NIIST BHOPAL		NRI INSTITUTE OF INFORMATION SCI TECHNOLOGY DEPARTMENT NAME: CIVIL ENGG
BRANCH	CIVIL	Course Objective & Course Outcome
SESSION	JULY-DEC 2015	

SEMESTER -VII	
SUBJECT/CODE : DESIGN OF HYDRAULIC STRUCTURE (CE-701)	
Course Objective:	This course is designed to study the fundamental concept , design and maintenance of hydraulic structures.
Course Outcome:	Students will be able to-
Outcome1	To provide basic understanding of heavy structures like dam have to study.
Outcome2	To give the basic idea of canal regulation, canal headwork and cross-drainage.
SUBJECT/CODE : ADVANCED STRUCTURAL DESIGN-II (R.C.C.) (CE-702)	
Course Objective:	To become familiar with professional and contemporary issues in the design and fabrication of reinforced concrete members.
Course Outcome:	Students will be able to-
Outcome1	To understand the general mechanical behaviour of reinforced concrete in accordance with IS 456:2000.
Outcome2	To identify and apply the applicable industry design codes relevant to the design of RC Retaining walls.
Outcome3	To analyze and design of RC water Tanks.
Outcome4	To design and analysis of RC Bunker & Silo.
Outcome5	To design and analysis of RC bridges.
SUBJECT/CODE : ENVIRONMENTAL ENGG.-II (CE-703)	
Course Objective:	The ability to apply the fundamental knowledge of science and engineering to assess environmental and health risk
Course Outcome:	Students will be able to-
Outcome1	To understand the Plan and design water supply systems for a rural/urban area , Use population forecasting methods.
Outcome2	To Design various water treatment units and plan their operations on the basis of raw water quality and water demand.
Outcome3	Apply knowledge of advanced water treatment processes for individual water purification

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Outcome4	Students understood Sewage quantity and quality for better treatment so as to reduce scarcity by recycling waste water
Outcome5	Students understood industrial waste water quantity and quality for achieving better sanitation in society

SUBJECT/CODE : QUANTITY SURVEYING & COSTING (CE-704)	
Course Objective:	To provide the student with the ability to estimate the quantities of item of works involved in buildings, water supply and sanitary works, road works and irrigation works, and also to equip the student with the ability to do rate analysis, valuation of properties and preparation of reports for estimation of various items.
Course Outcome:	The student shall be able to estimate the material quantities, prepare a bill of quantities, make specifications and prepare tender documents. Student shall be able to prepare value estimates.
Outcome1	The students can get the ability to estimate the quantities to various items to the building
Outcome2	Then student can prepare the rate of every items of building and the materials and labour rate.
Outcome3	The student will be getting knowledge an contracts and tenders
Outcome4	The student will make a specification and valuation of the building will be done by the student
Outcome5	The knowledge an report preparation for various projects takes will be given to the students

SUBJECT/CODE : TRAFFIC ENGINEERING (CE-705/7102)	
Course Objective:	Course Objectives To introduce fundamental knowledge of traffic engineering so that students can understand and be able to deal with traffic issues including safety, planning, design, operation and control. Students will learn and be able to use software such as Highway Capacity Software and Synchro in traffic engineering projects.
Course Outcome:	Students will be able to-
Outcome1	Use statistical concepts and applications in traffic engineering.
Outcome2	Identify traffic stream characteristics.
Outcome3	Understand elements of highway safety and approaches to accident Studies.
Outcome4	Design a pre-timed signalized intersection, and determine the signal splits.
Outcome5	Design an actuated signalized intersection and Identify level of services for arterials.

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SEMESTER -V		
SUBJECT/CODE : TRANSPORTATION ENGINEERING (CE-501)		
Course Objective:		Understand the principles and practices of transportation engineering and urban transportation planning
Course Outcome:		Students will be able to-
Outcome1		On successful completion of the course, the students shall be able to understand the basic concept about Highway Engineering
Outcome2		To understand the principles of Highway geometrics design as per IRC standards
Outcome3		Students are able to understand the Traffic engineering& different types of traffic control device.
Outcome4		Understanding of Types of pavements & Materials required for highway construction
Outcome5		In Airport Engineering students will get knowledge of Airport planning, layout and runway and taxiway components
SUBJECT/CODE : ADVANCED SURVEYING (CE-502)		
Course Objective:		Have the ability to apply knowledge of mathematics, science and engineering to understand the measurement techniques and equipmentsd used in land surveying.
Course Outcome:		Students will be able to-
Outcome1		The students are able to understand the use of different advanced surveying instruments and their uses
Outcome2		Students are able to calculate compute the area and earthwork for different works by using advanced surveying instruments.
Outcome3		Students are able to do the surveying of different civil engineering projects
Outcome4		Students are able to do trigonometric and Geodetic Survey
Outcome5		Students are able to understand the hydrographic survey
SUBJECT/CODE : FLUID MECHANICS -II (CE-503)		
Course Objective:		To give fundamental knowledge of fluid, its properties and behavior under various conditions of internal and external flows.
Course Outcome:		Students will be able to-
Outcome1		Student are able to understand the fluid characteristics and their application in different material manufacturing industry
Outcome2		Student are able to measure the pressures at various conditions with different types of pressure measuring devices
Outcome3		Students are able to calculate the discharges of fluid

