1
CO5	1	2	1			1	1		2	1	2		1	2
AVG	2.2	2.2	1.8	2.0	2.7	1.6	2.2	1.8	2.0	1.2	1.5	2.3	1.6	2

Course Name: Geotechnical Engineering Laboratory

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	2	3	3	3	2	3	3	3
CO2	3	3	3	3	3	2	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	2	3	3	3	3	3	3	2	2
CO4	3	3	3	3	3	2	3	3	3	3	3	3	2	3
CO5	3	3	3	3	3	2	3	3	3	3	3	3	3	2
AVG	3.00	3.00	3.00	3.00	3.00	2.00	2.80	3.00	3.00	3.00	2.80	3.00	2.60	2.60

Course Name: Fluid Mechanics and Hydraulic Machinery laboratory

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3	2	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	2	3
AVG	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	2.40	3.00

Course Name: Personality Development and Behavior Skills (PDBS)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1								2	3	3	2	2	1	
CO2								2	3	3	2	2	1	
CO3								2	3	3	2	2	1	1
CO4								2	3	3	2	2	1	1
CO5								2	3	3	2	2	1	
AVG								2.00	3.00	3.00	2.00	2.00	1.00	1.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech III year II Sem

Course Name: Environmental Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	3	1	1	1	1	1	3	3
CO2	3	3	3	3	3	2	3	1	1	1	1	1	1	3
CO3	3	3	3	3	3	2	3	1	1	1	1	1	2	2
CO4	3	3	3	3	3	2	3	1	1	1	1	1	2	3
CO5	3	3	3	3	3	2	3	1	1	1	1	1	2	2
AVG	3.00	3.00	3.00	3.00	3.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	2.00	2.60

Course Name: Steel Structure Design and Drawing

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	3	2	2	3	3	3	3
CO2	3	3	3	3	2	3	2	3	2	2	3	3	3	3
CO3	3	3	3	3	2	3	3	3	2	2	2	3	3	3
CO4	3	3	3	2	2	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	2	2	2	2	2	2	2	3	3	3
AVG	3.00	3.00	3.00	2.80	2.00	2.60	2.40	2.80	2.20	2.20	2.60	3.00	3.00	3.00

Course Name: Highway Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	3	1	1	1	3	3	3	1	2
CO2	3	3	3	2	2	2	1	1	3	2	3	2	1	2
CO3	3	3	3	3	2	2	1	1	3	2	2	2	1	2
CO4	3	3	3	3	2	2	1	1	3	2	2	2	2	2
CO5	3	2	1	3	1	1	2	2	2	2	2	2	2	2
AVG	3.00	2.80	2.60	2.60	1.80	2.00	1.20	1.20	2.40	2.20	2.40	2.20	1.40	2.00

Course Name: Foundation Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	1	1	1	2	1	1	2	1	3	3
CO2	3	3	3	3	2	1	2	2	1		1	1	3	2
CO3	3	3	3	3	2	2	2	1	1		1	1	3	2
CO4	3	3	3	3	3	3	2	1	1	1	2	1	3	2
CO5	3	3	3	3	2	2	1	2	1	1	3	1	3	2
AVG	3.00	3.00	3.00	3.00	2.00	1.80	1.60	1.60	1.00	1.00	1.80	1.00	3.00	2.20



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Ground improvement Techniques (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2		1	2	1				1	2	2
CO2	2	2	2	2	3	1	1	1	1		1	1	2	2
CO3	2	2	2	2	2		1	1				1	2	2
CO4	2	2	2	2	2	1	1	1				1	2	2
CO5	2	2	2	2		1	1	1				1	2	2
AVG	2.00	2.00	2.00	2.00	2.33	1.00	1.20	1.00	1.00		1.00	1.00	2.00	2.00

Course Name: Earthquake Engineering (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	1	1	1	1	2	3	3
CO2	3	3	3	3	2	2	2	1	1	1	1	2	3	3
CO3	3	3	3	3	2	2	2	1		1	1	2	3	3
CO4	3	3	3	3	2	2	2	1	1	1	1	2	3	3
CO5	3	3	3	3	2	2	3	1	1	1	1	2	3	2
AVG	3.00	3.00	3.00	3.00	2.00	2.00	2.20	1.00	1.00	1.00	1.00	2.00	3.00	2.80

Course Name: Building, Planning, Design and Drawing (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	2	2	3	2	2	3	3	3	2
CO2	3	3	3	3	3	3	2	3	2	2	3	3	3	3
CO3	3	3	3	3	3	3	2	3	2	2	3	3	3	3
CO4	3	3	3	3	3	3	2	3	2	2	3	2	3	2
CO5	3	3	3	3	3	3	2	3	2	2	3	2	3	2
AVG	3.00	3.00	3.00	2.80	2.80	2.80	2.00	3.00	2.00	2.00	3.00	2.60	3.00	2.40

Course Name: Environmental Pollution & Control Methods (OE-2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3				2	2	1		1		1		2
CO2	2		1	2	2	1	1	1		1		1		3
CO3	1	2	3	1		1	1			1				2
CO4	2	1				1	1		1					1
CO5	1		1			1	1	1		1		1		2
AVG	1.8	2.0	1.7	1.5	2.0	1.2	1.2	1.0	1.0	1.0		1.0		2.0



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Green Building Technologies (OE-2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	1			2	3	2	3	1		1	1	2
CO2	1		1	1	1	2	3	1	2	1	1	1	1	2
CO3	3	2	3	2	3	3	3	2	3	1	2	2	2	3
CO4	3	3	2	3	2	2	3	2	1		1	2	2	2
CO5	2	1				2	2	1	2		2	1		
AVG	2.2	2.0	1.8	2.0	2.0	2.2	2.8	1.6	2.2	1.0	1.5	1.4	1.5	2.25

Course Name: Computer Aided Drafting of Building Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	3	2	3	3	3	3	3	3	3
CO2	3	3	3	2	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	2
CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AVG	3.00	3.00	3.00	2.60	2.80	3.00	2.80	3.00	3.00	3.00	3.00	3.00	3.00	2.80

Course Name: Advance English Communication Skills Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1										3		3	1	
CO2										3		3		
CO3										3		3		
CO4									2	3		3		1
CO5									2	3		3		
AVG									2.00	3.00		3.00	1.00	1.00

Course Name: Quantitative Methods and Logical Reasoning (QMLR)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	1	1		2	3	1	2	1	2	1
CO2	3	2	2	1	1	1		2	3	1	2	1	2	1
CO3	3	2	2	2	1	1		2	3	1	2	2	3	2
CO4	3	2	2	2	1	1		2	3	1	2	1	2	1
CO5	3	2	2	1	1	1		2	3	1	2	1	2	1
AVG	3.00	2.00	1.80	1.40	1.00	1.00		2.00	3.00	1.00	2.00	1.20	2.20	1.20



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech IV year I Sem

Course Name: Estimating & Costing

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2		3	3	3	2		3	3
CO2	3	3	3	3	2	2		3	3	3	2		3	3
CO3	3	3	3	3	2	2		3	3	3	2	1	2	2
CO4	3	3	3	3	2	2		3	3	3	2	1	3	2
CO5	3	3	3	3	2	2		3	3	3	2	1	3	3
AVG	3.00	3.00	3.00	3.00	2.00	2.00		3.00	3.00	3.00	2.00	1.00	2.80	2.60

Course Name: Water Resources Engineering-II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	1	1	1	1	1	2	2
CO2	3	3	3	3	3	1	2	2	2	2	1	2	2	2
CO3	3	3	3	3	2	1	1	1	1	2	1	1	2	2
CO4	3	3	3	3	2	2	2	2	1	2	1	1	2	2
CO5	3	3	3	3	3	2	2	2	1	2	2	2	2	1
AVG	3.00	3.00	3.00	3.00	2.40	1.60	1.80	1.60	1.20	1.80	1.20	1.40	2.00	1.80

Course Name: Railways, Airports and Harbors Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	1	1	1	1	1		1	1	1
CO2	3	3	3	3	2	1	1	1	1	1		1	2	2
CO3	3	3	3	3	2	1	1	1	1	1		1	1	1
CO4	3	3	3	3	2	1	1	1	1	1		1	1	1
CO5	3	3	3	3	2	1	1	1	1	1		1	2	3
AVG	3.00	3.00	3.00	3.00	2.00	1.00	1.00	1.00	1.00	1.00		1.00	1.40	1.60

Course Name: Finite Element Methods (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	1	2	2	2	1	1		2	3	3
CO2	3	3	3	3	3	1		1		2		2	3	3
CO3	3	3	3	3	2	1		1		3		3	2	3
CO4	3	3	3	3	2	1		1		3		3	2	3
CO5	3	3	3	3	3	2	1	2	1	1		2	3	3
AVG	3.00	3.00	3.00	3.00	2.20	1.40	1.50	1.40	1.00	2.00		2.40	2.60	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Advanced Foundation Engineering (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2		3	3	3	2		3	3
CO2	3	3	3	3	2	2		3	3	3	2		3	3
CO3	3	3	3	3	2	2		3	3	3	2	1	2	2
CO4	3	3	3	3	2	2		3	3	3	2	1	3	2
CO5	3	3	3	3	2	2		3	3	3	2	1	3	3
AVG	3.00	3.00	3.00	3.00	2.00	2.00		3.00	3.00	3.00	2.00	1.00	2.80	2.60

Course Name: Solid Waste management (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2		3	3	3	2	3	2	2	2	2
CO2	2	2	2	2		3	3	3	2	3	2	2	2	2
CO3	2	2	2	2	1	3	3	3	2	3	2	2	2	2
CO4	2	2	2	2	1	3	3	3	2	3	2	2	2	3
CO5	2	2	2	2		3	3	3	2	3	2	2	2	2
AVG	2.00	2.00	2.00	2.00	1.00	3.00	3.00	3.00	2.00	3.00	2.00	2.00	2.00	2.20

Course Name: Remote Sensing & GIS (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	1	3	2	2	3	1	2			2	2	2
CO2	3	2	3	3	2	2	3	1	2	2		2	2	2
CO3	3	3	2	3	3	2	3	1	1	2	2	2	2	2
CO4	2	2	2	3	3	2	3	1	2	1	2	2	2	2
CO5	3	3	2	2	2	3	2	1	2		2	2	2	2
AVG	2.60	2.60	2.00	2.80	2.40	2.20	2.80	1.00	1.80	1.67	2.00	2.00	2.00	2.00

