### III YEAR I SEMESTER

<table>
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<tr>
<th>S. No</th>
<th>Course Code</th>
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### III YEAR II SEMESTER

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*During Summer Vacation between III and IV Years: Industry Oriented Mini Project*

### Professional Elective - I

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<td>CE611PE</td>
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<td>CE612PE</td>
<td>Advanced Structural Analysis.</td>
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<td>CE613PE</td>
<td>Ground Water Development and Management.</td>
</tr>
<tr>
<td>CE614PE</td>
<td>Earth and Rock fill Dams and Slope Stability.</td>
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*Open Elective* subjects’ syllabus is provided in a separate document.

*Open Elective –* Students should take Open Electives from The List of Open Electives Offered by Other Departments/Branches Only.

**Ex:** A Student of Mechanical Engineering can take Open Electives from all other departments/branches except Open Electives offered by Mechanical Engineering Dept.
CONCRETE TECHNOLOGY

B.Tech. III Year I Sem.  
Course Code: CE501PC  
L T/P/D C  
4 0/0/0 4

Pre Requisites: Building Materials

Course Objectives: Concrete is the basic construction material in the advancements present construction industry. Lot of advances are taking place in the concrete technology on par with development taking place in the engineering. The present day industry needs the knowledge of concrete technology thoroughly. The subject is designed to give the basic knowledge as well as latest developments in concrete technology.

Course Outcomes: At the end of the course, the student will be able to:
- Identify Quality Control tests on concrete making materials
- Understand the behavior of fresh and hardened concrete
- Design concrete mixes as per IS and ACI codes
- Understand the durability requirements of concrete
- Understand the need for special concretes

UNIT - I

UNIT - II

UNIT – III

UNIT - IV
UNIT – V

TEXT BOOKS:
2. Concrete Technology by M. S. Shetty. – S. Chand & Co. 2004
3. Concrete Technology by Job Thomas -Cengage learning India Pvt Ltd 2015.

REFERENCES:
DESIGN OF REINFORCED CONCRETE STRUCTURES

B.Tech. III Year I Sem. 

Course Code: CE502PC

Pre-Requisites: Structural Analysis I & II

Course Objectives: Structural elements are subjected to different loading to withstand the structures, for external loading we need to design the structures for its safety and serviceability.

Course Outcomes: At the end of the course, the student will be able to:

- Design RC Structural elements
- Design the Reinforced Concrete beams using limit state Design
- Design Reinforced Concrete slabs
- Design the Reinforced Concrete Columns and footings
- Design structures for serviceability
- Design staircases, canopy

UNIT – I

UNIT – II
Limit state analysis and design of section for shear and torsion – concept of bond, anchorage and development length, I.S. code provisions. Design examples in simply supported and continuous beams, detailing; Design of canopy.

UNIT – III

UNIT – IV
Footings: Different types of footings – Design of isolated, square, rectangular, circular footings and combined footings.

UNIT - V

TEXT BOOKS:
2. Reinforced concrete design by N. Subrahmanian Oxford University Press.
REFERENCES:
WATER RESOURCES ENGINEERING

B.Tech. III Year I Sem. L T/P/D C
Course Code: CE503PC 4 1/0/0 4

Pre-Requisites: Fluid Mechanics & HHM

Course Objectives: The objectives of the course is to study the concepts of
- Engineering Hydrology and its applications like Runoff estimation, estimation of
design discharge and flood routing.

Course Outcomes: At the end of the course, the student will be able to:
- Analyze hydro-meteorological data
- Estimate abstractions from precipitation
- Compute yield from surface and subsurface basin
- Develop rainfall-runoff models
- Formulate and solve hydrologic flood routing models
- Estimate runoff, design discharge from catchment

UNIT - I

UNIT - II
Distribution of Runoff – Hydrograph Analysis Flood Hydrograph – Effective Rainfall – Base Flow- Base Flow Separation - Direct Runoff Hydrograph Unit pulse and Unit step function - Unit Hydrograph, definition, limitations and applications of Unit hydrograph, derivation of Unit Hydrograph from Direct Runoff Hydrograph and vice versa - S-hydrograph, Synthetic Unit Hydrograph.

