

Lesson Plan

Name of the Faculty : _____ Discipline : **Civil Engineering** L T P
 Subject : **FLUID MECHANICS** Semester : **3rd** 3 - -
 Lesson Plan Duration : **15 Weeks (from Jul-2018 to Dec-2018)**

Week	Theory		Delivery Date of Lecture		Whether the Lesson Plan Followed? Yes/No
	Lecture Day	Topic (including Assignments / Seminar / Group Discussion / Sessional Tests)	Expected	Actual	
1 st	1 st	Introduction to the subject and its necessity e-Lecture/Video Lecture /PPTs on the subject matters and Learning Outcomes			
	2 nd	Unit – 1: Introduction (01 Period) Fluids: Real and ideal fluids, Fluid Mechanics, Hydrostatics, Hydrodynamics, Hydraulics			
	3 rd	Unit – 2: Properties of Fluids (03 Period) Mass density, specific weight, specific gravity, viscosity,			
2 nd	1 st	Surface tension - cohesion, adhesion and, capillarity, vapour pressure and compressibility.			
	2 nd	Unit – 3: Hydrostatic Pressure (08 Period) e-Lecture/Video Lecture /PPTs on the hydrostatic pressure			
	3 rd	Pressure, intensity of pressure, pressure head, Pascal's law and its applications			
3 rd	1 st	Pascal's law and its applications			
	2 nd	Total pressure, resultant pressure, and centre of pressure.			
	3 rd	Total pressure and centre of pressure on horizontal, vertical and inclined plane surfaces of rectangular, triangular (Simple Numerical Problems)			
4 th	1 st	Total pressure and centre of pressure on horizontal, vertical and inclined plane surfaces of trapezoidal shapes and circular. (Simple Numerical Problems)			
	2 nd	Total pressure and centre of pressure on horizontal, vertical and inclined plane surfaces of rectangular, triangular, trapezoidal shapes and circular. (Simple Numerical Problems)			
	3 rd	Unit – 4: Measurement of Pressure (05 Period) Atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure.			
5 th	1 st	Piezometer, simple manometer and differential manometer, simple numerical problems			
	2 nd	Bourden gauge and dead weight pressure gauge. simple numerical problems, Assignment – 1			
	3 rd	e-Lecture/Video Lecture /PPTs on the hydrostatic pressure Measurement of Pressure			
6 th	1 st	Sessional Test -1			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Unit – 5: Fundamentals of Fluid Flow (06 Periods) Types of Flow: Steady and unsteady flow, laminar and turbulent flow, uniform and non-uniform flow			
7 th	1 st	Discharge and continuity equation (flow equation) Simple numerical problems.			

	2 nd	Types of hydraulic energy: Potential energy, kinetic energy, pressure energy			
	3 rd	Bernoulli's theorem; statement and description, Simple numerical problems.			
8 th	1 st	e-Lecture/Video Lecture /PPTs on the Fundamentals of Fluid Flow			
	2 nd	Unit – 6: Flow Measurements (06 Periods) Brief description with simple numerical problems of : Venturimeter and orificemeter			
	3 rd	Brief description with simple numerical problems of : Pitot tube, Orifices and mouthpieces			
9 th	1 st	Brief description with simple numerical problems of : Current meters, Notches and weirs			
	2 nd	e-Lecture/Video Lecture /PPTs on the Flow Measurements			
	3 rd	Simple numerical problems / Quarries			
10 th	1 st	Unit – 7: Flow Measurements (08 Periods) Definition of pipe flow; Reynolds number, laminar and turbulent flow - explained through Reynold's experiment			
	2 nd	Critical velocity and velocity distributions in a pipe for laminar flow			
	3 rd	Head loss in pipe lines due to friction, sudden expansion and sudden contraction, entrance, exit, obstruction and change of direction, Simple numerical problems			
11 th	1 st	Hydraulic gradient line and total energy line			
	2 nd	Sessional Test -2			
	3 rd	Group discussion / Technical Quiz / Seminar			
12 th	1 st	Pipes in series and parallel, Simple numerical problems			
	2 nd	Water hammer phenomenon and its effects, Assignment – 2			
	3 rd	Unit – 8: Flow through open channels (09 Periods) Definition of an open channel, uniform flow and non-uniform flow, Discharge through channels using: Chezy's formula, Simple numerical problems			
13 th	1 st	Discharge through channels using: Manning's formula, Simple numerical problems			
	2 nd	Most economical channel sections (simple numerical problems): Rectangular, Trapezoidal			
	3 rd	Most economical channel sections (simple numerical problems): Rectangular, Trapezoidal			
14 th	1 st	Head loss in open channel due to friction			
	2 nd	Simple numerical problems / Assignment – 3 e-Lecture/Video Lecture /PPTs on the Flow through open channels			
	3 rd	Unit – 9: Hydraulic Pumps (09 Periods) Hydraulic pump, reciprocating pump, centrifugal pumps			
15 th	1 st	Hydraulic pump, reciprocating pump, centrifugal pumps e-Lecture/Video Lecture /PPTs on the Hydraulic Pumps			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Sessional Test -3			

