



DEPARTMENT OF CIVIL ENGINEERING

Course Objective and Course Outcome

Name Of Subject:	Building Technology and Materials (201001)
Course Objectives:	
1	To enumerate different types of structure and their requirement as building components.
2	To describe all basic activities of construction from foundation to finishing.
3	To study different types of materials used in construction for civil engineering projects.
Course Outcomes:	
CO1	Identify types of building and basic requirements of building components
CO2	Explain types of masonry, formwork, casting procedure and necessity of underpinning and scaffolding.
CO3	Elucidate different types of flooring and roofing materials.
CO4	.Describe types of doors, windows, arches and lintel.
CO5	Illuminate means of vertical circulation and protective coatings
CO6	Explain different materials especially eco-friendly materials and safety measures to be adopted at any construction site
Name Of Subject:	Strength of Materials (201002)
Course Objectives:	
1	To study the different types of stresses due to load, temperature, etc.



2	To learn concept of Shear Force and Bending Moment Diagram for determinate beams.
Course Outcomes:	
CO1	Compute different type of stresses in determinate, indeterminate, homogeneous and composite structures.
CO2	Develop bending and shear stress diagram.
CO3	Determine the torsional stresses and stresses due to strain energy for different loading conditions.
CO4	Explain the concept of principal stresses due to combined loading and able to compare the values of analytical and graphical (Mohr's circle) method.
CO5	Plot loading diagram, Shear Force Diagram (SFD) and Bending Moment Diagram (BMD).
CO6	Analyze axially and eccentrically loaded column
Name Of Subject:	Surveying
Course Objectives:	
1	To learn the basis of plane surveying and different types of instruments used for plane surveying
2	To learn different methods of plane surveying
3	To understand advancement in plane surveying such as electronic instruments and software
Course Outcomes:	
CO1	Operate and use surveying equipments
CO2	Draw plan or map of existing permanent features on the ground



CO3	Classify the ground features from the map or plan
CO4	Analyse temporary adjustments and check permanent adjustment of the theodite
Name Of Subject:	Geotechnical Engineering (201008)
Course Objectives:	
1	To describe soil properties, classification and its behavior under stress.
2	To learn methods for measurements and determination of index & engineering properties of soil.
3	To study the interaction between water and soil and the effects of static vs flowing water on soil strength
Course Outcomes:	
CO1	Identify and classify the soil based on the index properties and its formation process
CO2	Explain permeability and seepage analysis of soil by construction of flow net
CO3	Illustrate the effect of compaction on soil and understand the basics of stress distribution
CO4	Express shear strength of soil and its measurement under various drainage conditions.
CO5	Evaluate the earth pressure due to backfill on retaining structures by using different theories.
CO6	Analysis of stability of slopes for different types of soils.
Name Of Subject:	Engineering Mathematics
Course Objectives:	
1	To make the students familiarize with concepts and techniques in Ordinary & Partial differential equations, Numerical methods, Statistical methods, Probability theory and Vector calculus.



2	The aim is to equip them with the techniques to understand advanced level mathematics and its applications that would enhance analytical thinking power, useful in their disciplines.
Course Outcomes:	
CO1	Solve Higher order linear differential equations and its applications to modelling and analysing Civil engineering problems such as bending of beams, whirling of shafts and mass spring systems.
CO2	Solve System of linear equations using direct & iterative numerical techniques and develop solutions for ordinary differential equations using single step & multistep methods applied to hydraulics, geotechnics and structural systems.
CO3	Apply Statistical methods like correlation, regression and probability theory in data analysis and predictions in civil engineering.
CO4	Perform Vector differentiation & integration, analyze the vector fields and apply to fluid flow problems.
CO5	Solve Partial differential equations such as wave equation, one and two dimensional heat flow equations.
TE CIVIL SEMESTER-I	
Name Of Subject:	Structural Analysis –II (301004)
Course Objectives:	
1	To learn Slope Deflection method for beam and frame analysis.
2	To learn Moment Distribution method for beam and frame analysis.
3	To learn Flexibility method for beam and frame analysis.
4	To learn Stiffness method for beam and frame analysis.