UNIT - III
Ground water Occurrence, types of aquifers, aquifer parameters, porosity, specific yield, permeability, transmissivity and storage coefficient, Darcy’s law, radial flow to wells in confined and unconfined aquifers. Types of wells,- Well Construction – Well Development.

UNIT - IV
Necessity and Importance of Irrigation, advantages and ill effects of Irrigation, types of Irrigation, methods of application of Irrigation water, Indian agricultural soils, methods of improving soil fertility –Crop Rotation, preparation of land for Irrigation, standards of quality for Irrigation water. Soil-water-plant relationship, vertical distribution of soil moisture, soil moisture constants, soil moisture tension, consumptive use, Duty and delta, factors affecting duty- Design
discharge for a water course. Depth and frequency of Irrigation, irrigation efficiencies - Water Logging.

UNIT - V
Classification of canals, Design of Irrigation canals by Kennedy’s and Lacey’s theories, balancing depth of cutting, IS standards for a canal design canal lining. Design Discharge over a catchment, Computation of design discharge-rational formulae etc.

TEXT BOOKS:
2. Engineering Hydrology by Jayarami Reddy, Laxmi publications pvt. Ltd., New Delhi
3. Irrigation and Water Resources & Water Power by P. N. Modi, Standard Book House

REFERENCES:
2. Irrigation and water power engineering by Purnmia & Lal, Laxmi publications Pvt. Ltd., New Delhi
FUNDAMENTALS OF MANAGEMENT

B.Tech. III Year I Sem.  
Course Code: SM504MS

Course Objective: To understand the Management Concepts, applications of Concepts in Practical aspects of business and development of Managerial Skills.

Course Outcome: The students understand the significance of Management in their Profession. The various Management Functions like Planning, Organizing, Staffing, Leading, Motivation and Control aspects are learnt in this course. The students can explore the Management Practices in their domain area.

UNIT - I

UNIT – II

UNIT - III
Organization and HRM: Principles of Organization: Organizational Design & Organizational Structures; Departmentalization, Delegation; Empowerment, Centralization, Decentralization, Recentralization; Organizational Culture; Organizational Climate and Organizational Change.

UNIT - IV
Leading and Motivation: Leadership, Power and Authority, Leadership Styles; Behavioral Leadership, Situational Leadership, Leadership Skills, Leader as Mentor and Coach, Leadership during adversity and Crisis; Handling Employee and Customer Complaints, Team Leadership.
Motivation - Types of Motivation; Relationship between Motivation, Performance and Engagement, Content Motivational Theories - Needs Hierarchy Theory, Two Factor Theory, Theory X and Theory Y.

UNIT - V
Controlling: Control, Types and Strategies for Control, Steps in Control Process, Budgetary and Non- Budgetary Controls. Characteristics of Effective Controls, Establishing control systems, Control frequency and Methods.
TEXT BOOKS:

REFERENCES:
CONCRETE TECHNOLOGY LAB

B.Tech. III Year I Sem.
Course Code: CE505PC

Pre-Requisites: Concrete Technology Theory

Course Objectives: The objectives of the course is to gain the practical knowledge of properties of concrete materials, behavior of concrete properties of fresh and hardened concrete

Course Outcomes: At the end of the course, the student will be able to:
Understand properties of concrete material, behavior of concrete & properties of fresh & hardened concrete

I. Test on Cement
   1. Normal Consistency and fineness of cement.
   2. Initial setting time and final setting time of cement.
   3. Specific gravity of cement
   4. Soundness of cement.
   5. Compressive strength of cement.
   6. Workability test on concrete by compaction factor, slump and Vee-bee.