Course Name: Advanced Structural Design (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	2	2	2	3	1	2	3	3
CO2	3	3	3	3	3	3	2	2	2	3	1	3	3	3
CO3	3	3	3	3	3	3	2	2	2	3	1	2	3	3
CO4	3	3	3	3	3	2	3	2	2	3	1	3	3	3
CO5	3	3	3	3	3	2	2	2	2	3	1	3	3	3
AVG	3.00	3.00	3.00	3.00	3.00	2.40	2.20	2.00	2.00	3.00	1.00	2.60	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Air Pollution and Control methods (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	1		3	3	3	2	2	1	2	2	2
CO2	2	2	2	2	2	3	3	2	3	2	2	2	2	3
CO3	3	3	3	2	3	3	3	1	2	1	2	2	2	2
CO4	3	2	1	2	2	2	3	3	1	2	1	2	2	3
CO5	3	2	1	2	1	2	3	1	1	2	1	2	2	3
AVG	2.80	2.40	1.60	1.80	2.00	2.60	3.00	2.00	1.80	1.80	1.40	2.00	2.00	2.60

Course Name: Water Resources Systems Analysis (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	1	3	1	2	2		1	1	1	2	2
CO2	3	3	3	1	2		1	2		2		2	2	2
CO3	3	3	3	1	2		1	2		1	1	1	1	2
CO4	3	3	3	2	2	1		2		1		1	1	2
CO5	3	3	3	3	1	1	1	2	1		2	1	2	2
AVG	3.00	3.00	3.00	1.60	2.00	1.00	1.25	2.00	1.00	1.25	1.33	1.20	1.60	2.00

Course Name: Industrial Waste Water Treatment (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2		3	3	3	2	3	2	2	2	2
CO2	2	2	2	2		3	3	3	2	3	2	2	2	2
CO3	2	2	2	2	1	3	3	3	2	3	2	2	2	2
CO4	2	2	2	2	1	3	3	3	2	3	2	2	2	2
CO5	2	2	2	2		3	3	3	2	3	2	2	2	2
AVG	2.00	2.00	2.00	2.00	1.00	3.00	3.00	3.00	2.00	3.00	2.00	2.00	2.00	2.00

Course Name: Elements of Civil Engineering (OE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	1	2	1	1	1	1	3	3	3	3	2	2
CO2	1	3	3		3	2	3	1	2	2	3	3	2	2
CO3	1					2						3	1	2
CO4	1		2				2	1			3	3	1	1
CO5	1					1					1	1	2	1
AVG	1	2	2	2	2	2	2	1	2.5	2.5	2.5	2.6	1.6	1.6



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

B. Tech IV year II Sem

Course Name: Construction Management

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	1	2	2	3	3	3	3	2	3	3
CO2	2	2	2	2	1	2	2	3	3	3	3	2	3	3
CO3	2	2	2	2	1	2	2	3	3	3	3	2	3	3
CO4	2	2	2	2	1	2	2	3	3	3	3	2	3	3
CO5	2	2	2	2	1	3	2	3	3	3	3	2	2	2
AVG	2.00	2.00	2.00	2.00	1.00	2.20	2.00	3.00	3.00	3.00	3.00	2.00	2.80	2.80

Course Name: Rehabilitation and Retrofitting of Structures

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	3	2	2	1	1	1	2	2	3	3
CO2	2	2	2	2	3	1	2	1	1	1	2	1	3	2
CO3	2	2	2	2	3		2	1	1	1	2	1	3	3
CO4	2	2	2	2	3		2	1	1	1	2	1	3	3
CO5	2	2	2	2	3	2	2	1	1	1	2	1	2	3
AVG	2.00	2.00	2.00	2.00	3.00	1.67	2.00	1.00	1.00	1.00	2.00	1.20	2.80	2.80

Course Name: Pre- Stressed concrete Structures

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2		2	2	3	1	3	2	3	2	2
CO2	3	3	3	3	3	2	2	3	1	3	2	3	3	3
CO3	3	3	3	3	3	2	2	2	1	2	2	3	3	3
CO4	3	3	3	3	3	2	2	2	2	3	3	3	3	3
CO5	3	3	3	3	3	2	2	3	1	2	2	3	3	3
AVG	3.00	3.00	3.00	2.80	3.00	2.00	2.00	2.60	1.20	2.60	2.20	3.00	2.80	2.80

Course Name: Technical Seminar

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	2	3	3	2	3	2	2
CO2	3	3	2	3	2	2	2	2	3	3	2	3	2	2
CO3	3	3	2			2	2	2	3	3	2	3	2	3
CO4	3	3	3	3	3	2	2	2	3	3	2	3	2	2
CO5	3	3	3	3	3	2	2	3	3	3	2	3	2	2
AVG	3.00	3.00	2.60	3.00	2.50	2.00	2.00	2.20	3.00	3.00	2.00	3.00	2.00	2.20



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-15 Course Outcomes

Course Name: Major Project

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO2	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3	3	3	3	3	3
AVG	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Course Name: Comprehensive Viva Voce

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2		3	3	2	2	3	1	2	3	3
CO2	3	3		2		3	3	2	2	3	1	2	3	3
CO3	3	3	1	2		3	3	2	2	3	1	2	3	3
CO4	3	3	1	2		3	3	2	2	3	1	2	3	3
CO5	3	3		2	2	3	3	2	2	3	1	2	3	3
AVG	3.00	3.00	1.00	2.00	2.00	3.00	3.00	2.00	2.00	3.00	1.00	2.00	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - I YEAR I SEM

C101	Course Name: Mathematics I
CO	Students who successfully complete this course will be able to:
CO1	Write the matrix representation of system of linear equations and identify the consistency of the system of equations.
CO2	Find the Eigen values and Eigen vectors of the matrix and discuss the nature of the quadratic form.
CO3	Analyze the convergence of sequence and series.
CO4	Discuss the applications of mean value theorems to the mathematical problems, Evaluation of improper integrals using Beta and Gamma functions.
CO5	Examine the extrema of functions of two variables with/ without constraints.

C102	Course Name: Chemistry
CO	Students who successfully complete this course will be able to:
CO1	Acquire knowledge of atomic, molecular and electronic changes related to conductivity.
CO2	Apply the various processes of treatment of water for both domestic and industrial purpose.
CO3	Apply the knowledge of electrode potentials for the protection of metals from corrosion.
CO4	Analyze the major chemical reactions that are used in the synthesis of compounds.
CO5	Apply the knowledge of polymers in every day's life.

C103	Course Name: Chemistry Lab
CO	Students who successfully complete this course will be able to:
CO1	Analyze various water samples.
CO2	Determine the physical properties of lubricants.
CO3	Synthesize the organic compounds and analyze the inorganic salts.
CO4	Apply the knowledge of conductance and emf for estimation of strength of compounds.
CO5	Interpret the data to estimate the rate of reactions



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C104	Course Name: English
CO	Students who successfully complete this course will be able to:
CO1	Define vocabulary and grammar concepts for effective writing.
CO2	Classify and draw connections of ideas for technical and professional purposes
CO3	Interpret information into various forms of writing with the help of perfect syntax.
CO4	Organize the given texts and construct various written forms.
CO5	Relate values and elements of professionalism for successful careers.

C105	Course Name: English Language Skills Lab (ELSL)
CO	Students who successfully complete this course will be able to:
CO1	Recognise appropriate pronunciation and language fluency
CO2	Demonstrate accuracy to avoid ambiguity in pronunciation
CO3	Execute effective professional skills
CO4	Design a well-planned presentation for effective communication
CO5	Demonstrate confidence during job interviews

C106	Course Name: Programming for Problem Solving – I
CO	Students who successfully complete this course will be able to:
CO1	Design Algorithms and Flowcharts for real world applications using 'C'.
CO2	Know the usage of various operators in Program development.
CO3	Design programs involving decision and iteration structures.
CO4	Apply the concepts code reusability using Functions.
CO5	Analyze various searching and sorting techniques using Arrays.

C107	Course Name: Programming for Problem Solving Lab – I
CO	Students who successfully complete this course will be able to:
CO1	Apply the specification of syntax rules for numerical constants and variables, data types.
CO2	Know the Usage of various operators and other C constructs.
CO3	Design programs on decision and control constructs.
CO4	Develop programs on code reusability using functions.
CO5	Implement various searching and sorting techniques using arrays.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C108	Course Name: Engineering Workshop
CO	Students who successfully complete this course will be able to:
CO1	Understand different tools used in engineering work shop practice
CO2	Perform various types of joints, filing, turning and house wiring operations
CO3	Test and Evaluate the accuracy of the operations performed



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - I YEAR II SEM

C131	Course Name: Mathematics – II
CO	Students who successfully complete this course will be able to:
CO1	Classify the various types of differential equations of first order and first degree and apply the concepts of differential equations to the real-world problems.
CO2	Solve higher order differential equations and apply the concepts of differential equations to the real-world problems.
CO3	Find the Laplace Transform of various functions and apply to find the solutions of differential equations.
CO4	Evaluate the multiple integrals and identify the vector differential operators physically in engineering problems.
CO5	Evaluate the line, surface and volume integrals and converting them from one to another by using vector integral theorems.

C132	Course Name: Engineering Physics
CO	Students who successfully complete this course will be able to:
CO1	Interpret forced damped harmonic oscillations and Transverse waves.
CO2	Identify various optical phenomena of light.
CO3	Explain the working principle of optical fibers and lasers.
CO4	Describe the crystalline structures of solids.
CO5	Classify magnetic and dielectric behavior of materials.

C133	Course Name: Physics Lab
CO	Students who successfully complete this course will be able to:
CO1	Characterize the mechanical properties of given material.
CO2	Demonstrate various types of oscillation and rotational motion to determine the mechanical parameters.
CO3	Identify the magnetic induction along the axis of current carrying coil.
CO4	Apply the optical phenomena to characterize optical sources and components.
CO5	Describe the electrical characteristics LCR and RC circuits.

C134	Course Name: Engineering Mechanics
CO	Students who successfully complete this course will be able to:
CO1	Understanding the concepts of engineering mechanics
CO2	Apply the laws of mechanics for various engineering
CO3	Analyze the motion of body.
CO4	Evaluate performance of various engineering components in terms of their energy capacities



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C135	Course Name: Engineering Graphics & Modeling
CO	Students who successfully complete this course will be able to:
CO1	Understanding the concepts of engineering graphics with their applications.
CO2	Drawing the views of points, lines, planes and solids by Applying Ortho Graphic Projections.
CO3	Analyze the Sections and development of solids with various cutting planes.
CO4	Evaluating the 2D Graphic modeling with 3D models by using Auto Cad software.

