Mapping of Assignment with COs B.Tech (Civil) -2014 Programme

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
Class:- B. Tech (Civil) Sem:-I		**Name of Course:-** Fundamentals of Civil Engineering					
1	Write Scope Importance and Applications of Civil Engineering	✓					
2	Write Objectives, Principles, Classifications of Surveying.		✓				
3	State and explain site selection criterion for residential buildings			✓			
4	State and Explain types and suitability of different foundations.				✓		
5	State and explain drinking water requirements and its quality parameters					✓	
6	Discuss role of infrastructure in economical growth of a country.						✓
Class:- B. Tech (Civil) Sem:-II		**Name of Course:-** Engineering Mechanics					
1	Determine Resultant of given force system	✓					
2	Determine Reactions of system / beam	✓					
3	Determine forces in truss members		✓				
4	Determine impending force in friction		✓				
5	Evaluate position of centroid			✓			
6	Determine MI of an area			✓			
7	Evaluate motion parameters of rectilinear motion				✓		
8	Evaluate relative velocity				✓		
9	Determine motion of projectile					✓	
10	Determine motion parameters for curvilinear motion					✓	
11	Appy D Alembert's principle						✓
12	Appy Work-Energy principle						✓
13	Appy Impulse-Momentum principle						✓
14	Determine motion after an impact						✓
Class:- B. Tech (Civil) Sem:-II		**Name of Course:-** Building Construction					
1	Different types of foundations	✓					
2	Types of Door and Window		✓				
3	Classifications of arches and various types of flooring			✓			
4	Methods of water proofing of roofs, Types of trusses				✓		
5	Plastering and Pointing					✓	
6	Formwork and Scaffolding						✓
Class:- B. Tech (Civil) Sem:-III		**Name of Course:-** Building Planning, Design and Byelaws					

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
1	Study of building bye laws and D.C. rules of local authority	✓					
2	Study of different types of drawings.	✓					
3	Data collection with respect to climate , ventilation and lighting in building planning.		✓				
4	Study of various components of water supply and drainage system of buildings.			✓			
5	Case studies with respect to fire fighting of high rise building.			✓			
6	Case studies with respect to lift and escalators.			✓			
7	Study of constructional requirements with respect to electrical services in buildings			✓			
8	Case studies of Ecofriendly and intelligent buildings.				✓		
9	Collecting information about legal aspects of building planning					✓	
10	Writing report on development plan.						✓
Class:- B. Tech (Civil) Sem:-III					**Name of Course:-** Applied Geology		
1	Collect and describe rock forming minerals & ore forming minerals	✓					
2	Collect and describe igneous rocks		✓				
3	Collect and describe secondary rocks		✓				
4	Collect and describe metamorphic rocks		✓				
5	Collect information and photographs of volcanoes		✓	✓			
6	Collection of information about waterfalls & ox-bow lakes in India				✓		
7	Collection of data about different geological structures like folds, faults & unconformities		✓	✓			
8	Conduct survey of ground water in India				✓		
9	Conduct survey of geological conditions suitable for tunneling.					✓	
10	Conduct survey of geological conditions suitable for dam						✓
Class:- B. Tech (Civil) Sem:-III **Name of Course:-** Engineering Economics and Financial Accounting							
1	Preparation of organization chart for small construction project	✓					
2	Preparation of organization chart for large construction project	✓					
3	Preparation of cash flow diagrams and finding out time value of money		✓				

