2013-14

K L UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
BOARD OF STUDIES MEETING

Meeting Particulars

Type of Meeting	COURSE CURRICULUM/BOS
Department Conducting the meeting	CIVIL ENGINEERING
Number of the Meeting	3
Date of Meeting	21.05.2013
Time of Meeting	9:30 A.M.
Venue of Meeting	HoD Chamber (Civil)

Agenda of the Meeting:

1. To consider the proposed 2013-14 admitted batch B. Tech Curriculum revision and make recommendations to the Academic Council KLU for approval of the same.
2. Any other points with permission of the Chair.

The following members were present:

S.No	Name of the Person	Institution	Department of the person	Designation of the Person	Position of the person in the meeting	Primary Responsibility if any
1	Dr.S. K. Gupta	KLU	CIVIL	Professor & HoD	BOS Chairman	Chair the meeting, Document the proceedings of the meeting and forward the same to Academic Council
2	Dr. D. S. R Murthy	Andhra University	CIVIL	Professor	External Academic BOS Member	Review the existing and proposed system and suggest suitable changes for the betterment of the courses
3	Dr. Ch. Hanumantha	KLU	CIVIL	Professor	BOS Member	Preparation of Geotechnical

Gupta2

	Rao					Engg. syllabuses
4	Dr. Y Eswar Rao	KLU	CIVIL	Professor	BOS Member	Water resources RS&GIS group
5	Mr. S. Kanakambara Rao	KLU	CIVIL	Associate Professor	BOS Member	Structural Engineering Research group head
6	Dr. B. Satyanarayana	KLU	CIVIL	Associate Professor	BOS Member	Geotechnical Engineering Research group head
7	Mr. P. Sundara Kumar	KLU	CIVIL	Associate Professor	BOS Member	Water resources And remote sensing and GIS Group head
8	Dr. K. Raja Sekhar Reddy	KLU	CIVIL	Associate Professor	BOS Member	Environmental Engineering Research group head
9	Mr. A. V. Rao	KLU	CIVIL	Associate Professor	BOS Member	Preparation of Structural Engg. syllabuses
10	Mr. K Shyam Chamberlin	KLU	CIVIL	Asst. Professor	BOS Member	Preparation of Geotechnical Engg. syllabuses
11	Mr. B.G. Rahul	KLU	CIVIL	Asst. Professor	Alumni BOS Member	Review the existing and proposed system and suggest suitable changes for the betterment of the courses
12	Mr. Uma Maheswar	KLU	CIVIL	Asst. Professor	BOS Member	Preparation of Transportation Engineering syllabuses
13	Ms. Anita Nag	KLU	CIVIL	Asst. Professor	BOS Member	Preparation of Water Resources syllabuses

RESOLUTION

The BOS Committee resolved to recommend the following recommendations to the Academic council for the curriculum structure and syllabus for B. Tech Civil Engineering and M. Tech Structural Engineering of 2013-14 admitted students.

1. Syllabus of Fluid Mechanics course is reviewed & revised.
2. List of professional electives are prepared domain wise considering needs of the industry.
3. Three new courses viz., Network Theory, Computer Programming and Object Oriented Programming are introduced in the curriculum considering the software industry requirements.
4. A new course- Language and Reasoning is introduced in view of improving the opportunities for placements.
5. Two new courses viz., employability skills and advanced employability skills to enhance the interpersonal skills and employability skills.
6. Three new courses viz., finite element analysis, structural dynamics and fracture mechanics are introduced in M. Tech Structural Engineering Specialisation.
7. A new course-human values is proposed to be introduced at 1st year level to cover ethics and moral values.
8. A new course- computer programming is proposed to be introduced to have exposure of basic programming skills.
9. A new course-construction materials and concrete technology is proposed to be introduced.
13. The Curriculum Structure for 2013-14 admitted batch of B. Tech in Civil Engineering and M. Tech in Structural Engineering was approved by all members present in the meeting. The detailed structure of 2013-14 is shown in Annexure-I & II respectively.
14. It was resolved to approve all the recommendations/points mentioned in DAC meeting conducted on 11th October 2012, except point no. 3 was partially approved.
15. It was resolved to approve all the recommendations/points mentioned in DAC meeting conducted on 14th March 2013, except point no. 3 and point no.2 was partially approved.

K L UNIVERSITY

DEPARTMENT OF CIVIL ENGINEERING

BOARD OF STUDIES MEETING

List of BOS Members:

S. No	Name	Designation of the Person	Institution	Signature
1	Dr.S. K. Gupta	Professor & HoD	KLU	
2	Dr. D. S. R Murthy	Professor	Andhra University	21/05/2013
3	Dr. Ch. Hanumantha Rao	Professor	KLU	
4	Dr. Y Eswar Rao	Professor	KLU	
5	Mr. S. Kanakambara Rao	Associate Professor	KLU	
6	Dr. B. Satyanarayana	Associate Professor	KLU	
7	Mr. P. Sundara Kumar	Associate Professor	KLU	
8	Dr. K. Raja Sekhar Reddy	Associate Professor	KLU	
9	Mr. A. V. Rao	Associate Professor	KLU	
10	Mr. K Shyam Chamberlin	Asst. Professor	KLU	
11	Mr. B.G. Rahul	Asst. Professor	KLU	
12	Mr. Uma Maheswar	Asst. Professor	KLU	
13	Ms. Anita Nag	Asst. Professor	KLU	Anita

ANNEXURE-I

K L UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
MAPPING OF Courses & Cos *vs.* PEOs (Undergraduate)-2013-14 Admitted Batch

Course Code	Course Title	CO NO	Description of the Course Outcome	a	b	c	d	e	f	g	h	i	j	k	Course Type	Rationale/Objective
13HS101	ENGLISH	CO1	Kinesics To enable the students with the study of body language as it is an essential component of soft skills	1											Retained	To bring about a consistent accent and intelligibility in students' pronunciation of English by providing an opportunity for practice in speaking
		CO2	Lexis Vocabulary building	1												
		CO3	English usage and mechanics Grammar and verbal reasoning					2								
		CO4	Office communication to improve learning skills					2								
13HS102	LANGUAGE AND REASONING SKILLS	CO1	Understand the method of identifying the meaning of words and apply them in contexts.							2					Added	To train students to use language appropriately for public speaking, group discussions and interviews
		CO2	Understand and analyze different cultures and the importance of empathy in cross-cultural communication						2							
		CO3	Understand and analyze seven techniques of reading and improve reading speed							2						
		CO4	Understand and apply writing strategies in office/ formal communication							2						
11BS105	ECOLOGY AND ENVIRONMENT	CO1	Understand the importance of Environmental education and conservation of natural resources								1				Retained	To understand the relation between biotic and abiotic components of the environment, impact of human activities on the environment and possible remedial measures to restore the environment.
		CO2	Understand the importance of ecosystems and biodiversity									1				
		CO3	Understand the knowledge on solid waste management										1			
		CO4	Understand the knowledge on disaster management and EIA process										1			
13HS104	HUMAN VALUES	CO1	realize and understand the basic aspiration, harmony in the human being						1				1		Retained	to understand the relations to be maintained with the co citizens to become a good citizen of the society
		CO2	envisage the roadmap to fulfill the basic aspiration of human beings	2				2								
		CO3	Analyze the profession and his role in this existence						2				2			

		CO1	Explain how ultrasonic waves are produced and detected Determine flaws present inside a material using NDT techniques													Retained	
13BS103	ENGINEERING PHYSICS	CO2	Compute the magnetic induction produced by current carrying conductors by using Biot-Savart law & Ampere's law. Compute the Lorentz force experienced by a charged particle	1													To understand the Engineering Physics which are essential to know the behaviour of materials and structural elements and to come up with solutions
		CO3	Understand different aberrations in lenses and their corrections, phenomenon of interference in thin films of uniform thickness	1													
		CO4	Explain the working of optoelectronic devices like LED, photodiode, photo transistor and solar cells. Explain the phenomenon of superconductivity and its applications	1													
11BS104	ENGINEERING CHEMISTRY	CO1	Examine water quality and select appropriate purification technique for intended problem		2	2										Retained	To understand the Engineering Chemistry which are essential to know the behaviour of materials and structural elements and to come up with solutions
		CO2	Predict potential complications from combining various chemicals or metals in an engineering setting		2	2											
		CO3	Discuss fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena		2	2											
		CO4	Apply phase rule, polymers, conducting polymers and nano chemistry to engineering processes			2											
		CO5	An ability to analyze & generate experimental skills		2	2											
13BS201	MATHEMATICAL METHODS	CO1	Identify different mathematical problems and reformulate them to facilitate numerical treatment using an appropriate technique	2												Retained	To understand the Engineering Mathematics which are essential to know the behaviour of materials and structural elements and to come up with solutions
		CO2	Apply Fourier series, Fourier transforms and Z-transforms to analyze various signals	2													
		CO3	Construct the probability distribution of a random variable, based on a real-world situation, and use it to compute expectation and variance and to estimate unknown parameters of populations and apply the tests of hypotheses	2													

	THROUGH PROGRAMMING		and programming													various programming tools. Softwares and systems available in solving of Various Complex problems related to Civil engineering
		CO2	Interpret & Illustrate user defined C functions and different operations on list of data	2				2								
		CO3	Implement Linear Data Structures and compare them		2											
		CO4	Implement Binary Trees		2											
13ES106	ENGINEERING MECHANICS	CO1	Understand the concept of forces and apply the static equilibrium equations	1				2							Retained	To Understand the concept of forces acting on various elements of structures
		CO2	Analyze co-planar and non-co-planar system of forces	2				2								
		CO3	Apply the concept of centroid & centre of gravity to determine moment of inertia	2				2								
		CO4	Analyze the rigid bodies under translation and rotation with and without considering forces	2				2								
13ES201	THERMODYNAMICS	CO1	Apply first law of thermodynamics to non-flow systems	2				2							Retained	To understand the laws of thermodynamics and apply to thermodynamic systems and process
		CO2	Apply steady flow energy equation and second law of thermodynamics to various processes and engineering devices	2				2								
		CO3	apply principle of entropy and thermodynamic relations to thermodynamic system and process	2				2								
		CO4	Evaluate the performance of Otto, Diesel, Dual cycles and Refrigeration cycles	2				2								
13ES202	OBJECT ORIENTED PROGRAMMING	CO1	Understand Basic Concepts of OOP and apply the concepts of classes and objects through Java Language	2				2							Added	To Understand the Basic Concepts of OOP and apply the concepts of programs and projects through Java Language
		CO2	Apply the concepts of constructors, Overloading, parameter passing, access control, Inheritance	2				2								
		CO3	Apply Packages, Interfaces, Exception Handling	2				2								