C136	Course Name: English Communication Skills Lab (ECSL)
CO	Students who successfully complete this course will be able to:
CO1	Distinguish the variations in British and American English
CO2	Recognise the various purposes of listening and speaking
CO3	Interpret ideas in diverse communicative settings
CO4	Demonstrate confidence in public speaking skills
CO5	Develop new ideas in critical thinking, problem solving and decision-making skills and through GD's

C137	Course Name: Programming for Problem Solving - II
CO	Students who successfully complete this course will be able to:
CO1	Identify various string handling functions in 'C'.
CO2	Develop programs with user defined data types.
CO3	Use Dynamic memory allocation functions with pointers.
CO4	Distinguish between Stacks and Queues.
CO5	Analyze various Dynamic Data Structures.

C138	Course Name: Programming for Problem Solving Lab- II
CO	Students who successfully complete this course will be able to:
CO1	Build programs on various string handling functions.
CO2	Develop applications on user defined data types.
CO3	Apply dynamic memory allocation through pointers.
CO4	Implement linear data structures through stacks and queues.
CO5	Create linked list dynamically through stacks and queues



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - II YEAR I SEM

C201	Course Name: PROFESSIONAL COMMUNICATION
CO	Students who successfully complete this course will be able to:
CO1	Acquire enhanced personality
CO2	Exhibit appropriate professional etiquette
CO3	Practice team building with strong communication skills
CO4	Develop problem solving skills and decision-making
CO5	Demonstrate effective presentation skills

C202	Course Name: NUMERICAL METHODS AND PARTIAL DIFFERENTIAL EQUATIONS
CO	After learning the contents of course the students will be able to:
CO1	Develop skills in solving engineering problems involving Algebraic and transcendental equations.
CO2	Acquires the knowledge of interpolation in predicting future out comes based on the present knowledge and also to fit different types of Curves.
CO3	Know the various types of numerical methods in solving engineering problems.
CO4	Classify the nature of second and Higher order partial differential equations and find the solutions of linear and non linear PDE.
CO5	Apply Partial differential Equations in different engineering problems.

C203	Course Name: FLUID MECHANICS
CO	After completion of this course students will be able to
CO1	Understand the Concepts of fluid properties and the relationship between them and to obtain the principles of continuity, momentum, and energy as applied to fluid motions.
CO2	Differentiate various flow lines and to formulate the Continuity equation for One dimensional, Two dimensional and three dimensional flows.
CO3	Formulate the Euler's and Bernoulli's equation with practical applications, to determine the discharge over notches and weirs and to apply the Momentum equation for a pipe bend.
CO4	Evaluate the head losses in pipes, flow between parallel plates and to solve the pipe network problems.
CO5	Demonstrate Boundary layer concepts and to explain the separation of the boundary layer.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C204	Course Name: SOLID MECHANICS – I
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Examine stress – strain, elastic constants and strain energy.
CO2	Analyse the shear force and bending moment diagrams of beams and relationship between them.
CO3	Evaluate the flexural and shear stresses for various beam cross sections.
CO4	Calculate principal stresses and strains using analytical and graphical solutions for the safety using failure theories.
CO5	Determine the deflections of beams with various loadings using different methods.

C205	Course Name: ENGINEERING GEOLOGY
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Classify and compare different rocks and minerals across the construction site.
CO2	Identify and build the knowledge on main and most common igneous, sedimentary and metamorphic rocks encountered by foundations and sites.
CO3	Define and Interpret the geological structures in the geological maps and cross sections
CO4	Understand the importance of graphical studies and various geophysical methods.
CO5	Illustrate the factors which affect the dams, reservoirs and tunnels.

C206	Course Name: SURVEYING & GEOMATICS
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Perform a detailed surveying at any site by any method.
CO2	Use the modern survey equipment to measure angles and distances.
CO3	Measure the differences in elevation, draw and utilize contour plots, and calculate volumes
CO4	Develop applications of environmental remote sensing and GIS which can directly enhance service delivery on land use management, ground water management/prospects, agriculture, forestry, food and water security, disaster management, etc.
CO5	Avail the need for lifelong learning through the discussion of recent changes in survey procedures and equipment.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C207	Course Name: SURVEYING & GEOMATICS LAB
CO	At the end of the course, the student will be able to:
CO1	Apply the principle of surveying for civil Engineering Applications
CO2	Calculation of areas.
CO3	Drawing plans and contour maps using different measuring equipment at field level
CO4	Learn the applications of GPS in surveying system
CO5	Write a technical laboratory report.

C208	Course Name: ENGINEERING GEOLOGY LAB
CO	At the end of the course, the student will be able to:
CO1	To study the physical properties and identification of minerals referred under the theory.
CO2	Describe and identify the rocks referred under the theory.
CO3	Illustrate the Microscopic study of rocks.
CO4	Interpret and draw the sections for geological maps showing tilted beds, faults, unconformities etc.,
CO5	Solve the simple structural geological problems.

C209	Course Name: ENVIRONMENTAL SCIENCE
CO	Students will be able to:
CO1	Define and explain the structure and functions of ecosystem, value of biodiversity, threats and conservation of biodiversity.
CO2	Explain the limitations of the resources and impacts of over utilization of all natural resources.
CO3	Identify the sources and effects of environmental pollutions and list the available techniques to control the pollution.
CO4	Illustrate the global environmental issues like climate change, ozone hole and can explain the scope of EIA, Environmental Management Plan, environmental audit and list the EIA methods.
CO5	Mention the salient features of environmental acts and rules, define the sustainable goals along with measures required for the sustainability.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - II YEAR II SEM

C231	Course Name: PROBABILITY AND STATISTICS
CO	After learning the contents of this course the students must be able to:
CO1	Differentiate among random variables involved in the probability models which are useful for all branches of engineering.
CO2	Derive relationship among variety of performance measures using probability distributions.
CO3	Acquire elementary knowledge of parametric and non parametric –tests and understand the use of observing state analysis for predicting future conditions.
CO4	Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data.
CO5	Apply proper measurements, Indicators and techniques of Correlation and regression analysis

C232	Course Name: PRINCIPLES OF ELECTRICAL ENGINEERING
CO	After this course the student can:
CO1	Understand basics of electrical circuit components and their characteristics
CO2	Analyze the electrical circuits with A.C excitation
CO3	Understand the working principle and operation of transformers
CO4	Understand the fundamentals concepts of D.C Machines
CO5	Apply the concepts of the electrical engineering to design the low voltage electric installations

C233	Course Name: SOLID MECHANICS – II
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Realize the basic concepts of torsion and locate the bending stress
CO2	Identify the types of columns and calculate the failure load for various end conditions
CO3	Understand the basic concepts of direct and bending stresses and calculate the bending moment
CO4	Differentiate about thin and thick cylinders and calculate the various stresses
CO5	Determine the stresses due to Unsymmetrical bending of beams and locate the shear



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C234	Course Name: ENVIROMENTAL ENGINEERING
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Predict the population forecasting and test the quality of water.
CO2	Design the filter and apply disinfection practices for water treatment.
CO3	Design water distribution system and examine sewage.
CO4	Analysis and design sewerage system.
CO5	Design different units of sewage treatment plant and trickling filters.

C235	Course Name: STRUCTURAL ANALYSIS
CO	Students who successfully complete this course will be able to:
CO1	Analyze propped cantilever, fixed beams for external loadings and support settlements.
CO2	Understand the concept of Slope deflection, moment distribution method and analysis of continuous beams.
CO3	Calculate the deflection of beams by different methods for determining slope and deflection and understand the concept of three hinged arches.
CO4	Analyze the pin-jointed plane frames.
CO5	Draw the influence line diagram for moving loads and calculate critical stress resultants.

C236	Course Name: BUILDING MATERIALS AND CONSTRUCTION
CO	At the conclusion of the course students will be able to:
CO1	Identify the various building materials
CO2	Understand the minimum standard required to designate and use the material in construction.
CO3	Understand the uses of different material like concrete, masonry, wood, steel or with a combination of these materials in construction domain.
CO4	Describe various types of interior and exterior finishes.
CO5	Classify the various tests required for the building material.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C237	Course Name: ENVIRONMENTAL ENGINEERING LAB
CO	After the completion of the course student should be able to
CO1	Understand principles and their practical application in water treatment.
CO2	Determine physical, chemical and biological characteristics of water and wastewater.
CO3	Determine the optimum dose of coagulant.
CO4	Estimate the chloride, nitrate and iron content in water.
CO5	Summarize the solutions using titration, conductivity meter, pH meter, turbidity meter and DO meter.

C238	Course Name: SOLID MECHANICS LAB
CO	At the end of the course the student will be able to:
CO1	Predict the behavior of materials under impact, hardness, tensile and compressive loads.
CO2	Determine elastic constants by flexural and torsion test.
CO3	Determine the spring constants under various loadings.
CO4	Understand the deflection of materials under bending.
CO5	Understand basic material properties stress and strain

C239	Course Name: GENDER SENSITIZATION
CO	At the end of the course the student expected to:
CO1	Develop awareness about gender discrimination and take measurable steps to counter it.
CO2	Identify the basic dimensions of biological, sociological, psychological and legal aspects of gender.
CO3	Acquire knowledge about gendered division of labour in relation to politics and economics.
CO4	Enhance the knowledge and act against the gender violence.
CO5	Adapt the culture of work and live together as equals.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - III YEAR I SEM

C301	Course Name: MANAGERIAL ECONOMICS & AND FINANCIAL ANALYSIS
CO	At the end of the course the students are expected to:
CO1	Understand the importance of certain basic issues governing the business operations namely demand and supply, production function, cost analysis
CO2	Apply managerial tools and techniques in obtaining optimal solutions for business problems
CO3	Differentiate the various forms of business organizations
CO4	Evaluate and interpret the financial statements of companies using ratios
CO5	Apply the methods of capital budgeting in effective investment decision making.

C302	Course Name: DESIGN OF REINFORCED CONCRETE STRUCTURES
CO	Upon successful completion of this course students will be able to
CO1	Understand the various design concepts and design a beam under flexure and draw the reinforcement details.
CO2	Design the beam under shear and torsion, Calculate the anchorage and development length and check the serviceability requirements for RC structural elements.
CO3	Analyze and solve various RC slabs and draw the reinforcement details
CO4	Classify short, long columns and draw the reinforcement details
CO5	Explore the design concept of footing & staircase.

C303	Course Name: GEOTECHNICAL ENGINEERING
CO	On successful completion of this course, it is expected that the students will be able to:
CO1	Illustrate the soil formation and classification.
CO2	Explain the Hydrostatic effect in soil mass.
CO3	Illustrate the stress distribution mechanism and compaction in soil mass.
CO4	Illustrate the mechanism of consolidation.
CO5	Identify the Shear strength parameters through analytical and experimental approach.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C304	Course Name: CONCRETE TECHNOLOGY
CO	On completion of the course, the students will be able to
CO1	Understanding the properties of cements and admixtures.
CO2	Analyse the properties of aggregates.
CO3	Evaluate the properties of fresh concrete.
CO4	Analyse the behavior of hardened concrete and durability of concrete.
CO5	Design the concrete mix using IS Code and describe the special concretes.