Lesson Plan

Name of the Faculty : _____ Semester : 3rd 4
 Subject : APPLIED MECHANICS - -
 Lesson Plan Duration : 15 Weeks (from Jul-2018 to Dec-2018)
 Discipline : Civil Engineering L T P

Week	Theory		Delivery Date of Lecture		Whether the Lesson Plan Followed? Yes/No
	Lecture Day	Topic (including Assignments / Seminar / Group Discussion / Sessional Tests)	Expected	Actual	
1 st	1 st	Introduction to the subject and its necessity e-Lecture/Video Lecture /PPTs on the subject matters and Learning Outcomes			
	2 nd	Unit – 1: Introduction (06 Period) Concept of engineering mechanics definition of mechanics, statics, dynamics, application of engineering mechanics in practical fields.			
	3 rd	Different systems of units (FPS, CGS, MKS and SI) and their conversion from one to another e.g. density, force, pressure, work, power, velocity, acceleration (Simple Numerical Problems)			
	4 th	Fundamental Units and Derived Units, (Simple Numerical Problems)			
2 nd	1 st	Concept of rigid body, scalar and vector quantities e-Lecture/Video Lecture /PPTs on the Concept of engineering mechanics			
	2 nd	Unit – 2: Laws of forces (12 Period) Definition of force, Bow's Notations, types of force: Point force/concentrated force & Uniformly distributed force,			
	3 rd	Effects of force, characteristics of a force			
	4 th	Different force systems, principle of transmissibility of forces (Simple Numerical Problems)			
3 rd	1 st	law of super-position (Simple Numerical Problems)			
	2 nd	Composition and resolution of coplanar concurrent forces, resultant force, method of composition of forces (Simple Numerical Problems)			
	3 rd	Laws of forces, triangle law of forces (Simple Numerical Problems)			
	4 th	Polygon law of forces - graphically, analytically, resolution of forces (Simple Numerical Problems)			
4 th	1 st	Free body diagram (Simple Numerical Problems)			
	2 nd	Equilibrant force and its determination (Simple Numerical Problems)			
	3 rd	Lami's theorem (Simple Numerical Problems), Assignment – 1			
	4 th	(Simple Numerical Problems)			
5 th	1 st	Unit – 3: Moment (12 Period)			