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4	Comparison of different projects by different methods			✓			
5	Benefit cost analysis of project			✓			
6	Determination depreciation value of equipments				✓		
7	Preparation of balance sheet for project				✓		
8	Assignment on value analysis					✓	
9	Collection of data regarding RBI government of India guide lines for foreign funding in construction project.	✓	✓	✓	✓	✓	✓
10	Numericals on engineering economics	✓	✓	✓	✓	✓	✓
Class:- B. Tech (Civil) Sem:-III				**Name of Course:-** Mechanics of Solids			
1	Explain different types of stresses with practical example.	✓					
2	Write physical properties of different metals.	✓					
3	Draw shape of SFD and BMD for different types of loading		✓				
4	Draw SFD and BMD for beams.		✓				
5	Draw bending stress distribution diagram across section			✓			
6	Calculate bending stress at particular point			✓			
7	Draw deflected shape of beam for different support conditions.			✓			✓
8	Calculate slope and deflection at particular point.			✓			
9	Draw shear stress distribution diagram across section				✓		
10	Calculate shear stress at particular point.				✓		
11	Explain application of shafts in series and in parallel.				✓		
12	Calculate twist/torque/stresses in shaft.				✓		
13	Draw effect of combined axial and flexure stress					✓	
14	Draw deflected shape of column under different support conditions.					✓	
15	Calculate critical load for column.					✓	
16	Explain principal stresses and strains.						✓
17	Draw Mohr's circle for different stresses.						✓
Class:- B. Tech (Civil) Sem:-III		**Name of Course:-** Concrete Technology					
1	To find the types of cement from market.	✓	✓	✓	✓	✓	✓
2	To find the different types, sizes, shapes of aggregate from market.	✓	✓	✓	✓	✓	

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
3	Measurement of workability of fresh concrete by different methods.		✓				
4	Describe the concreting process from any nearby site.		✓	✓	✓		
5	Describe the curing of concrete.			✓			
6	Design the concrete mix by different method.				✓		
7	Measurement of strength of hardened concrete.			✓			✓
8	Measurement of strength of hardened concrete by non-destructive testing.			✓			✓
9	Describe the concept of durability of concrete.						✓
10	Explain the use of Admixtures in concrete.					✓	
Class:- B. Tech (Civil) Sem:-IV		**Name of Course:-** Engineering Mathematics III					
1	Linear differential equation with constants coefficients	✓					
2	Application of LDE and partial differential equations		✓				
3	Numerical methods to solve system of algebraic equation and ordinary differential equation.			✓			
4	Statistical methods and probability distribution				✓		
5	Vector identities and application of vector differential in mechanics					✓	
6	line integral, surface integral and volume integral.						✓
Class:- B. Tech (Civil) Sem:-IV				**Name of Course:-** Surveying			
1	Computation of corrected bearings of the traverse by different methods.	✓					
2	Solving problems on calculation of reduced levels by different methods.		✓				
3	Preparing contour map of the area from the given spot levels		✓				
4	Study of topographical sheets to record various details shown.	✓	✓				
5	Solving problems on trigonometrical levelling			✓			

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
6	Computations of independent coordinates of a closed traverse.			✓			
7	Solving problems on omitted measurements.				✓		
8	Calculation of reduced level and distance of a point by tacheometry.			✓			
9	Computation of data required to set out the simple circular curve by Rankine's method					✓	
10	Write details of survey for drainage line with proper sketches.	✓	✓	✓	✓	✓	✓
Class:- B. Tech (Civil) Sem:-IV					**Name of Course:-** Mechanics of Fluids		
1	Solution of numerical problems asked in recent three years of BVU question papers.	✓	✓	✓	✓	✓	✓
2	Solution of questions asked in recent three years BVU question papers	✓	✓	✓	✓	✓	✓
3	Report of new topic being discussed in reputed research journals related to fluid Mechanics.	✓	✓	✓	✓		
4	Mini projects such as collection of information, Brochure, Data, on a topic related to fluid mechanics.	✓	✓	✓	✓		
5	Writing of industrial applications of various topics of syllabus.	✓	✓	✓	✓	✓	✓
6	Design of new experiments related to fluid mechanics.	✓	✓		✓		
7	Collection of two fluid mechanics NPTEL videos and demonstration of it.	✓	✓				
8	Collection of information about fluid mechanics equipment's / machinery/ materials related to fluid mechanics.	✓	✓	✓	✓	✓	
9	Collection of information about fluid mechanics phenomenon and its explanation.	✓	✓	✓	✓		
10	Collection of data of different fluids with reference to their properties.	✓	✓	✓	✓	✓	✓
Class:- B. Tech (Civil) Sem:-IV		**Name of Course:-** Construction Techniques and Machinery					
1	Enlist & explain role of construction activity in National & Global development. Explain scope of infrastructure in India & provisions made.	✓					
2	Define with examples; Light, Medium & Heavy construction.	✓	✓	✓	✓	✓	
3	Define & differentiate between Cofferdams & Caissons & briefly explain piles & its classification.						