C305	Course Name: ADVANCED STRUCTURAL ANALYSIS (PE1)
CO	On successful completion of this course, it is expected that the students will be able to,
CO1	Analyze the continuous beams, portal frames by Kani's method.
CO2	Differentiate Static and kinematic Indeterminacy of Trusses by Castiglione's second theorem.
CO3	Evaluate the shear forces and bending moments in Two-Hinged arches and to execute secondary stresses due to rise of temperature and Elastic Shortening of rib.
CO4	Analyze the Multi-storey frames by approximate methods for gravity (vertical) and horizontal loads.
CO5	Understand the concept of Matrix method for the analysis of continuous beams and Pin jointed plane frames

C306	Course Name: BUILDING PLANNING & DRAWING (PE1)
CO	On successful completion of this course, it is expected that the students will be able to,
CO1	Identify various building components, conventional signs and symbols.
CO2	Illustrate the building bye-laws and the principles of planning.
CO3	Understand about the building services and safety.
CO4	Design and Sketch the plans of various types of buildings and detailing of doors, windows, etc.
CO5	Understand the elements of perspective drawing involving simple problems.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C307	Course Name: AIR POLLUTION AND CONTROL METHODS (PE1)
CO	On successful completion of this course, it is expected that the students will be able to,
CO1	Find the sources, causes & effects of air pollution.
CO2	Understand the meteorological components and the plume behavior for atmospheric stability conditions.
CO3	Identify the types of equipments to control the particulates at sources.
CO4	Miniize the control measures of NOX, SOX and other gaseous emissions.
CO5	Examine the SPM, SOx, NOx and CO emission standards.

	Course Name: Elements of Civil Engineering
CO	Open Elective - 1
CO1	Understand Geological properties and Geotechnical aspect of civil engineering.
CO2	Plan the concept of different building byelaws and planning principles.
CO3	Analyse the concept of stress-strain and to identify the properties of the fluid changes treatment process.
CO4	Apply modern tools of surveying and understand basic concepts of concrete.
CO5	Evaluate the principles of highway geometric designs and types of pavements as per IRC standards.

	Course Name: Smart City
CO	Open Elective - 1
CO1	Understand the necessity of smart infrastructure and to promote cities that provide quality of life to citizens.
CO2	Explain technology-based solution on smart mobility.
CO3	Illustrate & introduce the smart and sustainable waste and water management for smart cities.
CO4	Evaluate economical models for smart infrastructure solution.
CO5	Create healthy and waste ridden environment.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C316	Course Name: CAD LAB
CO	At the end of the course, the student will be able to:
CO1	Assess the Software with aiding source.
CO2	Draft the Plan and Elevation & Sectional views of the buildings.
CO3	Develop the components of the building.
CO4	Replicate the detailing of framed and Industrial structures.
CO5	Interpret the isometric and orthogonal projection of buildings.

C317	Course Name: ADVANCED COMMUNICATION SKILLS (ACS) LAB
CO	At the end of the course, the student will be able to:
CO1	Develop sound communication skills in various situations with the help of enriched vocabulary.
CO2	Practice reading techniques for a faster and better comprehension.
CO3	Exhibit strong writing skills to express ideas effectively.
CO4	Demonstrate effective presentation skills.
CO5	Use appropriate verbal and non-verbal skills for a successful career.

C318	Course Name: QUANTITATIVE METHODS & LOGICAL REASONING (QMLR)
CO	At the end of the completion of the course a student is expected
CO1	To perform well in various competitive exams and placement drives.
CO2	To solve basic and complex mathematical problems in short time.
CO3	To become strong in Quantitative Aptitude and Reasoning which can be applied for GRE, GATE, GMAT or CAT exam also.
CO4	To develop problem solving skills and analytical abilities, which play a great role in corporate and industry set up.
CO5	To perform well in various competitive exams and placement drives.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - III YEAR II SEM

C331	Course Name: FOUNDATION ENGINEERING
CO	Upon successful completion of this course students will be able to:
CO1	Organize the preparation and programme of soil investigation.
CO2	Examine the earth pressure theories and stability of retaining walls.
CO3	Evaluate the bearing capacity of soil and allowable settlement.
CO4	Analyse the capacity and settlement of pile foundation.
CO5	Analyse the stability of finite and infinite slopes using various methods.

C332	Course Name: DESIGN OF STEEL STRUCTURES
CO	Upon successful completion of this course students will be able to do:
CO1	Classify the types of connections and specifications as per IS: 800-2007.
CO2	Apply the provisions of IS: 800-2007 to design tension members.
CO3	Analyze and design compression members.
CO4	Illustrate behaviour of beams and design strengths as per IS code.
CO5	Adapt IS code procedures to design welded plate girder.

C333	Course Name: HYDRAULICS & HYDRAULIC MACHINERY
CO	At the end of this course, students will be able to
CO1	Explain the concept of different types of flows, designing of most Economical section of open channel & to understand the concept of specific energy.
CO2	Demonstrate the concept of dimensional quantities and the application of similitude concepts in designing a model and prototype.
CO3	Understand the concept, working applications of impact of jets with the importance of Constructing velocity triangles.
CO4	Compare the design concept of Pelton, Francis and Kaplan turbines, Centrifugal pumps along with the most economical designs.
CO5	Determine the working mechanism of different types of the pumps with their important characteristic curves.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C334	Course Name: WATER RESOURCES ENGINEERING
CO	Upon successful completion of this course students will be able to do:
CO1	Describe the components in the hydrologic cycle and all hydrological processes and methods.
CO2	Analyze the flood analysis and its measurement by means of hydrograph.
CO3	Analyze the phenomenon of Ground water occurrence by means of aquifers.
CO4	Assess the methods of irrigation and its quality with help of duty delta relationship.
CO5	Design the canals by using standard theories.

C335	Course Name: CONSTRUCTION ENGINEERING & MANAGEMENT (PE2)
CO	Upon successful completion of this course students will be able to:
CO1	Understand the behavioural aspect of entrepreneurs, various approaches of time management, their strength and weakness.
CO2	Apply the concepts of project management during the construction phase, project organization, project planning and control using CPM, PERT techniques.
CO3	Analysis various materials and equipment's for construction work.
CO4	Examine the on different types of contracts and specifications.
CO5	Outline the labour regulations and safety in construction.

C336	Course Name: GROUND IMPROVEMENT TECHNIQUES (PE2)
CO	At the end of this course the student will be able to
CO1	Illustrate the several Ground modification mechanisms
CO2	Illustrate the Ground Improvement Techniques through mechanical approach.
CO3	Identify the different Hydraulic ground improvement techniques through Dewatering techniques.
CO4	Explain the quick settlement techniques through chemical and physical modification.
CO5	Distinguish the inclusion and confinement techniques of ground improvement.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C337	Course Name: FINITE ELEMENT METHOD (PE2)
CO	Upon successful completion of this course students will be able to
CO1	Explain plane stress-plane strain equations and develop displacement functions.
CO2	Analyze one-dimensional problems using stiffness matrix.
CO3	Examine the different elements based on continuity and compatibility.
CO4	Illustrate quadrilateral elements using nodal points and shape functions.
CO5	Determine displacements, strains and stresses for static loads.

	Course Name: Geen Building Technologies
CO	Open Elective – 2
CO1	Understand the Green building concept and focus on approaches that makes building sustainable.
CO2	Illustrate Green building assessment and accreditation system.
CO3	Able to apply low energy building strategies.
CO4	Designing green building and improve sustainability of infrastructure.
CO5	Classify the economic benefits of green buildings.

	Course Name: Environmentl Pollution & Control Methods
CO	Open Elective – 2
CO1	Understanding about the various air pollutants and effect on environment.
CO2	Analyze quality of air in the form of air quality index and dispersion modeling.
CO3	Determine sampling and measurements of air Pollutants.
CO4	Analysis and measurement of soil contamination.
CO5	Predict types of noise and problems arise due to noise pollution.

C347	Course Name: GEOTECHNICAL ENGINEERING LAB
CO	At the end of this course the student will be able to
CO1	Demonstrate the engineering properties the soil.
CO2	Illustrate the field bulk and dry density of cohesive and cohesion less soils.
CO3	Classify the Coarse grained soils based on sieve analysis test & a grain size distribution curve.
CO4	Compute the shear strength of cohesive and cohesion less soil.
CO5	Determine the permeability of coarse grained soil and fine grained soil by constant head permeability test and falling head method.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C348	Course Name: FLUID MECHANICS & HYDRAULIC MACHINERY LAB
CO	Students who successfully complete this course will have demonstrated ability to:
CO1	Examine the calibration of different flow meters.
CO2	Illustrate flow measuring devices used in pipes, channels and Notches.
CO3	Determine major and minor losses in pipes.
CO4	Analyze the energy equation for problems on in pipes flow.
CO5	Examine the performance characteristics of turbines and pumps.

C349	Course Name: PERSONALITY DEVELOPMENT AND BEHAVIORAL SKILLS	Bloom's Taxonomy
CO	At the end of the completion of the course a student is expected-	
CO1	Practice optimistic attitude for an efficient, socially viable and multi-faceted personality.	2
CO2	Demonstrate functions of non-verbal communication in formal context.	2
CO3	Build effective individual & team dynamics for professional accomplishments.	3
CO4	Analyze appropriate strategic Interpersonal Skills for productive workplace relationships.	4
CO5	Correspond in multiple contexts, for varied audiences, across genres and modalities.	5



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - IV YEAR I SEM

C401	Course Name: HIGHWAY ENGINEERING
CO	At the end of this course the student will be able to
CO1	Summarize the road developments in India from different periods.
CO2	Apply the concept of geometric design in real time engineering.
CO3	Make use of parameters related to traffic studies.
CO4	Design & model the intersections with specific standards.
CO5	Evaluate the different pavement design methods using IRC standards.

C402	Course Name: ESTIMATION & COSTING
CO	After completion of the course, student can be able to
CO1	Summarize the basic principal and standard methods for working out quantities in estimating.
CO2	Determine the earthwork estimate of buildings, roads and canals.
CO3	Estimate the rate analysis of the various items of work.
CO4	Understand the process of contracting for roads and buildings.
CO5	Evaluate the valuation of buildings and provide practical knowledge of standard specifications of items of building construction.

C403	Course Name: PRESTRESSED CONCRETE STRUCTURES (PE3)
CO	After completion of the course, student can be able to
CO1	Classify the concepts, principles, types and methods of PSC structures.
CO2	Evaluate the losses of PSC structures.
CO3	Analysis and design of PSC slabs and beams using IS:1343 (2012).
CO4	Explain transmission of prestressing force, end block analysis by different methods.
CO5	Analyse the stress distribution of composite beams and asses the deflection of beams. Understand the different methods of prestressing.