II. Test on Aggregate
   1. Sieve Analysis and gradation chairs
   2. Bulking of sand.
   3. Bulk and compact densities of fine and coarse aggregates

III. Test on Fresh Concrete
   1. Slump test
   2. CF (compact factor stress)
   3. Vee-bee Test
   4. Flow Table Test

Self Compacting Concrete
   1. Slump cone
   2. V funnel
   3. L Box

IV. Test on hardened concrete
   1. compression test on cubes & Cylinders
   2. flexure test
   3. Splitting Tensile Test
   4. Modulus of Elasticity

V. Non Destructive test of concrete
   1. Rebound hammer
   2. Ultrasound pulse Velocity (UPV)

TEXT BOOK:
1. Concrete Technology by M.S. Shetty – S. Chand & Co.
2. Concrete Manual by M.L. Gambhir, Dhanpat Rai & Sons
GEOGRAPHICAL INFORMATION SYSTEMS LAB

B.Tech. III Year I Sem.  
Course Code: CE506PC

Prerequisites: Surveying

Course Objectives: To Develop GIS interface to field problems through geofencing.

Course Outcomes: At the end of the course, the student is exposed to spatial technologies, mapping the field problems and solution convergence through GIS.

UNIT - I
Development of georeferencing of maps either from cadastral or AutoCAD based map.

UNIT - II
Identification of best locations of ground control points and mosaicing the different sources of maps of information like topo sheets & satellite data and other drawings.

UNIT - III
Digitization and GIS coordination.

UNIT - IV
GIS interface and features using open Source Software QGIS.

UNIT - V
Case example on mapping like water distinguish, Road alignment road network etc.,

TEXT BOOKS:
HYDRAULICS AND HYDRAULIC MACHINERY LAB

B.Tech. III Year I Sem. Course Code: CE507PC

L  T/P/D  C
0  0/3/0  2

Pre Requisites: HHM Theory

Course Objectives: To give the student an exposure to various hydraulic machines.

Course Outcomes: Hydraulics & Hydraulic Machinery
- Compute drag coefficients
- Test the performance of pumps and turbines
- Determine Manning’s and Chezy’s coefficients for smooth and rough channels
- Determine Energy loss in Hydraulic jump and Calibrate standing wave flume

1. Impact of jet on vanes
2. Study of Hydraulic jump in Open Channel.
3. Performance test on Pelton wheel turbine.
4. Performance test on Francis turbine.
5. Performance test on Kaplan turbine.
6. Performance characteristics of a single stage centrifugal pump.
7. Performance characteristics of a multi-stage centrifugal pump.
8. Performance characteristics of a reciprocating pump.
9. Study of Flow in Open Channel (Applying Chezy’s and Manning’s equations).
10. Determination of Coefficient of discharge for the given Weir (Sharp crested / Broad crested / Cippoletti weir).
PROFESSIONAL ETHICS

B.Tech. III Year I Sem.  
Course Code: MC500HS

Course Objective: To enable the students to imbibe and internalize the Values and Ethical Behaviour in the personal and Professional lives.

Course Outcome: The students will understand the importance of Values and Ethics in their personal lives and professional careers. The students will learn the rights and responsibilities as an employee, team member and a global citizen.

UNIT - I  
Introduction to Professional Ethics: Basic Concepts, Governing Ethics, Personal & Professional Ethics, Ethical Dilemmas, Life Skills, Emotional Intelligence, Thoughts of Ethics, Value Education, Dimensions of Ethics, Profession and professionalism, Professional Associations, Professional Risks, Professional Accountabilities, Professional Success, Ethics and Profession.

UNIT - II  

UNIT - III  
Professional Practices in Engineering: Professions and Norms of Professional Conduct, Norms of Professional Conduct vs. Profession; Responsibilities, Obligations and Moral Values in Professional Ethics, Professional codes of ethics, the limits of predictability and responsibilities of the engineering profession.  
Central Responsibilities of Engineers - The Centrality of Responsibilities of Professional Ethics; lessons from 1979 American Airlines DC-10 Crash and Kansas City Hyatt Regency Walk away Collapse.

UNIT - IV  
Work Place Rights & Responsibilities, Ethics in changing domains of Research, Engineers and Managers; Organizational Complaint Procedure, difference of Professional Judgment within the Nuclear Regulatory Commission (NRC), the Hanford Nuclear Reservation.  
Ethics in changing domains of research - The US government wide definition of research misconduct, research misconduct distinguished from mistakes and errors, recent history of attention to research misconduct, the emerging emphasis on understanding and fostering responsible conduct, responsible authorship, reviewing & editing.

