

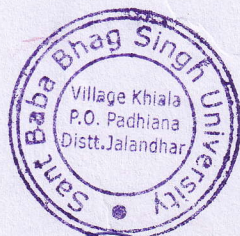


Sant Baba Bhag Singh

UNIVERSITY

LEARN | ACHIEVE | SUCCEED

PO, PEO, PSO and CO
of
(Civil Engineering)



Dr.
(Smt Jagdeep Kaur) (Dean)
(Signature)

Kaur
Dr.
Mr. Gurmant Kaur
(COD-CE)

Programme outcomes (PO's) of B.Tech (Civil Engineering)

PO1	Engineering knowledge: Apply the knowledge of mathematics, science, civil engineering fundamentals in the five broad areas of civil engineering namely structures, water resources, geotechnical, transportation and environmental engineering for solution of complex problems, in the Civil Engineering.
PO2	Problem analysis: Use first principles of mathematics, physics/chemistry and civil engineering concepts to identify, formulate, research literature and analyze complex engineering problems
PO3	Design/development of solutions: Design solutions/processes for problems pertaining to civil Engineering projects in sub and super structure construction, water treatment, highway alignment with due consideration for the structural stability and safety, durability with respect to environmental effects, cultural and societal needs of the public.
PO4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information for Civil Engineering problems that cannot be solved by straightforward application of theories/knowledge, may not have a unique solution and that may need consideration of requirements not clearly defined, and may require mathematical modeling or use of computational tools.
PO5	Modern tool usage: Create, select or apply appropriate IT / Engineering tools, software and techniques in order to manage Civil Engineering projects for planning, analyzing, designing and drawing, costing, scheduling, and predicting / modeling with a clear understanding of the limitations of such an attempt.
PO6	The engineer and society: Understand the role and responsibility of a professional Civil Engineer in the societal, health, safety and cultural issues by applying reasoning based on the contextual knowledge and within the legal framework for the welfare of society at large.
PO7	Environment and sustainability: Understand the impact of the professional civil engineering solutions on the environment and the society and develop necessary knowledge in incorporating sustainability concepts in engineering solutions.
PO8	Ethics: Apply humanitarian ethics as well as professional ethics as pertaining to norms of civil engineering practice.
PO9	Individual and team work: Functioning effectively as an individual and applying the principle of 'unity in diversity' with a motivation/spirit of synergy and teamwork.
PO10	Communication: Communicate effectively by comprehending designs and drawings, including use of relevant codes, writing effective technical reports and make oral or written presentation as per the need of the project.
PO11	Project management and finance: Demonstrate knowledge and understanding of the civil engineering and project management principles and apply them to manage/complete within the stipulated period and funds.
PO12	Life-long learning: Recognize the need for and develop competencies necessary for life-long learning so as to offer enhanced knowledge and skill in the globally changing and challenging project environment.

Noted Dept.

PA



Gurpreet Kaur
Co-Ordinator
Sant Baba Bhag Singh University
Village Khado
P.O. Faridkot
Dist. Jalandhar

Programme outcomes (PO's) of M.Tech (Civil Engineering)	
PO1	The post-graduates will be able to apply the knowledge of engineering to understand and analyse individual components related to the Civil Engineering.
PO2	The post-graduates will be able to analyse, design and conduct experiments, interpret and report results of complex Civil Engineering problems as per specifications and standards.
PO3	The post-graduates will be able to create, adopt, and apply appropriate techniques, resources, and modern computational tools.
PO4	The post-graduates will be capable of undertaking self-employment schemes.
PO5	The post-graduates will be able to understand the impact of the professional Civil Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO6	The post-graduates will be able to operate in inter-disciplinary engineering teams with social responsibility and ethical values.
PO7	The students will be able to engage themselves in higher studies or life-long learning and keep on updating themselves with technological advances

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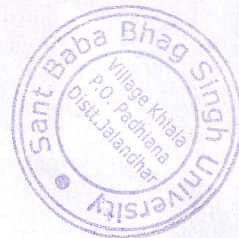


Program me Specific Outcomes (PSOs) B.Tech (Civil Engineering)

