KONGUNADU COLLEGE OF ENGINEERING AND TECHNOLOGY

NAMAKKAL- TRICHY MAIN ROAD, THOTTIAM

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

(Accredited by NBA, Accredited by NAAC with B++ Grade, Recognized by UGC with 2(f) & 12(B) and An ISO 9001:2015 Certified Institution)

DEPARTMENT OF CIVIL ENGINEERING

List of Subjects: (Regulation 2013)

S.No.	Course code	Subject code	Course Name
Semester V			
1.	C301	CE6501	Structural Analysis I
2.	C302	CE6502	Foundation Engineering
3.	C303	CE6503	Environmental Engineering I
4.	C304	CE6504	Highway Engineering
5.	C305	CE6505	Design of Reinforced Concrete Elements
6.	C306	CE6506	Construction Techniques, Equipment and Practice
7.	C307	GE6674	Communication and soft skills- Laboratory Based
8.	C308	CE6511	Soil Mechanics Laboratory
9.	C309	CE6512	Survey Camp*
Semester VI			
10.	C310	CE6601	Design of Reinforced Concrete & Brick Masonry Structures
11.	C311	CE6602	Structural Analysis II
12.	C312	CE6603	Design of Steel Structures
13.	C313	CE6604	Railways, Airports and Harbour Engineering
14.	C314	CE6605	Environmental Engineering II
15.	C315	CE6002	Concrete Technology
16.	C316	CE6611	Environmental Engineering Laboratory
17.	C317	CE6612	Concrete and Highway Engineering Laboratory
Semester VII			
18.	C401	CE6701	Structural Dynamics and Earthquake Engineering
19.	C402	CE6702	Prestressed Concrete Structures
20.	C403	CE6703	Water Resources and Irrigation Engineering
21.	C404	CE6704	Estimation and Quantity Surveying
22.	C405	CE6007	Housing Planning and Management
23.	C406	EN6501	Municipal Solid Waste Management
24.	C407	CE6711	Computer Aided Design and Drafting Laboratory
25.	C408	CE6712	Design Project
Semester VIII			
26.	C409	MG6851	Principles of Management
27.	C410	CE6016	Prefabricated Structures
28.	C411	CE6021	Repair and Rehabilitation of Structures
29.	C412	CE6811	Project Work

Course Outcomes of all subjects

Semester V

Structural Analysis I:C301	
C301.1	To analyze indeterminate frames.
C301.2	To analyse structures for moving loads and to draw influence lines foe member forces.
C301.3	Can able to analyze various types of arches.
C301.4	Will be conversant with classical methods of analysis using slope deflection method.
C301.5	To require knowledge about analyzing beams and frames using moment distribution method.

Foundation Engineering:C302	
C302.1	Students will have the ability to select type of foundation required for the soil at a place.
C302.2	Able to design shallow foundation.
C302.3	Can able to design deep foundation.
C302.4	Students acquire detailed knowledge about types of piles with its function and testing.
C302.5	To acquire knowledge about retaining structures.

Environmental Engineering I:C303	
C303.1	An insight into the structure of drinking water supply systems.
C303.2	To understand various water conveyance systems.
C303.3	An understanding of water quality criteria and standards, and their relation to public health.
C303.4	To understand various water treatment process.
C303.5	The ability to design and evaluate water supply project alternatives on basis of chosen selection criteria.

Highway Engineering:C304	
C304.1	The students completing this course would have acquired knowledge on highway planning.
C304.2	To acquire knowledge of various geometric design.
C304.3	Able to design flexible and rigid pavements.
C304.4	Able to understand various types of highway construction materials.
C304.5	To acquire practical knowledge about construction and maintenance of highways as per IRC standards and other methods.

Design of Reinforced Concrete Elements:C305	
C305.1	The student shall be in a position to design the basic elements of reinforced concrete structures.
C305.2	To understand limit state design for flexure.
C305.3	Able to gain knowledge about limit state design for bond, anchorage shear and torsion.
C305.4	To design various types of compression members.
C305.5	Able to design various types of footings.

Construction Techniques, Equipment and Practice:C306	
C306.1	Students able to understand the properties and testing of fresh and hardened concrete.
C306.2	Students completing the course will have understanding of different construction techniques, practices and equipments.
C306.3	They will be able to plan the requirements for substructure.

C306.4	Students will be able to prepare the requirements for superstructure
C306.5	Students acquire knowledge about various types of construction equipments.