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
4	In context of tunnelling, enlist different tunnel driving techniques & tunnel boring machines.		✓				
5	Write short notes on -: I. Shotcreting ii. Gunieting iii. Trenchless technology iv. Drill & Blast method v. Pneumatic drilling equipment's			✓			
6	Classify, discuss briefly various earth work machineries (any five) & factors affecting in selection including their economics.				✓		
7	Classify & explain various hoisting & conveying equipment. Discuss in detail about factors affecting in selection of them & its economics.					✓	
8	Explain crushers & its types in detail.					✓	
9	Enlist & explain with neat diagrams, different dewatering techniques (electro-osmosis method, well point system).						✓
10	Write a brief note on Pumps & its types. Discuss in detail about various pumps used for concreting.						✓
11	Prepare a Power Point presentation (P.P.T.) on any of the topic of your choice from the entire syllabus after getting approval of topic from your subject teacher.	✓	✓	✓	✓	✓	✓
Class:- B. Tech (Civil) Sem:-IV		**Name of Course:-** Structural Analysis I					
1	Draw different types of structures- space, plane, trusses, beams and frames.	✓					
2	Draw deflected shapes of different types of structures	✓	✓				
3	Calculate degree of static indeterminacy.	✓					
4	Calculate degree of kinematic indeterminacy.	✓					
5	Calculate deflection of beam using conjugate beam method.		✓				
6	Calculate deflection of truss using Castigliano's first theorem.		✓				
7	Analysis of indeterminate trusses using Castigliano's second theorem			✓			
8	Write fixed end moments for different loading cases.				✓		
9	Explain three moment theorem				✓		

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10	Analysis of beam/frame using slope deflection method					✓	
11	Calculate distribution factor at joint.						✓
12	Analysis of non-sway beam/frame using moment distribution method						✓
13	Analysis of sway frame using moment distribution method						✓
Class:- B. Tech (Civil) Sem:-V					**Name of Course:-** Structural Design I		
1	Calculate Wind load acting on the roof truss.	✓					
2	Design of bolted or welded connection for axial load.		✓				
3	Design of member for axial tensile load.			✓			
4	Calculate axial capacity of member in compression.				✓		
5	Design of lacing or battening connection for built up column					✓	
6	Calculation of moment and shear capacity of rolled / built up section.						✓
7	Explain limit state design phidosophy.	✓					
8	Explain different types of structural sections and their properties.	✓					
9	Calculate design strength of given bolt.		✓				
Class:- B. Tech (Civil) Sem:-V					**Name of Course:-** Advanced Surveying		
1	Solution of problems on Laws of weights and normal equations	✓					
2	Collection of information for various types of ETS used and available in the market and their salient features		✓				
3	Collection of information of SBPS of various countries and applications of SBPS			✓			
4	Write a report on Instruments used for measurement of soundings.				✓		
5	Case studies on applications of Remote sensing and GIS.					✓	
6	Case studies on applications of Aerial survey						✓
Class:- B. Tech (Civil) Sem:-V					**Name of Course:-** Engineering Project Management		
1	Project Manager Education, experience, authority & responsibility.	✓					
2	Draw a bar chart for a building project.		✓				
3	Ladder network analysis.		✓	✓			
4	ABC analysis of small building project.				✓		