		Concept of moment, Moment of a force and units of moment			
	2 nd	Varignon's theorem (Simple Numerical Problems)			
	3 rd	Principle of moment and its applications (Levers – simple and compound, steel yard, safety valve, reaction at support)			
	4 th	Parallel forces (like and unlike parallel force), calculating their resultant			
6 th	1 st	(Simple Numerical Problems)			
	2 nd	Sessional Test -1			
	3 rd	Concept of couple, its properties and effects (Simple Numerical Problems)			
	4 th	General conditions of equilibrium of bodies under coplanar forces (Simple Numerical Problems)			
7 th	1 st	Position of resultant force by moment (Simple Numerical Problems)			
	2 nd	(Simple Numerical Problems)			
	3 rd	e-Lecture/Video Lecture /PPTs on moment and its concepts			
	4 th	Group discussion / Technical Quiz / Seminar			
8 th	1 st	Unit – 4: Friction (12 Period) e-Lecture/Video Lecture /PPTs on Friction			
	2 nd	Definition and concept of friction, types of friction,			
	3 rd	Force of friction, Limiting Friction. (Simple Numerical Problems)			
	4 th	Laws of static friction, coefficient of friction, angle of friction, angle of repose. (Simple Numerical Problems)			
9 th	1 st	Equilibrium of a body lying on a horizontal plane. (Simple Numerical Problems)			
	2 nd	Equilibrium of a body lying on a rough inclined plane. (Simple Numerical Problems)			
	3 rd	Calculation of least force required to maintain equilibrium of a body on a rough inclined plane subjected to a force: Acting along the inclined plane (Simple Numerical Problems)			
	4 th	Calculation of least force required to maintain equilibrium of a body on a rough inclined plane subjected to a force: At some angle with the inclined plane (Simple Numerical Problems)			
10 th	1 st	(Simple Numerical Problems)			
	2 nd	Ladder friction, Advantages and Disadvantages of friction (Simple Numerical Problems)			
	3 rd	Methods of increasing/decreasing the force of friction. (Simple Numerical Problems)			
	4 th	Sessional Test -2			
11 th	1 st	Group discussion / Technical Quiz / Seminar			
	2 nd	Unit – 5: Centre of Gravity (10 Period) e-Lecture/Video Lecture /PPTs on Centre of Gravity and it's concept			
	3 rd	Concept, definition of centroid of plain figures and centre of gravity of symmetrical solid bodies, difference between centroid and C.G. (Simple Numerical Problems)			
	4 th	(Simple Numerical Problems)			
12 th	1 st	Determination of centroid of plain and composite lamina using moment method only, centroid of bodies with removed portion (Simple Numerical Problems)			

	2 nd	Determination of centroid of plain and composite lamina using moment method only, centroid of bodies with removed portion (Simple Numerical Problems)			
	3 rd	(Simple Numerical Problems)			
	4 th	Determination of center of gravity of solid bodies - cylinder, cube, cuboid and sphere; composite bodies and bodies with portion removed (Simple Numerical Problems)			
13 th	1 st	Determination of center of gravity of solid bodies - cylinder, cube, cuboid and sphere; composite bodies and bodies with portion removed (Simple Numerical Problems) Assignment – 2			
	2 nd	(Simple Numerical Problems)			
	3 rd	Unit – 6: Simple Machines (12 Period) e-Lecture/Video Lecture /PPTs on Simple Machines and Compound Machines			
	4 th	Definition of Simple and compound machine (Examples)			
14 th	1 st	Definition of load, effort, velocity ratio, mechanical advantage and efficiency of a machine and their relationship, law of machines			
	2 nd	Definition of ideal machine, reversible and self-locking machine			
	3 rd	Effort lost in friction, Load lost in friction, determination of maximum mechanical advantage and maximum efficiency			
	4 th	System of pulleys (first, second, third system of pulleys), determination of velocity ratio, mechanical advantage and efficiency (Simple Numerical Problems)			
15 th	1 st	System of pulleys (first, second, third system of pulleys), determination of velocity ratio, mechanical advantage and efficiency (Simple Numerical Problems) Assignment – 3			
	2 nd	Working principle and application of wheel and axle, Weston’s Differential Pulley Block, Expression for their velocity ratio and field of their application, Simple Numerical Problems			
	3 rd	Working principle and application of simple screw jack, worm and worm wheel, Expression for their velocity ratio and field of their application, Simple Numerical Problems			
	4 th	Working principle and application of single and double winch crab. Expression for their velocity ratio and field of their application, Simple Numerical Problems ,			
16 th	1 st	Simple Numerical Problems			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Revision/Simple Numerical Problems			
	4 th	Sessional Test -3			

Lesson Plan

Name of the Faculty : _____ Discipline : **Civil Engineering** L T P
 Subject : **Surveying – I** Semester : **3rd** 3 - -
 Lesson Plan Duration : **15 Weeks (from Jul-2018 to Dec-2018)**