Communication and Soft Skills- Laboratory Based:C307	
C307.1	Take international examination such as IELTS and TOEFL
C307.2	Make presentations and Participate in Group Discussions.
C307.3	Successfully answer questions in interviews**.**
C307.4	Able to improve their skills in listening, speaking, reading and writing.
C307.5	To improve their grammar and vocabulary.

Soil Mechanics Laboratory:C308	
C308.1	Students know the techniques to determine index properties.
C308.2	Students know the techniques to determine engineering properties
C308.3	To test shear strength parameters of various types of soil.
C308.4	To test compressibility and permeability by conducting appropriate tests.
C308.5	To calculate consolidation of soil.

Survey Camp:C309	
C309.1	To conduct triangulation ,trilateration and rectangulation surveying
C309.2	To conduct trilateration Surveying.
C309.3	To carryout rectangulation surveying
C309.4	Able to plot LS &CS
C309.5	Students able to prepare contour maps with azimuth surveying.

Semester VI

Design of Reinforced concrete & Brick Masonry structures:C310	
C310.1	The student shall have a comprehensive design knowledge related to retaining structures.
C310.2	Students gain knowledge about design of various types of water tanks.
C310.3	Able to design and understand the principles of stair case and various structural systems.
C310.4	Students require knowledge about yield line theory and its concepts.
C310.5	Students able to design different types of masonry.

Structural Analysis II:C311	
C311.1	Students able to understand equilibrium and compatibility conditions and to analyze indeterminate structures using flexibility method.
C311.2	Students will gain the knowledge of analyzing indeterminate structures using stiffness method.
C311.3	Students able to understand concepts and principles of FEA.
C311.4	They gain knowledge about plastic analysis of structures.
C311.5	The student will have the knowledge on advanced methods of analysis of structures including space and cable structures.

Design of Steel Structures:C312	
C312.1	Students gain knowledge about various steel sections and connections.
C312.2	The students would have knowledge on the design of structural steel members subjected to

	tensile forces.
C312.3	The students would have knowledge on the design of structural steel members subjected to compressive forces.
C312.4	Students require knowledge on design of steel members subjected to bending forces.
C312.5	The students would have knowledge on the design of structural steel members subjected to as per current code and also know to design structural systems such as roof trusses and gantry girders.

Railways, Airports and Harbour Engineering:C313	
C313.1	On completing the course, the students will have the ability to plan and design various Civil Engineering aspects of railways.
C313.2	Students able to construct and maintenance various aspects of railways.
C313.3	Can able to understand the characteristics of airport and its classification.
C313.4	Required understanding on the runway design.
C313.5	Ability to understand the basic terms ,classification and design of harbor

Environmental Engineering II:C314	
C314.1	Ability to estimate sewage generation and design sewer system including sewage pumping stations
C314.2	Required understanding on the characteristics and composition of sewage, self purification of streams
C314.3	Ability to perform basic design of the unit operations and processes that are used in primary sewage treatment
C314.4	Ability to perform basic design of the unit operations and processes that are used in secondary sewage treatment
C314.5	Students can understand the various disposal methods .

Concrete Technology:C315	
C315.1	The student will possess the knowledge on properties of materials required for concrete tests
C315.2	Able to understand properties of various chemical and mineral admixtures.
C315.3	Students acquire knowledge on those materials and design procedures for making conventional and special concretes.
C315.4	Students acquire knowledge on fresh and hardened properties of concrete.
C315.5	Able to gain knowledge on properties and tests on special concrete.

Environmental Engineering Laboratory:C316	
C316.1	The students completing the course will be able to characterize wastewater
C316.2	Students can able to conduct treatability studies.
C316.3	Students can determine coagulation and precipitation present in waste water.
C316.4	Students able to perform BOD and COD tests.
C316.5	Ability to determine heavy metals

Concrete and Highway Engineering Laboratory:C317	
C317.1	Student knows the techniques to characterize various pavement materials through relevant tests.
C317.2	Students can able test fresh concrete

C317.3	Students can able test hardened concrete
C317.4	Students able to determine properties of aggregates by conducting various tests.
C317.5	Students acquire knowledge to conduct tests on bitumen to study its various properties.

Semester VII

Structural Dynamics and Earthquake Engineering:C401	
C401.1	At the end of the course, student will have the knowledge to analyse structures subjected to dynamic loading
C401.2	Students able to calculate degree of freedom
C401.3	Students able to design the structures for seismic loading as per code provisions.
C401.4	They can able to understand response of structures to earthquake.
C401.5	Able to understand the design and detailing of earthquake resistant structures as per IS codal provisions.