		CO3	Apply the Fourier Transformation techniques for DT sequences and their applications					2											techniques for DT sequences Design and Implementation of the Signal processing algorithms in Matlab
		CO4	Ability to design, Implementation and realization of digital filters					2											
		CO5	Design and Implementation of the Signal processing algorithms in Matlab													3			
13-CE201	MECHANICS OF MATERIALS	CO1	Determine SF and BM and draw SFD and BMD for determinate beams		2												Retained	To understand the Engineering properties of Materials and apply the same in analysis of Structural elements in civil engineering
		CO2	Determine bending stresses and shear stresses in beams		2														
		CO3	Determine Transformation of stresses from one axis to another axis Analysis and design of shafts		2														
		CO4	Analyze Buckling of columns by various methods and analysis of thin cylinders		2														
13CE202	FLUID MECHANICS	CO1	Understand various properties of fluids and apply various laws for measuring pressure					2									Retained	To understand the properties of Fluids and apply the same in Fluid Flow Applications in civil engineering	
		CO2	Apply the laws to measure total pressure and center of pressure on surfaces and understand the concepts of Buoyancy and flotation					2											
		CO3	Apply continuity equation, stream function and velocity potential function for fluid flows and apply Bernoulli's equation to various fluid flow applications					2											
		CO4	Estimate the major and minor losses in flow through pipes and understand the concepts of dimensional analysis and boundary layers					2											
		CO5	Apply the theoretical concepts to conduct various experiments of fluid flow practically and analyze the data		2														
13CE205	Surveying	CO1	Apply the knowledge of plane surveying for computation of angles in a traverse	2				2									Revised	To Understand the Various Surveying Equipments and Methods used in Land surveying and alignment of Different Civil Engineering Structures	
		CO2	Calculate the differences in elevation using differential levelling techniques and preparation of contour plan	2				2											
		CO3	Computation of areas of field and volume of earthwork	2				2											
		CO4	Apply the knowledge of theodolite and tacheometric survey, and total station for calculation of height of building													2			
15CE 2104	Structural Analysis	CO1	Determine the deflection of determinate beams	1				2									Retained	To become familiar with analysis of structural elements in civil engineering	
		CO2	Analyse indeterminate Propped cantilever and fixed beams	1				2											
		CO3	Analyse indeterminate continuous beams and portal frames	1				2											
		CO4	Analyse Continuous beams and portal frames by moment distribution method	1				2											

proportioning

		CO3	Understand the relationship between material properties and structural form	2				2											
		CO4	Understand the importance of experimental verification of material properties	1				1											
13CE302	Engineering Geology	CO1	Understand various geological processes operate on the surface of the earth, impact of the processes on the construction materials	2	2			2										Retained	To become familiar with Identification of Suitable site for Construction project & investigation of Construction materials
		CO2	Understand the formation of different types of rocks and their identification and properties and use in sourcing suitable geological materials for construction	2				2											
		CO3	Equip with factors leading to various geological hazards and able to identify areas vulnerable to sliding, come out measures to stabilize slopes and seismic vulnerability	2		2		2											
		CO4	Equip with basic knowledge required for identification of suitable site for the proposed construction project, equip with basic knowledge of hydro geological properties of rocks, identification of potential pockets for tapping groundwater and geological settings that are un favorable / unsafe for construction of dams and driving the tunnels	2		2		2											
13CE303	Transportation Engineering	CO1	Design various geometric elements and significance of Transportation Engineering and its development in world and in India.	2														Revised	To become familiar with Design concepts of Various Types of pavements and traffic infrastructure
		CO2	Analyze and Design of Flexible Pavements and rigid pavements	2															
		CO3	Understand Highway Construction equipment & Necessary Highway Drainage and Maintenance	1															
		CO4	Analyze and Design Traffic Infrastructure Facilities	2															
		CO5	Testing and Specification of Pavement Materials														2		
13CE304	Foundation Engineering	CO1	Carry out geotechnical field investigation and can prepare field reports and Thoroughly understand different geotechnical investigation methodologies and can handle individually	2				2										Revised	To Apply knowledge of soil mechanics in Geotechnical investigation to assess the behaviour of Ground to load and stability of slopes
		CO2	Can compute stress distribution using different techniques and can carry settlement analysis in different soil types	2				2											
		CO3	Compute bearing capacity of shallow and deep foundations in laboratory and field using different methods	2				2											
		CO4	Can analyze stability of slopes for finite and infinite in different soil conditions and methods. Carry earth pressure analysis and can design retaining walls	2				2											
13CE305	Design of Reinforced Concrete Structures	CO1	Design singly reinforcement beam using LSD			2												Retained	To become familiar with basic design concepts of various Concrete structural elements
		CO2	Design concepts of shear, development length and torsion for beams			2													
		CO3	Design reinforced concrete slabs and columns			2													

		CO2	Prepare detailed estimate w. quantities and costs of R C C structures Roads Canals	2				2											Man power and Machinery for a civil engineering project and valuation of the same
		CO3	Prepare detailed specifications and provide exposure to rate analysis for different items of work	2				2											
		CO4	Recognize the P W D working procedures Contracts and tenders of a project and carry out building valuation	2				2											
		CO5	Practical estimations of buildings, road works etc by using a software package (M S Excel)															3	
13CE331	GREEN BUILDINGS	CO1	Understand Necessity and Role of Green Buildings & Regarding Indian Green Building Council	2															To Understand the Requirements for Green Buildings &methods of rating
		CO2	Understand the usage of Water, Site and Material Parameters															2	
		CO3	Understand Passive Solar Design & Economics of a Green Buildings															2	
		CO4	Understand Construction and Maintenance of Green Buildings															2	
13CE333	Earth quake Resistant Design of Structures	CO1	Understand the building categories, seismic behavior and dynamics of structures	1				1											To become familiar with basic concepts involved in designing of Structures against to earth quake
		CO2	Understand the earthquake causes, ground motion behavior, Seismic resistant building architecture	1				1											
		CO3	Understand about the Foundations of different structures, Quality of construction materials, Quality of concrete, general detailing requirements		1			1											
		CO4	Analyze an Earthquake resistant structure 2-storied structure based upon the upcoming forces onto the structure because of the seismic condition		2			2											
13CE334	PRESTRESSED CONCRETE	CO1	Understand the concepts of prestressed concrete and analyze the prestressed concrete beams	2				2											To become familiar with basic concepts, analysis, design and execution methods involved in Pre stressed concrete structures
		CO2	Analyze losses in prestressed concrete and deflection of the prestressed concrete members.	2				2											
		CO3	Design reinforcement for Ultimate shear, torsion and bending of prestressed concrete members	2															
		CO4	Design end blocks as per IS 1343 recommendations		2														
11CE335	Bridge Engineering	CO1	Introduction to different types of bridges and codal provisions for designing the bridge components	2		2		2											To become familiar with basic concepts, analysis and design involved in Designing of Bridges
		CO2	Analysis and Design of slab Culvert	2		2		2											
		CO3	Analysis and Design of T-Beam, sub-structure components and bearings	2		2		2											
		CO4	Understanding the designing of cable supported bridges	2		2		2											
13CE341	GROUND IMPROVEMENT TECHNIQUES	CO1	Able to apply different Stabilization Techniques for the ground improvement			2													To know the different Stabilization Techniques available for the ground improvement
		CO2	Able to apply different dewatering techniques for the drainage in clays			2													
		CO3	Able to apply different grouting techniques and use various geosynthetics for ground improvement			2													

		CO2	Understand the Applications of various Pavement methodologies in the design pavements	1														Knowledge in designing of Pavements
		CO3	Analyze and Design Highway Flexible Pavements	1	2													
		CO4	Analyze and Design Airport flexible Rigid Pavements	1	2													
11-CE-439	Urban Transportation Systems Planning	CO1	Understand the role, purpose of urban transportation planning and to know the characteristics of components involved in planning of urban transportation systems	1													Retained	To become familiar with various systems involved in urban transportation
		CO2	Understand the Four stage modelling approach, Trip generation and distribution concepts and their application					2										
		CO3	Understand the concepts of Modal split and traffic assignments and their applications					2										
		CO4	Gain knowledge about the concepts of public transport planning, Intermediate para transit and Intelligent Transportation Systems	1														
13AC201	ENERGY AND SOCIETY	CO1	Understand the various forms of available energy and energy related aspects									1		1			Retained	To understand the various forms of available energy and impact of usage of energy on the society and environment
		CO2	Apply energy auditing methodology to estimate energy conservation of different case studies									2		2				
		CO3	Understand the environmental and geological impacts on the energy vice versa.									1		1				
		CO4	Apply the planning and controlling aspects for economical energy usage									2		2				
13AC301	ADVANCED EMPLOYABILITY SKILLS	CO1	Understand and adopt appropriate behavior patterns		1												Added	To acquire the communication skills required for securing employment
		CO2	Understand, remember and apply lexical, syntactic skills related to grammar, usage and composition					2										
		CO3	Analyze and apply various interpersonal skills in day-to-day communication					2										
		CO4	Understand, learn and apply the principles of various types of GDs and Personal Interviews					2										