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5	Problems on linear programming, graphical and simplex method.					✓	
6	Total quality management.						✓
Class:- B. Tech (Civil) Sem:-V		**Name of Course:-** Structural Analysis II					
1	Calculate Plastic moment capacity of the cross section	✓					
2	Draw ILD for beams for reaction, SF and BM		✓				
3	Draw ILDs for members of the Truss			✓			
4	Analyse of three hinged arch				✓		
5	Calculate support reactions for two hinged arch.					✓	
6	Analyse frame using any approximate method						✓
7	Calculate plastic moment for Beam.	✓					
8	Calculate maximum SF & BM due to moving loads on beam.		✓				
9	Calculate maximum axial force in truss due to moving loads			✓			
Class:- B. Tech (Civil) Sem:-V		**Name of Course:-** Advanced Fluid Mechanics					
1	Solve Four Numericals to find out Critical Depth.	✓					
2	Solve Numerical on GVF to find out flow profiles	✓	✓				
3	Solve Numericals on Hydraulic Jump to find out dissipation of energy.	✓	✓	✓			
4	Solve Numericals to find out forces on different types of vanes.				✓		
5	Solve Numericals on design of Turbines.				✓	✓	
6	Solve Numericals on design of Pumps.						✓
7	Collection & Study of Information Brochure about different Hydraulic Machineries.				✓	✓	✓
8	Collection & Study of Information Brochure about Hydraulic Lab Supply Companies	✓	✓	✓	✓	✓	✓
9	Solve Numericals of Drag & Lift			✓			
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Structural Design II					
1	Assignment based on various methods of design.	✓					
2	Assignment based on basic parameters in design-Limit State Method and Working Stress Method	✓					

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3	Assignment based on moment of resistance of a singly reinforced beam, doubly reinforced beam, flanged beam.		✓				
4	. Assignment based on design of various types of slabs.				✓		
5	Assignment based on design of various types of beams			✓			
6	Assignment based on staircase design.				✓		
7	Assignment based on design of various types of columns.					✓	
8	. Assignment based on design of isolated footing						✓
9	Making the models of reinforcement in various types of slabs.				✓		
10	Making the models of reinforcement in various types of beams.			✓			
11	Making the models of reinforcement in columns.					✓	
12	Making the models of reinforcement in staircase				✓		
13	Making the models of reinforcement in footing						✓
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Environmental Engineering I					
1	Draw and explain flow sheets of water treatment plant for different types of water sources		✓	✓			
2	Numericals on design of flocculator, sedimentation tank and tube settler.	✓	✓				
3	Information about various types of filtration units			✓			
4	National ambient air quality standards and control methods of air pollutants				✓		
5	Experiences of solid waste management.					✓	
6	EIA studies						✓
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Estimating, Costing and Valuation					
1	Approximate estimate of different types of buildings	✓					
2	To determine quantities of different items of building and preparation of specifications for construction materials (Any five)		✓				
3	Rate analysis.			✓			
4	To carryout the valuation of existing building.				✓		

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
5	Mock up exercise of submission of tender.					✓	
6	Types of contracts.						✓
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Geotechnical Engineering					
1	Study of various relationships between weight and volume, numerical based on it and classification of soil.	✓					
2	Classification of soil based on the index properties of soil.		✓				
3	Study of permeability and numerical based on it.			✓			
4	Study of Proctor tests, different field compaction equipments.				✓		
5	Determination of shear strength, numerical problems based on it					✓	
6	Numerical problems based on earth pressure.						✓
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Elective I Human Resource Engineering					
1	Case study of HRD in construction industry	✓					
2	Formulating human resource plan		✓				
3	Case study of external and internal recruitment			✓			
4	Report on establishing evaluation system for performance appraisal				✓		
5	Importance on Employee benefits					✓	
6	Report on conversation with HR of any construction industry						✓
Class:- B. Tech (Civil) Sem:-VI		**Name of Course:-** Elective I Urban Water Management					
1	Collection of data how cities are growing and changing describing the promise of IUWM	✓					
2	Study of urban water resources: in the past and how new concerns about water quality are now emerging		✓				
3	Design new tools and strategies to shift from Conventional urban water management to IUWM			✓			
4	Study and data collection of climate change and analyze changing climate demanding water management be approached in a different way.				✓		
5	Design framework for integrated urban water management for Existing and Futuristic SMART Cities					✓	