C404	Course Name: EARTHQUAKE ENGINEERING (PE3)
CO	After completion of the course, student can be able to
CO1	Quantify mechanical behaviour of earth's surface, seismic hazards and its effects.
CO2	Identify, formulate and solves engineering problems subjected to dynamic loading conditions.
CO3	Understand the internal parameters of the structures for seismic design source.
CO4	Assess the design component or process to meet desired needs within realistic constraints.
CO5	Analyze and design the members for earthquake resisting parameters.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C405	Course Name: GREEN BUILDING TECHNOLOGIES (PE4)
CO	After successful completion of this course the students should able to
CO1	Understanthe Green building concept and focus on approaches that makes building sustainable.
CO2	Illustrate Green building assessment and accreditation system.
CO3	Apply low energy building strategies.
CO4	Designing green building and improve sustainability of infrastructure.
CO5	Classify the economic benefits of green buildings.

C406	Course Name: RAILWAYS, AIRPORTS AND HARBORS ENGINEERING (PE4)
CO	Upon successful completion of yhis course students will be able to:
CO1	Define and understand the various components of railways.
CO2	Understand and solve the geometric elements needed for the design of permanent way.
CO3	Define, understand, and design the various components of the airport.
CO4	Define, understand the planning and requirements of a harbor.
CO5	Improve and Visualize the working of intelligent transportation system.

C407	Course Name: ADVANCED STRUCTURAL DESIGN (PE4)
CO	At the end of the course, the student will be able to:
CO1	Analyze and design of cantilever retaining wall.
CO2	Apply the provision of IS :3370-2009 to design water tank.
CO3	Apply the provision of IS 456-2000 for designing flat slab.
CO4	Adapt the provision of IRC 21-1987 to class AA loading to design T beam girder.
CO5	Summarize the force components and design principles of RCC Chimney.

C408	Course Name: GROUND WATER HYDROLOGY (PE4)
CO	At the end of the course, the student will be able to:
CO1	Understand different types of aquifers and their characteristics
CO2	Analysis the pumping test data for different aquifers
CO3	Distinguish the surface and subsurface investigation methods of ground water.
CO4	Discuss the methods of artificial recharging of ground water.
CO5	Evaluation and control of saline water intrusion.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering R-18 CO-PO Mapping

	Course Name: Remote Sensing & GIS
CO	Open Elective - 3
CO1	Select the type of remote sensing technique / data for required purpose.
CO2	Identify the earth surface features from satellite images.
CO3	Analyse the energy interactions in the atmosphere and earth surface features.
CO4	Prepare thematic maps.
CO5	Interpretations of satellite data for various applications.

	Course Name: Introduction to Earthquake Engineering
CO	Open Elective -3
CO1	Understand the Interior Earth' surface, fault attenuation, different wave propagation in Earthquake events.
CO2	Classify different earthquake hazards and its effects.
CO3	Examine the mechanical behavior of earth surface and its significance.
CO4	Evaluate the quantification of Hazard effects - approach methods.
CO5	Predict the vibration motion and how it influences the earth's surface.

C416	Course Name: CONCRETE & HIGHWAY MATERIALS LAB
CO	At the end of the course, the student will be able to:
CO1	Examine the experimental strength of aggregate materials as per codal provisions.
CO2	Illustrate the stability & properties of bituminous materials & mixes by conducting tests.
CO3	Determine the properties of cement by conducting the test.
CO4	Define the workability of fresh concrete by conducting tests.
CO5	Estimate the strength of hardened concrete by conducting destructive and non destructive testing.

C417	Course Name: COMPUTATIONAL LAB
CO	At the end of this course the student will be able to
CO1	Encalcate with the usage of recent softwares and its applications in the field of civil engineering
CO2	Analysing the Beam and Slab using Staad Pro software.
CO3	Assess the frame using the Staad Pro.
CO4	Model & demostraing the slope of the soil source using Geostudio.
CO5	Analysis the settlement of footing and pile using geostudio.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C418	Course Name: INDUSTRIAL ORIENTED MINI PROJECT
CO	The student will be able to:
CO1	Interpret the literature and develop solutions for framing problem statement.
CO2	Select software techniques for identifying problems.
CO3	Analysis and test the modules of planned project.
CO4	Design technical report and deliver presentations.
CO5	Apply engineering and management principles to achieve project goals.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B TECH - IV YEAR II SEM

C431	Course Name: REHABILITATION AND RETROFITTING OF STRUCTURES
CO	Upon successful completion of this course students will be able to:
CO1	Illustrate the importance of inspection and maintenance.
CO2	Evaluate the Impacts of cracks, corrosion and climate on structures.
CO3	Explain the concepts of High Performance concrete.
CO4	Distinguish the materials and techniques needed for repairs.
CO5	Classify the failures of the structures and demolition techniques.

C432	Course Name: REMOTE SENSING & GIS
CO	After successful completion of this course the students should be able to:
CO1	Understand the concepts of Photogrammetry and compute the heights of the objects using parallax.
CO2	Understand the principles of aerial Photogrammetry and remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies.
CO3	Analyze the basic concept of GIS and its applications, able to work with GIS software in various application fields.
CO4	Illustrate spatial and non-spatial data features in GIS and understand the map projections and coordinate systems.
CO5	Understand the application of vector and raster data structure to the real world, the importance of source map and learning the on-screen digitization.

C433	Course Name: TECHNICAL SEMINAR
CO	The student will be able to:
CO1	Demonstrate the skills in identifying, analysing, and presenting a research topic.
CO2	Demonstrate the quality of knowledge gained from the literature survey on recent technologies.
CO3	Demonstrate the skills developed to communicate effectively on engineering activities with the engineering community.
CO4	Demonstrate ability to effectively manage time in presentation skills.
CO5	Design a technical report with the principal of ethics.



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

C434	Course Name: COMPREHENSIVE VIVA VOCE
CO	The student will be able to:
CO1	Explain comprehensively to answer questions from all the courses.
CO2	Test Oral Presentation skills by answering questions in a precise and concise manner.
CO3	Build confidence and interpersonal skills.
CO4	Support the students to face interview both in the academic and the industrial sector.
CO5	Improve placements and better performers in their future.

C435	Course Name: MAJOR PROJECT
CO	The student will be able to:
CO1	Identify, Analyse and apply suitable current techniques and tools to solve a problem in the civil engineering domain and societal issues.
CO2	Function effectively in teams to accomplish a common goal.
CO3	Organise the technical report writing and communication effectively.
CO4	Extend in lifelong activity.
CO5	Define and analyse a problem to assess health, safety and legal issues



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech I year I Sem

Course Name: Mathematics-I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2			1	1	2	2	3	2
CO2	3	3	3	3	3	2			1	1	2	2	3	2
CO3	3	3	3	3	3	2			1	1	2	2	3	2
CO4	3	3	3	3	3	2			1	1	2	2	3	2
CO5	3	3	3	3	3	2			1	1	2	2	3	2
AVG	3.00	3.00	3.00	3.00	3.00	2.00			1.00	1.00	2.00	2.00	3.00	2.00

Course Name: Chemistry

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2			2	1				1		2	3	2
CO2	3	3	2	2	2	3	2	2		2		3	3	3
CO3	3	3	2	2	2	3	2	2		2		3	3	3
CO4	3	1				2				1		1	3	1
CO5	3	2	2	2	2	3	2	2		2		3	3	2
AVG	3.00	2.20	2.00	2.00	2.00	2.40	2.00	2.00		1.60		2.40	3.00	2.20

Course Name: Chemistry Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2		1	2		2	1	1	1		2	2	1
CO2	3		1	2		2	3	1		1		3	1	2
CO3	3	2		1	2	2	1	2	1	1		2	1	1
CO4	3	2	1	2	2	2		1				2	2	3
CO5	3	2	1	2	2	2	1	1	1			3	3	1
AVG	3.00	2.00	1.00	1.60	2.00	2.00	1.75	1.20	1.00	1.00		2.40	1.80	1.60

Course Name: English

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2		1	2		2	1	1	1		2	2	1
CO2	3		1	2		2	3	1		1		3	1	2
CO3	3	2		1	2	2	1	2	1	1		2	1	1
CO4	3	2	1	2	2	2		1				2	2	3
CO5	3	2	1	2	2	2	1	1	1			3	3	1
AVG	3.00	2.00	1.00	1.60	2.00	2.00	1.75	1.20	1.00	1.00		2.40	1.80	1.60



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Course Name: English Language Skills Lab (ELSL)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1								2	3	3		3		1
CO2									2	3		3		1
CO3								2	2	3	1	3		1
CO4								2		3	1	3		1
CO5								2	1	3	1	3		1
AVG								2.00	2.00	3.00	1.00	3.00		1.00

Course Name: Programming for Problem Solving-I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	1		2	3	3	1	3	1	1
CO2	3	3	3	3	2	1		2	3	3	1	3	1	1
CO3	3	3	3	3	2	1		2	3	3	1	3	1	1
CO4	3	3	3	3	2	1		2	3	3	1	3	1	1
CO5	3	3	3	3	2	1		2	3	3	1	3	1	1
AVG	3.00	3.00	3.00	3.00	2.00	1.00		2.00	3.00	3.00	1.00	3.00	1.00	1.00

Course Name: Course Name: Programming for Problem Solving Lab-I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	1			3			3	1	1
CO2	3	3	3		2	1		2	3	3	1	3	1	1
CO3	3	3	3	3	2					3		3	1	
CO4	3	3	3	3	2	1		2	3		1	3		1
CO5	3	3	3	3		1				3			1	1
AVG	3.00	3.00	3.00	3.00	2.00	1.00		2.00	3.00	3.00	1.00	3.00	1.00	1.00

Course Name: Engineering Workshop

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	3	1	1	3			1	2			1	3
CO2	2	1	3	1	1	3			1	2			1	3
CO3	2	1	3	1	3	3			1	2			1	3
CO4														
CO5														
AVG	1.67	1.00	3.00	1.00	1.67	3.00			1.00	2.00			1.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech I year II Sem

Course Name: Mathematics-II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2			1	1	2	2	3	2
CO2	3	3	3	3	3	2			1	1	2	2	3	2
CO3	3	3	3	3	3	2			1	1	2	2	3	2
CO4	3	3	3	3	3	2			1	1	2	2	3	2
CO5	3	3	3	3	3	2			1	1	2	2	3	2
AVG	3.00	3.00	3.00	3.00	3.00	2.00			1.00	1.00	2.00	2.00	3.00	2.00