		CO1	Understand the different wind thermal applications and wind power plants	1										1											
11OE426	RENEWABLE ENERGY RESOURCES	CO2	Understand the operation of wind turbine, different types of wind turbines and wave energy conversion	1										1										Retained	To Understand The Various Renewable Energy Recourses Available And Systems, Methods To Tap The Same
		CO3	Understand the energy conversion of Tidal, ocean thermal and various the geo thermal power plants	1										1											
		CO4	Analyze the operation of Bio energy conversion methods and the different bio gas plants	2										2											
12OE442	MECHATRONICS	CO1	Identify appropriate sensors, identify appropriate actuation system for a given application				2																	Retained	To understand the various components and systems involved in Mechatronic product design
		CO2	Identify appropriate microcontroller for a given application and to build a mathematical Model of system for evaluating open Loop system performance and behavior						2																
		CO3	Suggest an appropriate closed loop control strategy to attain the desired system behavior						2																
		CO4	Suggest a Mechatronic product design for a given application and evaluate its performance					3																	
12OE443	ROBOTICS	CO1	Analyze existing robotic systems with respect to their anatomy, type, performance specifications, end effectors etc				2																	Retained	To understand the basic systems and designs in robotics and their application in automation and Engineering
		CO2	Suggest a robotic system design with respect to the suitable sensors, actuators for an intended application and simulate its performance	3																					
		CO3	Analyze robot manipulator performance with respect to digital control architecture comprising of PLC's Microcontroller for an application				2																		
		CO4	Comprehensive understanding and identification of suitable Robotic system	2																					

		CO1	Understand the essential principles of operation and design of simple radar systems and the associated signal processing at block diagram level					1													
11 OE 431	RADAR SYSTEMS	CO2	Apply the mathematical models relevant to radar systems to calculate system performance and apply the principles of tracking Radars					2											Retained	To Understand the Basic concepts of operation and design of radar systems	
		CO3	Understand essential elements of Transmitters, Receivers and design of simple Radar Receiver					1													
		CO4	Understand the concepts of different elements that protect the Radar Receives and Principles of various Synthetic Aperture Radars	1																	
11-OE-422	OPTICAL ENGINEERING	CO1	Understand the basics of Light signals and different types of Optical Engineering methodologies	1															Retained	To Familiar with basic concepts of Light signals and different types of Optical Engineering methodologies	
		CO2	Analyze the concepts of transmission characteristics of optical fibers and optical transmitters					2													
		CO3	Understand the concepts of optical Detectors, optical Sensors and their applications	1																	
		CO4	Analyze the concept of optical fiber systems and instruments					2													
11-OE-424	MOBILE COMMUNICATIONS	CO1	Describe various 2G,3G,4G,5G wireless network models	2															Retained	To Familiar with basic concepts of 2G,3G,4G,5G wireless network	
		CO2	Explain three basic propagation mechanisms	2																	
		CO3	Discuss wireless system standard GSM services	2																	
		CO4	Discuss OFDM wireless communication					2													
11OE432	DATA WAREHOUSING AND MINING	CO1	Understand basic concepts of Databases and issues related to Data mining													1				To Understand basic concepts of Databases and issues related to Data mining	
		CO2	Analyze Data Warehouse Architecture and Data Pre-processing techniques													2					
		CO3	Analyze Association rules in large data bases, Classification and Prediction techniques														2				
		CO4	Analyze Clustering techniques on large data bases													2					
12OE445	FUNDAMENTALS OF DATABASE MANAGEMENT SYSTEMS	CO1	Understand the fundamentals of database management systems	1																To Understand the fundamentals of database management systems and transaction processing	
		CO2	Construct database tables using SQL		2																
		CO3	Analyze various normalization techniques and develop procedures and functions in PL/SQL		2																
		CO4	Understand the file storage structures in the Database Management and transaction processing		1																
13-OE475	MEASURMENTS AND INSTRUMENTATION	CO1	Understand the basic principles of Measurement Systems					1												To Understand the principles of Measurement Systems, Signal conditioning & signal analyzers and Digital systems& Recording systems	
		CO2	Explore the Transducers and their classification					1													
		CO3	Elucidate the basic principles of Signal conditioning & signal analyzers					1													
		CO4	Understand Digital systems& Recording systems					1													
13 OE	ANIMATION FOR	CO1	Understand about 3D interface environment and its																	To Understand about 3D	

		CO4	Create an appropriate budget for the marketing of high tech products and services														
11HS211	ORGANIZATION MANAGEMENT	CO1	Understand the various management theories and management approaches	1		1										To Understand the various management theories and management approaches	
		CO2	Have knowledge in organization structures and organization principles	1		1											
		CO3	Have basic knowledge in motivation, motivation theories and leadership theories, moral and behavioral sciences and also understand the management concept, administration and management objectives	1		1											
		CO4	Understand the various issues in industrial relations, trade unions and college bargaining	1		1											

K L UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING

Meeting Particulars

Type of Meeting	INTERNAL ACADEMIC DISCUSSIONS
Department conducting the meeting	CIVIL ENGINEERING
Date of the meeting	14-03-13
Time of the meeting	9.30 A.M
Venue of the meeting	HoD Chamber (Civil)

The following members were present:

S.No.	Name	Designation of the person	Position of the person in the meeting
1	Dr. S. K. Gupta	Professor & HoD	Chairman
2	Mr. B. G. Rahul	Assistant Professor	Convener
3	Mr. S. Kanakambara Rao	Associate Professor	Member
4	Mr. P. Sundara Kumar	Associate Professor	Member
5	Dr. A. Siva Sankar	Associate Professor	Member
6	Dr. K. Rajasekhara Reddy	Associate Professor	Member
7	Mr. K. Shyam Chamberlin	Assistant Professor	Member
8	Ms. K. Prasanthi	Assistant Professor	Member
9	Mr. N. Lekaz (09100133)	IV/IV B. Tech Student	Member
10	Mr. G. Rama Lingeswara Rao (09100185)	IV/IV B. Tech Student	Member

Agenda:

1. To discuss the feedbacks received from stake holders on curriculum
2. To propose the curriculum for B. Tech 2013-14 admitting batch
3. Any other points with the permission of the DAC chairman

The following points were discussed and resolved:

1. Upon discussing the feedback from faculty, the committee resolved to recommend the following to BOS.

a. A new course-human values is introduced at 1st year level to cover ethics and moral values and same is presented in Annexure-I.

b. A new course- computer programming is introduced to have exposure of basic programming skills and same is given in Annexure-I.

2. Upon discussing the feedback from academic peers, the committee resolved to recommend the following to BOS.

   a. A new course-construction materials and concrete technology is proposed to introduced and same is given in Annexure-I.

   b. Syllabus of all professional core courses are reviewed and revised by considering various competitive examinations of state and central governments etc. The professional core courses in which syllabus revision took place is presented in Annexure-I.

3. The DAC members reviewed the various certificate courses being imparted to the student and resolved to cover the following list of certificate courses which enhance the placement opportunities.

   a. AUTOCAD
   b. 3DS MAX
   c. STAAD PRO.
   d. SAP 2000
   e. TOTAL STATION

Dr. S.K. Gupta
(Head of the Department)

K L University
Department of Civil Engineering
Department Academic Committee (DAC)

The following members attended the meeting on 14th March 2013 at 9:30 A.M.:

S.No.	Name	Designation of the person	Signature
1	Dr. S. K. Gupta	Professor & HoD	
2	Mr. B. G. Rahul	Assistant Professor	
3	Mr. S. Kanakambara Rao	Associate Professor	
4	Mr. P. Sundara Kumar	Associate Professor	
5	Dr. A. Siva Sankar	Associate Professor	
6	Dr. K. Rajasekhara Reddy	Associate Professor	
7	Mr. K. Shyam Chamberlin	Assistant Professor	
8	Ms. K. Prasanthi	Assistant Professor	
9	Mr. N. Lekaz (09100133)	IV/IV B. Tech Student	
10	Mr. G. Rama Lingeswara Rao (09100185)	IV/IV B. Tech Student	

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Department of Civil Engineering

Department Academic Committee Meeting (11/10/2012 & 14/03/2013)

Annexure 1: Proposed B.Tech 2013-14 Course Structure

S. No	Course Name	L-T-P	Cr	Pre-Req.	Remarks
I					NIL
1	English	2-0-2	3	NIL.	NIL
2	Language and Reasoning Skills	2-0-2	3	NIL.	New Course
3	Ecology & Environment	2-0-0	2	NIL.	NIL
4	Human Values	2-0-0	2	NIL.	NIL
5	Employability Skills	0-0-2	0	NIL.	New Course
6	Advanced Employability Skills	0-0-2	0	NIL.	New Course
II					
1	Linear Algebra and Multi variate calculus	3-0-2	4	NIL.	NIL
2	Differential Equations	3-0-2	4	NIL.	NIL
3	Engineering Physics	3-0-2	4	NIL.	NIL
4	Engineering Chemistry	3-0-2	4	NIL.	NIL
5	Mathematical Methods	3-0-0	3	Linear Algebra and Multi variate calculus & Differential Equations	NIL
6	Complex variables and Finite differential Methods	3-0-0	3	calculus & Differential Equations	NIL
III					
1	Engineering Materials	3-0-0	3	NIL.	NIL
2	Measurements	3-0-2	4	NIL.	NIL
3	Engineering Graphics with CAD	0-0-4	2	NIL.	NIL
4	Workshop Practice	0-0-4	2	NIL.	NIL
5	Problem Solving through Programming	3-0-2	4	NIL.	New Course
6	Engineering Mechanics	3-0-2	4	NIL.	NIL
7	Thermodynamics	3-0-0	3	Engineering Physics	NIL
8	Object Oriented Programming	3-0-2	4	Engineering Materials	New Course
9	Network Theory	3-1-2	4	Linear Algebra and Multi variate calculus	New Course
10	Data Structures	3-0-2	4	Linear Algebra and Multi variate calculus	NIL
11	Signal Processing	3-0-2	4	Differential Equations	NIL
IV					
1	Mechanics of Materials	3-0-2	4	Engineering Mechanics	NIL
2	Fluid Mechanics	3-0-2	4	NIL.	NIL
3	Structural Analysis	3-0-2	2	Engineering Mechanics	NIL
4	Hydraulics & Hydraulic Machines	3-0-2	4	Fluid Mechanics	Topics Removed: Force exerted by a jet on a hinged plate, on moving plates, force exerted by jet on flat plates and series of vanes.
5	Surveying	3-0-2	4	NIL.	Topics Removed: Determination of the capacity of reservoir, volume of barrow pits
6	Building Planning and Construction	3-0-2	4	NIL.	NIL
7	Engineering Geology	3-0-2	3	NIL.	NIL
8	Soil Mechanics	3-0-2	4	NIL.	Topics Added: Skempton pore water pressure parameters.
9	Environmental Engineering	3-0-2	4	NIL.	Topics removed: Sludge digestion and sludge dewatering beds.