UNIT - V  
TEXT BOOKS:

REFERENCES:
DESIGN OF STEEL STRUCTURES

B.Tech. III Year II Sem.  L  T/P/D  C
Course Code: CE601PC  4  1/0/0  4

Pre-Requisites: Structural Analysis I & II

Course Objectives: The objective of the course is to make the student conversant with the design principles of steel structural elements as per IS Codal provisions

Course Outcomes: At the end of the course, the student will be able to
- Design tension and compression members
- Design beams and beam columns
- Design bolt and weld connections
- Design built up members and Column base
- Design of plate girders and Roof Trusses

UNIT – I

UNIT – II

UNIT – III

UNIT – IV

UNIT – V
Design of roof trusses – Types of roof trusses, loads on trusses – purlin design – truss design, Design of joints and end bearings.

TEXT BOOKS:
REFERENCES:

1. Fundamental of Structural Steel Design by M L Gambhir MC Graw Hill Education Pvt Ltd 2013
5. Design of Steel structures by K.S. Sai Ram, Person Education.
Course Objectives: This subject provides the knowledge of water sources, water treatment, design of distribution system waste water treatment, and safe disposal methods. The topics of characteristics of waste water, sludge digestion are also included.

Course Outcomes: At the end of the course, the student will be able to:
- Analyze characteristics of water and wastewater
- Estimate the quantity of drinking water and domestic wastewater generated
- Design components of water supply systems Design sewerage system

UNIT – I

UNIT – II

UNIT – III
Distribution systems requirement –method and layouts -Design procedures- Hardy Cross and equivalent pipe methods pipe – joints, valves such as sluice valves, air valves, scour valves and check valves water meters – laying and testing of pipe lines – pump house - Conservancy and water carriage systems – sewage and storm water estimation – time of concentration – storm water overflows combined flow

UNIT - IV
UNIT – V

TEXT BOOKS:

REFERENCES:
1. Water and Waste Water Technology by Steel, Wiley
SOIL MECHANICS

B.Tech. III Year II Sem.  
Course Code: CE603PC  
L  T/P/D  C  
4  0/0/0  4

Pre-Requisites: Engineering Geology, Applied Mechanics, Fluid Mechanics

Course Objectives: To enable the student to study the properties of soil and to determine the behaviour soil under various conditions and loads.

Course Outcomes: At the end of the course, the student will be able to:

- Understand the mechanism Behaviour of Soil for different loads
- and from Soil Condition will be able to determine properties of soil

UNIT – I
Index Properties Of Soils: Grain size analysis – Sieve–

UNIT – II

UNIT – III
Stress Distribution In Soils: Boussinesq’s and Westergaard’s theories for point load, uniformly loaded circular and rectangular areas, pressure bulb, variation of vertical stress under point load along the vertical and horizontal plane, and Newmark’s influence chart for irregular areas.

UNIT – IV
Consolidation: Types of compressibility – Immediate Settlement, primary consolidation and secondary consolidation - stress history of clay; e-p and e-log(p) curves – normally consolidated soil, over consolidated soil and under consolidated soil - preconsolidation pressure and its determination - Terzaghi’s 1-D consolidation theory – coefficient of consolidation: square root time and logarithm of time fitting methods - computation of total settlement and time rate of settlement.

UNIT - V
Shear Strength Of Soils: Importance of shear strength – Mohr’s– Coulomb Failure theories – Types of laboratory tests for strength parameters – strength tests based on drainage conditions – strength envelops – Shear strength of sands - dilatancy – critical void ratio.
TEXT BOOKS:
2. Geotechnical Engineering Principles and Practices by Cuduto, PHI International

REFERENCES:
AIR POLLUTION AND CONTROL
(Professional Elective - I)

B.Tech. III Year II Sem.                  L  T/P/D  C
Course Code: CE611PE            3   0/0/0   3

Pre Requisites: Environmental Engineering

Course Objectives: The subject provides the knowledge of various effects of Air pollution on human beings and Vegetation and Materials. The topics of control methods, details of control equipment, and the methods of controlling gaseous are also included. The objective of the course is to study the moment, occurrence of ground water and its development and management.

