



NIIST BHOPAL

**NRI INSTITUTE OF INFORMATION SCIENCE & TECHNOLOGY**

**DEPARTMENT NAME: CIVIL ENGG**

BRANCH

CIVIL

SESSION

JULY-DEC  
2017

**Course Objective & Course Outcome**

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

**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.



<b>Course Outcome:</b>	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.
<b>Outcome1</b>	The students can get the ability to estimate the quantities to various items to the building
<b>Outcome2</b>	Then student can prepare the rate of every items of building and the materials and labour rate.
<b>Outcome3</b>	The student will be getting knowledge an contracts and tenders
<b>Outcome4</b>	The student will make a specification and valuation of the building will be done by the student
<b>Outcome5</b>	The knowledge an report preparation for various projects takes will be given to the students
<b>SUBJECT/CODE : TRAFFIC ENGINEERING (CE-705/7102)</b>	
<b>Course Objective:</b>	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.
<b>Course Outcome:</b>	Students will be able to-
<b>Outcome1</b>	Use statistical concepts and applications in traffic engineering.
<b>Outcome2</b>	Identify traffic stream characteristics.
<b>Outcome3</b>	Understand elements of highway safety and approaches to accident Studies.
<b>Outcome4</b>	Design a pre-timed signalized intersection, and determine the signal splits.
<b>Outcome5</b>	Design an actuated signalized intersection and Identify level of services for arterials.





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**Course Objective & Course Outcome**

**SEMESTER -V**

**SUBJECT/CODE : TRANSPORTATION ENGINEERING / CE 5001**

**Course Objective:**

To understand the principles of geometric design for various transportation facilities, To know the design of at-grade and grade separated intersections along with design of drainage facilities.

**Course Outcome:**

Students will be able to-

**Outcome1**

Gain knowledge about railways, permanent way stations, yards, tunnels and able to design the railway track by geometric method

**Outcome2**

Know the different types of points and crossings used in railway tracks

**SUBJECT/CODE : QUANTITY SURVEYING & CASTING / CE 5002**

**Course Objective:**

This subject covers the various aspects of estimating of quantities of items of works involved in buildings, water supply and sanitary works, road works and irrigation works. This also covers the rate analysis, valuation of properties and preparation of reports for estimation of various items.

**Course Outcome:**

Students will be able to-

**Outcome1**

Understand the preparation of an Abstract Estimate for a Residential Building

**Outcome2**

Analyze the units for various quantities of items of works

**Outcome3**

Demonstrate the calculation of earth work quantity for roads and canals.

**Outcome4**

Design and Prepare Bar bending schedule for reinforcement works

**SUBJECT/CODE : STRUCTURAL ANALYSIS II / CE 5003**

**Course Objective:**

To impart the principles of elastic structural analysis and behaviour of indeterminate structures. To impart knowledge about various methods involved in the analysis of indeterminate structures.

**Course Outcome:**

Students will be able to-

**Outcome1**

Classify & discuss between symmetrical and unsymmetrical frames

**Outcome2**

Apply the different methods and analysis frame

**Outcome3**

Identify & analyze stiffness matrix, transformation matrix, load matrix for various structural

**Outcome4**

Explain the basics of finite element method in the analysis of structural components

**SUBJECT/CODE : CONSTRUCTION MATERIALS & TECHNIQUES / CE 5004**



<b>Course Objective:</b>	To know the various conventional construction materials, properties and their uses ,and To know the various latest and modern construction materials, properties and their uses To know and understand the general construction processes and their sequences.
<b>Course Outcome:</b>	Students will be able to-
<b>Outcome1</b>	Understand various conventional construction materials, properties and their uses
<b>Outcome2</b>	Describe various latest and modern construction materials, properties and their uses
<b>Outcome3</b>	Understand the general construction processes and their sequences
<b>Outcome4</b>	Understand the various techniques which are useful for the substructure construction