1. **UNDERSTANDING:** Graduates will have an ability to describe, analyse and solve problems using mathematics and systematic problem solving technique.
2. **ANALYTICAL SKILL:** Graduates will have an ability to plan, execute, manage, maintain and rehabilitate civil engineering systems and processes.
3. **EXECUTIVE SKILL:** Graduates will have an ability to interact and work seamlessly in multi disciplinary teams.
4. **RESPONSIBILITY:** Graduates will have requisite understanding on impact of civil engineering projects and processes in a global, economic and societal context.

monika singh

Gurpreet Singh
COP, CA



Programme Specific Objectives (PSO) of M.Tech (Civil Engineering)	
PSO1	Understanding: Students shall demonstrate sound knowledge in analysis, design, laboratory investigations and construction aspects of civil engineering infrastructure.
PSO2	Broadness and Diversity: Students will have a broad understanding of economical, environmental, societal, health and safety factors involved in infrastructural development and shall demonstrate ability to function within multidisciplinary teams with competence in modern tool usage.
PSO3	Self-Learning and Service: Students will be motivated for continuous self learning in engineering practice and or pursue research in advanced areas of civil engineering in order to offer engineering services, ethically and responsibly.

Monika Arora

Gurpreet Singh
CoD CRT



Programme Educational Objectives (PEO) of B.Tech (Civil Engineering)	
PEO1	To train the students so that they can work and contribute to the infrastructure development projects being undertaken by Govt. And private or any other sector companies.
PEO2	To train the students in such as a way that they can pursue higher studies so that they can contribute to the teaching profession/research and development of civil engineering and other allied fields.
PEO3	To train students in a manner that they should function effectively in the multicultural and multidisciplinary groups for the sustainable development and growth of civil engineering projects and profession.

Manish Arora

Gurmanpreet
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Programme Educational Objectives (PEO) of M.Tech (Civil Engineering)	
PEO1	To implement civil engineering principles and knowledge to create structural systems and services for the society and to improve quality of life while emphasizing on sustainable development.
PEO2	To inculcate state of the art technical expertise using theoretical, experimental and computational approaches for the analysis and design of structures.
PEO3	To impart research skills with professional and ethical attitude amongst the post graduates.
PEO4	To enhance personal knowledge, communication, managerial and decision making skills to succeed in civil engineering profession so as to be the preferred choice of employers at global arena.

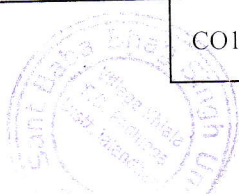
Monika Singh

G. Munand
C.D., C.E.



Course Outcomes (Cos) of B.Tech (Civil Engineering)				
Semester	Course Code	Course Name	Course Outcomes	
3	CE213	Computer-aided Civil Engineering Drawing	CO1	To develop graphical skills for communicating concepts, ideas and designs of engineering products graphically/ visually as well as understand another person's designs.
			CO2	To get exposure to national standards relating to technical drawings using Computer Aided Design and Drafting practice.
			CO3	Develop Parametric design and the conventions of formal engineering drawing.
			CO4	Examine a design critically and with understanding of CAD - The student learn to interpret drawings, and to produce designs using a combination of 2D and 3D software.nerves, peripheral nerves.
	CE215	Introduction to Civil Engineering	CO1	Identifying the various areas available to pursue and specialize within the overall field of Civil Engineering.
			CO2	Highlighting the depth of engagement possible within each of these areas.
			CO3	Exploration of the various possibilities of a career in this field.
			CO4	Understanding the vast interfaces this field has with the society at large.
			CO5	Providing inspiration for doing creative and innovative work.
	CE217	Computer-aided Civil Engineering Drawing Laboratory	CO1	Produce and interpret 2D & 3D drawings.
			CO2	Do a detailed study of an engineering artifact.
			CO3	Develop drawings for conventional structures using practical norms.
	CE220	Instrumentation & Sensor Technologies for Civil Engineering Applications	CO1	To describe the measurement of electrical variables.
			CO2	To describe the requirements during the transmission of measured signals.
			CO3	To construct Instrumentation/Computer Networks.
			CO4	To suggest proper sensor technologies for specific applications.
			CO5	To design and setup measurement systems and do the studies.
	CE222	Engineering Geology	CO1	Know broadly the concepts and functionalities of the electronic devices, tools and instruments.
			CO2	Understand use, general specifications and deploy abilities of the electronic devices, and assemblies.
			CO3	Confidence in handling and usage of electronic devices, tools and instruments in engineering applications.
			CO1	Understand the broad principles of fluid statics, kinematics and dynamics.