10	Transportation Engineering	3-0-2	4	NIL	Topics Added: Pavement Drainage - Necessity, Analysis and Design of Surface and sub surface drainage system.
11	Design of Concrete Structures	3-0-2	4	Structural Analysis	NIL
12	Water Resources Engineering	3-1-2	4	NIL	Contents Added
13	Foundation Engineering	3-2-0	4	NIL	Topics Removed: Meyerhof's analysis, Hansen's bearing capacity theory, Vesic's bearing capacity theory
14	Design of Steel Structures	3-0-2	3	NIL	Topics Added: Roof Trusses Roof trusses Roof and side coverings Design loads, design of purlin, Sheetings-Loads on trusses-Analysis of trusses and elements of truss-Grouping of members- end bearing
15	Quantity Surveying and Estimation	3-0-2	4	NIL	NIL
V					
STRUCTURAL ENGINEERING SPECIALIZATION STREAM					
1	Green Buildings	3-0-0	3	NIL	NIL
2	Advanced Design of Steel Structure	3-0-0	3	Design of Steel Structures	NIL
3	Earthquake Resistant Design of Structures	3-0-0	3	NIL	NIL
4	Prestressed Concrete	3-0-0	3	NIL	NIL
5	Bridge Engineering	3-0-0	3	NIL	NIL
GEOTECHNICAL ENGINEERING SPECIALIZATION STREAM					
1	Ground Improvement Techniques	3-0-0	3	NIL	NIL
2	Advanced Foundation Engineering	3-0-0	3	NIL	NIL
3	Geotechnical Earthquake Engineering	3-0-0	3	NIL	NIL
4	Design of Earth Retaining Structures	3-0-0	3	NIL	NIL
5	Rock Mechanics	3-0-0	3	NIL	NIL
ENVIRONMENTAL & WATER RESOURCE ENGINEERING SPECIALIZATION STREAM					
1	Advanced Open Channel Hydraulics	3-0-0	3	NIL	NIL
2	Design of Hydraulic Structures	3-0-0	3	NIL	NIL
3	Environmental Impact Assessment	3-0-0	3	NIL	NIL
4	Solid Waste Management and Landfills	3-0-0	3	NIL	NIL
5	Rural Water Supply & Sanitation	3-0-0	3	NIL	NIL
TRANSPORTATION ENGINEERING SPECIALIZATION STREAM					
1	Railway, Airport and Dock & Harbour Engineering	3-0-0	3	NIL	NIL
2	Advanced Highway Engineering	3-0-0	3	NIL	NIL
3	Traffic Engineering	3-0-0	3	NIL	NIL
4	Advanced Pavement Design Engineering	3-0-0	3	NIL	NIL
5	Urban Transportation Systems Planning	3-0-0	3	NIL	NIL
VI MANAGEMENT ELECTIVE, Credits: 3					
1	Emotional Intelligence	3-0-0	3	NIL	NIL
2	Paradigm in Management thought	3-0-0	3	NIL	NIL
3	Indian Economy	3-0-0	3	NIL	NIL
4	Professional Ethics & Values	3-0-0	3	NIL	NIL
5	Behavioural Sciences	3-0-0	3	NIL	NIL
6	Managing Personal Finances	3-0-0	3	NIL	NIL
7	Basics of Marketing for Engineers	3-0-0	3	NIL	NIL
8	Self Management	3-0-0	3	NIL	NIL
9	Organization Management	3-0-0	3	NIL	NIL
10	Resources Safety and quality management	3-0-0	3	NIL	NIL
11	Construction Project Management	3-0-0	3	NIL	NIL
12	Disaster Management	3-0-0	3	NIL	NIL
VII	PROJECT				

Industrial Training	0-0-4	2	NIL	NIL
Mini Project	0-0-4	2	NIL	NIL
Term Paper	0-0-4	2	NIL	NIL
Minor Project	0-0-4	2	NIL	NIL
Practice School/PROJECT	0-0-24	10	NIL	NIL

1.1.2 Percentage of programmes where syllabus revision was carried out during the last five years

2013-14				
Program Code of revised syllabus	Program name of revised syllabus	No. of Courses offered during this academic year	Number of Courses Revised	Percentage of syllabus content added or replaced
002	B. Tech (Civil Engineering)	41	8	18

List of Syllabus Revised Courses for A.Y. 2013-14

S. No	Course Code	Course Name	L-T-P	Cr.	Removed	Added
1	13CE204	Hydraulics & Hydraulic Machines	3-0-2	4	Force exerted by a jet on a hinged plate, on moving plates, force exerted by jet on flat plates and series of vanes.	--
2	13CE205	Surveying	3-0-2	4	Determination of the capacity of reservoir, volume of barrow pits.	
3	13CE206	Soil Mechanics	3-0-2	4	--	Skempton pore water pressure parameters.
4	13CE207	Environmental Engineering	3-0-2	4	Sludge digestion and sludge dewatering beds.	--
5	13CE303	Transportation Engineering	3-0-2	4	--	Pavement Drainage - Necessity, Analysis and Design of Surface and sub surface drainage system.
6	13CE304	Foundation Engineering	3-0-2	4	Meyerhof's analysis, Hansen's bearing capacity theory, Vesic's bearing capacity theory	
7	13CE306	Design of Steel Structures	3-2-0	4	--	Roof Trusses: Roof trusses – Roof and side coverings – Design loads, design of purlin, Sheetings-Loads on trusses-Analysis of trusses and elements of truss-Grouping of members- end bearing
8	13CE307	Water Resources Engineering	3-2-0	4	--	Syllabus Added

L	T	P	Cr
3	0	2	4

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HYDRAULICS AND HYDRAULIC MACHINES (11CE205)

SYLLABUS:

Open Channel Flow
Definition, classification, and Comparison between open channel flow and pipe flow, Types of channels, Chezy's and Manning's equation, Flow through rectangular, Trapezoidal and Circular channels, Most efficient channel section -Rectangular, Trapezoidal.
Open Channel Flow: Specific energy, Specific energy diagram, Critical flow, critical flow in rectangular channel, critical slope, Froude's number, Channel transitions.

Gradually Varied Flow
Gradually varied flow in rectangular channels – equation for GVF, Water surface slope w.r.t. channel bed and horizontal, Classification of channel slopes, classification of surface profiles, Backwater and draw down curves.
Rapidly Varied Flow: Hydraulic jump, elements and characteristics of hydraulic jump, Types of hydraulic jump, Location and applications of hydraulic jump, Energy loss in a hydraulic jump

Impact of Jets
Force exerted by the jet on a stationary plate – vertical, inclined and curved, Force exerted by a jet on a hinged plate, on moving plates, force exerted by jet on flat plates and series of vanes.
Turbines: Introduction, classification of turbines, Pelton wheel, velocity triangles and work done on Pelton wheel, Design of Pelton wheel.

Turbines
Radial flow reaction turbine, Velocity triangles and work done by water on runner, Francis turbine, Design of Francis turbine, Axial flow reaction turbine – Kaplan turbine, head and efficiency, Draft tube – types, draft tube theory, efficiency of draft tube, Specific speed, Unit quantities, Selection of turbines, Cavitation,

Centrifugal Pumps
Manometric head; losses and efficiencies; work done; working principle; priming; velocity triangles; performance and characteristics curves; multistage and double suction pumps. Cavitation effects.
Reciprocating Pumps: Classification of reciprocating pump, working principle, Discharge through reciprocating pump, negative slip Discharge, work done, and power required to drive double acting pump.

TEXT BOOKS:

1. Hydraulics & Fluid Mechanics by P. N. Modi & S. N. Seth; Standard Book house, New Delhi
2. Fluid Mechanics by A. K. Jain; Khanna Publishers, Delhi

REFERENCE BOOKS:

1. Open Channel flow by V.T. Chow, McGraw Hill book company
2. Flow in Open channels by K. Subramanya, Tata McGraw-Hill Publishing Company,1994.
3. Introduction to Fluid Mechanics by Robert W.Fox and Alan T. Mc Donald, Fourth Edition, John Willey & sons, New York, 1995
4. Hydraulic Machines by Jagadhishlal; Metropoliton Company, Delhi

L	T	P	Cr
3	0	2	4

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HYDRAULICS AND HYDRAULIC MACHINES (13CE204)

SYLLABUS:

Open Channel Flow: classification, and Comparison between open channel flow and pipe flow, Types of channels, Chezy's and Manning's equation, Flow through rectangular, Trapezoidal and Circular channels, Most efficient channel section -Rectangular, Trapezoidal, Specific energy, Specific energy diagram, Critical flow, critical flow in rectangular channel, critical slope, Froude's number, Channel transitions.

Gradually Varied Flow: Gradually varied flow in rectangular channels – equation for GVF, Water surface slope w.r.t. channel bed and horizontal, Classification of channel slopes, classification of surface profiles, Backwater and draw down curves.

Rapidly Varied Flow: Hydraulic jump, elements and characteristics of hydraulic jump, Types of hydraulic jump, Location and applications of hydraulic jump, Energy loss in a hydraulic jump.

Impact of Jets: Force exerted by the jet on a stationary plate – vertical, inclined and curved, Force exerted by a jet on a hinged plate, on moving plates, force exerted by jet on flat plates and series of vanes.

Turbines: classification of turbines, Pelton wheel, velocity triangles and work done on Pelton wheel, Design of Pelton wheel, Radial flow reaction turbine, Velocity triangles and work done by water on runner, Francis turbine, Design of Francis turbine, Axial flow reaction turbine – Kaplan turbine, head and efficiency, Draft tube – types, draft tube theory, efficiency of draft tube, Specific speed, Unit quantities, Selection of turbines, Cavitation.

Centrifugal Pumps: Manometric head; losses and efficiencies; work done; working principle; priming; velocity triangles; performance and characteristics curves; multistage and double suction pumps, Cavitation effects.

