

Lesson Plan

Name of the Faculty: GURJEET KAUR
 Discipline: CIVIL ENGG.
 Semester: 4TH
 Subject: WATER SUPPLY AND WASTE WATER ENGINEERING
 Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Week	Lecture Day	Theory Topic (including assignment/test)	Practical Day	Practicals Topic
1st	1st	WATER SUPPLY:- Introduction -Necessity and brief description of water supply system	1st	To determine turbidity of water sample
	2nd	WATER SUPPLY:- Introduction -Necessity and brief description of water supply system		
	3rd	Quantity of Water- Water requirement,		
	4th	Rate of demand and variation in rate of demand		
2nd	5th	Fire fighting uses as per BIS standards (no numerical problems)	2nd	To determine dissolved oxygen of given sample
	6th	Fire fighting uses as per BIS standards (no numerical problems)		
	7th	Population Forecasting		
	8th	Quality of Water:- Meaning of pure water and methods of analysis of water		
	9th	Physical, Chemical and bacteriological tests and their significance		
	10th	Standard of potable water as per Indian Standard		
	11th	Maintenance of network of water (small scale and large scale quantity)		
	12th	Water Treatment (brief introduction):- Sedimentation - purpose, types of sedimentation tanks		
3rd	13th	Coagulation flocculation - usual coagulation and their feeding	5th	viva-voice
	14th	Filtration - significance, types of filters, their suitability		
	15th	Revision		
	16th	Necessity of disinfection of water, forms of chlorination, break point chlorine, residual chlorine, application of chlorine.		
	17th	Flow diagram of different treatment units, functions of (i) Aeration fountain (ii) mixer		
	18th	(iii) flocculator, (iv) classifier,		
	19th	Assignment		
4th	20th	(v) slow and rapid sand filters (vi) chlorination chamber.	7th	To determine BOD of given sample
	21st	Conveyance of Water- Different types of pipes - cast iron, PVC, steel, asbestos cement, concrete and lead pipes		
	22nd	Their suitability and uses, types of joints in different types of pipes.		
	23rd	Appurtenances: Sluice, air, reflux valves, relief valves, scour valves, bb cocks, stop cocks		
	24th	Revision		
	25th	fire hydrants, water meters their working and uses		
5th	26th	Distribution sise: Requirement of distribution, minimum head and rate, methods of layout of distribution pipes	8th	To determine residual chlorine in water
	27th	Systems of water supply - Intermittent and continuous service reservoirs - types, necessity and accessories.		
	28th	Maintenance of water supply network		
	29th	Maintenance of distribution system, Leakage detection		
	30th	Revision		
	31st	Laying out Pipes:-Setting out alignment of pipes		
	32nd	Excavation for laying of pipes and precautions to be taken in laying pipes in black cotton soil.		
6th	33rd	Handline, lowerline, backline and jointline of mines	9th	To determine conductivity of water and total dissolved solids
	34th	Testing of pipe lines		
	35th	Back filling, Use of boring rods		
	36th	Building Water Supply:-Connections to water main (practical aspect only)		
	37th	Water supply fixtures and installations and terminology related to plumbin		
	38th	Water supply fixtures and installations and terminology related to plumbin		
7th	39th	Revision	10th	viva-voice
	40th	Assignment		
	41st	WASTE WATER ENGINEERING:- Introduction, Purpose of sanitation, Necessity of systematic collection and disposal of		
	42nd	Definition of terms in sanitary engineering, Collection and conveyance of sewage		
	43rd	Conservancy and water carriage systems, their advantages and Disadvantage		
	44th	(a) Surface drains (only sketches) : various types, suitability		
	45th	(b) Types of sewage: Domestic, industrial, storm water and its seasonal variation		
	46th	Sewerage Systems: Types of sewerage systems, materials for sewers		
	47th	their sizes and joints		
	48th	Appurtenance: Location, function and construction features		
8th	49th	Manholes, drop manholes, tank hole, catch basin,	11th	viva-voice
	50th	inverted siphon, flushing tanks grease and oil traps, storm regulators, ventilating shafts		
	51st	Laying and Construction of Sewers:Setting out/alignment of sewers		
	52nd	Excavations, checking the gradient with boring rods preparation of bedding,		
	53rd	handling and jointing testing and back filling of sewers/pipes.		