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Gurpreet Singh
CO1, CO2

CE224	Introduction to Fluid Mechanics	CO2	Understand definitions of the basic terms used in fluid mechanics.
		CO3	Understand classifications of fluid flow.
		CO4	Be able to apply the continuity , momentum and energy principles.
CE226	Introduction to Solid Mechanics	CO1	Describe the concepts and principles , understand the theory of elasticity including strain/displacement and Hooke's law relationships; and perform calculations, relative to the strength and stability of structures and mechanical component.
		CO2	Define the characteristics and calculate the magnitude of combined stresses in individual members and complete structures; analyze solid mechanics problems using classical methods and energy methods.
		CO3	Analyse various situations involving structural members subjected to combined stresses by application of Mohr's circle of stress; locate the shear center of thin wall beams.
		CO4	Calculate the deflection at any point on a beam subjected to a combination of loads; solve for stresses and deflections of beams under unsymmetrical loading; apply various failure criteria for general stress states at points; solve torsion problems in bars and thin walled members.
CE228	Surveying and Geomatics	CO1	Apply the knowledge, techniques, skills, and applicable tools of the discipline to engineering and surveying activities.
		CO2	Translate the knowledge gained for the implementation of Civil infrastructure facilities.
		CO3	Relate the knowledge on Surveying to the new frontiers of science like Hydrographic surveying, Electronic Distance Measurement, Global Positioning System, Photogrammetry and Remote Sensing.
CE230	Materials, Testing & Evaluation	CO1	Documenting the experimental program including the test procedures, collected data, method of interpretation and final results.
		CO2	Operating the laboratory equipment including the electronic instrumentation, the test apparatus and the data collection system.
		CO3	Measuring physical properties of common structural and geotechnical construction materials.
CE232	Engineering Geology Lab	CO1	To categorize rocks and minerals by their origin and engineering properties.
		CO2	To apply geological principles of rock masses discontinuities for use in engineering design for examples foundation.

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Gurmanpreet
COD, CE

CE234	Instrumentation & Sensor Technologies for Civil Engineering Applications Laboratory	CO1	Analyze the errors during measurements.
		CO2	Describe the measurements of electrical variables.
		CO3	Describe the requirements during the transmission of measured signals.
CE236	Surveying & Geomatics Laboratory	CO1	Able to apply principles of surveying in field.
		CO2	Able to handling basic survey instruments including leveling.
		CO3	Able to development of contour maps of given area and to possess knowledge about theodolite.
CE240	Introduction to Fluid Mechanics Laboratory	CO1	To understand of basic physics of fluids.
		CO2	Gaining knowledge to calculate and design engineering applications involving fluid.
		CO3	Understanding of analyzing flow systems flow systems in terms of mass, momentum and energy balance.
CE242	Materials. Testing & Evaluation Laboratory	CO1	Reproduce the basic knowledge of mathematics and engineering in finding the strength in tension, compression, shear and torsion.
		CO2	Identify, formulate and solve engineering problems of structural elements subjected to flexure.
		CO3	Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to unsuitable materials.
CE313	Mechanics of Materials	CO1	An ability to apply knowledge of mathematics, science, and engineering.
		CO2	An ability to design a system, component, or processes to meet desired needs.
		CO3	An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.
		CO4	An ability to apply principles of engineering, basic science and math to model, analyze, design and realize physical systems, components or processes.
CE315	Hydraulic Engineering	CO1	The students will be able to apply their knowledge of fluid mechanics in addressing problems in open channels.
		CO2	They will possess the skills to solve problems in uniform, gradually and rapidly varied flows in steady state conditions.
		CO3	They will have knowledge in hydraulic machineries (pumps and turbines).