Reciprocating Pumps: Classification of reciprocating pump, working principle, Discharge through reciprocating pump, negative slip Discharge, work done, and power required to drive double acting pump.

TEXT BOOKS:

1. Hydraulics & Fluid Mechanics by P. N. Modi & S. N. Seth; Standard Book house, New Delhi
2. Introduction to Fluid Mechanics by Robert W. Fox and Alan T. Mc Donald, Fourth Edition, John Willey & sons, New York, 1995

REFERENCE BOOKS:

1. Open Channel flow by V.T. Chow, McGraw Hill book company
2. Flow in Open channels by K. Subramanya, Tata McGraw-Hill Publishing Company,1994.
3. Fluid Mechanics by A. K. Jain; Khanna Publishers, Delhi
4. Hydraulic Machines by Jagadhishlal; Metropoliton Company, Delhi.

L	T	P	Cr
3	0	2	4

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SURVEYING (11CE203)

SYLLABUS

Surveying Introduction - Overview of plane surveying (chain, compass and plane table), Objectives, Principles and classifications.

Distances and Direction - Distance measurement conventions and methods; use of chain and tape, Electronic distance measurements, Meridians, Azimuths and Bearings, declination, computation of angle.

Leveling and Contouring - Concept and Terminology, Temporary and permanent adjustments-method of leveling, Characteristics and Uses of contours- methods of conducting contour surveys and their plotting.

Computation of Areas and Volumes - Area from field notes, computation of areas along irregular boundaries and area consisting of regular boundaries, Embankments and cutting for a level section and two level sections with and without transverse slopes.

Theodolite - Theodolite, description, uses and adjustments - temporary and permanent, measurement of horizontal and vertical angles, Principles of Electronic Theodolite, Trigonometrical leveling, Traversing.

Tachometric Surveying - Stadia and tangential methods of Tacheometry, Distance and Elevation formulae for Staff vertical position.

Curves - Types of curves, design and setting out -- simple and compound curves, Introduction to geodetic surveying.

Total Station: Introduction – Accessories with description - Features of total station – Onboard software electronic data reading - Summary of total stations characteristics - Field procedure of total stations in topographic survey, Global positioning system, Introduction to Geographic information system (GIS).

Text Books:

1. Basak N.N, "Surveying and Leveling", Tata McGraw Hill Publishing Company Ltd., New Delhi, 1994

Reference Books:

1. Kanetkar.T.P. & S.V. Kulkarni, "Surveying and levelling part I & II", Puna vidyarthi girha, Prakashan,23rd edition,1993.
2. Subramanian, R, "Surveying and Levelling", Oxford Higher Education.
3. Arora K. R, "Surveying Vol-I", Rajsons Publications Pvt. Ltd, 10th Edition, 2008
4. Punmia B. C, "Surveying Vol-I", Laxmi Publications, 16th Edition, 2005.
5. Punmia B.C, "Surveying Vol-II", Laxmi Publications, 15th Edition, 2007.

L	T	P	Cr
3	0	2	4

K L UNIVERSITY

SURVEYING (13CE205)

SYLLABUS

Surveying, Overview of plane surveying (chain, compass and plane table), Objectives, Principles and classifications.

Distances and Direction - Distance measurement conventions and methods; use of chain and tape. Electronic distance measurements, Meridians, Azimuths and Bearings, declination, computation of angle.

Leveling and Contouring - Concept and Terminology, Temporary and permanent adjustments-method of leveling. Characteristics and Uses of contours- methods of conducting contour surveys and their plotting.

Computation of Areas and Volumes - Area from field notes, computation of areas along irregular boundaries and area consisting of regular boundaries. Embankments and cutting for a level section and two level sections with and without transverse slopes, determination of the capacity of reservoir, volume of hill - two pits.

Theodolite - Theodolite, description, uses and adjustments - temporary and permanent, measurement of horizontal and vertical angles. Principles of Electronic Theodolite, Trigonometrical leveling, Traversing.

Tachometric Surveying - Stadia and tangential methods of Tacheometry. Distance and Elevation formulae for Staff vertical position.

Curves - Types of curves, design and setting out – simple and compound curves. Introduction to geodetic surveying.

Total Station: Introduction – Accessories with description - Features of total station – Onboard software electronic data reading - Summary of total stations characteristics - Field procedure of total stations in topographic survey, Global positioning system, Introduction to Geographic information system (GIS).

Text Books:

1. Surveying and Levelling by R. Subramanian, Oxford University Press, 2nd edition, 2012.
2. Surveying Vol - I, II, III - Dr. B.C. Punmia Laxmi publications, Delhi-6

Reference Books:

1. Surveying and levelling part. I & II by Kanetkar.T.P. & S.V. Kulkarni, Puna vidyarthi girha, Prakashan,23rd edition,1993.
2. Arora K. R, "Surveying Vol-I", Rajsons Publications Pvt. Ltd, 10th Edition, 2008.

K L UNIVERSITY
SOIL MECHANICS (11CE206)

L	T	P	Cr
3	0	2	4

SYLLABUS

Origin of Soils: Soil Origin, rock cycle.
Phase Relations: Weight Relationships, Volume Relationships, Density and Unit Weight Relationships, Inter-relationships.
Laboratory tests on index properties of soils.
Soil Classification: coarse grained soils, fine grained soils., IS soil classification
Compaction: variables in compaction, laboratory tests, field compaction, specification and control.
Effective Stress: Effective stress Principle, effective stress, pore water pressure, and total stress variation with depth, vertical normal stress due to overburden, capillary effects in soils.
Permeability: Bernoulli's Equation, Darcy's law, Laboratory and field measurement of permeability, factors affecting permeability. Stress in soils due to flow, Seepage Force, Downward Flow, Upward Flow, Quick Condition.
Vertical stresses beneath the loaded areas: stresses due to point load, stresses due to line load, stresses under the corner of rectangular load, 2:1 distribution method.
Compressibility: Compressibility as a function of effective stress, soil type, stress history; normally consolidated and over consolidated clay.
Consolidation: Terzaghi's One-Dimensional Consolidation theory, consolidation test, Consolidation Settlement, Determining Coefficients of compressibility and consolidation, limitations in predicting consolidation behavior, amount of consolidation, time for consolidation, secondary compression.
Shear Strength: Mohr's Circle, Mohr Coulomb failure criterion, Mohr circles and failure envelopes in terms of effective and total stresses. Drained and undrained loading tests, direct shear test, triaxial test, skempton pore water pressure parameters. Field vane shear test
Site Investigations: Various geotechnical field investigations, geotechnical field report.

TEXT BOOK:

1. Geotechnical Engineering: A practical problem solving approach by N Sivakugan, and Braja M Das, Eureka series, J. Ross publishing, 2009.

REFERENCE BOOK:

1. Geotechnical Engineering by Shashi K Gulhati and Manoj Datta, TATA McGraw HILL Publishing Company Limited, New Delhi, 2008.
2. Soil Mechanics and Foundation Engineering by V. N. S. Murthy, CBS Publishers & Distributors, New Delhi.

L	T	P	Cr
3	0	2	4

K L UNIVERSITY

SOIL MECHANICS (13CE301)

SYLLABUS:

Origin of Soils: Soil Origin, rock cycle. **Phase Relations**: Weight Relationships, Volume Relationships, Density and Unit Weight Relationships, Inter-relationships. **Soil Classification**: coarse grained soils, fine grained soils., IS soil classification. **Compaction**: variables in compaction, laboratory tests, field compaction, specification and control. **Effective Stress**: Effective stress Principle, effective stress, pore water pressure, and total stress variation with depth, vertical normal stress due to overburden, capillary effects in soils. **Permeability:** Bernoulli's Equation, Darcy's law, Laboratory and field measurement of permeability, factors affecting permeability. Stress in soils due to flow, Seepage Force, Downward Flow, Upward Flow, Quick Condition. **Vertical stresses beneath the loaded areas**: stresses due to point load, stresses due to line load, stresses under the corner of rectangular load, 2:1 distribution method. **Compressibility**: Compressibility as a function of effective stress, soil type, stress history: normally consolidated and over consolidated clay. **Consolidation:** Terzaghi's One-Dimensional Consolidation theory, consolidation test, Consolidation Settlement, Determining Coefficients of compressibility and consolidation, limitations in predicting consolidation behavior, amount of consolidation, time for consolidation, secondary compression. **Shear Strength**: Mohr's Circle, Mohr Coulomb failure criterion, Mohr circles and failure envelopes in terms of effective and total stresses, Drained and undrained loading tests, direct shear test, triaxial test, skempton pore water pressure parameters Field vane shear test **Site Investigations**: Various geotechnical field investigations, geotechnical field report.

TEXT BOOK:

1. Geotechnical Engineering: A practical problem solving approach by N Sivakugan, and Braja M Das, Eureka series, J. Ross publishing, 2009.

REFERENCE BOOKS:

1. Basic and Applied Soil Mechanics by Gopal Ranjan and ASR Rao, New Age International Publishers, Second Edition, 2007.
2. Soil Mechanics and Foundation Engineering by V. N. S. Murthy, CBS Publishers & Distributors, New Delhi.
3. Geotechnical Engineering Principles and Practices by Donald P. Coduto, Man-Chu Ronald Yeung and William A. Kitch, PHI Learning Pvt. Ltd., Second Edition.