	54th	Revision		
9th	55th	Sewerage characteristics:Properties of sewage and IS standards for analysis of sewage	12th	To demonstrate the laying of SW pipes for sewers
	56th	Physical, chemical and bacteriological parameters		
	57th	Natural Methods of Sewerage Disposal:-General composition of sewage and disposal methods		
	58th	Disposal by land treatment		
	59th	Self purification of stream		
	60th	Disposal by land treatment		
	61st	Revision		
10th	62nd	Sewerage Treatment:-Meaning and principle of primary and secondary treatment and activated sludge process their flow	13th	viva-voice
	63rd	Introduction and uses of screens, grit chambers,		
	64th	detritus tanks, skimming tanks, oil/sedimentation tanks.		
	65th	primary clarifiers, secondary clarifiers,		
	66th	filters, control beds, intermittent sand filters, trickling filters,		
	67th	sludge treatment and disposal, oxidation ponds (Visit to a sewage treatment plant)		
11th	68th	Building Drainage:-Aims of building drainage and its requirements	15th	viva-voice
	69th	Building Drainage:-Aims of building drainage and its requirements		
	70th	Different sanitary fittings and installations		
	71st	Different sanitary fittings and installations		
12th	72nd	Traps, seals, causes of breaking seals	20th	Study of water purifying process by visiting a field lab.
	73rd	Traps, seals, causes of breaking seals		
	74th	Revision		
	75th	Assignment		
	76th	Assignment		
13th	77th	Traps, seals, causes of breaking seals	21th	Study of water purifying process by visiting a field lab.
	78th	Traps, seals, causes of breaking seals		
	79th	Revision		
	80th	Assignment		
	81st	Assignment		
14th	82nd	Traps, seals, causes of breaking seals	22th	viva-voice
	83rd	Traps, seals, causes of breaking seals		
	84th	Revision		
	85th	Assignment		
	86th	Assignment		
15th	87th	Traps, seals, causes of breaking seals	23th	To test house drainage
	88th	Traps, seals, causes of breaking seals		
	89th	Revision		
	90th	Assignment		
	91st	Assignment		
16th	92nd	Traps, seals, causes of breaking seals	24th	To test house drainage
	93rd	Traps, seals, causes of breaking seals		
	94th	Revision		
	95th	Assignment		
	96th	Assignment		
17th	97th	Traps, seals, causes of breaking seals	25th	viva-voice
	98th	Traps, seals, causes of breaking seals		
	99th	Revision		
	100th	Assignment		
	101st	Assignment		
18th	102nd	Traps, seals, causes of breaking seals	26th	viva-voice
	103rd	Traps, seals, causes of breaking seals		
	104th	Revision		
	105th	Assignment		
	106th	Assignment		
19th	107th	Traps, seals, causes of breaking seals	27th	viva-voice
	108th	Traps, seals, causes of breaking seals		
	109th	Revision		
	110th	Assignment		
	111th	Assignment		
20th	112nd	Traps, seals, causes of breaking seals	28th	viva-voice
	113rd	Traps, seals, causes of breaking seals		
	114th	Revision		
	115th	Assignment		
	116th	Assignment		
21st	117th	Traps, seals, causes of breaking seals	29th	viva-voice
	118th	Traps, seals, causes of breaking seals		
	119th	Revision		
	120th	Assignment		
	121st	Assignment		
22nd	122nd	Traps, seals, causes of breaking seals	30th	viva-voice
	123rd	Traps, seals, causes of breaking seals		
	124th	Revision		
	125th	Assignment		
	126th	Assignment		

Name of the Faculty SHILPA SHARMA
 Discipline CIVIL ENGG.
 Semester 4TH
 Subject IRRIGATION ENGINEERING
 Lesson Plan Duration 15 weeks(from January, 2018 to April,2018)

Week	Lecture Day	Topic (Including assignment/test)
1st	1st	Introduction:Definition of Irrigation, Necessity of Irrigation
	2nd	History of development of Irrigation in India. Major, medium and minor irrigation projects
	3rd	Revision
2nd	4th	Water Requirement of Crops:-Principal crops in India and their water requirements
	5th	Crop seasons – Kharif and Rabi
	6th	Soil water, soil crop and water relationships,
	7th	Wady, delta and base period, their relationship
	8th	Crops commanded area (CCA), culturable commanded area (CCA)
3rd	9th	Intensity of Irrigation, Irrigable area
	10th	Hydrological Cycle Catchment Area and Run-off:-Rainfall -definition rain-rauses – automatic and non-automatic
	11th	Methods of estimating average rainfall (Arithmetic system)
4th	12th	Catchment area runoff factors affecting runoff
	13th	Hydrograph, basic concept of unit hydrograph.