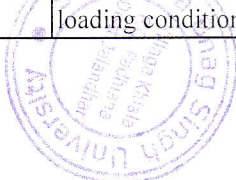
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Guhanth for C.D. CRT

CE317	Structural Engineering	CO1	Specify a strategy for site investigation to identify the soil deposits and determine the depth and spatial extent within the ground.
		CO2	Understand various site investigation techniques and their in-situ applications.
		CO3	Prepare a soil investigation report based on bore hole log data and various in-situ tests like SPT,CPT, etc.
CE319	Geotechnical Engineering	CO1	Specify a strategy for site investigation to identify the soil deposits and determine the depth and spatial extent within the ground
		CO2	Understand various site investigation techniques and their in-situ applications
		CO3	Prepare a soil investigation report based on bore hole log data and various in-situ tests like SPT,CPT, etc
CE321	Hydrology & Water Resources Engineering	CO1	Understand the interaction among various processes in the hydrologic cycle.
		CO2	Understand the basic aquifer parameters and estimate groundwater resources for different hydro-geological boundary conditions.
		CO3	Apply the application of fluid mechanics and use of computers in solving a host of problems in hydraulic engineering
CE323	Environmental Engineering	CO1	Understand the impact of humans on environment and environment on humans.
		CO2	Be able to identify and value the effect of the pollutants on the environment: atmosphere, water and soil.
		CO3	Be able to plan strategies to control, reduce and monitor pollution.
CE325	Transportation Engineering	CO1	Carry out surveys involved in planning and highway alignment.
		CO2	Design the geometric elements of highways and express ways.
		CO3	Carry out traffic studies and implement traffic regulation and control measures and intersection design.
		CO4	Characterize pavement materials.
		CO5	Design flexible and rigid pavements as per IRC.
CE327	Geotechnical Engineering Lab	CO1	To determine index properties of soils.
		CO2	To determine engineering properties of soil.
		CO3	To evaluate compressive behaviour of soils
		CO4	To evaluate strength behaviour of soils.
CE333	Transportation Engineering Lab	CO1	The experiments will provide better understanding of the materials and their behavior under various loading conditions.

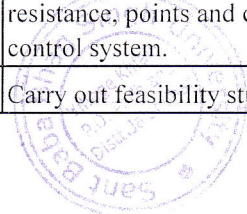
Monika Arora



Gurumukhi
CODCE

CE331	Hydraulic Engineering Lab	CO1	This course aims at developing and understanding of the behavior of fluids in motion or at rest and the subsequent effects of the fluid on the boundaries.
		CO2	The study of this subject will develop analytical abilities related to fluid flow . This is a core subject, basic knowledge of which is required by all engineers.
CE310	Construction Engineering & Management	CO1	An idea of how structures are built and projects are developed on the field.
		CO2	An understanding of modern construction practices.
		CO3	A good idea of basic construction dynamics- various stakeholders, project objectives, processes, resources required and project economics.
CE312	Engineering Economics, Estimation & Costing	CO1	Have an idea of Economics in general, Economics of India particularly for public sector agencies and private sector businesses.
		CO2	Be able to perform and evaluate present worth, future worth and annual worth analyses on one of more economic alternatives.
		CO3	Be able to carry out and evaluate benefit/cost, life cycle and break even analyses on one or more economic alternatives.
CE314	Disaster Preparedness & Planning Management	CO1	General concept in the dimensions of disasters caused by nature beyond the human control.
		CO2	The disasters and environmental hazards induced by human activities with emphasis on disaster preparedness, response and recovery.
CE318	Geotechnical Design	CO1	Knowing about the properties of materials required for the constructing a desired infrastructure.
		CO2	Familiar with design concepts of various foundation systems.
		CO3	Familiar with design of transportation facilities.
CE320	Foundation Engineering	CO1	Have an exposure to the systematic methods for designing foundations.
		CO2	Be able evaluate the feasibility of foundation solutions to different types of soil conditions considering the time effect on soil behaviour.
		CO3	Have necessary theoretical background for design and construction of foundation systems.
CE322	Offshore Engineering	CO1	Floatation and stability of floating offshore platform.
		CO2	Deep and shallow water wave kinematics.
		CO3	Wave, wind, current and motion induced loading on offshore energy structures.
CE324	High Speed Rail Engineering	CO1	Solve problems of railway track geometrics, train resistance, points and crossings, signaling and control system.
		CO2	Carry out feasibility study of rail tracks.