Course Name: Engineering Physics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	3	2	2	2		2	2	1	3	1	3
CO2	2	3	3	3	2	3	3	2	3	3	2	3	2	2
CO3	3	2	2	2	2	2	3	1	2	3	1	3	1	2
CO4	2	2	2	3	3	2	2		2	3	2	3	2	3
CO5	3	3	2	3	2	3	2		3	3	2	3	2	3
AVG	2.40	2.40	2.20	2.80	2.20	2.40	2.40	1.50	2.40	2.80	1.60	3.00	1.60	2.60

Course Name: Physics Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	3	2	3	2	1	2	2	2	3	2	1
CO2	2	2	2	2	2	2	2	1	2	2	2	3	2	1
CO3	2	2	2	2	2	1	1	1	1	1	1	2	2	1
CO4	3	2	3	3	2	3	3	2	3	3	2	3	3	3
CO5	2	3	3	3	2	1	2	2	2	2	2	2	2	1
AVG	2.40	2.20	2.60	2.60	2.00	2.00	2.00	1.40	2.00	2.00	1.80	2.60	2.20	1.40

Course Name: Engineering Mechanics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	1							1		3
CO2	3	2	2									1		2
CO3	3	3	3	2	3	1								2
CO4	3	3	3	2	2	2								2
CO5														
AVG	3.00	2.75	2.50	2.00	2.00	1.50						1.00		2.25



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Engineering Graphics & Modeling

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2							2		3
CO2	3	3	2	1	2							1		2
CO3	3	3	3	2	3							2		2
CO4	2	2	2	2	3	2						3		2
CO5														
AVG	2.75	2.75	2.50	1.75	2.50	2.00						2.00		2.25

Course Name: English Communication Skills Lab (ECSL)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1										3		3		
CO2										3		3		1
CO3								3	2	3	1	3		2
CO4								3	3	3	1	3		1
CO5								3	3	3	1	3		2
AVG								3.00	2.67	3.00	1.00	3.00		1.50

Course Name: Programming for Problem Solving -II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	1		2	3	3	1	3	1	1
CO2	3	3	3	3	2	1		2	3	3	1	3	1	1
CO3	3	3	3	3	2	1		2	3	3	1	3	1	1
CO4	3	3	3	3	2	1		2	3	3	1	3	1	1
CO5	3	3	3	3	2	1		2	3	3	1	3	1	1
AVG	3.00	3.00	3.00	3.00	2.00	1.00		2.00	3.00	3.00	1.00	3.00	1.00	1.00

Course Name: Programming for Problem Solving Lab -II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	1		2	3	3	1	3	1	1
CO2	3	3	3	3	2	1		2	3	3	1	3	1	1
CO3	3	3	3	3	2	1		2	3	3	1	3	1	1
CO4	3	3	3	3	2	1		2	3	3	1	3	1	1
CO5	3	3	3	3	2	1		2	3	3	1	3	1	1
AVG	3.00	3.00	3.00	3.00	2.00	1.00		2.00	3.00	3.00	1.00	3.00	1.00	1.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech II year I Sem

Course Name: Professional Communication

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1									2	2		3		3
CO2								3	2	2	2	2		3
CO3									3	3	2	2		3
CO4								2	3	2	2	2		2
CO5										3		2		1
AVG								2.50	2.50	2.40	2.00	2.20		2.40

Course Name: Numerical Methods & Partial Differential Equations

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2							2	1	2	1
CO2	3	3	2	2							2	1	2	2
CO3	3	3	2	2							2	1	2	1
CO4	3	3	2	2							2	1	2	1
CO5	3	3	2	2							2	1	1	1
AVG	3.00	3.00	2.00	2.00							2.00	1.00	1.80	1.20

Course Name: Fluid Mechanics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	1	2	2		1	1	2	2	2	3
CO2	3	2	2	2	1	2	1		1	1	2	1	2	2
CO3	3	3	2	2	2	2	1		1	1	2	2	2	3
CO4	3	3	2	2	1	2	1		1	1	2	1	2	2
CO5	3	3	2	2	1	2	1		1	1	1	1	2	2
AVG	3.00	2.80	2.00	2.00	1.20	2.00	1.20		1.00	1.00	1.80	1.40	2.00	2.40

Course Name: Solid Mechanics - I

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	2	2	1	1		1	1	1	2	2
CO2	3	3	2	2	2	2	2	1		1	1	1	2	2
CO3	2	2	2	2	1	2	1	1		1	1	1	2	2
CO4	2	2	2	2	1	2	1			1	1	1	2	2
CO5	3	2	3	2	1	2	1	1		1	1	1	2	2
AVG	2.40	2.20	2.20	2.00	1.40	2.00	1.20	1.00		1.00	1.00	1.00	2.00	2.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Engineering Geology

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	2	1	1	1	1	1	1	1	2	2	2
CO2	2	2		2	1	2	1	1				2	2	2
CO3	3	3	1	1	1	2	2	2	1	1		2	2	2
CO4	3	2	2	2	1	1	1	1	1			2	2	2
CO5	3	3	1	2	1	2	2	1	1	1	1	2	3	3
AVG	2.80	2.40	1.25	1.80	1.00	1.60	1.40	1.20	1.00	1.00	1.00	2.00	2.20	2.20

Course Name: Surveying & Geomatics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	3	1	1	1	3	3	3	3	2	2
CO2	3	3	3	2	2	2	1	1	3	2	3	2	3	2
CO3	3	3	3	3	2	2	1	1	2	3	2	2	3	3
CO4	3	3	3	3	3	2	1	1	3	2	3	3	3	2
CO5	3	3	3	3	3	1	1	1	3	2	3	3	3	3
AVG	3.00	3.00	3.00	2.60	2.60	1.60	1.00	1.00	2.80	2.40	2.80	2.60	2.80	2.40

Course Name: Surveying & Geomatics Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	2	2	3	2	2	2	3	2		2	3	3
CO2	3	3	1	2	3	3	2	2	3	2	1	3	2	3
CO3	3	2	2	1	2	3	2	3	2	3	2	2	2	3
CO4	2	2			3	3	2	2	2	3	2	3	2	3
CO5	3	2		2	3	2	1	2	2	2		2	2	2
AVG	2.60	2.00	1.67	1.75	2.80	2.60	1.80	2.20	2.40	2.40	1.67	2.40	2.20	2.80

Course Name: Engineering Geology Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			3		3	3	1	2	1		2	3	3
CO2	3			3	1	3	3	1	2	1		2	3	3
CO3	3			3	1	3	3	1	2	1		2	3	3
CO4	3	1		3		3	3		2			2	3	3
CO5	3	2		3		3	3		2			2	3	3
AVG	3.00	1.50		3.00	1.00	3.00	3.00	1.00	2.00	1.00		2.00	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering R-18 CO-PO Mapping

Course Name: Environment Science

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1						1	3	3						1
CO2			1			2	3	2			1	1	1	1
CO3	2		1		2		3	2				2	1	1
CO4	1		2	2	2	1	3	3					1	1
CO5	1		3		2	2	3	3				2	1	1
AVG	1.33		1.75	2.00	2.00	1.50	3.00	2.60			1.00	1.67	1.00	1.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech II year II Sem

Course Name: Probability and Statistics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	1	1	1		2	1	2	3	2	2
CO2	3	3	2	2	1	1	1		2	1	2	3	2	2
CO3	3	3	3	2	1	1	2		1	2	3	2	2	2
CO4	3	3	3	2	3	1	1		2	3	2	2	2	1
CO5	3	3	3	2		1	2		1	2	2	2	2	3
AVG	3.00	3.00	2.60	2.00	1.50	1.00	1.40		1.60	1.80	2.20	2.40	2.00	2.00

Course Name: Principle of Electrical Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3		1	1				1	1		1	1
CO2	2		2	3	1	2	1			1	1			1
CO3	2	2	3	3	2		1	1	1	1	1	1	1	1
CO4	2	1	3	2		1	1			1		1		1
CO5														
AVG	2.25	1.67	2.75	2.67	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Course Name: Solid Mechanics - II

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3		3			2	1		2	3	3
CO2	3	3	3	3	2	3	1		2	1		2	3	3
CO3	3	3	3	3		3		1	2	1		2	3	3
CO4	3	3	3	3	2	3	1		2	1		2	3	3
CO5	3	3	3	3	2	3		1	2	1		2	3	3
AVG	3.00	3.00	3.00	3.00	2.00	3.00	1.00	1.00	2.00	1.00		2.00	3.00	3.00

Course Name: Environmental Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3		3			2	1		2	3	3
CO2	3	3	3	3	2	3	1		2	1		2	3	3
CO3	3	3	3	3		3		1	2	1		2	3	3
CO4	3	3	3	3	2	3	1		2	1		2	3	3
CO5	3	3	3	3	2	3		1	2	1		2	3	3
AVG	3.00	3.00	3.00	3.00	2.00	3.00	1.00	1.00	2.00	1.00		2.00	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering R-18 CO-PO Mapping

Course Name: Structural Analysis

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	2	2	3	1	1	2	3	3
CO2	3	3	3	3	3	2	2	2	3	1	2	2	3	3
CO3	3	3	3	3	3	2	2	2	3	1	1	2	3	3
CO4	3	3	3	3	3	2	2	2	3	1	2	2	3	3
CO5	3	3	3	3	3	2	2	2	3	1	1	1	3	3
AVG	3.00	3.00	3.00	3.00	3.00	2.00	2.00	2.00	3.00	1.00	1.40	1.80	3.00	3.00

Course Name: Building Materials & Construction

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			2		1		2	2	1	1	1	2	2
CO2	2			2		1	1	2	1		1	1	2	2
CO3	3			1		1	1	1				1	2	3
CO4	2			1		1	1	1	1		1	1	2	2
CO5	2			1		1	1	1				1	2	2
AVG	2.40			1.40		1.00	1.00	1.40	1.33	1.00	1.00	1.00	2.00	2.20

Course Name: Environmental Engineering Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	3	3	2	2	2	3	3	2	3
CO2	3	3	3	3	3	3	3	3	2	2	3	3	2	3
CO3	3	3	2	2	3	3	3	2	2	2	3	3	2	3
CO4	3	3	3	3	3	3	3	2	2	2	3	3	2	3
CO5	3	3	3	3	3	3	3	2	2	2	3	3	2	3
AVG	3.00	3.00	2.80	2.80	3.00	3.00	3.00	2.20	2.00	2.00	3.00	3.00	2.00	3.00