	14th	Revision
5th	15th	Assignment
	16th	Methods of Irrigation:-Flow irrigation - its advantages and limitation
	17th	Lift Irrigation – Tube well and open well irrigation
	18th	Their advantages and disadvantages
	19th	Sprinkler irrigation conditions favourable and essential requirements for sprinkler irrigation.
	20th	sprinkler system – classification and component parts
6th	21st	Drip irrigation, suitability of drip irrigation,
	22nd	layout, component parts, advantages
7th	23rd	Revision
	24th	Canals:- Classification, apurtenances of a canal and their functions,
	25th	Sketches of different canal cross-sections (unlined)
	26th	Various types of canal lining - their related advantages and disadvantages,
	27th	Various types of canal lining - their related advantages and disadvantages,
	28th	sketches of different lined canal x-sections
	29th	sketches of different lined canal x-sections
8th	30th	Branches and their control
	31st	Maintenance of lined and unlined canals
	32nd	Revision
9th	33rd	Tube Well Irrigation:-introduction, occurrence of ground water, location and command.
	34th	Advantages and disadvantages, comparison with canal irrigation
	35th	Tube wells, explanation of terms: water table, radius of influence, depression head, cone of depression
	36th	confined and unconfined aquifers, Yield of a well and methods of determining yield of well
	37th	Types of tube wells, cavity, strainer and slotted taper,
	38th	Method of boring, installation of well assembly,
10th	39th	development of well, pump selection and installation and maintenance
	40th	Water Harvesting Techniques: Need and requirement of various methods, Run-off from roof top and ground surface
	41st	construction of recharge pits and recharge wells and their maintenance,
	42nd	Dams:- Classification of dams, earthen dams - types, causes of failure,
	43rd	crosssection of zoned earthen dams, method of construction
11th	44th	gravity dams – types, cross sections of a dam, method of construction
	45th	Concept of small and micro dams
	46th	Concept of spillways and energy dissipator
12th	47th	Canal Head Works and Regulatory Works:-Definition, object, general layout, functions of different parts of head works.
	48th	Difference between weir and barrage
	49th	Cross Drainage Works:-Functions and necessity of the following types: aqueduct, super passage, level crossing, inlet and outlet, pipe crossing
	50th	Sketches of the above cross drainage works
	51st	Revision/Assignment
	52nd	Definitions of following Hydraulic Structures with Sketches:-Falls, Cross and head regulators
14th	53rd	Outlets, Canal Escapes
	54th	River Training Works:-Methods of river training, guide banks, retired (bevers) embankments, groynes.
	55th	Sours, oltched island, cut-off
	56th	Water Logging and Drainage and Ground Water Re-charge:-Definition of water logging – its causes and effects, detection, prevention and remedies
	57th	Reclamation of soil
15th	58th	Surface and sub-surface drains and their layout
	59th	Concept and various techniques used for ground water re-charge
	60th	Revision/Assignment

Name of the Faculty NAZAQIT ALI ANIUM
 Discipline CIVIL ENGG.