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CoD, CE

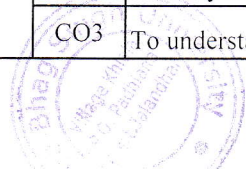
CE326	Public Transportation Systems	CO1	Understanding the issues and challenges in the transportation sector.
		CO2	To develop skills required for transport planning.
		CO3	Analyzing the processes for transport project execution control.
CE328	Railway Engineering	CO1	Impart basic knowledge of railway track components and their functions.
		CO2	Introduce geometric design, signaling and control system.
		CO3	Acquaint with bridge technology.
CE330	Structural Analysis-I	CO1	Ability to distinguish between stable and unstable structures.
		CO2	Apply different methods to calculate slopes and deflections.
		CO3	Ability to model and analyze structural system.
CE332	Concrete Technology	CO1	To understand concepts related to properties of concrete and its constituents.
		CO2	To present foundation to basic engineering tools and concepts related to concrete technology.
		CO3	To give an experience in implementation of engineering concepts in the field of civil engineering.
CE334	Bridge Engineering	CO1	Able to learn about components, classifications and choice of bridge type.
		CO2	To apply various standard specifications for road bridges.
		CO3	Able to gain knowledge about different type of bridges.
CE336	Reinforced Concrete	CO1	Explain the basic concepts of structural design methods of RCC to the practical problem.
		CO2	Use the knowledge in structural planning and design of various components of buildings.
		CO3	Explain the composite action of reinforced steel and concrete in reinforced concrete structural members.
CE338	Structural Dynamics	CO1	Apply knowledge of mathematics, science and engineering by developing the equation of motion for vibratory systems and solving for the free and forced response.
		CO2	Intercept dynamics analysis results for design analysis and research purposes.
		CO3	Analyze different systems with distributed load.
CE340	Design of Concrete Structures-I	CO1	Able to describe about characteristics of cement, sand and aggregates.
		CO2	Able to illustrate design philosophies.
		CO3	Able to solve problems in context to beams and slabs.

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COD, CR

CE316	Engineering Economics & Costing Laboratory	CO1	Be able to understand the technical specifications for various works to be performed for a project and how they impact the cost of a structure.
		CO2	Be able to quantify the worth of a structure by evaluating quantities of constituents, derive their cost rates and build up the overall cost of the structure.
		CO3	Be able to understand how competitive bidding works and how to submit a competitive bid proposal.
CE405	Civil Engineering - Societal & Global Impact	CO1	The impact which Civil Engineering projects have on the Society at large and on the global arena and using resources efficiently and effectively.
		CO2	The extent of Infrastructure, its requirements for energy and how they are met: past, present and future.
		CO3	The Sustainability of the Environment, including its Aesthetics, The potentials of Civil Engineering for Employment creation and its Contribution to the GDP.
CE409	Structural Analysis-II	CO1	This course aims at providing students with a solid background on principles of structural engineering design.
		CO2	Students will be exposed to the theories and concepts of both concrete and steel design analysis both at the element and system levels.
		CO3	Hands-on design experience and skills will be gained and learned through problem sets and a comprehensive design project.
CE411	Design of Structural Systems	CO1	Evaluate structural design analysis.
		CO2	Analyze structure cost and value.
		CO3	Analyze loading system of structures.
CE413	Industrial Structures	CO1	Acquired adequate knowledge of statistics and probability related to reliability analysis.
		CO2	Acquired adequate knowledge of statistics and probability related to reliability systems.
		CO3	Ability to carry out reliability based design procedure for structural problems.
CE415	Design of Concrete Structures-II	CO1	Identify and compute main properties of concrete.
		CO2	Apply strength methods to design RC members.
		CO3	Analyze and design safety and serviceability of structural elements.
CE417	Masonry Structures	CO1	Students will be able to analyze properties of constituents.
		CO2	Students will be able to analyze and design masonry structures.
		CO3	To understand masonry structure behaviour.

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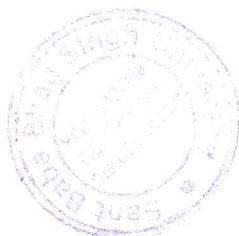