5	To study Finite difference method.
6	To learn Fundamental concepts of Finite Element method.
Course Outcomes:	
CO1	Students able to analyze beams and Frames by slope Deflection method.
CO2	Students able to analyze beams and Frames by Moment distribution method.
CO3	Students able to analyze beams and Frames by Flexibility method.
CO4	Students able to analyze beams and Frames Stiffness method.
CO5	Students able to understand and analyze concept of Finite difference method.
CO6	Students able to learn Fundamental concepts of Finite Element method.
Name Of Subject:	Structural Design I (301003)
Course Objectives:	
1	To learn Analysis and design of Tension member
2	To learn Analysis and design of Compression member
3	To learn eccentrically loaded column & column bases
4	To learn Analysis and design of Flexural member
5	To learn Design of welded plate girder
6	To learn Design of Roof truss
Course Outcomes:	



CO1	Students able to make Analysis and design of Tension member
CO2	Students able to make Analysis and design of Compression member
CO3	Students able to make eccentrically loaded column & column bases
CO4	Students able to make Analysis and design of Flexural member
CO5	Students able to make Design of welded plate girder
CO6	Students able to make Design of Roof truss
Name Of Subject:	Hydrology and water Resource Engineering (301001)
Course Objectives:	
1	To learn government organizations, apply & analyze precipitation & its abstractions, runoff, runoff hydrographs and gauging of streams.
2	To learn floods, hydrologic routing & Q-GIS software in hydrology, reservoir planning, capacity of reservoir & reservoir economics.
3	To learn water logging & water management, apply & analyze ground water hydrology, irrigation, piped distribution network and canal revenue, apply and analyze crop water requirement.
Course Outcomes:	
CO1	Understand government organizations, apply & analyze precipitation & its abstractions.
CO2	Understand, apply & analyze runoff, runoff hydrographs and gauging of streams.
CO3	Understand, apply & analyze floods, hydrologic routing & Q-GIS software in hydrology.
CO4	Understand, apply & analyze reservoir planning, capacity of reservoir & reservoir economics.
CO5	Understand water logging & water management, apply & analyze ground water hydrology
CO6	Understand irrigation, piped distribution network and canal revenue, apply and analyze crop water requirement.



Name Of Subject:	Fluid Mechanics-II (301005)
Course Objectives:	
1	To learn fluid flow around Submerged Objects and its types, Open channel flow and its relationship.
2	To learn uniform flow in open channels and jumps involved, impact of jet and pumps used.
3	To learn generation of hydropower, different types of flows for computation in open channel.
Course Outcomes:	
CO1	To understand fluid flow around Submerged Objects and its types.
CO2	To understand Open channel flow and its relationship.
CO3	To understand uniform flow in open channels and jumps involved.
CO4	To understand impact of jet and pumps used.
CO5	To understand generation of hydropower.
CO6	To understand different types of flows for computation in open channel.
Name Of Subject:	Infrastructure Engineering and Construction Techniques (301002)
Course Objectives:	
1	To learn Railways and its types, different Construction Techniques.
2	To learn different Tunneling methods, Docks & Harbors and its requirement, different Construction Equipments.
Course Outcomes:	
CO1	To understand Meaning and scope of Infrastructure Engineering



CO2	To understand Railways and its types
CO3	To understand different Construction Techniques
CO4	To understand different Tunneling methods
CO5	To understand Docks & Harbors and its requirement
CO6	To understand different Construction Equipments

BE CIVIL SEMESTER-I

Name Of Subject:	Environmental Engineering - II (401001)
Course Objectives:	
1	To provide the necessary knowledge on wastewater collection system, characteristics of wastewater and treatment/processing/control technologies for wastewater.
2	To impart necessary skill for the design and operation of wastewater treatment facilities
3	To prepare students for higher studies and research in the field of wastewater treatment technology.
4	To introduce new development in the field of waste management and pollution control.
Course Outcomes: After the completion of the course the student should be able to -	
CO1	Explain component of sewage collection, conveyance and treatment plant, keeping in view of quantitative and qualitative approach.
CO2	Describe stream sanitation and design screen chamber, grit chamber, and primary sedimentation tank.
CO3	Describe and design secondary treatment units with special emphasis on activated sludge process and trickling filter.
CO4	Describe low cost treatment methods, viz., Oxidation pond, aerated lagoon, phytoremediation and root zone technology.
CO5	Describe anaerobic treatment processes as anaerobic digester, up flow anaerobic sludge blanket and design of units as septic tank with