Week	Theory		Delivery Date of Lecture		Whether the Lesson Plan Followed? Yes/No
	Lecture Day	Topic (including Assignments / Seminar / Group Discussion / Sessional Tests)	Expected	Actual	
1 st	1 st	Introduction to the subject and its necessity / Learning outcomes of the subject e-Lecture/Video Lecture /PPTs on the subject matters			
	2 nd	Unit – 1: Introduction (04 Periods) Basic principles of surveying			
	3 rd	Concept and purpose of surveying, measurements-linear and angular, units of measurements			
2 nd	1 st	Instruments used for taking these measurements, classification based on surveying instruments			
	2 nd	Unit – 2: Chain surveying: (06 Periods) e-Lecture/Video Lecture /PPTs on Chain surveying			
	3 rd	Purpose and principles of Chain Surveying			
3 rd	1 st	Introduction, advantages and disadvantages			
	2 nd	Direct and indirect ranging, offsets and recording of field notes			
	3 rd	Obstacles in Chain Surveying, Errors in Chain Surveying and their correction.			
4 th	1 st	Unit – 3: Compass surveying (08 Periods) e-Lecture/Video Lecture /PPTs on Compass surveying			
	2 nd	Purpose of compass surveying. Use of prismatic compass: Setting and taking observations			
	3 rd	Concept of following with simple numerical problems: a) Meridian - Magnetic and true, Arbitrary b) Bearing - Magnetic, True and Arbitrary			
5 th	1 st	Concept of following with simple numerical problems: c) Whole circle bearing and reduced bearing d) Fore and back bearing e) Magnetic dip and declination			
	2 nd	Sessional Test – 1			
	3 rd	Local attraction - causes, detection, errors and corrections, problems on local attraction,			
6 th	1 st	Local attraction - magnetic declination and calculation of included angles in a compass traverse Simple Numerical Problems (Assignment – 1)			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Unit – 4: Levelling (15 Periods) Purpose of levelling, concept of a level surface, horizontal surface, vertical surface,			

		datum, reduced level and bench marks			
7 th	1 st	Identification of various parts of Dumpy level and use of Dumpy level, Engineer' level,			
	2 nd	Auto level: advantages and disadvantages use of auto level, Concepts of line of collimation, axis of the bubble tube, axis of the telescope and vertical axis			
	3 rd	Levelling staff: single piece, folding, invar precision staff, telescopic Temporary adjustment and permanent adjustment of dumpy level by two peg method			
8 th	1 st	Concept of back sight, foresight, intermediate sight, change point, to determine reduce levels			
	2 nd	Level book and reduction of levels by: Height of collimation method with Numerical problems			
	3 rd	Level book and reduction of levels by: Rise and fall method with Numerical problems			
9 th	1 st	Arithmetic checks, problem on reduction of levels, fly levelling, check leveling and profile levelling (L-section and X-section), errors in levelling, permissible limits, reciprocal leveling. Numerical problems.			
	2 nd	Arithmetic checks, problem on reduction of levels, fly levelling, check leveling and profile levelling (L-section and X-section), errors in levelling, permissible limits, reciprocal leveling. Numerical problems.			
	3 rd	Computations of Areas of regular figures and irregular figures. Simpson's rule: prismatic formula and graphical method use of planimeter for computation of areas, numerical problems			
10 th	1 st	e-Lecture/Video Lecture /PPTs on Dumpy level / Auto level / Levelling (Assignment – 2)			
	2 nd	Sessional Test – 2			
	3 rd	Group discussion / Technical Quiz / Seminar			
11 th	1 st	Unit – 5: Plane Table Surveying (15 Periods) e-Lecture/Video Lecture /PPTs on Plane Table surveying			
	2 nd	Purpose of plane table surveying, equipment used in plane table survey			
	3 rd	Setting of a plane table: (a) Centering (b) Levelling (c) Orientation			
12 th	1 st	Methods of plane table surveying: Radiation,			
	2 nd	Methods of plane table surveying; Intersection			
	3 rd	Methods of plane table surveying: Traversing			
13 th	1 st	Methods of plane table surveying: Resection			
	2 nd	Practice of methods of plane table surveying			
	3 rd	Concept of Two point and Three point problems (Concept only)			
14 th	1 st	Concept of Two point and Three point problems (Concept only)			
	2 nd	Errors in plane table survey and precautions to control them.			
	3 rd	Testing and adjustment of plane table and alidade			
15 th	1 st	e-Lecture/Video Lecture /PPTs on Plane Table Surveying / Quarries / Revision			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Sessional Test – 3			