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CoD, CE

	CE419	Pre-stressed Concrete	CO1	Ability to carry out pre-stressed concrete systems.
			CO2	Able to fundamental principles as well as design aids.
			CO3	Develop competence in load conditions.
8	CE408	Design of Steel Structures	CO1	Ability to design steel structures.
			CO2	Gain technical expertise to analyze different steel structures.
			CO3	Ability to insight relevant codes of practice.
	CE410	Structural Mechanics	CO1	Ability to appreciate applications of simulation in structural engineering.
			CO2	members.
			CO3	Ability to analyze degree of dimensional freedom system.
	CE412	Advanced Structural Analysis	CO1	Able to analyze statically determinate structures.
			CO2	Understand different techniques of anlysis of structures.
			CO3	Analysis of statically indeterminate structures.
	CE414	Airport Planning and Design	CO1	Developments and challenges in Intelligent Transport Systems.
			CO2	Urban Transport; Plan a sustainable transport system for a city.
			CO3	Identify key features/components in the planning and design of a green field airport and the cost-economics.
	CE416	Traffic Engineering and Management	CO1	Developments and challenges in Transport Systems.
			CO2	Plan a sustainable transport system for a city.
			CO3	Identify key features/components in the planning safe and cost-economics traffic management.
	CE418	Pavement Design	CO1	Characterize pavement materials.
			CO2	Design flexible and rigid pavements as per IRC.
			CO3	Carry out surveys involved in planning and highway alignment.

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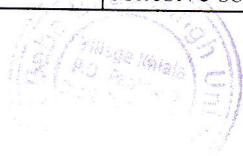
Gurmanj Kaur
CoD, CR



Course Outcomes (Cos) of M.Tech (Civil Engineering)

Semester	Course Code	Course Name	Course Outcomes	
1	CE501	Prestressed Concrete Structures	CO1	Understand the basic properties of pre-stressed concrete constituents.
			CO2	Analyze the flexural behavior of simple and composite pre-stressed concrete girders.
			CO3	Capable to calculate pre-stress losses for simple pre-stressed concrete girders.
	CE503	Repair & Retrofitting Of Structures	CO1	Various distress and damages to concrete and masonry structures .
			CO2	The importance of maintenance of structures, types and properties of repair materials etc
			CO3	Assessing damage to structures and various repair techniques.
	MAT524	Research Methodology and IPR	CO1	Students will acquire collaborative skills through working in a team to achieve common goals.
			CO2	Students will acquire the ability to make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task
			CO3	Students will acquire the skills to communicate effectively and to present ideas clearly and coherently to specific audience in both the written and oral forms.
	CE505	Concrete Structure Lab	CO1	Outline the importance of testing of cement and its properties.
			CO2	Assess the different properties of aggregate, concept of workability and testing of concrete.
			CO3	Students will be to describe the preparation of green concrete and properties of hardened concrete.
	CE507	Bridge Engineering	CO1	Ability to design the slab culvert, Box culvert
			CO2	Ability to design the T beam bridge and substructures
			CO3	Ability to design the Bridge bearings
	CE509	Design of Industrial Structures	CO1	Ability to apply the ground improvement technique using admixture and advanced technique using grouting.
			CO2	Ability to identify the relevance of reinforcing elements to resist the lateral earth pressures
			CO3	Ability to apply suitable techniques for the deep compaction of granular soils and improvement of cohesive soils

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CO1, CO2

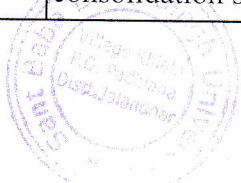
CE511	Design of plates and Shell Structures	CO1	Ability to design the Bridge bearings
		CO2	Ability to design the steel bridge for railways
		CO3	Design various units of conventional water treatment plant and water supply system Identify necessity of treatment, types of treatment processes and disposal methods for solid waste.
CE513	Wind Engineering	CO1	Students will learn to study the maps and plans.
		CO2	Learn the techniques for drawing maps in plane areas and in hilly areas
		CO3	Students will learn use different instruments.
CE515	Engineering Behavior of soil	CO1	Understand various properties of soil and their classification.
		CO2	Understand various stresses and their distribution in soil and other engineering properties of soil.
		CO3	Understand shear strength of soil and various techniques for improving the shear strength.
CE517	Advanced Concrete Technology	CO1	Students will able to choose and recommend different constituent of concrete.
		CO2	Apply basic rule for manufacture of plastic concrete and its mechanization, various methods for testing of plastic and hardened concrete.
		CO3	Students will able to design the concrete mix by IS method , distinguish special concrete from conventional concrete and analyze causes of deterioration of concrete components.
CE502	Analysis and Design of Foundation	CO1	To learn about types and purposes of different foundation systems and structures.
		CO2	To provide students with exposure to the systematic methods for designing foundations.
		CO3	To discuss and evaluate the feasibility of foundation solutions to different types of soil conditions considering the time effect on soil behavior.
CE504	Reinforced Cement Concrete Structures	CO1	Students will become familiar with the reinforced concrete fabrication and construction process, perform an industry relevant design project in a team setting.
		CO2	Students will be required to design a concrete mix design and form, pour, construct, and test a reinforced concrete beam, design philosophies of reinforced concrete structures.
		CO3	To apply the principles, procedures and current code requirements to the analysis and design of reinforced concrete beams, identify the behavior of reinforced concrete members in bond, anchorage, shear and torsion.