S.N	Title of Assignment	CO-1	CO-2	CO-3	CO-4	CO-5	CO-6
6	Design, analyze and apply practical approaches for constructing and building GREEN and SMART cities to foster a new culture of urban water management.						✓
7	Field Visit and Report on SMART City and/or Township in India and/or abroad	✓	✓	✓	✓	✓	✓
Class:- B. Tech (Civil) Sem:-VII		**Name of Course:-** Structural Design III					
1	Assignment problems based on analysis of rectangular P.S.C.beam	✓					
2	Assignment problems based on analysis of unsymmetrical I section of a P.S.C.beam	✓					
3	Assignment problems based on analysis of T section of a P.S.C.beam	✓					
4	Assignment problems based on time dependent losses in prestressing		✓				
5	Assignment problems based on instantaneous losses in prestressing		✓				
6	Assignment problems based on design of a rectangular prestressed concrete beam.		✓				
7	Assignment problems based on design of a flat slabs.			✓			
8	Assignment problems based on design of L-shaped retaining wall.				✓		
9	Assignment problems based on design of circular water tank using I.S.Code method.					✓	
10	Assignment problems based on design of rectangular water tank using I.S. Code method.						✓
Class:- B. Tech (Civil) Sem:-VII		**Name of Course:-** Environmental Engineering II					
1	Numericals on Hydraulic Design of Sewer	✓					
2	Characteristics of sewage sample collected by the students.			✓			
3	Numericals on Design of standard rate and high rate filters		✓				
4	Collection of information - Advances in sludge treatment and disposal				✓		
5	Drawing Layout of ETP of Sugar, Pulp and Paper, Dairy Industries (Case studies)				✓	✓	
6	Numericals on Design and drawing of septic tank for hostel						✓
7	Information of useful micro-organisms in waste water treatment		✓	✓			

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8	Case studies – Recycle and reuse of treated waste water.		✓	✓	✓	✓	
9	Case studies - Rural sanitation. (Site Visit).						✓
Class:- B. Tech (Civil) Sem:-VII				**Name of Course:-** Foundation Engineering			
1	A case study for Preparation of bore hole investigation report	✓					
2	Numerical on Bearing Capacity by different Methods.		✓				
3	Numericals on Plate load test		✓				
4	Numericals on Consolidation of soil.			✓			
5	Numericals on Elastic settlement by different methods.			✓			
6	Explain Pile load test.				✓		
7	Discuss Group action of piles and Negative skin friction				✓		
8	Draw sketches of Under reamed pile.					✓	
9	Sheet pile and its applications					✓	
10	Methods of soil stabilization						✓
Class:- B. Tech (Civil) Sem:-VII					**Name of Course:-** Urban Planning		
1	Report on UDPFI guidelines for urban planning			✓			
2	Settlements and their physical forms during various dynasties upto 18th century and during colonization						✓
3	Study of various surveys for Urban planning.		✓				
4	Write a report on preparation of development plan of a City			✓			
5	Case studies on Urban planning from ITPI Journal.	✓					
6	Applications of Remote sensing and GIS in Urban planning						✓
7	Land use Survey of a given area		✓				
8	Layout of neighborhood design				✓		
9	Traffic volume survey at a given intersection					✓	
Class:- B. Tech (Civil) Sem:-VII		**Name of Course:-** Elective II Construction Management					
1	Preparation of Site layout.						✓
2	Numerical on Time Value of Money.		✓				
3	Application of LPP for civil engg. Problems			✓			
4	Preparation of feasibility report –A case study.	✓			✓		
5	Study of labour laws					✓	