Lesson Plan

Name of the Faculty : _____ Discipline : **Civil Engineering** L T P
 Subject : **CONSTRUCTION MATERIALS** Semester : **5th** 5 - -
 Lesson Plan Duration : **15 Weeks (from Jul-2018 to Dec-2018)**

Week	Theory		Delivery Date of Lecture		Whether the Lesson Plan Followed? Yes/No
	Lecture Day	Topic (including Assignments / Seminar / Group Discussion / Sessional Tests)	Expected	Actual	
1 st	1 st	Introduction to the subject and its necessity e-Lecture/Video Lecture /PPTs on the subject matters and Learning Outcomes			
	2 nd	Unit – 1: Building Stones (06 Period) e-Lecture/Video Lecture /PPTs on Building Stones			
	3 rd	Classification of Rocks: (General Review) Geological classification: Igneous, sedimentary and metamorphic rocks Chemical classification; Calcareous, argillaceous and siliceous rocks			
	4 th	Classification of Rocks: (General Review) Chemical classification; Calcareous, argillaceous and siliceous rocks Physical classification: Unstratified, stratified and foliated rocks			
2 nd	1 st	General characteristics of stones – Marble, Kota stone, Granite, Sand, Trap, Basalt stone, Lime stone and Slate			
	2 nd	Requirements of good building stones			
	3 rd	Identification of common building stones, Various uses of stones in construction			
	4 th	Quarrying of stones by blasting and its effect on environment			
3 rd	1 st	Unit – 2: Bricks and Tiles (13 Period) e-Lecture/Video Lecture /PPTs on Bricks and Tiles			
	2 nd	Introduction to bricks, Raw materials for brick manufacturing and properties of good brick making earth			
	3 rd	Manufacturing of bricks: Preparation of clay (manual/mechanically), Moulding: hand moulding and machine moulding brick table; drying of bricks,			
	4 th	Burning of bricks, types of kilns (Bull's Trench Kiln and Hoffman's Kiln), process of burning, size and weight of standard brick; traditional brick, refractory brick, clay-flyash bricks, sun dried bricks, only line diagram of kilns			
4 th	1 st	Burning of bricks, types of kilns (Bull's Trench Kiln and Hoffman's Kiln), process of burning, size and weight of standard brick; traditional brick, refractory brick, clay-flyash bricks, sun dried bricks, only line diagram of kilns			
	2 nd	Classification and specifications of bricks as per BIS: 1077			
	3 rd	Testing of common building bricks as per BIS: 3495 Compressive strength, water absorption – hot and cold water test, efflorescence, Dimensional tolerance,			