Course Name: Solid Mechanics Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	3	3	2	1	2	3	2	3	2	2	2
CO2	3	3	1	3	3	2	1	2	3	2	3	2	2	2
CO3	3	3	2	3	2	2	1	2	3	2	3	2	2	2
CO4	3	3	1	3	2	2	1	2	3	3	2	2	2	2
CO5	3	1	1	3	1	2	1	2	3	2	3	2	2	2
AVG	3.00	2.60	1.40	3.00	2.20	2.00	1.00	2.00	3.00	2.20	2.80	2.00	2.00	2.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Gender Sensitization

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1								2	1	1		3		
CO2						2		3	1			2		
CO3								2				3		
CO4								3	2			3		
CO5								3	2			3		
AVG						2.00		2.60	1.50	1.00		2.80		



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech III year I Sem

Course Name: Managerial Economics and Financial Analysis

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	1	1		1		1	1	1	1	
CO2	2	2	2	2	1	1		1		1	1	1		
CO3	2	2	2	2	1	1		1		1	2	1	1	1
CO4	2	2	2	2	1	1		1		1	1	1	1	1
CO5	2	2	2	2	1	1		1		1	1	1		
AVG	2.00	2.00	2.00	2.00	1.00	1.00		1.00		1.00	1.20	1.00	1.00	1.00

Course Name: Design of Reinforced Concrete Structures

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	3		2	3	2	2	3	2	2
CO2	3	3	3	3	2	3			3	2	2	3	2	2
CO3	3	3	2	2	2	3		2	3	2	2	3	2	2
CO4	3	3	3	2	2	2	3	2	3	2	2	3	2	2
CO5	3	3	3	2	2	2		2	3	2	2	3	2	2
AVG	3.00	3.00	2.80	2.40	2.00	2.60	3.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00

Course Name: Geotechnical Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3	2	2		2	2			1		3	3	2
CO2	3	3	2	1		2	2			2		3	3	2
CO3	3	3	2	1		2	2			2		3	3	2
CO4	2	3	1	1		2	2			2		3	3	2
CO5	3	3	3	3		2	2			2		3	3	2
AVG	2.60	3.00	2.00	1.60		2.00	2.00			1.80		3.00	3.00	2.00

Course Name: Concrete Technology

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	1	2	3	2	3	3	2	3
CO2	3	3	2	2	3	2	2	2	3	2	3	3	2	3
CO3	3	1	1	2	3	2	2	2	3	2	2	3	2	3
CO4	3	1	1	2	3	2	1	2	3	2	3	3	2	3
CO5	3	3	3	3	3	2	1	2	3	2	3	3	2	3
AVG	3.00	2.20	2.00	2.40	3.00	2.00	1.40	2.00	3.00	2.00	2.80	3.00	2.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Advanced Structural Analysis (PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	1	1		1		1	1	1	1	
CO2	2	2	2	2	1	1		1		1	1	1		
CO3	2	2	2	2	1	1		1		1	2	1	1	1
CO4	2	2	2	2	1	1		1		1	1	1	1	1
CO5	2	2	2	2	1	1		1		1	1	1		
AVG	2.00	2.00	2.00	2.00	1.00	1.00		1.00		1.00	1.20	1.00	1.00	1.00

Course Name: Building Planning & Drawing (PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	2	1	1								3	3	2
CO2	1	2	2	2								3	3	2
CO3	1	2	2	1	2	2				2		3	3	2
CO4	1	3	2	1								3	3	2
CO5	2	2	1	2						1		3	3	2
AVG	1.20	2.20	1.60	1.40	2.00	2.00				1.50		3.00	3.00	2.00

Course Name: Air Pollution and Control Methods(PE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2		3	3	1	3	3	1	2	2	2
CO2	3	3	2	3	2	3	3	1	2	2	3	3	2	2
CO3	3	2	2	2	3	3	3	1	1	2	1	2	2	2
CO4	3	2	2	3	3	3	3		1	2		2	2	2
CO5	3	2	1	2	2	3	3		2	1		2	2	2
AVG	3.00	2.20	1.80	2.40	2.50	3.00	3.00	1.00	1.80	2.00	1.67	2.20	2.00	2.00

Course Name: Elements of Civil Engineering (OE 1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1	1	1	2	1	1	1	1	3	3	3	3	2	2
CO2	1	3	3		3	2	3	1	2	2	3	3	2	2
CO3	1					2						3	1	2
CO4	1		2				2	1			3	3	1	1
CO5	1					1					1	1	2	1
AVG	1	2	2	2	2	2	2	1	2.5	2.5	2.5	2.6	1.6	1.6



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

Course Name: Smart City (OE1)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1		1	2	2	2	1		2	3	3
CO2	3	3	3	2	3	2	2	1	2	2	1	2	2	3
CO3	2	2	3	3	3	3	3	2	3	1		3	1	1
CO4	2	2	1	2	2	1	3	2	1	1		2	1	1
CO5	1	2	1			1	1		2	1	2		1	2
AVG	2.2	2.2	1.8	2.0	2.7	1.6	2.2	1.8	2.0	1.2	1.5	2.3	1.6	2

Course Name: Cad Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2		3		3	3	2		3			3	2	3
CO2	3	2	3	2	2	3	1	2	3	2		2	3	3
CO3	3		3		2	3	2	2	3	2		3	3	3
CO4	3	2	3	2	2	3	2	2	3	2	1	3	3	3
CO5	3	3	3	2	2	3	2	2	3	2	1	3	3	3
AVG	2.80	2.33	3.00	2.00	2.20	3.00	1.80	2.00	3.00	2.00	1.00	2.80	2.80	3.00

Course Name: Advanced Communication Skills (ACS) Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2		3	3	1	3	3	1	2	2	2
CO2	3	3	2	3	2	3	3	1	2	2	3	3	2	2
CO3	3	2	2	2	3	3	3	1	1	2	1	2	2	2
CO4	3	2	2	3	3	3	3		1	2		2	2	2
CO5	3	2	1	2	2	3	3		2	1		2	2	2
AVG	3.00	2.20	1.80	2.40	2.50	3.00	3.00	1.00	1.80	2.00	1.67	2.20	2.00	2.00

Course Name: Quantitative Methods & Logical Reasoning

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	1	1		2	3	1	2	1	2	1
CO2	3	2	2	1	1	1		2	3	1	2	1	2	1
CO3	3	2	2	2	1	1		2	3	1	2	2	3	2
CO4	3	2	2	2	1	1		2	3	1	2	1	2	1
CO5	3	2	2	1	1	1		2	3	1	2	1	2	1
AVG	3.00	2.00	1.80	1.40	1.00	1.00		2.00	3.00	1.00	2.00	1.20	2.20	1.20



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech III year II Sem

Course Name: Foundation Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	3	2	2	2	1	2	1	1	2	3	3
CO2	3	3	1	2		2	2		1	1		2	3	3
CO3	2	3	1	2		2	2	1	1	1		2	3	3
CO4	2	3	1	3	1	2	2	1	1	2		2	3	3
CO5	2	3	1	2	1	2	2	1	1	2		2	3	3
AVG	2.40	2.80	1.20	2.40	1.33	2.00	2.00	1.00	1.20	1.40	1.00	2.00	3.00	3.00

Course Name: Steel Structure Design and Drawing

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	1	3	3	1	2	1	2	3	3	3
CO2	3	3	3	2	1	3	2	1	2		2	3	3	3
CO3	3	3	3	3	1	3	2	1	2		2	3	3	3
CO4	3	3	3	2		3	3	1	3	1	3	3	3	3
CO5	3	3	3	3	1	3	3	1	2	1	2	3	3	3
AVG	3.00	3.00	3.00	2.40	1.00	3.00	2.60	1.00	2.20	1.00	2.20	3.00	3.00	3.00

Course Name: Hydraulics & Hydraulic Machinery

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	3		2	3	2	2	3	2	2
CO2	3	3	3	3	2	3			3	2	2	3	2	2
CO3	3	3	2	2	2	3		2	3	2	2	3	2	2
CO4	3	3	3	2	2	2	3	2	3	2	2	3	2	2
CO5	3	3	3	2	2	2		2	3	2	2	3	2	2
AVG	3.00	3.00	2.80	2.40	2.00	2.60	3.00	2.00	3.00	2.00	2.00	3.00	2.00	2.00

Course Name: Water Resources Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	3	2	2	3	1	2	2	1	2	3	2
CO2	3	3	3	3	2	3	2	2	2	2	2	3	3	2
CO3	3	3	3	3	3	2	2	1	2	2	1	2	2	1
CO4	3	3	3	3	2	3	2	2	2	2	2	3	3	2
CO5	3	3	3	3	3	3	3	2	3	2	2	2	3	2
AVG	3.00	3.00	2.80	3.00	2.40	2.60	2.40	1.60	2.20	2.00	1.60	2.40	2.80	1.80



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech III year II Sem

Course Name: Construction Engineering & Management (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	1			1				2	2	2	3	2	1	2
CO2	3	2		2	2	2	2	1	2	2	1	2	2	2
CO3	3	2	2	2	3	2	2		2	1	2	2	2	2
CO4	3	2		1		1	1	1	1	2	2	3	2	3
CO5	3	3	1	2	1	3	3	1	1	1	1	2	1	2
AVG	2.60	2.25	1.50	1.60	2.00	2.00	2.00	1.25	1.60	1.60	1.80	2.20	1.60	2.20

Course Name: Ground Improvement Techniques (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	2	2	1	2	2	2	1	2	1	3	2	2
CO2	3	3	2	2	2	3	3	2	2	2	1	3	3	2
CO3	3	3	2	2	2	3	3	2	2	2	1	3	3	2
CO4	3	3	2	2	2	3	3	2	2	2	1	3	3	2
CO5	3	3	2	2	2	3	3	2	1	2	1	3	3	3
AVG	3.00	2.80	2.00	2.00	1.80	2.80	2.80	2.00	1.60	2.00	1.00	3.00	2.80	2.20

Course Name: Finite Element Method (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	1	2	2	2	2	1		2	3	3
CO2	3	3	3	3	3	1		1	2	2	1	2	3	3
CO3	3	3	3	3	2	1		1	2	3	1	3	2	3
CO4	3	3	3	3	2	1		1	2	3	1	3	2	3
CO5	3	3	3	3	3	2	1	2	2	1	1	2	3	3
AVG	3.00	3.00	3.00	3.00	2.20	1.40	1.50	1.40	2.00	2.00	1.00	2.40	2.60	3.00

Course Name: Environmental Pollution & Control Methods (OE-2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3				2	2	1		1		1		2
CO2	2		1	2	2	1	1	1		1		1		3
CO3	1	2	3	1		1	1			1				2
CO4	2	1				1	1		1					1
CO5	1		1			1	1	1		1		1		2
AVG	1.8	2.0	1.7	1.5	2.0	1.2	1.2	1.0	1.0	1.0		1.0		2.0