	up flow filters and soak pit.
CO6	Explain industrial wastewater treatment facilities.
Name of Subject:	Architecture and Town Planning (ATP) (401004)
Course Objectives: Objectives of the Course are	
1	1.To make students conversant with the importance of Architecture and Town Planning in construction industry
2	2.To learn landscaping and importance of sustainable architecture in urban renewal
3	3.To understand the Goals and Objectives, Levels of Neighborhood planning and MRTTP Act 1966
4	4.To study types of Civic Surveys, Planning agencies for various levels of planning and Traffic transportation systems
5	5.To understand the LARR, URDPFI and RERA Act 2016 and MAHA-RERA
6	6.To learn Special townships, SEZ, CRZ, Smart City, AMRUT Guidelines and Application of GIS, GPS, remote sensing in planning
Course Outcomes: At the end of the course the students will have an ability to	
CO1	1.Explain the importance of Architecture and Town Planning.
CO2	2.Explain the landscaping and urban renewal.
CO3	3.Apply Levels of neighborhood planning and MRTTP Act.
CO4	4.Apply the appropriate survey method for planning and use the traffic transportation system.
CO5	5.Application of LARR, URDPFI and RERA Act 2016 and MAHA-RERA.
CO6	6.Application of GIS, GPS, remote sensing in planning
Name Of Subject:	Structural Design and Drawing III (401003)



Course Objectives:	
1	To study introduction, basic concept various pre-tensioning & post tensioning systems, concept of losses, stress calculation and cable profile.
2	To design of post tensioned prestressed concrete simply supported rectangular and flanged sections for flexure and shear including end block.
3	To design of prestressed two way flat slab by direct design method.
4	To analysis and design of RCC cantilever type of retaining wall for various types of backfill conditions.
5	To study introduction, types, function, codal provisions, methods of analysis, design of circular, square, and rectangular water tanks resting on ground by working stress method, Introduction to limit state design of water tanks.
6	To study introduction to single and multi-degree of freedom systems: free, forced, un-damped and damped vibration, Estimation of earthquake forces by seismic coefficient method, Estimation of combined effect of lateral forces and vertical loading on G+2 storied frames.
Course Outcomes:	
CO1	Students will have knowledge of pre-tensioning & post tensioning systems also they will calculate stresses, losses and analyze cable profile.
CO2	Students will able to design post tensioned prestressed concrete simply supported rectangular and flanged sections for flexure and shear including end block.
CO3	Students will able to design prestressed two way flat slab by direct design method.
CO4	Students will analyze and design RCC cantilever type of retaining wall for various types of backfill conditions.
CO5	Students will have knowledge of introduction, types, function, codal provisions of water tank and able to analyze and design of circular, square, and rectangular water tanks resting on ground by working stress method with the help of limit state method.
CO6	Students will have knowledge of introduction, types, function, codal provisions of water tank and able to analyze and design of circular, square,



	and rectangular water tanks resting on ground by working stress method with the help of limit state method.
Name Of Subject:	Transportation Engineering (401002)
Course Objectives:	
1	To learn role of Transportation, Highway developmenn and Highway planning.
2	To Learn Geometric design of Highway and Highway drainage System.
3	To Learn Traffic Engineering and control.
4	To Learn Propeties of Highway Pavement Materials and its various test on it.
5	To Design Highway Pavement
6	To learn Pavement Construction Techniques and Modern Trends in Highway Materials, Construction and Maintenance.
Course Outcomes:	
CO1	Students able to understand role of transportation, Highway development and Highway planning.
CO2	Students able to understand geometric design of Highway
CO3	Students able to understand Traffic Engineering and its Control.
CO4	Students able to understand Propeties of Highway Pavement Materials and its various test on it.
CO5	Students able to understand the design of Highway Pavement.
CO6	Students able to understand Pavement Construction Techniques and Modern Trends in Highway Materials, Construction and Maintenance.
Name Of Subject:	TQM & MIS in Civil Engineering (401005)
Course Objectives:	



1	To learn total quality management and total quality control, 7 QC tool.
2	To learn ISO and Quality Manual Importance, contents, documentation
3	To learn Management Control and CONQAS and CIDC-CQRA Certifications, TQM Implementation and Management Information systems (MIS).
Course Outcomes:	
CO1	Students acquire knowledge of what is quality, quality gurus and their contribution in this world. Describe Total quality management and total quality control
CO2	Students will be able to understand the concept of 7 QC tools and apply them in their project or any industrial research problem.
CO3	Students will analyze the use and importance of ISO and Quality Manual Importance, contents, documentation. Importance of check-lists in achieving quality.
CO4	Describe Management Control and CONQAS and CIDC-CQRA Certifications
CO5	Describe techniques in TQM Implementation and various types of international and national quality awards
CO6	Explain Introduction to Management Information systems (MIS)