Course Outcomes: At the end of the course, the student will be able to:
- Identify sampling and analysis techniques for air quality assessment
- Describe the plume behavior for atmospheric stability conditions
- Able to control air pollution by properties various techniques to control

UNIT – I
Air Pollution – Definitions, Scope, Significance and Episodes, Air Pollutants – Classifications – Natural and Artificial – Primary and Secondary, point and Non-Point, Line and Areal Sources of air pollution- stationary and mobile sources.

UNIT – II
Effects of Air pollutants on man, material and vegetation; Global effects of air pollution – Green House effect, Heat Islands, Acid Rains, Ozone Holes etc.

UNIT - III
Thermodynamics and Kinetics of Air-pollution – Applications in the removal of gases like SO₂; NO₂; CO; HC etc., air-fuel ratio. Computation and Control of products of combustion. Meteorology and plume Dispersion; properties of atmosphere; Heat, Pressure, Wind forces, Moisture and relative Humidity; Influence of Meteorological phenomena on Air Quality- wind rose diagrams.

UNIT - IV
Lapse Rates, Pressure Systems, Winds and moisture plume behavior and plume Rise Models; Gaussian Model for Plume Dispersion.
Control of particulates – Control at Sources, Process Changes, Equipment modifications, Design and operation of control.
Equipment’s – Settling Chambers, Centrifugal separators, filters Dry and Wet scrubbers, Electrostatic precipitators.

UNIT – V
General Methods of Control of NOₓ and SOₓ emissions – In-plant Control Measures, process changes, dry and wet methods of removal and recycling.
Air Quality Management – Monitoring of SPM, SOₓ; NOₓ and CO Emission Standards.
TEXT BOOKS:

REFERENCE:
Course Objectives:

- To understand the influence line concepts for indeterminate structures
- To understand the methods of analysis of intermediate trusses for external loads, lack of fit and thermal effect
- To study behavior of arches and their methods of analysis
- To know the concept and analysis of cable stayed bridge
- To study the multi storey frames subjected to gravity loads and lateral loads

Course Outcomes: At the end of the course, the student will be able to:

- Demonstrate the concepts of qualitative influence line diagram for continuous beams and frames.
- Apply the methods of indeterminate truss analysis
- Demonstrate the behavior of arches and their methods of analysis analyze cable suspension bridges
- Analyze multistory frames subjected to gravity loads and lateral loads

UNIT – I
Analysis of Frames: Castigliano’s second theorem
Indeterminate Trusses: Determination of static and kinematic indeterminacies – Analysis of trusses having single and two degrees of internal and external indeterminacies.
Two Hinged Arches: Introduction – Classification of Two hinged Arches – Analysis of two hinged parabolic arches – Secondary stresses in two hinged arches due to temperature and elastic shortening of rib.

UNIT - II

UNIT – III
UNIT – IV

UNIT – V

Influence Lines for Indeterminate Beams: Introduction – ILD for two span continuous beams with constant and variable moments of inertia. ILD for propped cantilever beams. Muller Breslau’s principle.

TEXT BOOKS:

REFERENCES:
2. Structural Analysis by R. C. Hibbeler Pearson Education.
5. Advanced Structural Analysis by A. K. Jain, Nem Chand Bros
GROUND WATER DEVELOPMENT AND MANAGEMENT
(Professional Elective - I)

B.Tech. III Year II Sem. | L | T/P/D | C
Course Code: CE613PE | 3 | 0/0/0 | 3

Pre Requisites: Water Resources Engineering

Course Objectives: The objective of the course is to study the moment, occurrence of ground water and its development and management

Course Outcomes: At the end of the course, the student will be able to Understand Ground Water occurrence, Ground Water Movement Well constructional etc..