		soundness			
	4 th	Tiles: Building tiles; Types of tiles-wall, ceiling, roofing and flooring tiles, Ceramic, terrazo and PVC tiles, : their properties and uses, Vitrified tiles, Paver blocks, interlocking tiles			
5 th	1 st	Tiles: Building tiles; Types of tiles-wall, ceiling, roofing and flooring tiles, Ceramic, terrazo and PVC tiles, : their properties and uses, Vitrified tiles, Paver blocks, interlocking tiles			
	2 nd	Stacking of bricks and tiles at site, Assignment – 1			
	3 rd	Unit – 3: Cement (10 Period) e-Lecture/Video Lecture /PPTs on Cement and it's production processes.			
	4 th	Introduction, raw materials, flow diagram of manufacturing of cement			
6 th	1 st	Various types of Cements, their uses and testing: Ordinary portland cement, rapid hardening cement, low heat cement, white and coloured cement, portland pozzolana cement			
	2 nd	Sessional Test -1			
	3 rd	Group discussion / Technical Quiz / Seminar			
	4 th	Various types of Cements, their uses and testing: Ordinary portland cement, rapid hardening cement, low heat cement, white and coloured cement, portland pozzolana cement			
7 th	1 st	Various types of Cements, their uses and testing: Ordinary portland cement, rapid hardening cement, low heat cement, white and coloured cement, portland pozzolana cement			
	2 nd	Properties of cement			
	3 rd	Properties of cement			
	4 th	Unit – 4: Timber and Wood Based Products (12 Period) e-Lecture/Video Lecture /PPTs on Timber and Wood Based Products.			
8 th	1 st	Identification and uses of different types of timber: Teak, Deodar, Shisham, Sal, Mango, Kail, Chir, Fir, Hollock, Champ			
	2 nd	Market forms of converted timber as per BIS Code			
	3 rd	Seasoning of timber: Purpose, methods of seasoning as per BIS Code			
	4 th	Seasoning of timber: Purpose, methods of seasoning as per BIS Code			
9 th	1 st	Properties of timber and specifications of structural timber			
	2 nd	Defects in timber, decay in timber Assignment – 2			
	3 rd	Preservation of timber and methods of treatment as per BIS			
	4 th	Other wood based products, their brief description of manufacture and uses: Laminated board, gypsum board, block board, fibre board, hard board			
10 th	1 st	Other wood based products, their brief description of manufacture and uses: Plywood, veneers, nu-wood and study of the brand name and cost of the wood based products available in the market,			
	2 nd	Other wood based products, their brief description of manufacture and uses: Plywood, veneers, nu-wood and study of the brand name and cost of the wood based products available in the market,			
	3 rd	Other wood based products, their brief description of manufacture and uses: Cement Panel Board, Moulded Doors.			
	4 th	Revision / Quarries			
11 th	1 st	Sessional Test -2			
	2 nd	Group discussion / Technical Quiz / Seminar			

	3 rd	Unit – 5: Paints and Varnishes (07 Period) e-Lecture/Video Lecture /PPTs on Paints and Varnishes			
	4 th	Introduction, purpose and use of paints			
12 th	1 st	Types, ingredients, properties and uses of oil paints, water paints and cement paints**			
	2 nd	Covering capacity of various paints, Types, properties and uses of varnishes			
	3 rd	Types, properties and uses of varnishes			
	4 th	Trade name of different products.			
13 th	1 st	Unit – 6: Metals (04 Period) e-Lecture/Video Lecture /PPTs on Metals			
	2 nd	Ferrous metals: Composition, properties and uses of cast iron, mild steel and HYSD steel, high tension steel as per BIS.			
	3 rd	Commercial forms of ferrous, metals.			
	4 th	Aluminum & Stainless Steel.			
14 th	1 st	Unit – 7: Miscellaneous Materials (12 Period) e-Lecture/Video Lecture /PPTs on Miscellaneous Materials			
	2 nd	Plastics – Introduction and uses of various plastic products in buildings such as doors, water tanks and PVC pipes			
	3 rd	Fibre Sheets and their size and uses			
	4 th	Types and uses of insulating materials for sound and thermal insulation			
15 th	1 st	Construction chemicals like water proofing compound, epoxies, polymers			
	2 nd	Water proofing, termite proofing and fire resistance materials – types and uses, Assignment - 3			
	3 rd	Materials used in interior decoration works like POP, methods of doing POP, PVC paneling			
	4 th	Group discussion / Technical Quiz / Seminar			
16 th	1 st	Eco friendly materials for construction of buildings.			
	2 nd	e-Lecture/Video Lecture /PPTs on Water Proofing			
	3 rd	Revision/Quarries			
	4 th	Sessional Test -3			

Lesson Plan

Name of the Faculty : _____ Discipline : **Civil Engineering** L T P
 Subject : **BUILDING CONSTRUCTION** Semester : **5th** 5 - -
 Lesson Plan Duration : **15 Weeks (from Jul-2018 to Dec-2018)**