SE CIVIL SEMESTER-II

Name Of Subject:	Fluid Mechanics I (201004)
Course Objectives:	
1	To study basics of Fluid Mechanics, Fluid properties and concept of submerged & floating structure in a static fluid.
2	To make use of principles of continuity, momentum, and energy as applied to fluid motions.
3	To apply fundamental principles of fluid mechanics for the solution of practical civil engineering problems.
Course Outcomes:	



CO1	Use fluid properties, dimensional analysis for solving problems of fluid flow.
CO2	Solve fluid statics problems.
CO3	Measure fluid pressure.
CO4	Calibrate discharge measuring instrument like venturimeter, orifice meter.
CO5	Distinguish between various types of fluid flows and find the fluid velocity using principles of Kinematics and Dynamics.
CO6	Design pipes to carry particular amount of discharge
Name Of Subject:	Architectural Planning and Design of Buildings (201005)
Course Objectives:	
1	To understand necessity of Town planning, principles of planning, principles of architecture and byelaws
2	To study the planning for building services such as noise and acoustics, ventilation, lighting, plumbing work and safety practices.
3	To develop the plan, elevation and section of load bearing and framed structures.
Course Outcomes:	
CO1	Make use of principles of planning and principles of architectural Planning
CO2	Analyze the available primary or secondary data and plan different types of structures considering futuristic need of an area
CO3	Improve the status of existing structures by proposing appropriate green measures
CO4	Plan effectively various types of buildings according to their utility with reference to different codes.
CO5	Understand and resolve contemporary issues at multi-dimensional functional levels.



Name Of Subject:	Structural Analysis I
Course Objectives:	
1	To understand the basics configuration and classification of structures
2	To analyze the determinate and indeterminate structures
Course Outcomes:	
CO1	Understand the basic concept of static and kinematic indeterminacy, slope and deflection of determinate and indeterminate beams for analysis of structures.
CO2	Analyze indeterminate beams structures and frames
CO3	Evaluate determinate and indeterminate trusses and its application in the field.
CO4	Apply influence line diagrams for the analysis of structures under moving load.
CO5	Analyze two and three hinged arches and its application.
CO6	Apply plastic analysis for indeterminate steel structures by limits state method.
Name Of Subject:	Engineering Geology
Course Objectives:	
1	To study basic of Engineering Geology and introductory part of the Earth science.
2	To understand the utility and application of Geological principles in various phases of Civil Engineering activities.
3	To describe the sources, and characterization of common Building materials.
4	To learn the basic aspects occur due to structural features like folds and faults.
5	To explain various natural hazards and their implications on structures and effects on society.



Course Outcomes:	
CO1	Explain the basic concepts of Engineering Geology.
CO2	Differentiate between the different rock types, their inherent characteristics and their application in civil engineering.
CO3	Understand physical properties, mechanical properties of the minerals and their application in civil engineering
CO4	Identify favourable and unfavourable conditions for the buildings, roads, dam, tunneling etc through the rocks.
CO5	Explain mass wasting processes, effects of mass wasting process on the civil engineering structures and remedial measures
CO6	Interpret geohydrological characters of the rocks present at the foundations of the dams, percolation tanks, tunnels
CO7	Understand Seismic activities and its effect on the civil engineering construction
CO8	Identify Geological hazards and presence of ground water
Name Of Subject:	Concrete Technology (201007)
Course Objectives:	
1	To know properties of various ingredients of concrete.
2	To learn the behavior of concrete at its fresh & hardened state
3	To understand special concrete and their application in Industries
4	To learn concept of concrete mix design.
5	To explain deterioration of concrete and study methods of repair.
Course Outcomes:	
CO1	Understand chemistry, properties, and classification of cement, fly ash, aggregates and admixtures, and hydration of cement in concrete.



CO2	Prepare and test the fresh concrete
CO3	Test hardened concrete with destructive and nondestructive testing instruments
CO4	Get acquainted to concrete handling equipments and different special concrete types.
CO5	Design concrete mix of desired grade
CO6	Predict deteriorations in concrete and repair it with appropriate methods and techniques.