L	T	P	Cr
3	0	2	4

K L UNIVERSITY
ENVIRONMENTAL ENGINEERING (11CE207)

SYLLABUS

Water Supply
Public Health Engineering – necessity of protected water supply and sanitation role of civil Engineer. Water demand and per capita consumption, factors affecting – population forecasts. Water supply – sources of water and quality parameters, Standards of potable water, Intake structures, Pipes, joints, valves and pumps

Treatment of Water
Clarification, sedimentation- Principles, Design of sedimentation tanks, Coagulation and flocculation, Design of a Clariflocculation. Filtration – Types of filters and filter media. Design principles of a slow and rapid sand filters. Backwash mechanisms. Pressure filters. Disinfection – Necessity and methods, Chlorination of water supplies, break point chlorination, Ozone and U-V radiation, Removal of hardness, tastes and odor, adsorption methods

Sewage & Sewerage Systems
Sewerage systems, Quantity estimation, Velocity in sewers, Storm water sewers- Strom water estimation by rational method. Sewerage system design, Sewage conveyance- Sewer types and appurtenances

Waste Water Treatment
Quality parameters – Physical, Chemical and Bacteriological Preliminary treatment. Screens, grit chambers. Primary treatment- Sedimentation – rectangular and circular sedimentation tanks Secondary treatment- Mechanisms, activated sludge process & Trickling filter, Designs aspects, Secondary clarifier

Sludge Handling & Sanitation & Environmental Pollution
Sludge digestion and disposal methods Septic tanks- design parameters and working principles.
Air Pollution-Types, Impacts on environment, and Principles of control techniques
Solid Wastes-Types, sources and composition of solid wastes, Methods of collection, Transportation and disposal methods; Landfills, composting, incineration, pyrolysis, gasification

Text Books:

1. Environmental Engineering by Howard S. Peavy, Donald R. Rowe and George Tchobanoglous, Mc Graw-Hill International Editions, New York
2. Wastewater Engineering Treatment, Disposal & Reuse by Met Calf & Eddy, Tata McGraw – Hill publishing Co. Ltd., New Delhi.

Reference Books:

1. Water and Waste water Technology, Mark. J Hammer and Mark. J Hammer, Eastern Economy Edition, PHI-Learning, New Delhi (2008)
2. Environmental Engineering by Davis Cornvel, McGraw Hill Book Co., New York. (2000)
3. Water and waste water Engineering by G.M. Fair, J.C. Geyer, and Okum, John Wiley & Sons, New York (1998)
4. Waste water Engineering by M.N Rao and A.K Dutta, Oxford & IBH Publishing Co.Ltd. (2000)

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L	T	P	Cr
3	0	2	4

ENVIRONMENTAL ENGINEERING (13CE304)

SYLLABUS

Necessity of protected water supply. Role of Civil Engineer. Water demand, per capita consumption and factors affecting. Effect of variations of water demand on design of different components of water supply schemes. Design period – population forecasting, Sources of water - quality parameters and their significance. Drinking water quality standards in India. Intake structures – definition and site selection. Pipes, joints and valves.

Types and origin of impurities Need for water treatment. Purpose, principles of operation and design considerations of plain sedimentation, sedimentation with coagulation, slow, rapid sand and pressure filters. Chlorination, Ozonization, and UV radiation.

Special treatment processes for color, odor, taste and hardness removal from water.

Sewerage systems, Quantity estimation, Velocity in sewers, Storm water sewers- Strom water estimation by rational method. Sewerage system design, Sewage conveyance- Sewer types and appurtenances

Objectives and extent of wastewater treatment, Quality parameters – physical, chemical and microbial. Standards of discharge of effluents on surface waters, sewers and for agricultural use.

Purpose, principle and design considerations of Preliminary treatment -. Screens, grit chambers: Primary treatment- Sedimentation – rectangular and circular tanks; Secondary treatment- Activated sludge process & Trickling filter and Secondary clarifiers. Septic tanks - design parameters and working principles. Sludge digestion and sludge dewatering beds.

Air Pollution-Types, Impacts on environment, and Principles of control techniques

Solid Wastes-Types, sources and composition of solid wastes, Methods of collection, Transportation and disposal methods; Landfills, composting, incineration, pyrolysis, gasification

Text Books:

1. Environmental Engineering (Vol. I), Water Supply Engineering, S. K. Garg, Khanna Publishers, New Delhi, Twelfth Revised Edition, 2010.
2. Environmental Engineering (Vol II), Sewage Disposal and Air Pollution Engineering, S. K. Garg, Khanna Publishers, New Delhi, Twenty-second Revised Edition, 2010.

Reference Books:

1. Environmental Engineering by Howard S. Peavy, Donald R. Rowe and George Tchobanoglous, Mc Graw-Hill International Editions, New York
2. Wastewater Engineering Treatment, Disposal & Reuse by Met Calf & Eddy, Tata McGraw Hill publishing Co. Ltd., New Delhi.
3. Water and Waste water Technology, Mark. J Hammer and Mark. J Hammer, Eastern Economy Edition, PHI-Learning, New Delhi (2008).
4. Environmental Engineering by Davis Cornvel, McGraw Hill Book Co., New York. (2000).
5. Water and waste water Engineering by G.M. Fair, J.C. Geyer, and Okun, John Wiley & Sons, New York (1998).
6. Waste water Engineering by M.N Rao and A.K Dutta, Oxford & IBH Publishing Co. Ltd. (2000).

L	T	P	Cr
3	0	2	4

K L UNIVERSITY

TRANSPORTATION ENGINEERING (11CE303)

SYLLABUS

Transportation Development and Planning: Importance of Transportation Engineering, Classification of Transportation Studies – Modal, Elemental & Functional Classification. Historical Development of Road Construction, Highway Development in India. **Highway Alignment** -Factors governing alignment; Engineering surveys. **Highway Geometric Design**: Introduction, Highway cross-section elements; Sight distance – SSD, ISD, OSD; Design of horizontal alignment; Design of vertical alignment – summit curves and valley curves. **Pavement Design Engineering**: Pavement types, components of flexible & rigid pavements, Pavement Design Factors, Flexible Pavement Design - Design strategies, CBR Method, Burmister's Layered Theory, IRC 37-2001 Guidelines, Rigid Pavement Design - General Design Considerations, Stresses in concrete pavements, Joints, Design of Rigid Pavements as per IRC:58-2002 Guidelines. **Highway Construction**: Equipment, Stages of Pavement Construction, Earthwork, Stabilization of Soil, Bituminous Pavement Construction and Cement Concrete Pavement Construction. **Highway Maintenance**: Pavement Distress – causes and remedial measures. **Traffic Infrastructure Design:** Properties of Traffic Engineering Elements – Introduction, Vehicle Characteristics, Human Factors and Driver Characteristics, Road Characteristics, Control Mechanisms and Terminal Facilities. Traffic Studies, Traffic Operations - Traffic Regulations, Traffic Control Devices - Traffic Signs, Traffic signals, Road Markings and Islands. Traffic Stream Parameters and their Relations; Design of Traffic Signals, Design of Intersections – Intersection at Grade and grade separated Intersections.

TEXT BOOKS:

1. Principles of Transportation Engineering by Partha Chakroborty and Animesh Das, Prentice Hall of India, New Delhi
2. Highway Engineering by S.K.Khanna & C.J.Justo, Nemchand & Bros., Latest Edition.

REFERENCE BOOKS:

1. Principles of pavement design – Yoder & wit zorac – Jhonwilley & Sons
2. Principles and practices of highway Engineering by Dr. L. R. Kadiyali & Dr. N. B. Lal Khanna publishers, Latest Edition.
3. Transportation Engineering by C. Jotin Khisty, B.Kent Lall, Prentice Hall of India, New Delhi
4. Traffic Engineering and Transportation Planning by L.R.Kadiyali, Khanna Publishers.

L	T	P	Cr
3	0	2	4

K L UNIVERSITY

TRANSPORTATION ENGINEERING (13-CE302)

SYLLABUS

Transportation Development and Planning: Importance of Transportation Engineering, Classification of Transportation Studies – Modal, Elemental & Functional Classification. Historical Development of Road Construction, Highway Development in India. **Highway Alignment** -Factors governing alignment; Engineering surveys. **Highway Geometric Design:** Introduction, Highway cross-section elements; Sight distance – SSD, ISD, OSD; Design of horizontal alignment; Design of vertical alignment – summit curves and valley curves. **Pavement Design Engineering:** Pavement types, components of flexible & rigid pavements, Pavement Design Factors, Flexible Pavement Design - Design strategies, CBR Method, Burmister's Layered Theory, IRC 37-2001 Guidelines, Rigid Pavement Design - General Design Considerations, Stresses in concrete pavements, Joints, Design of Rigid Pavements as per IRC:58-2002 Guidelines. Pavement Drainage – Necessity, Analysis and Design of Surface and sub surface drainage system. **Highway Construction:** Equipment, Stages of Pavement Construction, Earthwork, Stabilization of Soil, Bituminous Pavement Construction and Cement Concrete Pavement Construction. **Highway Maintenance:** Pavement Distress – causes and remedial measures. **Traffic Infrastructure Design:** Properties of Traffic Engineering Elements – Introduction, Vehicle Characterjstics, Human Factors and Driver Characteristics, Road Characteristics, Control Mechanisms and Terminal Facilities. Traffic Studies, Traffic Operations – Traffic Regulations, Traffic Control Devices - Traffic Signs, Traffic signals, Road Markings and Islands. Traffic Stream Parameters and their Relations; Design of Traffic Signals, Design of Intersections – Intersection at Grade and grade separated Intersections.

TEXT BOOKS:

1. Principles of Transportation Engineering by Partha Chakroborty and Animesh Das. Prentice Hall of India, New Delhi.
2. Highway Engineering by S.K.Khanna & C.J.Justo, Nemchand & Bros., Latest Edition.

REFERENCE BOOKS:

1. Principles of pavement design – Yoder & wit zorac – Jhonwilley & Sons
2. Principles and practices of highway Engineering by Dr. L. R. Kadiyali & Dr. N. B. Lal Khanna publishers, Latest Edition.
3. Transportation Engineering by C. Jotin Khisty, B.Kent Lall, Prentice Hall of India, New Delhi
4. Traffic Engineering and Transportation Planning by L.R.Kadiyali, Khanna Publishers.