UNIT – I
Ground Water Occurrence: Ground water hydrologic cycle, origin of ground water, rock properties effecting ground water, vertical distribution of ground water, zone of aeration and zone of saturation, geologic formation as Aquifers, types of aquifers, porosity, Specific yield and Specific retention.

UNIT – II
Ground Water Movement: Permeability, Darcy’s law, storage coefficient. Transmissivity, differential equation governing ground water flow in three dimensions derivation, ground water flow equation in polar coordinate system. Ground water flow contours their applications.

UNIT – III
Steady groundwater flow towards a well in confined and unconfined aquifers – Dupuit’s and Theim’s equations, Assumptions, Formation constants, yield of an open well Well interface and well tests – Recuperation Test.


UNIT – IV

Artificial Recharge of Ground Water: Concept of artificial recharge – recharge methods, relative merits, Applications of GIS and Remote Sensing in Artificial Recharge of Ground water along with Case studies.

UNIT – V
Well Construction – Drilling Equipment used for Well Construction – Bore log – Interpretation of Log Data.

**TEXT BOOKS:**
2. Groundwater by H. M. Raghunath, Wiley Eastern Ltd.

**REFERENCES:**
EARTH AND ROCKFILL DAMS AND SLOPE STABILITY
(Professional Elective-I)

B.Tech. III Year II Sem.
Course Code: CE614PE

Course Objectives:
- Have an understanding of seismic design concepts and current practices for earth
  dams and other similar structures to enable them to plan and direct the
  construction activity appropriately.
- Understand the soil dynamic testing procedure and methodology of seismic
  design to be able to execute a proper design.
- Have a clear understanding of design methodology and the interpretation in the
  seismic codes.

Course Outcomes: At the end of the course, the student will be able to:
- Describe the behaviour of natural and engineered soil / rock slopes under various
  weather and engineering conditions.
- Explain the factors that may affect the stability of slopes.
- Select an appropriate slope stability analysis method subject to geometry of slope,
  material properties, and uncertainty of observations.
- Assess the potential landslide risk of slopes.

UNIT - I
Earth and Rockfill Dams: General features, Selection of site; Merits and demerits of the
earth and rock fill dams, Classification of earth dams, Causes of failure, Safe design
criteria. Instrumentation in earth dams: Pore pressure measurements, Settlement gauges,
Inclinometers, Stress measurements, Seismic measurements.

UNIT - II
Failures, Damages and Protection of Earth Dams: Nature and importance of failure,
Piping through embankment and foundations, Methods of seepage control through
embankments and foundations, Design Criteria for filters, Treatment of upstream and
downstream of slopes, Drainage control, Filter design.

UNIT - III
Slope Stability Analysis: Types of Failure: Failure surfaces - Planar surfaces, Circular
surfaces, Non-circular surfaces, Limit equilibrium methods, Total stress analysis versus
effective Stress analysis, Use of Bishop's pore pressure parameters, Short term and Long
term stability in slopes. Taylor Charts.

UNIT - IV
Bishop's Analysis, Bishop and Morgenstern Analysis, Non-circular Failure Surfaces:
Janbu Analysis, Sliding Block Analysis, Seismic stability, Stabilization of slopes: Soil
reinforcement (geosynthetics/soil nailing/micro piles etc), soil treatment (cement/lime
treatment), surface protection (vegetation/erosion control mats/shotcrete).
UNIT - V

Rockfill Dams: Requirements of compacted rockfill, Shear strength of rockfill, Rockfill mixtures, Rockfill embankments, Earth-core Rockfill dams, Stability, Upstream & Downstream slopes.

TEXT BOOK:

REFERENCES:
SOIL MECHANICS LAB

B.Tech. III Year II Sem.  
Course Code: CE604PC  
L   T/P/D   C  
0   0/3/0   2

Pre-Requisites: Soil Mechanics (Co-requisite)

Course Objectives: To obtain index and engineering properties of locally available soils, and to understand the behavior of these soil under various loads.

Course Outcomes: At the end of the course, the student will be able to Classify and evaluate the behavior of the soils subjected to various loads.