TE CIVIL SEMESTER-II

Name Of Subject:	ADVANCED SURVEYING (301007)
Course Objectives:	
1	To make students aware with different advance surveying methodologies applied to carry out large scale survey works in field measurements with modern instruments & To understand the concept of SBPS in identification of land features from space, it's segments, uses, governing factors & errors.
2	To understand the hydrographic surveying & its methods of sounding, plotting used in finding solution of problems
3	To know in detail the concept of remote sensing with different data acquisition techniques & get introduced to the field of GIS, coordinate systems, map projections, its working principles, data collection, data processing and analysis.
4	To know about significance of triangulation adjustments in terms of its field measurements errors, its distributions, laws & methods .
5	To get introduced to the concept of photogrammetry in preliminary identification and map making.
6	To study trigonometric leveling work based on parameters of correction for curvature & refraction & to know setting out of different construction works .
Course Outcomes:	
CO1	Understand modern surveying technique & equipments also apply knowledge of SBPS astronomy for solving civil engineering



	problems.
CO2	Understand hydrographic surveying & use sounding equipments and applying knowledge to finding solution of problems .
CO3	Remember & understand the principles of the earth surface, its projections and different coordinates involved in map making & apply RS & GIS in transportation engineering, structural engineering and land use planning.
CO4	Explain limits of accuracy, apply principles of theory of errors for correction of measurements & get solutions of problems & errors.
CO5	Identify aerial photographs and understand procedure of aerial survey & utilize stereoscope and parallax bars.
CO6	Handle the leveling errors they are likely to come across any large scale survey works & applying knowledge to do setting out of construction works like bridge, tunnel.
Name Of Subject:	Environmental Engineering-1 (301011)
Course Objectives:	
1	To provide the necessary knowledge on Noise pollution, Air pollution and Solid waste management.
2	To impart necessary skill for the design and operation of water treatment plants.
3	To impart necessary skill for the operation and processes of water treatment plants.
4	To prepare students for higher studies and research in the field of water treatment technology.
5	To introduce new developments in the field of water treatment.
6	To provide the necessary knowledge rain water harvesting, concepts in the field of water supply and treatment.
Course Outcomes:	
CO1	To provide the necessary knowledge on Noise pollution, Air pollution and Solid waste management.
CO2	To impart necessary skill for the design and operation of water treatment plants.



CO3	To impart necessary skill for the operation and processes of water treatment plants.
CO4	To prepare students for higher studies and research in the field of water treatment technology.
CO5	To introduce new developments in the field of water treatment.
CO6	To provide the necessary knowledge rain water harvesting, concepts in the field of water supply and treatment.
Name Of Subject:	Foundation Engineering
Course Objectives:	
1	To learn about types and purposes of different foundation systems and structures.
2	To provide students with exposure to the systematic methods for designing foundations.
3	To build the necessary theoretical background for design and construction of foundation systems.
4	To discuss and evaluate the feasibility of foundation solutions to different types of soil conditions considering the time effect on soil behavior.
Course Outcomes:	
CO1	Be able to plan and implement a site investigation program including subsurface exploration to evaluate soil/structure.
CO2	Be able to determine allowable bearing pressures and load carrying capabilities of different foundation systems.
CO3	Be able to carry out laboratory and field compaction tests for preparation of foundation surfaces and placement of engineered fill.
CO4	Students will get knowledge about types of deep foundations and will be able to calculate load carrying capacity by various methods.
CO5	Be able to design foundation on black cotton soil.
CO6	Students will get knowledge about new technique i.e. Geosynthetics and application in civil engineering.
Name of Subject:	Project Management and Engineering Economics (301008)



Course Objectives: Objectives of the Course are	
1	To make students conversant with the importance of project management in construction industry.
2	To Learn various optimization techniques and adopting appropriate technique for decision making with analyzing and solving problems on network analysis, resource allocation and updating
3	To Understand the principles of Inventory management with the concept of Materials Management and Project Appraisal
4	Learn to recognize and apply quality assurance and quality control techniques for Construction Management and the importance of TQM in construction projects.
Course Outcomes: At the end of the course the students will have an ability to	
CO1	Explain the importance, objective, and functions of project management.
CO2	Get knowledge about network for planning and scheduling of project.
CO3	Explain different methods of analysis for project resource management and safety norms to the construction project.
CO4	Understand project monitoring, resource allocation as well as basic knowledge of project management software for controlling of project.
CO5	Explain basic project economics in construction industry.
CO6	Understand conditions for project appraisal and preparation of project feasibility report as well as detailed project report.
Name Of Subject:	Structural Design – ii(301010)
Course Objectives:	
1	To learn Working stress method & Limit state method
2	To learn M.R. Of singly & Doubly reinforced rectangular R.C. section. Design Of One way Slab
3	To learn design of two way slabs & staircase



4	To learn Analysis and design of Flexural member
5	To learn shear, bond and torsion & Redistribution of moments
6	To learn Column & isolated column footing.
Course Outcomes:	
CO1	Students able to know Working stress method & Limit state method
CO2	Students able to know M.R. Of singly & Doubly reinforced rectangular R.C. section & make Design Of One way Slab
CO3	Students able to make design of two way slabs & staircase
CO4	Students able to make Analysis and design of Flexural member
CO5	Students able to know shear, bond and torsion & Redistribution of moments
CO6	Students able to Design Column & isolated column footing.