Week	Theory		Delivery Date of Lecture		Whether the Lesson Plan Followed? Yes/No
	Lecture Day	Topic (including Assignments / Seminar / Group Discussion / Sessional Tests)	Expected	Actual	
1 st	1 st	Introduction to the subject and its necessity e-Lecture/Video Lecture /PPTs on the subject matters and Learning Outcomes			
	2 nd	Unit – 1: Introduction (03 Period) e-Lecture/Video Lecture /PPTs on Buildings and their classification			
	3 rd	Definition of a building, classification of buildings based on occupancy, Different parts of a building			
	4 th	Unit – 2: Foundations (05 Period) e-Lecture/Video Lecture /PPTs on Foundations			
2 nd	1 st	Concept of foundation and its purpose, Types of foundation-shallow and deep Shallow foundation - constructional details of: Spread foundations for walls, min. depth criteria, thumb rules for depth and width of foundation and thickness of concrete block,			
	2 nd	Types of foundation-shallow and deep Shallow foundation - stepped foundation for masonry pillars and concrete columns,			
	3 rd	Types of foundation-shallow and deep Introduction to deep foundation and their types			
	4 th	Earthwork: Layout/setting out for surface excavation, cutting and filling, Excavation of foundation,			
3 rd	1 st	Trenches, shoring, timbering and de- watering			
	2 nd	Unit – 3: Walls (05 Period) e-Lecture/Video Lecture /PPTs on Walls and their Classifications.			
	3 rd	Purpose of walls, Classification of walls - load bearing, non-load bearing, dwarf wall, retaining, breast walls and partition walls			
	4 th	Classification of walls as per materials of construction: brick, stone, reinforced brick, reinforced concrete, precast, hollow and solid concrete block and composite masonry walls			
4 th	1 st	Partition walls: Constructional details, suitability and uses of brick and wooden partition walls			
	2 nd	Scaffolding, construction details and suitability of mason’s brick layers and tubular scaffolding,			

		shoring, underpinning			
	3 rd	Unit – 4: Masonry (08 Period) e-Lecture/Video Lecture /PPTs on Masonry			
	4 th	Brick Masonry: Definition of terms like header, stretcher, queen closer, king closer, frog and quoin, course, bond, facing, backing, hearting, jambs, reveals, soffit, plinth, pillars and plasters			
5 th	1 st	Bond – meaning and necessity; English, flemish bond and other types of bonds			
	2 nd	Construction of brick walls –methods of laying bricks in walls, precautions observed in the construction of walls, methods of bonding new brick work with old (toothing, raking, back and block bonding), Expansion and contraction joints			
	3 rd	Mortars: types, selection of mortar and its preparation Assignment – 1			
	4 th	Stone Masonry: Glossary of terms – natural bed, bedding planes, string course, corbel, cornice, block in course grouting, moulding, templates, corner stone, bond stone, throating, through stone, parapet, coping, pilasters and buttress			
6 th	1 st	Types of stone masonry: rubble masonry - random and coursed; Ashlar masonry, principles to be observed in construction of stone masonry walls			
	2 nd	Sessional Test -1			
	3 rd	Group discussion / Technical Quiz / Seminar			
	4 th	Unit – 5: Arches and Lintels (06 Period) e-Lecture/Video Lecture /PPTs on Arches and Lintels			
7 th	1 st	Meaning and use of arches and lintels, Glossary of terms used in arches and lintels - abutment, pier, arch ring, intrados, soffit, extrados, voussoirs, springer, springing line, crown, key stone, skew back, span, rise, depth of an arch, haunch, spandril, jambs, bearing, thickness of lintel, effective span			
	2 nd	Arches: Types of Arches - Semicircular, segmental, elliptical and parabolic, flat, inverted and relieving			
	3 rd	Arches: Types of Arches - Stone arches and their construction, Brick arches and their construction			
	4 th	Lintels: Purpose of lintel, Materials used for lintels, Cast-in-situ and pre-cast lintels, Lintel along with sun-shade or chhajja			
8 th	1 st	Unit – 6: Doors, Windows and Ventilators (06 Period) e-Lecture/Video Lecture /PPTs on Doors, Windows and Ventilators			
	2 nd	Glossary of terms with neat sketches			
	3 rd	Classification based on materials i.e. wood, metal and plastic and their suitability for different situations.			
	4 th	Different type of doors- panel door, flush door, glazed door, rolling shutter, steel door, sliding door, plastic and aluminium doors			
9 th	1 st	Window – Panel window, glazed windows (fixed and openable) ventilators, sky light window,			