 Semester 4TH
 Subject SURVEYING – II
 Lesson Plan Duration 15 weeks(from January, 2018 to April,2018)

Week	Theory		Practical	Practicals
Lecture Day	Topic (including assignment/test)		Day	Topic
1st	1st	Contouring:-Concept of contours, purpose of contouring, contour interval and horizontal equivalent.	1st	Contouring:-Preparing a contour plan by radial line method by the use of a Tangent Clinometer/Tachometer
2nd	2nd	Factors effecting contour interval, characteristics of contours, methods of contouring.	2nd	Preparation of master sheet
	3rd	Direct and indirect, use of stadia measurements in contour survey, interpolation of contours; use of contour map	3rd	Preparing a contour plan by method of squares
3rd	4th	Drawing cross section from a contour map, marking alignment of a road, railway and a canal on a contour map.	4th	Preparation of master sheet
	5th	computation of earth work and reservoir capacity from a contour map	5th	Preparing a contour plan of a Road/Railway track/Canal by taking cross sections
	6th	Theodolite Surveying: Working of a transit vernier theodolite, axes of a theodolite and their relation; temporary adjustments of a transit theodolite	6th	Preparation of master sheet
4th	7th	concept of transiting, swinging, face left, face right and changing face	7th	Theodolite:Taking out the Theodolite, mounting on the tripod and placing it back in the box
	8th	measurement of horizontal and vertical angles. Prolonging a line (forward and backward)	8th	Study of a transit vernier theodolite; temporary adjustments of theodolite
5th	9th	measurement of bearing of a line; traversing by included angles and deflection angle method;	9th	Reading the vernier and working out the least count, measurement of horizontal angles by repetition and reiteration methods
	10th	traversing by stadia measurement, theodolite triangulation,	10th	Measurement of vertical angles and use of tachometric tables
6th	11th	Plotting a traverse; concept of coordinate and solution of omitted measurements (one side affected).	11th	Exercise/viva-voice
	12th	errors in theodolite survey and precautions taken to minimize them; limits of precision in theodolite traversing.	12th	Measurement of magnetic bearing of a line
7th	13th	Height of objects – accessible and non-accessible bases	13th	Running a closed traverse with a theodolite (at least five sides) and its plotting
	14th	Tacho-metric surveying:-Tachometry, instruments to be used in tachometry	14th	Height of objects with and without accessible bases
8th	15th	methods of tachometry, stadia system of tachometry,	15th	Height of objects with and without accessible bases
	16th	general principles of stadia tachometry.	16th	Exercise/viva-voice
9th	17th	examples of stadia tachometry and Numerical problems.	17th	Exercise/viva-voice
	18th	Curves:Simple Circular Curve: Need and definition of a simple circular curve; Elements of simple circular curve - Degree of the curve, radius of the curve	18th	Curves:-Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced b) One theodolite method
10th	19th	(Apex point), tangent point, length of curve.	19th	Curves:-Setting out of a simple circular curve with given data by the following methods a) Offsets from the chords produced b) One theodolite method
	20th	long chord deflection angle.	20th	Minor instruments:- Demonstration and use of minor instruments like Ceylon Ghat Tracer, Tangent Clinometer, Pantagraph, Abney level etc
11th	21st	Apex distance and Mid-ordinate. Setting out of simple circular curve: By linear measurements only - Offsets from the tangent	21st	Use of planimeter for computing areas
	22nd	-Successive bisection of arcs - Offsets from the chord produced b) By tangential angles using a theodolite	22nd	Use of planimeter for computing areas
12th	23rd	b) By tangential angles using a theodolite	23rd	Exercise/viva-voice
	24th	Revision/Assignment	24th	Demonstration of digital instruments through field visits to Survey of India and other government agencies.
13th	25th	Introduction to the use of Modern Surveying equipment and techniques such as: a) EDM or Distomat b) Planimeter	25th	Total Station (only demonstrations).
	26th	c) Total station d) Introduction to remote sensing, GIS and GP	26th	Total Station (only demonstrations).
14th	27th	Minor Instruments:-Introduction and use of minor instruments like Ceylon Ghat Tracer, Clinometer, Pantagraph, Abney Level etc	27th	Exercise/viva-voice
	28th	Use of planimeter for computing areas	28th	Exercise/viva-voice
15th	29th	Revision	29th	Exercise/viva-voice
	30th	Assignment	30th	Exercise/viva-voice

Name of the Faculty NAZQIT ALI / MD. ASIF
 Discipline CIVIL ENGG.