BE CIVIL SEMESTER-II

Name Of Subject:	Quantity Survey, Contrats and Tenders
Course Objectives:	
1	To study Estimate, Meaning, purpose, methods, various basic term in estimate & types of estimate.
2	Learn process of preparation of detailed estimate of various structure upto plinth with help of various methods.
3	Learn the process of preparation detailed estimate and valuation of various structures upto superstructure with help of various methods
4	To study and understand detailed specification of Civil Work & its rate analysis.
5	Understanding the tendering process of civil work & Methods of Executing Works.



6	To concieve Knowledge and get to know the concept of contract, conditions of contracts and arbitration
Course Outcomes:	
CO1	Understand of the concept Estimate, various term in estimate & types of estimate.
CO2	Will be able to prepare estimate of various structure up to plinth level and prepare estimate of various Super Structures and DSR.
CO3	Acquire knowledge about detailed specification of Civil Work & to calculate its rate analysis.
CO4	Will be able to understand about valuation and preparation of valuation report.
CO5	Get to know tendering process of civil work & Methods of Executing Works.
CO6	Understand concept of contract include in tender & various terminology of include in contracts.
Name Of Subject:	Dams And Hydraulic Structures
Course Objectives:	
1	To learn introduction, classification, different terms related to dams and dam safety and instrumentation
2	To learn different components and construction of gravity dam, and concept and classification of Arch Dam and Other Dams
3	To learn details of spillway and gates, Hydropower Structures,
4	To learn details of Earth Dam and Diversion head works
5	To learn details of Canals and Canal Structures
6	To learn details of C. D. Works and River Training Structures
Course Outcomes:	
CO1	Students are able to understand introduction, classification, different terms related to dams and dam safety and instrumentation



CO2	Students are able to understand different components and construction of gravity dam, and concept and classification of Arch Dam and Other Dams
CO3	Students are able to understand details and design of spillway and gates, Hydropower Structures,
CO4	Students are able to understand details of Earth Dam and Diversion head works
CO5	Students are able to remember different components and apply knowledge to design and analyze earthen dam.
CO6	Students are able to understand details of C. D. Works and River Training Structures
Name Of Subject:	Construction Management (Elective-IV)
Course Objectives:	
1	To understand Role of construction industry, construction management & PMC in construction sector.
2	To learn the Construction scheduling, work study and work measurement.
3	To understand the labour laws and Capital investments associated with construction sector.
4	To learn risk management and value engineering technique for construction project.
5	To learn Materials management and human resource management skill.
6	To enhance awareness about applications of artificial intelligence technique in civil engineering.
Course Outcomes:	
CO1	Explain role of construction management, PMC in construction sector.
CO2	Prepare Scheduling of a Construction Project. Apply basic procedures of work study, work measurement, time and motion studies.
CO3	Explain Need and importance of labour laws and Prepare Project Balance Sheet.



CO4	Identify risks involved in projects, analyse the risks and control the risks using mathematical models, Perform value analysis.
CO5	Solve Materials management problem and explain human resource management.
CO6	Explain basic terminologies and applications of artificial intelligence in civil engineering.
Name Of Subject:	Air Pollution and Control
Course Objectives:	
1	To study the relation between Meteorology and Air Pollution
2	To learn the stack emission monitoring
3	To learn Sources, Causes & effects of indoor Air Pollution
4	To study methods and equipments used for controlling air pollution
5	To study methods and equipments used for controlling air pollution
6	To provide knowledge about EIA and its role
Course Outcomes:	
CO1	Apply the knowledge of meteorology to control air pollution
CO2	To conduct air pollution survey
CO3	Identify the sources of air pollutants and their effect on human, plants and materials
CO4	Design of air pollution controlling equipment
CO5	Use knowledge of legislation for prevention and control of air pollution
CO6	To prepare EIA of projects