	2 nd	Louveres shutters, plastic and aluminium windows. Assignment – 2			
	3 rd	Door and window frames – materials and sections, fixtures and fasteners, hold fasts			
	4 th	Unit – 7: Damp Proofing and Water Proofing (06 Period) e-Lecture/Video Lecture /PPTs on Damp Proofing and Water Proofing			
10 th	1 st	Dampness and its ill effects on bricks, plaster, wooden fixtures, metal fixtures and reinforcement, damage to aesthetic appearance, damage to heat insulating materials, damage to stored articles and health			
	2 nd	Sources of dampness - moisture penetrating the building from outside e.g. rainwater, surface water, ground moisture. Moisture entrapped during construction i.e. moisture in concrete, masonry construction and plastering work etc. Moisture which originates in the building itself i.e. water in kitchen and bathrooms etc.			
	3 rd	Damp proofing materials and their specifications: rich concrete and mortar, bitumen, bitumen mastic, polymer coating, use of chemicals			
	4 th	Damp proofing of basement, Ground floors, plinth and walls, water storage tank, kitchen, W.C., roof			
11 th	1 st	Unit – 8: Floors (05 Period) e-Lecture/Video Lecture /PPTs on Floors			
	2 nd	Glossary of terms-floor finish, topping, under layer, base course, rubble filling and their purpose			
	3 rd	Types of floor finishes - concrete flooring, ceramic tile flooring, stone (marble and kota) flooring. Wooden flooring			
	4 th	Special emphasis on level/slope/reverse slope in bathrooms, toilets, kitchen, balcony and staircase			
12 th	1 st	Sessional Test -2			
	2 nd	Group discussion / Technical Quiz / Seminar			
	3 rd	Unit – 9: Roofs (05 Period) e-Lecture/Video Lecture /PPTs on Roofs and their types			
	4 th	Types of roofs, concept of flat, pitched and arched roofs			
13 th	1 st	Glossary of terms for pitched roofs - batten, eaves, fascia board, gable, hip, lap, purlin, rafter, rag bolt, valley, ridge, rain water gutter, anchoring bolts			
	2 nd	False ceilings using gypsum, plaster boards, cellotex, fibre boards			
	3 rd	Unit – 10: Stairs (06 Period) e-Lecture/Video Lecture /PPTs on Stairs and their classification			
	4 th	Glossary of terms: Staircase, winders, landing, stringer, newel, baluster, riser, tread, width of staircase, hand-rail, nosing			
14 th	1 st	Classification of staircase on the basis of material – RCC, timber, steel, Aluminium			
	2 nd	Planning and layout of staircase: Relations between rise and tread, determination of width of stair, landing etc			

	3 rd	Various types of layout - straight flight, dog legged, open well, quarter turn, half turn (newel and geometrical stairs), bifurcated stair, spiral stair			
	4 th	Unit – 11: Surface Finishes (06 Period) Plastering - classification according to use and finishes like plain plaster, grit finish, rough cast, pebble dashed, concrete and stone cladding etc., dubbing, proportion of mortars used for different plasters, techniques of plastering and curing			
15 th	1 st	Pointing - different types of pointing and their methods Assignment - 3			
	2 nd	Painting - preparation of surface, primer coat and application of paints on wooden, steel and plastered wall surfaces			
	3 rd	Importance of preparation of surfaces such as hacking, grooving etc before application of surface finishes			
	4 th	Group discussion / Technical Quiz / Seminar			
16 th	1 st	Application of white washing, colour washing and distempering, polishing, application of cement and plastic paints, Selection of appropriate paints/finishes for interior and exterior surfaces			
	2 nd	Unit – 12: Anti Termite Measure (03 Period) Anti Termite Treatment to Foundation, Masonary, RCC, Floors, Junction of walls and Floors. e-Lecture/Video Lecture /PPTs on Anti Termite Measure			
	3 rd	Treatment to wooden joinery Treatment to existing building			
	4 th	Sessional Test -3			