 Semester 4TH
 Subject IRRIGATION ENGINEERING
 Lesson Plan Duration 15 weeks(from January, 2018 to April,2018)

Week	Lecture Day	Topic (Including assignment/test)	
1st	1st	WATER SUPPLY AND WASTE WATER ENGINEERING DRAWING-Drains and Sewers Cross section of standard types of open drains (circular, v-shaped and U-shaped) with their foundations	
	2nd		
	3rd		
	2nd	4th	IRRIGATION ENGINEERING DRAWING:-Typical cross-section of a channel - L-section of a channel for given data
		5th	
		6th	
7th			
8th			
9th			
3rd	10th	Traps, manholes and inspection chamber, Detailed section of floor trap and gully trap Typical cross section of an unlined and lined channel in cutting, partly cutting and partly filling and fully in filling with given design data	
	11th		
	12th		
	13th		
	14th		
	15th		
4th	16th	Detailed plan and section of a manhole-Detailed plan and cross sections of a domestic septic tank with soak pit for 10 and 50 users Layout plan of a canal head works	
	17th		
	18th		
	19th		
	20th		
	21st		
5th	22nd	Plan of a bathroom showing positions of lavatory, bath tub, wash-basin, taps and showers Layout plan of a canal head works	
	23rd		
	24th		
	25th		
	26th		
	27th		
6th	28th	Practice of reading water supply and sanitary engineering working drawings (PWD/urban Development agencies) including hot water and cold water supply system of a two room set Draw the typical L-section of a weir	
	29th		
	30th		
	31st		
	32nd		
	33rd		
7th	34th	Detailed Layout Plan of Sewage Treatment Plant for a residential area and Effluent Treatment Plant for an industrial unit. Draw the X-section of an Earthen Dam-Homogeneous	
	35th		
	36th		
	37th		
	38th		
	39th		
8th	40th	Sheet Checking and viva-voce Sheet Checking and viva-voce	
	41st		
	42nd		
	43rd		
	44th		
	45th		
9th	46th	Cross section of earthen ware and RCC sewer pipes Cross sections of masonry sewers (circular and egg shaped) Zoned type	
	47th		
	48th		
	49th		
	50th		
	51st		
10th	52nd	Detailed plan and section of an inspection chamber . Detailed plan and section of a manhole Diaphragm type	
	53rd		
	54th		
	55th		
	56th		
	57th		
11th	58th	Bath room and W.C connections:-Cross-section through the external wall of lavatories at ground and first floor showing the one and two pipe system and the connections of the lavatory to inspection chamber Sheet Checking and viva-voce	
	59th		
	60th		
	61st		
	62nd		
	63rd		
12th	64th	Sheet Checking and viva-voce Cross section of a tube well Draw sectional elevation of a two storeyed building showing details of one pipe and two pipes systems with sanitation system Cross section of a tube well	
	65th		
	66th		
	67th		
	68th		
	69th		
13th	70th	Practice of reading water supply and sanitary engineering working drawings (PWD/urban Development agencies) including hot water and cold water supply system of a two room set Layout and cross section of rain water harvesting system	
	71st		
	72nd		
	73rd		
	74th		
	75th		
14th	76th	Detailed Layout Plan of Sewage Treatment Plant for a residential area and Effluent Treatment Plant for an industrial unit. Layout and cross section of rain water harvesting system	
	77th		
	78th		
	79th		
	80th		
	81st		
15th	82nd	Sheet Checking and viva-voce Sheet Checking and viva-voce	
	83rd		
	84th		
	85th		
	86th		
	87th		
	88th		
	89th		
	90th		

Name of the Faculty: P.VYUSH THAKUR
 Discipline: CIVIL- ENGG.
 Semester: 4th
 Subject: CONCRETE TECHNOLOGY
 Lesson Plan Duration: 15 weeks(from January, 2018 to April,2018)

Week	Theory		Practicals	
Lecture Day	Topic (including assignment/test)	Practical Day	Topic	
1st	1st	Introduction: Definition of concrete, uses of concrete in comparison to other building materials.	1st	To determine the physical properties of cement as per IS Codes
	2nd	Introduction: Definition of concrete, uses of concrete in comparison to other building materials. 3rd Ingredients of Concrete: Cement: physical properties of cement; different types of cement as per IS Codes	2nd	To determine fineness and elongation index of coarse aggregate
2nd	4th	Aggregates: Classification of aggregates according to size and shape	3rd	viva-voice
	5th	Characteristics of aggregates: Particle size and shape, surface texture, specific gravity of aggregate, bulk density, 6th water absorption, surface moisture, bulking of sand, deleterious materials, soundness	4th	To determine silt in fine aggregate
3rd	7th	Grading of aggregates: coarse aggregate, fine aggregate;	5th	Determination of specific gravity and water absorption of aggregates
	8th	All-in-aggregate: fineness modulus; interpretation of grading charts	6th	Determination of bulk density and voids of aggregates