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Outcome4	Student are able to calculate the force acting on submerged bodies
Outcome5	Pipe flow problems can be understood
SUBJECT/CODE : STRUCTURAL ANALYSIS - I (CE 505)	
Course Objective:	To understand the concept of determinate and indeterminate structures, analyses of determinate and indeterminate structures. To understand the principle of virtual work and the application of influence line diagrams in structural analysis problems.
Course Outcome:	Students will be able to-
Outcome1	After completion of this subject student will be able to analyze Fixed and continuous beams.
Outcome2	Student will be able to analyze moving loads and will be able to draw influence line diagrams for simply supported beams.
Outcome3	Student will also be able to analyze columns.
Outcome4	Student will also be able to analyze three hinge arches and three hinge suspension bridges.
Outcome5	Influence Line diagrams & Train load analysis can be understood
SUBJECT/CODE : STRUCTURAL DESIGN AND DRAWING (RCC I) (CE-504)	
Course Objective:	Be able to perform analysis and design of reinforced concrete members and
Course Outcome:	Students will be able to-
Outcome1	To understand the general mechanical behaviour of reinforced concrete in accordance with IS 456:2000.
Outcome2	To identify and apply the applicable industry design codes relevant to the design of reinforced concrete members.
Outcome3	To analyze and design for shear, torsion and bond for structural members.
Outcome4	To design and analysis of singly doubly reinforced beam, one way two way slab.
Outcome5	To design and analysis of column, footing and staircases.

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SEMESTER -III	
SUBJECT/CODE : Mathematics II / BE-301	
Course Objective:	The objective of this course is to familiarize the prospective engineers with techniques in Ordinary and partial differential equations, complex variables and vector calculus. It aims to equip the students to deal with advanced level of mathematics and applications that would be essential for their disciplines.
Course Outcome:	Students will be able to-
Outcome1	Classify differential equations according to certain features
Outcome2	Solve first order linear equations and nonlinear equations of certain types and interpret the solutions.
Outcome3	Understand the conditions for the existence and uniqueness of solutions for linear differential equations
SUBJECT/CODE : Transportation bridges and tunnel / CE-302	
Course Objective:	The students will get a diverse knowledge of Railway, Bridge and Tunnel engineering practices applied to real life problems.
Course Outcome:	Students will be able to-
Outcome1	Steps involved in Planning of a railway track will be understood.
Outcome2	Students will get the feel of fundamentals of railway engineering from the syllabus.
Outcome3	under railway Engineering students get knowledge of railway geometrics, Signaling & interlocking Points, crossing and turnouts etc.
Outcome4	Subject will be helpful to introduce Bridge Engineering.
Outcome5	Similarly students get knowledge regarding fundamentals of tunnel its excavation methods, support systems, and executional aspects of tunnel
SUBJECT/CODE : Strength of Materials / CE-303	
Course Objective:	To give an ability to apply the knowledge of strength of materials on engineering applications and design problems
Course Outcome:	Students will be able to-
Outcome1	Students are able to understand the behavior of material under different loading
Outcome2	Student are able to understand and calculate the different type of stress like, simple stress, shear stress, direct stress and bending stress in the material
Outcome3	Students are students are able to understand and calculate the shear force and bending moment for beam of different loading

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Outcome4	Students are able to calculate the deflection of beam for different loading
Outcome5	Torsion & Unsymmetrical Bending in Civil Engineering can be understood
SUBJECT/CODE : Engineering Geology / CE-304	
Course Objective:	To study and identify different types natural materials like rocks & minerals and soil.
Course Outcome:	This course aims to introduce students on concept of Remote Sensing (RS), overview of RS image processing and its' applications.
Outcome1	Students will be able to-
Outcome2	As a students in the Bachelor of Engineering (Civil Engineering) will undertake courses in geology Such as Rock and mineral.
Outcome3	Students are able to understand the use of different rock and mineral
Outcome4	Students are able to understand the different geological structures and their impact on civil engineering structure.
SUBJECT/CODE : Building Design and Drawing / CE-305	
Course Objective:	To understand the concept of building planning and architecture. To understand the various building codes to be followed while planning a building. To have the knowledge of various
Course Outcome:	Students will be able to-
Outcome1	After completion of this students will able to understand basic principles of building design and planning.
Outcome2	They will explore building drawing as a way of discovering and developing ideas for designing residential, commercial and public buildings.
Outcome3	The student develops basic drawing skills; create multilayer architectural and working drawing drawings.
Outcome4	Basic Concepts of Architecture will be developed
Outcome5	Use of Vaastu Shastra in Civil Engineering can be understood