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Gurpreet Singh
CO-2

ENG001	English for Research Writing	CO1	Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
		CO2	Analyze the complexities associated with management of the group behavior in the organization.
		CO3	Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
CE506	Mini Project with seminar	CO1	Students will acquire the ability to make links across different areas of knowledge and to generate, develop and evaluate ideas and information so as to apply these skills to the project task.
		CO2	Students will acquire collaborative skills through working in a team to achieve common goals.
		CO3	Students will be able to learn on their own, reflect on their learning and take appropriate actions to improve it.
CE520	Material Testing Laboratory	CO1	Students will develop analytical skills in dealing with soil as a medium of water flow.
		CO2	Medium for structural supports and a primary building material.
		CO3	Understand Gradually Varied Flow & Rapidly Varied Flow analysis and its computation.
CE508	Site Investigation	CO1	Students will develop an understanding of the engineering properties of rocks
		CO2	Explain about fault, folds, unconformity and joints which are present in the strata of the earth crust, by which they can able to compare the particular area with their construction site or engineering projects.
		CO3	Apply knowledge related with the dams, tunnels, bridges and reservoir with the help of these they can be able to apply their knowledge for making of their engineering projects
CE510	Advanced Soil Mechanics	CO1	Students will be able to find the index and engineering properties of the soil.
		CO2	Identify the suitability of foundation for a particular type of soil, determine properties & demonstrate interaction between water and soil.
		CO3	Classify and characterize the soils, analyze and compute principles of compaction and consolidation settlements of soil, evaluate the

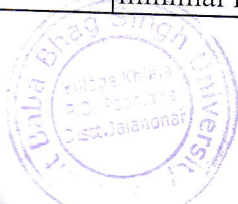
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Gurpreet Singh
CoD, CE

CE512	Finite Element Analysis	CO1	The student will be able to understand the design philosophies and behavior of structural steel.
		CO2	Ability to analyze and design of tension members, columns, beams, beam-columns; Ability to analyze and design of simple bolted and welded connections.
		CO3	Ability to design steel framing system and connections of a building in a team setting.
CE514	Advanced Steel Structures	CO1	Students will be able to use appropriate methods of structural design for the design of steel structures by applying the fundamentals of mechanics.
		CO2	Students will acquire adequate knowledge in the design of steel structural elements.
		CO3	Students will be able to check and specify the serviceability requirements of the designed steel structures.
CE516	Pavement Design & Analysis	CO1	Students will be able to choose and recommend different constituent of concrete.
		CO2	Apply basic rule for manufacture of plastic concrete and its mechanization, various methods for testing of plastic and hardened concrete.
		CO3	Students will be able to design the concrete mix by IS method, distinguish special concrete from conventional concrete and analyze causes of
CE518	Hydraulic Structures	CO1	To get an understanding of the ground improvement techniques
		CO2	Use of new materials and its behavior for ground improvement techniques.
		CO3	Problematic soil and ground improvement techniques, grouting Techniques, geo-synthetics
CE603	Construction Failures	CO1	Apply lifecycle assessment of varying levels of detail to the design and optimisation of processes and products
		CO2	Design a process according to cleaner production principles
		CO3	Evaluate and optimise existing processes for minimal impact on the environment

Monika Singh



Gurpreet Singh
CO1 CO2

3	CE 605	Composite Structure	CO1	Students to discriminate between valuable and superficial in the life.
			CO2	Develop sensitivity and awareness; leading to commitment and courage to act on their own
			CO3	This Course will encourage the students to discover what they consider valuable, they should
	CE 607	Tall Building	CO1	Understand the emergence and evolution of Indian Constitution
			CO2	Understand the structure and composition of Indian Constitution
			CO3	Understand and analyse federalism in the Indian context
	CE609	Advanced structural analysis	CO1	An ability to work in actual working environment.
			CO2	An ability to utilize technical resources.
			CO3	An ability to write technical documents and give

manika singh

Gurmanu
CD, CE, T