L	T	P	Cr
3	1	0	4

K L UNIVERSITY
FOUNDATION ENGINEERING (11CE302)

SYLLABUS

Bearing Capacity of Shallow Foundations: Basic definitions, Principal modes of soil failures, Terzaghi's bearing capacity theory/ equation and its modifications for square, rectangular and circular foundation, Skempton's bearing capacity analysis for clays, Meyerhof's analysis, Hansen's bearing capacity theory, Vesic's bearing capacity theory, IS code recommendations for bearing capacity, Bearing capacity of granular soils based on SPT value and Static cone resistance, Bearing capacity of footings on layered soils, Factors influencing bearing capacity, Allowable bearing pressure, General requirements of foundations, Factors affecting location and depth of foundation, Choice of type of foundations, Steps involved in the proportioning of footings. **Pile Foundations:** Use of piles, Types of piles, Construction, Selection of pile type, Types of foundations to suit subsoil conditions, Pile load capacity, Static formulae, Dynamic formulae, Load tests, on piles, Group action of piles, Load carrying capacity of pile groups, Negative skin friction, Piles subjected to uplift loads. **Well Foundations:** Types of wells and caissons, components of well foundation, shapes of wells, depth of a well foundation, forces acting on a well foundation, lateral stability of well foundation, construction and sinking of a well. **Settlement Analysis:** Consolidation settlement, Immediate settlement, Corrections to settlement due to consolidation, Settlement in different soil types/Settlement from field tests, Allowable settlement, Settlement of pile group. **Stability of Slopes:** Infinite slopes and translational slides, Definitions of factor of safety, Finite Slopes-Forms of slip surface, Limiting equilibrium method and Critical stages in stability, Total stress and effective stress methods of analysis, $\phi_u = 0$ Analysis (total analysis), $c - \phi$ analysis - method of slices, Location of the most critical circle, Friction circle method, Taylor's stability number. **Earth Pressure and Retaining Walls:** Effect of wall movement on earth pressure, Earth pressure at rest, Rankine's theory of earth pressure, Coulomb's theory of earth pressure, Coulomb's equation for $c = 0$ back fills, Culmann's graphical method, Passive earth pressures-Friction circle method, Design considerations retaining walls.

TEXT BOOK:

1. Basic and Applied Soil Mechanics by Gopal Ranjan and ASR Rao, New Age International Publishers, Second Edition, 2007.

REFERENCE BOOKS:

1. Foundation Analysis and Design by J.E. Bowles, MacGraw Hill, 1996.
2. Soil Mechanics and Foundation Engineering by V. N. S. Murthy, CBS Publishers & Distributors, New Delhi.
3. Geotechnical Engineering Principles and Practices by Donald P. Coduto, Man-Chu Ronald Yeung and William A. Kitch, PHI Learning Pvt. Ltd., Second Edition.
4. Foundation Design by W. C. Teng, Prentice hall

L	T	P	Cr
3	0	2	4

K L UNIVERSITY
FOUNDATION ENGINEERING (13CE308)

SYLLABUS

Bearing Capacity Of Shallow Foundations: Introduction, Basic definitions, Principal modes of soil failures, Terzaghi's bearing capacity theory/ equation and its modifications for square, rectangular and circular foundation, Skempton's bearing capacity analysis for clays, [redacted] IS code recommendations for bearing capacity, Bearing capacity of granular soils based on SPT value and Static cone resistance, Bearing capacity of footings on layered soils, Factors influencing bearing capacity, Allowable bearing pressure, General requirements of foundations, Factors affecting location and depth of foundation, Choice of type of foundations, Steps involved in the proportioning of footings, **Pile Foundations:** Use of piles; Types of piles, Construction, Selection of pile type, Types of foundations to suit subsoil conditions, Pile load capacity, Static formulae, Dynamic formulae, Load tests, on piles, Group action of piles, Load carrying capacity of pile groups, Negative skin friction, Piles subjected to uplift loads, **Well Foundations:** Types of wells and caissons, components of well foundation, shapes of wells, depth of a well foundation, forces acting on a well foundation, lateral stability of well foundation, construction and sinking of a well, **Settlement Analysis:** Consolidation settlement, Immediate settlement, Corrections to settlement due to consolidation, Settlement in different soil types/Settlement from field tests, Allowable settlement, Settlement of pile group, **Stability of Slopes:** Infinite slopes and translational slides, Definitions of factor of safety, Finite Slopes-Forms of slip surface, Limiting equilibrium method and Critical stages in stability, Total stress and effective stress methods of analysis, $\sigma_u = 0$ Analysis (total analysis), $c - \phi$ analysis - method of slices, Location of the most critical circle, Friction circle method, Taylor's stability number, **Earth Pressure and Retaining Walls:** Effect of wall movement on earth pressure, Earth pressure at rest, Rankine's theory of earth pressure, Coulomb's theory of earth pressure, Coulomb's equation for $c = 0$ back fills, Cullman's graphical method, Passive earth pressures-Friction circle method, Design considerations retaining walls.

TEXT BOOK:

1. Basic and Applied Soil Mechanics by Gopal Ranjan and ASR Rao, New Age International Publishers, Second Edition, 2007.

REFERENCE BOOKS:

1. Foundation Analysis and Design by J.E. Bowles, MacGraw Hill, 1996.
2. Soil Mechanics and Foundation Engineering by V. N. S. Murthy, CBS Publishers &
3. Distributors, New Delhi.
4. Geotechnical Engineering Principles and Practices by Donald P. Coduto, Man-Chu Ronald Yeung and William A.Kitch, PHI Learning Pvt. Ltd., Second Edition.
5. Foundation Design by W. C. Teng, Prentice hall

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3	1	0	4

K L UNIVERSITY

DESIGN OF STEEL STRUCTURES (11CE306)

SYLLABUS:

Materials and Structural Fasteners: Rolled steel sections, Common steel structures, Advantages and Disadvantages, Types of steel, properties of structural steel, Special considerations in steel design, Loads and Load combinations, Principles of Limit state design, Types of bolted and welded joints, Advantages and disadvantages of bolted and welded joints, Design of bolts, Design of welds. **Tension Members:** Types of sections, Net sectional area, Permissible stress, Design of axially loaded tension member, Design strength of a Tension member, Design Procedure-Tension member splice-Lug angles. **Compression Members:** Buckling class of Cross Section-Slenderness Ratio-Design compressive Stress and Strength-Shapes of compression members-Design of compression members, Design of lacing and battening type columns – Design of column bases – Gusseted base. **Beams:** Design of laterally supported beam, Design of Laterally unsupported beam, Bending strength of laterally supported beam, Shear strength of laterally supported beam, Web buckling, Web crippling and unsupported beams Effective length for lateral torsional buckling, Built up beams – design of purlin -design of grillage beams. **Design of Bolted and Welded Beam Connection:** Types- framed connection- unstiffened seated-stiffened seated-small moment resistant-large moment resistant connections For both Bolted and welded.

TEXT BOOKS:

1. Steel Structures (Design and Practice) by N Subramanian, Oxford University Press, New Delhi, 2010.
2. Indian standard code of practice for General Construction in Steel (IS: 800-2007): Bureau of Indian standards New Delhi

REFERENCE BOOKS:

1. Design of steel structures by limit state method by S.S. Bhavikatti, I.K International Publishing House Pvt. Ltd. New Delhi-110016
2. Limit state design of Steel Structures by S.K Duggal, Tata McGraw Hill publishing company Limited, New Delhi- 110008.
3. Limit State Design in Structural Steel by M R Shiyekar, PHI learning private limited, New Delhi, 2011.

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3	0	2	4

K L UNIVERSITY

DESIGN OF STEEL STRUCTURES (13CE307)

SYLLABUS

Materials and Structural Fasteners: Rolled steel sections, Common steel structures, Advantages and Disadvantages, Types of steel, properties of structural steel, Special considerations in steel design, Loads and Load combinationsPrinciples of Limit state design, Types of riveted and welded joints, Advantages and disadvantages of riveted and welded joints, Design of Rivet, Design of welds. Tension Members: Types of sections Net sectional area-Permissible Stress-Design of axially loaded tension member-Design strength of a Tension member- Design Procedure-Tension member splice-Lug angles. Compression Members: Buckling class of Cross Section-Slenderness Ratio-Design compressive Stress and Strength-Shapes of compression members-Design of compression members – Design of lacing and battening type columns Design of column bases – Gusseted base. Beams: Design of laterally supported beam, Design of Laterally unsupported beam, bending strength of laterally supported beam, Shear strength of laterally supported beam, Web buckling, Web crippling and unsupported beams – Effective length for lateral torsional buckling, Built up beams – design of purlins -design of grillage beams. Design of Bolted and Welded Beam Connection: Types- framed connection- unstiffened seated-stiffened seated-small moment resistant-large moment resistant connections – For both Bolted and welded. Design of Beam Columns: Introduction-behaviour-second order moments-elastic torsional buckling-interaction-Eccentricity of load-Eccentrically loaded base plates. [redacted] design of [redacted] members- end [redacted]

TEXT BOOKS:

1. Steel Structures (Design and Practice) by N Subramanian. Oxford University Press, New Delhi, 2010.

REFERENCE BOOKS:

1. Design of steel structures by limit state method by S.S. Bhavikatti. I.K International Publishing House Pvt. Ltd. New Delhi-110016.
2. Limit state design of Steel Structures by S.K Duggal, Tata McGraw Hill publishing company Limited, New Delhi- 110008.
3. Limit State Design in Structural Steel by M R Shiyekar, PHI learning private limited, New Delhi, 2011.

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3	1	0	4

K L UNIVERSITY

WATER RESOURCES ENGINEERING (11CE304)

Syllabus:

Hydrology: Hydrologic cycle – Rainfall measurement and estimation. -- evaporation, infiltration Hydrographs- Unit hydrograph, Method of construction of unit hydrograph for different duration. Method of super position, S-hydrograph. **Ground Water Hydrology** Types of aquifers Aquifer, Specific yield; Specific retention; Darcy's Law, Well hydraulics; Steady radial flow to a well -Dupuit's theory for confined and unconfined aquifers; Tube wells; Open wells; Yield of an open well-Constant level pumping test, Recuperation test. **Irrigation**: Duty, delta, Estimation of evapo-transpiration -- crop water requirements **Irrigation Channels:** design of lined and unlined canals --Silt theories–Kennedy's theory, Lacey's regime theory.
Reservoir and channel routing **Dams:** Designs of gravity dams and earthen dams. Classification of spillways.

TEXT BOOK:

1. Irrigation Engineering and Hydraulic Structure by S. K. Garg; Khanna Publishers, Delhi.
2. Asawa G.L., (2005) Irrigation and Water Resources Engineering New Age International Ltd.