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech III year II Sem

Course Name: Green Building Technologies (PE2)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	1			2	3	2	3	1		1	1	2
CO2	1		1	1	1	2	3	1	2	1	1	1	1	2
CO3	3	2	3	2	3	3	3	2	3	1	2	2	2	3
CO4	3	3	2	3	2	2	3	2	1		1	2	2	2
CO5	2	1				2	2	1	2		2	1		
AVG	2.2	2.0	1.8	2.0	2.0	2.2	2.8	1.6	2.2	1.0	1.5	1.4	1.5	2.25

Course Name: Geotechnical Engineering Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	3		2		2	2	2	3	2		2	3	3
CO2	1	3		2		2	2		1	2		2	3	2
CO3	1	3		2		2	2		1	1		2	3	3
CO4	1	3		2		1	1		1	2		2	3	3
CO5	2	3		2		2	2	1	1	1		2	3	3
AVG	1.40	3.00		2.00		1.80	1.80	1.50	1.40	1.60		2.00	3.00	2.80

Course Name: Fluid Mechanics & Hydraulic Machinery Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	2	2	1	2	2		2	3	3
CO2	3	3	2	2	2	2	2			2		2	3	3
CO3	3	3	2	2	1	2	2	1	1	2		2	3	3
CO4	3	3	2	2	1	2	2	1	1	2		2	3	3
CO5	3	3	2	2	2	2	2	1	1	1		2	3	3
AVG	3.00	3.00	2.20	2.00	1.60	2.00	2.00	1.00	1.25	1.80		2.00	3.00	3.00

Course Name: Personality Development and Behavioral Skills

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1								3				3		
CO2									3	3		3		1
CO3									3	3	2	2		3
CO4								2	2	3		3		2
CO5									3	2				
AVG								2.50	2.75	2.75	2.00	2.75		2.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech IV year I Sem

Course Name: Highway Engineering

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	3	1	1	1	3	3	3	1	2
CO2	3	3	3	2	2	3	2	2	3	2	2	2	1	2
CO3	3	3	3	3	2	2	2	1	3	2	2	3	1	2
CO4	3	3	3	3	2	2	1	1	3	3	2	2	2	2
CO5	3	3	3	2	1	1	2	2	1	1	1	2	2	2
AVG	3.00	3.00	3.00	2.60	1.80	2.20	1.60	1.40	2.20	2.20	2.00	2.40	1.40	2.00

Course Name: Estimation & Costing

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	3	3	3	3	3	1	1	1	2	2
CO2	3	3	3	3	2	3	3	3	3	2	1	2	2	2
CO3	3	3	3	2	2	3	3	3	3	2	1	1	2	2
CO4	3	3				3	2	3	3	2	1	1	2	2
CO5	3	3	2	2		3	2	3	3	2	2	2	2	1
AVG	3.00	3.00	2.50	2.25	2.33	3.00	2.60	3.00	3.00	1.80	1.20	1.40	2.00	1.80

Course Name: Prestressed Concrete Structures (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	2	3	3	3	2	2	2	2	3	2	2
CO2	3	2	3	3	3	2	3	2	1	2	1	3	2	2
CO3	3	3	3	3	2	2	3	2	1	3	2	3	3	3
CO4	3	3	3	3	3	2	3	2	2	2	3	3	3	3
CO5	3	3	3	2	3	3	3	2	2	2	3	3	3	3
AVG	3.00	2.60	3.00	2.60	2.80	2.40	3.00	2.00	1.60	2.20	2.20	3.00	2.60	2.60

Course Name: Earthquake Engineering (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	2	2	2	2		1	1		3	3	3
CO2	3	3	2	3	1	2	2		1			2	2	3
CO3	3	3	2	2	2	2	2					2	2	2
CO4	3	3	3	2	2	2	2	1	1	1	1	3	3	3
CO5	3	3	3	2	2	3	3	1	1	1	1	3	3	3
AVG	3.00	2.80	2.20	2.20	1.80	2.20	2.20	1.00	1.00	1.00	1.00	2.60	2.60	2.80



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech IV year I Sem

Course Name: Green Building Technologies (PE3)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2		1		3	3	1	1	1		3		2
CO2	3	1		1		3	3	2	1			2		2
CO3	3	3	3	2	3	3	3	3	1	2	3	3	2	2
CO4	3	3	2	2	2	3	3	3	2	2	3	3	2	2
CO5	3	3	2	2		3	3	2	2		3	1	1	1
AVG	3.00	2.40	2.33	1.60	2.50	3.00	3.00	2.20	1.40	1.67	3.00	2.40	1.67	1.80

Course Name: Railways, Airports and Harbours Engineering (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	3	2	2	1	1	1	1		1	1	2
CO2	3	3	3	3	2	2	1	1	1	1		1	2	2
CO3	3	3	3	3	2	1	1	1	1	1		1	1	1
CO4	3	2	3	3	2	1	1	1	1	1		1	1	2
CO5	3	2	3	3	2	1	1	1	1	1		1	2	3
AVG	3.00	2.40	3.00	3.00	2.00	1.40	1.00	1.00	1.00	1.00		1.00	1.40	2.00

Course Name: Advanced Structural Design (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	3	2	3	1	2	2	2	1	2	3	3	2
CO2	3	2	2	2	2	1	2	1	2	1	1	3	2	2
CO3	2	3	3	2	3	1	2	1	1	2	1	3	2	3
CO4	3	2	3	2	2	2	2	1	1	1	3	3	3	3
CO5	2	1	3	2	3	2	1	2	2	2	2	3	2	2
AVG	2.60	1.80	2.80	2.00	2.60	1.40	1.80	1.40	1.60	1.40	1.80	3.00	2.40	2.40

Course Name: Ground Water Hydrology (PE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	2	2	2	2		1	1	1	1	2	1
CO2	3	3	1	3	3	2	2	2	2	2	2	2	2	1
CO3	3	3	3	3	3	2	3	2	2	2	2	3	2	1
CO4	3	3	3	3	3	3	2	2	1	2	2	2	2	1
CO5	3	3	3	3	3	3	2	2	1	2	2	2	2	1
AVG	3.00	3.00	2.20	2.80	2.80	2.40	2.20	2.00	1.40	1.80	1.80	2.00	2.00	1.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech IV year I Sem

Course Name: Remote Sensing & GIS (OE 4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1		3		3	2	3	2		2	2		2	2	3
CO2	3	1		2	2		3		1			2	3	2
CO3	3	2	2	1	2		2			3		2	1	2
CO4	1	3	3	2	3	2	2		2	2	2	3	1	2
CO5	2	2		3	2	2	2		1			2	2	1
AVG	2.3	2.2	2.5	2.2	2.2	2.3	2.2		1.5	2.3	2.0	2.2	1.8	2

Course Name: Introduction to Earthquake Engineering (OE4)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1		1	3	3	1				1		1
CO2	3	3	2		1	2	1	1						2
CO3	3	2	2			1	1							2
CO4	3	3	3		1	2	2						2	1
CO5	3	2	2		1	2	1					1		2
AVG	3	2.4	2		1	2	1.6	1				1	2	1.6

Course Name: Concrete & Highway Materials lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	3	2	1	2	3	2	3	3	2	3
CO2	3	3	2	3	3	2	2	2	3	2	3	3	2	3
CO3	3	1	1	2	3	2	2	2	3	2	2	3	2	3
CO4	3	1	1	2	3	2	1	2	3	2	3	3	2	3
CO5	3	3	3	3	3	2	1	2	3	2	3	3	2	3
AVG	3.00	2.20	2.00	2.60	3.00	2.00	1.40	2.00	3.00	2.00	2.80	3.00	2.00	3.00

Course Name: Computational Lab

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	3	2	2	2	2			3	3	3
CO2	3	3	3		2	3	2		2	1	1	2	3	3
CO3	3	3	3		2	3	2	1	2	1	1	2	3	3
CO4	3	3	3	2	2	3	2		2	1	1	2	3	3
CO5	3	3	3	2	2	3	2	1	2	1	1	2	3	3
AVG	3.00	3.00	3.00	2.00	2.20	2.80	2.00	1.33	2.00	1.00	1.00	2.20	3.00	3.00



Vidya Jyothi Institute of Technology

(An Autonomous Institution)

(Accredited by NAAC, Approved By A.I.C.T.E., New Delhi, Permanently Affiliated to JNTU, Hyderabad)

Aziz Nagar Gate, C.B. Post, Hyderabad - 500 075

Department of Civil Engineering

R-18 CO-PO Mapping

B.Tech IV year II Sem

Course Name: Rehabilitation and Retrofitting of Structures

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	2	2	3	2	3	2	2	2		3	3	2
CO2	3	3	3	3	2	2	3	1	1	2	1	2	3	3
CO3	3	3	3	2	2	2	2	1	2	1	1	1	2	1
CO4	3	3				2	2	2	2	2	1	2	2	2
CO5	3	3	2	2		2	2	2	2	2	1	2	2	2
AVG	3.00	3.00	2.50	2.25	2.33	2.00	2.40	1.60	1.80	1.80	1.00	2.00	2.40	2.00

Course Name: Remote Sensing & GIS

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	2	2	2	3	2	2	1	1	1	2	2	3	3
CO2	2	2	2	2	3	1	2	1	1	1	2	1	3	2
CO3	2	2	2	2	3		2	1	1	1	2	1	3	3
CO4	2	2	2	2	3		2	1	1	1	2	1	3	3
CO5	2	2	2	2	3	2	2	1	1	1	2	1	2	3
AVG	2.00	2.00	2.00	2.00	3.00	1.67	2.00	1.00	1.00	1.00	2.00	1.20	2.80	2.80

Course Name: Technical Seminar

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	2	2	2	3	3	2	3	2	2
CO2	3	3	2	3	2	2	2	2	3	3	2	3	2	2
CO3	3	3	2			2	2	2	3	3	2	3	2	3
CO4	3	3	3	3	3	2	2	2	3	3	2	3	2	2
CO5	3	3	3	3	3	2	2	3	3	3	2	3	2	2
AVG	3.00	3.00	2.60	3.00	2.50	2.00	2.00	2.20	3.00	3.00	2.00	3.00	2.00	2.20

Course Name: Comprehensive Viva Voce

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3		2		3	3	2	2	3	1	2	3	3
CO2	3	3		2		3	3	2	2	3	1	2	3	3
CO3	3	3	1	2		3	3	2	2	3	1	2	3	3
CO4	3	3	1	2		3	3	2	2	3	1	2	3	3
CO5	3	3		2	2	3	3	2	2	3	1	2	3	3
AVG	3.00	3.00	1.00	2.00	2.00	3.00	3.00	2.00	2.00	3.00	1.00	2.00	3.00	3.00