LIST OF EXPERIMENTS
1. Atterberg Limits (Liquid Limit, Plastic Limit, and shrinkage limit)
2. a) Field density by core cutter method and  
    b) Field density by sand replacement method
3. Determination of Specific gravity of soil Grain size distribution by sieve analysis
4. Permeability of soil by constant and variable head test methods
5. Standard Proctor’s Compaction Test
6. Determination of Coefficient of consolidation (square root time fitting method)
7. Unconfined compression test
8. Direct shear test
9. Vane shear test
10. Differential free swell index (DFSI) test

REFERENCE:
COMPUTER AIDED DRAFTING – II LAB

B.Tech. III Year II Sem.  
Course Code: CE605PC

Pre-Requisites: CAD Lab – I & Excel, C - Programming

Course Objectives: To make students understand detailing of all kinds of structures such as reinforced concrete, plain concrete, steel structures.

Course Outcomes: At the end of the course, the student will be able to:

1. Detailing of reinforcement in Cantilever, Simply supported and Continuous Beams (Both Singly & Doubly Reinforced Beams)
2. Detailing of reinforcement in canopy & columns (both uniaxial & biaxial)
3. Detailing of reinforcement in RC isolated footings square, rectangular, circular and combined footings.
4. Detailing of reinforcement in RC one-way, two-way slabs and dog-legged staircases.
5. Drawing of Steel bolted and welded connections.
6. Drawing of steel compression and tension members.
7. Drafting of steel beams-built-up sections.
8. Drafting of steel plate girder
9. Drafting of steel roof truss.

Note: Drafting of all the exercises is to be carried out using commercially available drafting softwares.
ADVANCED ENGLISH COMMUNICATION SKILLS (AECS) LAB

B.Tech. III Year II Sem.  
Course Code: EN606HS

Introduction
A course on Advanced English Communication Skills (AECS) Lab is considered essential at the third year level of B.Tech and B.Pharmacy courses. At this stage, the students need to prepare themselves for their career which requires them to listen to, read, speak and write in English both for their professional and interpersonal communication. The main purpose of this course is to prepare the students of Engineering for their placements.

Course Objectives: This Lab focuses on using multi-media instruction for language development to meet the following targets:

- To improve students’ fluency in spoken English
- To enable them to listen to English spoken at normal conversational speed
- To help students develop their vocabulary
- To read and comprehend texts in different contexts
- To communicate their ideas relevantly and coherently in writing
- To make students industry-ready
- To help students acquire behavioral skills for their personal and professional life
- To respond appropriately in different socio-cultural and professional contexts

Course Outcomes: Students will be able to:

- Acquire vocabulary and use it contextually
- Listen and speak effectively
- Develop proficiency in academic reading and writing
- Increase possibilities of job prospects
- Communicate confidently in formal and informal contexts

Syllabus
The following course activities will be conducted as part of the Advanced English Communication Skills (AECS) Lab:

1. Inter-personal Communication and Building Vocabulary - Starting a Conversation – Responding Appropriately and Relevantly – Using Appropriate Body Language – Role Play in Different Situations - Synonyms and Antonyms, One-word Substitutes, Prefixes and Suffixes, Idioms and Phrases and Collocations.

2. Reading Comprehension – General Vs Local Comprehension, Reading for Facts, Guessing Meanings from Context, , Skimming, Scanning, Inferring Meaning.

4. **Presentation Skills** – Oral Presentations (individual or group) through JAM Sessions/Seminars/PPTs and Written Presentations through Posters/Projects/Reports/ e-mails/Assignments… etc.,


**Minimum Hardware Requirement**

Advanced English Communication Skills (AECS) Laboratory shall have the following infrastructural facilities to accommodate at least 35 students in the lab:

- Spacious room with appropriate acoustics
- Eight round tables with five movable chairs for each table.
- Audio-visual aids
- LCD Projector
- Public Address system
- Computer with suitable configuration

**Suggested Software:**

The software consisting of the prescribed topics elaborated above should be procured and used.

- Oxford Advanced Learner’s Compass, 8th Edition
- DELTA’s key to the Next Generation TOEFL Test: Advanced Skill Practice.

**REFERENCES:**