Reference Books

1. Engineering hydrology by K. Subramanyam, Tata McGraw Hill, New Delhi.
2. R.K. Linsley and J.L.H.Paulhus "Water Resources Engineering by McGraw-Hill Book Company
3. Irrigation Water Resources and Water Power Engineering by, Dr. P.N. Modi, Standard book house, New Delhi.
4. Applied Hydrology by Ven Te Chow, McGraw-Hill Book Company.

L	T	P	Cr
3	1	0	4

K L UNIVERSITY

WATER RESOURCES ENGINEERING (13CE310)

SYLLABUS

Hydrology: Distribution of water over earth, characteristics of rainfall in India, major river basin of India, surface water and ground water potential. Hydrology: Definition, Hydrologic cycle; Precipitation; Measurement of precipitation, Rain gauge network, Classification of storms. Detection of heterogeneity in rainfall records, Estimation of missing data, mean rainfall over an area, frequency of point rainfall, Interception, Evaporation, Depression storage, Infiltration, Infiltration index, Runoff; Factors affecting runoff; Computation of run-off, Estimation of design peak rate of runoff. Hydrographs: Introduction, Effect of basin shape on hydrograph, components of hydrograph, Unit hydrograph; use and application of the unit hydrograph for flood hydrograph resulting from rainfall of unit duration and two or more periods of rainfall; Method of construction of unit hydrograph in different duration; Method of super position, S-hydrograph. **Ground Water Hydrology**: Forms of sub-surface water; Types of aquifers Aquifer; Aquitard, Aquicludes; Aquifuge; Specific yield; Specific retention; Darcy's Law, Well hydraulics; Steady radial flow to a well–Dupuit's theory for confined and unconfined aquifers; Tube wells; Open wells; Well shrouding and well development; Yield of an open well–Constant level pumping test, Recuperation test.

Soil-Water-Plant Relationship: Importance of soil, soil texture and soil structure, Water holding capacity of soil, Soil water, classification of soil water, Soil moisture tension, Soil moisture stress, Soil moisture constants, Saturation capacity, Field capacity, Moisture equivalent, Permanent wilting point, Temporary wilting, Ultimate wilting, Available moisture, Readily available moisture, Salt problems in soil and water, reclamation of salt affected soils; **Water Requirement of Crops**: Limiting soil moisture conditions, gross command area, culturable command area, cultivated and uncultivated area, kor depth and kor period; Crop period and Base period, Duty and its relation to crop, relation between duty and delta, factors affecting duty; methods of improving duty, Crop seasons and crops of India, consumptive use of water (evapo- transpiration), Consumptive irrigation requirement, Net irrigation requirement; Estimating depth and frequency of irrigation, Irrigation efficiencies, Irrigation methods, types of irrigation system, **Irrigation Channels**, Classification of canal, Canal alignment; Intensity of irrigation, Net and Gross sown area, Net and Gross irrigated areas, Time factor, capacity factor, Inundation canals, Cross section of an irrigation channel, Balancing depth; Borrow pit; Spoil bank, Land width, Maintenance of irrigation channels, Silt theories–Kennedy's theory, Lacey's regime theory. **Reservoir Planning**: Investigations for reservoir planning; Selection of site for a reservoir, Zones of storage in a reservoir, Storage capacity and yield, Mass inflow curve and demand curve, Determination of reservoir capacity for a specified yield from the mass inflow curve; Determination of safe yield from a reservoir of a given capacity, Sediment flow in streams; Reservoir sedimentation, Life of reservoir; Reservoir sediment control;

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flood routing; Methods of flood routing: Graphical Method (Inflow – storage discharge curves method), Trial and error method. **Dams:** Classification; Gravity dams, Arch dams, Buttress dams, Steel dams, Timber dams, Earth dams and rock fill dams; Physical factors governing selection of type of dam and selection of site for a dam. **Earth Dams:** Types of earth dams; Causes of failure of earth dams; Criteria for safe design of earth dams; Section of an earth dam; Design to suit available materials; Seepage analysis, Seepage control measures; Slope protection.

Gravity Dams: Forces acting on a gravity dam; Combination of loading for design; Modes of failure and criteria for stability requirements; Stability analysis; Elementary profile of a gravity dam; Practical profile of a gravity dam; Limiting height of a gravity dam; High and low gravity dams; Design of gravity dams–single step method.

TEXT BOOK:

1. R.K. Linsley & J.L.H. Paulhus, 'Water Resource Engineering', McGraw Hill Book Co.
2. Engineering hydrology by K. Subramanyam, Tata McGraw Hill, New Delhi.
3. Irrigation Engineering and Hydraulic Structure by S.K. Garg; Khanna Publishers, Delhi.
4. Asawa, G.L. (2005). Irrigation and Water Resources Engineering, New Age International Ltd.

Reference Books

1. Irrigation Water Resources and Water Power Engineering by, P. N. Modi, Standard book house, New Delhi.
2. Elementary Hydrology by V. P. Singh, PHI Publishers, New Delhi.
3. Applied Hydrology by Ven Te Chow, McGraw-Hill Book Company.

Department of Civil Engineering

Department Academic Committee Meeting (11/10/2012 & 14/03/2013)

Annexure-II: Proposed M.Tech 2013-14 Course Structure

Master of Technology in Structural Engineering (SE)

S.No	Course Name	L-T-P	Cr	Pre-Req.	Remarks
1					
1	Applied Mathematics	3-2-0	4	NIL	NIL
2	Theory of Elasticity	3-2-0	4	NIL	NIL
3	Structural Dynamics	3-0-2	4	NIL	NIL
4	Advanced Prestressed Concrete	3-0-2	4	NIL	NIL
5	REPAIR AND REHABITAITON OF STRUCTURES	3-0-0	3	NIL	NIL
6	GEO TECHNICAL EARTH QUAKE ENGINEERING	3-0-0	3	NIL	NIL
7	Seminar	0-0-4	3	NIL	NIL
8	Finite Element Analysis	3-0-2	4	NIL	NIL
9	Bridge Engineering	3-2-0	4	NIL	NIL
10	Earthquake Resistant Design of Structures	3-0-2	4	NIL	NIL
11	Theory of Plates and Shells	3-2-0	4	NIL	NIL
12	INDUSTRIAL STRUCTURES	3-0-0	3	NIL	NIL
13	GREEN BUILDINGS	3-0-0	3	NIL	NIL
14	Term Paper	0-0-4	3	NIL	NIL
15	DISSERTATION	0-0-72	72	NIL	NIL

Gupta

K L UNIVERSITY
DEPARTMENT OF CIVIL ENGINEERING
MINUTES OF DEPARTMENT ACADEMIC COMMITTEE MEETING

Meeting Particulars

Type of Meeting	INTERNAL ACADEMIC DISCUSSIONS
Department conducting the meeting	CIVIL ENGINEERING
Date of the meeting	10-10-13
Time of the meeting	9.30 A.M
Venue of the meeting	HoD Chamber (Civil)

The following members were present:

S.No.	Name	Designation of the person	Position of the person in the meeting
1	Dr. S. K. Gupta	Professor & HoD	Chairman
2	Mr. B. G. Rahul	Assistant Professor	Convener
3	Mr. S. Kanakambara Rao	Associate Professor	Member
4	Mr. P. Sundara Kumar	Associate Professor	Member
5	Dr. A. Siva Sankar	Associate Professor	Member
6	Dr. K. Rajasekhara Reddy	Associate Professor	Member
7	Mr. K. Shyam Chamberlin	Assistant Professor	Member
8	Ms. K. Prasanthi	Assistant Professor	Member
9	Mr. Adithya Chebrolu (1010066)	IV/IV B. Tech Student	Member
10	Ms. Y. Divya (1010086)	IV/IV B. Tech Student	Member

Agenda:

1. To discuss the feedbacks received from stake holders on curriculum
2. To propose the curriculum for B. Tech 2014-15 admitting batch
3. Any other points with the permission of the DAC chairman

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The following points were discussed and resolved:

1. Upon discussing on feedbacks received from stake holders on curriculum, the DAC members discussed and resolved to recommend the following to forth coming BOS:
    a. Student feedback:
        i. Professional electives that cater to needs of industry are identified domain wise and the same is presented Annexure-I.
        ii. Syllabus of all the professional core courses were reviewed and topics having less significance are removed to cover the syllabus with in the stipulated time frame and the same is given in Annexure-I.
        iii. Syllabus of professional communication skills is reviewed and revised and the same is given in Annexure-I.
    b. Parents feedback:
        i. Syllabus of all the professional core and elective courses were reviewed and revised by considering the competitive examinations, higher education and industry needs and the same is given in Annexure-I.
    c. Alumini feedback:
        i. Syllabus of the professional elective courses such as were reviewed and revised considering getting admission in to higher education of premier institutes and industry needs
2. Upon considering above mentioned feedbacks and surveying through the policy documents in relevance to APIIC, Human Resource Development Policy, Govt. of India, National Skill Development Corporation, Govt. of India, Confederation of Indian Industries, The Associated Chambers of Commerce of India (Assocham), The National Association of Software and Services Companies (NASSCOM), ABET, NBA norms, AICTE statutory norms and American Society of Civil Engineers (ASCE), it is resolved to propose enclosed Program development documents and curriculum for B.Tech-Civil Engineering Program for 2014-15 for BOS approval (Annexure-I).

Gupta

Dr. S.K. Gupta
(Head of the Department)

K L University
Department of Civil Engineering
Department Academic Committee (DAC)

The following members attended the meeting on 10th October 2013 at 9:30 A.M.:

S.No.	Name	Designation of the person	Signature
1	Dr. S. K. Gupta	Professor & HoD	
2	Mr. B. G. Rahul	Assistant Professor	
3	Mr. S. Kanakambara Rao	Associate Professor	
4	Mr. P. Sundara Kumar	Associate Professor	
5	Dr. A. Siva Sankar	Associate Professor	
6	Dr. K. Rajasekhara Reddy	Associate Professor	
7	Mr. K. Shyam Chamberlin	Assistant Professor	
8	Ms. K. Prasanthi	Assistant Professor	
9	Mr. Adithya Chebrolu (1010066)	IV/IV B. Tech Student	
10	Ms. Y. Divya (1010086)	IV/IV B. Tech Student	