**SUBJECT/CODE : CONSTRUCTION PLANNING AND MANAGEMENT / CE 5005**

<b>Course Objective:</b>	To make them understand the concepts of Project Management for planning to execution of projects. And To make them understand the feasibility analysis in Project Management and network analysis tools for cost and time estimation.
<b>Course Outcome:</b>	Students will be able to-
<b>Outcome1</b>	create oral presentations appropriate to the construction discipline.
<b>Outcome2</b>	analyze professional decisions based on ethical principles.
<b>Outcome3</b>	analyze methods, materials, and equipment used to construct projects.
<b>Outcome4</b>	apply construction management skills as a member of a multi- disciplinary team.





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**Course Objective & Course Outcome**

SEMESTER -III

**SUBJECT/CODE : Energy, Environment, Ecology & Society / ES-3001**

**Course Objective:** Understanding the concept and importance of Ecology & Microbiology

**Course Outcome:** Students will be able to-

**Outcome1** Application of Ecology & biodiversity for sustainable development

**Outcome2** Use of microbiology for design of biological treatment processes

**SUBJECT/CODE : Fluid Mechanics / CE-3002**

**Course Objective:** To understand the basic concepts of fluid mechanics for undergraduate students in Civil Engineering. The course will begin with the fundamental concepts of fluid flow and proceed to cover various flow phenomena and approaches to analyse the flow phenomena.

**Course Outcome:** Students will be able to-

**Outcome1** Knowledge of the basic concepts and principles of fluid mechanics

**Outcome2** Ability to analyze fluid flow problems with the application of momentum and energy equations

**Outcome3** Ability to distinguish between various types of fluid flow.

**Outcome4** Ability to find solutions to typical pipe flow problems

**Outcome5** Basic knowledge of hydraulic machines.

**SUBJECT/CODE : Strength of Materials / CE-3003**

**Course Objective:** To familiarize the student with the various stresses that may act on a material such as compressive stress, tensile stress, tangential stress, etc and the response of a material to each of these types. The course will define basic concepts and calculations that will come handy in long-term to civil engineering students.

**Course Outcome:** Students will be able to-

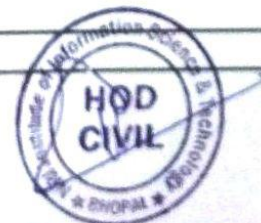
**Outcome1** An ability to identify and compute various mechanical stresses in material and the material's response to each

**Outcome2** An ability to apply this knowledge in science and engineering models.

**SUBJECT/CODE : Advance Surveying & Remote Sensing / CE-3004**

**Course Objective:** To introduce the student to the importance and objectives of surveying. The course would begin with the basic concepts of surveying and move on to discuss advancements such as GID and Remote Sensing.

**Course Outcome:** Students will be able to-



<b>Outcome1</b>	The student will be able to understand the basic principles of surveying and how they are implemented in practice.
<b>Outcome2</b>	The student will be able to adjust for errors that occur in practising of various surveying methods.
<b>Outcome3</b>	The student will be able to plan a survey for applications such as road alignment and height of the building.
<b>SUBJECT/CODE : Geology / CE-3005</b>	
<b>Course Objective:</b>	To study geological science and apply the same in the field of civil engineering. The course begins with history of earth's formation. It moves on to the different types of soil found on earth and finally describes the various applications of geological science in civil engineering
<b>Course Outcome:</b>	Students will be able to-
<b>Outcome1</b>	Understanding of the role of geology in design and construction processes
<b>Outcome2</b>	Ability to apply geological concepts and approaches to rock engineering projects.
<b>Outcome3</b>	Ability to identify and classify rocks using basic geological classifications and understand the formation and properties of each category.
<b>Outcome4</b>	Ability to use the geological literature to establish the Geo-technical framework needed to properly design and construct heavy civil engineering projects.
<b>Outcome5</b>	Understanding the application of remote sensing and geographical information system in civil engineering projects.