	9th	Water: Quality requirements as per IS-456-2000	7th	To determine surface moisture in fine aggregate by displacement method
4th	10th	Water Cement Ratio: Hydration of cement, principle of water-cement ratio, Duff Abram's Water-cement ratio law;	8th	viva-voice
	11th	Limitations of water-cement ratio law and its effects on strength of concrete		
5th	12th	Workability: Workability factors affecting workability		
	13th	Measurement of workability: slump test; compacting factor and Vee Bee consistometer;	9th	Determination of particle size distribution of fine, coarse and all-in aggregate by sieve analysis (grading of aggregate)
	14th	Recommended slumps for placement in various conditions as per IS-456-2000/SP-23	10th	To determine necessary adjustment for bulking of fine aggregate
	15th	Revision/Assignment	11th	viva-voice
6th	16th	Properties of Concrete - Properties in plastic state: Workability,	12th	To determine workability by slump test;
	17th	Segregation, Bleeding and Hardness		
7th	18th	Properties in hardened state: Strength, Durability,	13th	To determine workability by slump test;
	19th	Impermeability, Dimensional changes;		
8th	20th	Proportioning for Normal Concrete - Objectives of mix design, introduction to various grades as per IS-456/2000; proportioning for nominal mix design as prescribed by IS 456-2000	14th	To verify the effect of water, fine aggregate/coarse aggregate ratio and aggregate/Cement ratio on
	21st	Adjustment on site for: Bulking of fine aggregate, water absorption of aggregate, workability	15th	To verify the effect of water, fine aggregate/coarse aggregate ratio and aggregate/Cement ratio on slump
	22nd	Difference between nominal and controlled concrete	16th	viva-voice
9th	23rd	Introduction to IS-10262-2009-Code for controlled mix design	17th	viva-voice
	24th	Revision		
	25th	Introduction to Admixtures (chemicals and minerals) for improving performance of concrete	18th	Compaction factor test for workability
	26th	Introduction to Admixtures (chemicals and minerals) for improving performance of concrete	19th	Compaction factor test for workability
10th	27th	Revision	20th	Non destructive test on concrete by: a) Rebound Hammer Test b) Ultrasonic Pulse Velocity Test
	28th	Special Concretes (only features) - Concreting under special conditions, difficulties and precautions before, during and after concreting		
11th	29th	Cold weather concreting, Under water concreting		
	30th	Hot weather concreting		
12th	31st	Ready mix concrete, Fibre reinforced concrete, Polymer Concrete, Fly ash concrete, Silica fume concrete	21th	viva-voice
	32nd	Concreting Operations: Storing of Cement: Storing of cement in a warehouse, Storing of cement at site, Effect of storage on strength of cement, Determination of warehouse capacity for storage of Cement	22th	viva-voice
	33rd	Storage of Aggregate: Storing of aggregate at site		
13th	34th	Batching (to be shown during site visit) - Batching of Cement, Batching of aggregate, Volume, using gauge box (formal) selection of proper gauge box, Weight spring balances and batching machines, Measurement of water	23th	viva-voice
	35th	Mixing: Hand mixing, Machine mixing - types of mixers, capacities of mixers, choosing appropriate size of mixers, operation of mixers, Maintenance and care of machines	24th	Tests for compressive strength of concrete cubes for different grades of concrete
	36th	Transportation of concrete Transportation of concrete using: wheel barrows, transit mixers, chutes, belt conveyors, pumps, tower crane and hoists etc.		
14th	37th	Placement of concrete- Checking of form work, shuttering and precautions to be taken during placement	25th	Tests for compressive strength of concrete cubes for different grades of concrete
	38th	Compaction: Hand compaction, Machine compaction - types of vibrators, internal screed vibrators and form vibrators, Selection of suitable vibrators for different situations	26th	viva-voice
	39th	Finishing concrete slabs - screeding, floating and trowelling	27th	viva-voice
	40th	Revision		
15th	41st	Curing: Objectives of curing, methods of curing like ponding, membrane curing, steam curing, chemical curing, Duration for curing and removal of form works	28th	viva-voice
	42nd	Joining: Location of construction joints, treatment of construction joints, expansion joints in buildings - their importance and location		
15th	43rd	Defects in concrete: Identification of and methods of repair	29th	viva-voice
	44th	Importance and methods of non-destructive tests (introduction only)	30th	viva-voice
	45th	Revision/Assignment		