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6	Case study on safety Management. .	✓					✓
Class:- B. Tech (Civil) Sem:-VII **Name of Course:-** Elective II Environmental Impact Assessment							
1	The ways of modifying a project through EIA.	✓					
2	Legislative protections on a proposed development site in India		✓				
3	Some of the problems and advantages having the developer and/or consultant responsible for preparing the EIA documents			✓			
4	EIA Challenges especially in developing countries				✓		
5	Project of State Significance in India and what role does it play in the Indian system					✓	
6	Incentivisation of the natural resources available in India						✓
Class:- B. Tech (Civil) Sem:-VIII **Name of Course:-** Earthquake Resistant Design Structures							
1	Assignment based on geology of earthquakes, causes of earthquakes.	✓					
2	Assignment based on effects of earthquakes, seismic zones	✓					
3	Assignment based on calculation live loads at different storey levels..	✓		✓			
4	Assignment based on different types of vibrations.		✓				
5	Assignment based on calculation of various loads for different types of frames.			✓	✓		
6	Assignment based on calculation of various loads for different types of soils.			✓	✓		
7	Assignment based on calculation of various loads in different zones.			✓	✓		
8	Assignment based on single degree freedom and multiple degree freedom system.		✓				
9	Assignment based on various irregularities in buildings.					✓	✓
10	Assignment based on ductile detailing as per IS 13920						✓
Class:- B. Tech (Civil) Sem:-VIII **Name of Course:-** Water Resources Engineering							
1	Numerical on precipitation.	✓					
2	Estimation of net run off from given catchment knowing the infiltration index		✓				
3	Numerical on Unit hydrograph			✓			
4	Case studies on types of gravity dams.				✓		

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5	Report on colgroute masonry construction of gravity dams				✓		
6	Numerical on spillways						✓
7	Study of different sections of earth dams used in field for different site conditions and different materials.					✓	
Class:- B. Tech (Civil) Sem:-VIII		**Name of Course:-** Infrastructure Engineering					
1	Solve numerical problem on determination of road length according to Nagpur, Bombay & Lucknow plan.	✓					
2	Write a short note on BOT, BOOT & BOLT type of projects	✓					
3	Define all the terms related to cross section of highway with neat sketches of each (in embankment & cutting		✓				
4	Solve a numerical on calculation of sight distance on highway.		✓				
5	Write a short note on pavement design of highways (Flexible & Rigid) according to IRC guidelines			✓			
6	Draw a neat sketch of a cross section of a railway track explaining all its components & their functions				✓		
7	Write a short note on Gradients, Curves, Super Elevation, cant deficiency		✓				
8	Explain the advantages of SWR & LWR				✓		
9	Write classification of different types of signals & briefly explain semaphore signal.					✓	
10	Draw a layout of an airport illustrating all its components& their functions.						✓
11	Write a short on Inland Waterways & its scope in India.						✓
Class:- B. Tech (Civil) Sem:-VIII **Name of Course:-** Elective III Solids Waste Management							
1	Segregation and Storage of Waste at Source	✓					
2	Abolish open waste storage depots and other Inefficient waste storage devices		✓				
3	Public Private Partnership in SWM Services			✓			
4	Private Sector Participation				✓		
5	Provision of SWM Services in slums					✓	
6	Allotment adequate funds for capital and revenue Expenditure for SWM						✓

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Class:- B. Tech (Civil) Sem:-VIII **Name of Course:-** Elective III Advanced Geology with Rock Mechanics							
1	Identification of Varieties of Deccan Trap Rocks.	✓					
2	Various Foundation Treatments			✓			
3	Tunneling in Hard Rock				✓		
4	Tunneling in Soft Rock				✓		
5	Basalt as construction Material.		✓			✓	
6	Calculation of RQD and RMR						✓
7	Types of Drainage Pattern with studies of streams.			✓			
8	Study of Toposheet (Any One for Geomorphology)			✓			
9	Calculation of Geomorphological Parameters as per the requirement of Reservoir estimation			✓			
10	Weathering and Soil formation.	✓				✓	