Prestressed Concrete Structures:C402	
C402.1	Student shall have a knowledge on methods of prestressing.
C402.2	Able to calculate flexure and shear stresses.
C402.3	Students able to determine deflection of various prestressing elements under different loading conditions.
C402.4	Able to design various prestressed concrete structural elements.
C402.5	Students aquire knowledge to design other prestressed tension,compression members.

Water Resources and Irrigation Engineering:C403	
C403.1	Able to understand various water resources of india and tamilnadu.
C403.2	Students gain knowledge about various water resource management.
C403.3	The students will have knowledge and skills on Planning, design, operation and management of reservoir system.
C403.4	The student will gain knowledge on different methods of irrigation including canal irrigation.
C403.5	Students will able to understand various irrigation methods and management.

Estimation and Quantity Surveying:C404	
C404.1	The student shall be able to estimate the material quantities of buildings
C404.2	Students shall be able to estimate the material quantities of other structures.
C404.3	Students shall able to prepare a bill of quantities, make specifications and prepare tender documents.
C404.4	Student shall be able to prepare value estimates.
C404.5	Student will able to prepare report writing for various structures.

Housing Planning and Management:C405	
C405.1	Can able to understand basics of housing terms.
C405.2	Acquire knowledge on various housing programmes
C405.3	The students should have a comprehensive knowledge of planning, design of structures.
C405.4	evaluation, Students will gain knowledge on construction and financing of housing projects
C405.5	Can able to understand housing finance and aquire knowledge on project appraisal.

Municipal solid Waste Management:C406	
C406.1	An understanding of the nature and characteristics of municipal solid wastes and the regulatory requirements regarding municipal solid waste management
C406.2	Ability to understand the various onsite storage and processing of municipal solid waste.
C406.3	Ability to plan waste minimization and design storage, collection, transport, processing and disposal of municipal solid waste.
C406.4	Students able to understand various offsite storage and processing of municipal solid waste.
C406.5	Student shall be able to understand various disposal methods.

Computer Aided Design and Drafting Laboratory:C407	
C407.1	At the end of the course the student acquires hands on experience in design and preparation of structural drawings for concrete structures normally encountered in Civil Engineering practice.
C407.2	At the end of the course the student acquires hands on experience in design and preparation of structural drawings for steel structures normally encountered in Civil Engineering practice.
C407.3	Student shall be able to design water tanks in concrete.
C407.4	Student aquire knowledge on design of steel water tanks.
C407.5	Students gain knowledge on design of bridges.

Design Project:408	
C408.1	On completion of the design project students will have a better experience in designing various design problems related to Civil Engineering.
C408.2	On completion of the design project students will acquire knowledge on design of RC structures.
C408.3	Student able to design waste water treatment plant.
C408.4	Student able to design various foundation systems.
C408.5	Can able to design traffic intersection.

Semester VIII

Principles of Management:C409	
C409.1	Students gain basic knowledge on various aspects of management and organizations.
C409.2	Students will be able to have clear understanding of managerial functions like planning.
C409.3	Upon completion of the course, students will be able to have clear understanding of managerial functions like organizing.
C409.4	Can able to understand directing and controlling.
C409.5	Students aquire basic knowledge on international aspect of management

Prefabricated Structures:C410	
C410.1	The student shall be able to design some of the prefabricated elements
C410.2	Can able to gain knowledge on various construction methods in using these elements.
C410.3	To gain knowledge on various design principles.
C410.4	To gain knowledge on various joints used in these structural members.
C410.5	Able to design the structures to carry abnormal loads.

Repair and Rehabilitation of Structures:C411	
C411.1	Students gain knowledge in various maintenance and repair strategies.
C411.2	Students able to understand the various aspects of strength and durability of concrete.
C411.3	Can able to understand various properties of special concrete.
C411.4	Student shall be able to understand the various techniques adopted for repair and protection methods.
C411.5	Students must gained knowledge on quality of concrete, durability aspects, causes of deterioration, assessment of distressed structures, repairing of structures and demolition procedures.

Project Work:C412	
C412.1	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.
C412.2	At the end of the project work students will gain knowledge in handling materials with their properties in practical.
C412.3	Students will able to perform as a team.
C412.4	Students will be able to understand all aspects of planning, analysis, designing, estimating in all core area of civil engineering structures.
C412.5	Graduates will able to test the specimens related to strength and durability of structures as per IS codal provisions.