D. DETAILS OF SYLLABUS

1st Semester – 44 hrs. Duration

Calculation -22 hrs.				Science – 22 hrs.			
Week No.	Description	Hrs.	Mark	Week No.	Description	Hrs.	Mark
1	**Unit**: Systems of unit- FPS, CGS, MKS/SI unit, unit of length, Mass and time, Conversion of units	4	05	1	**Material Science** : properties - Physical & Mechanical, Types – Ferrous & Non-Ferrous, difference between Ferrous and Non-Ferrous metals, introduction of Iron, Cast Iron, Wrought Iron, Steel, difference between Iron and Steel, Alloy steel, carbon steel, stainless steel, Non-Ferrous metals, Non-Ferrous Alloys.	10	10
2	**Fractions** : Fractions, Decimal fraction, L.C.M., H.C.F., Multiplication and Division of Fractions and Decimals, conversion of Fraction to Decimal and vice versa. Simple problems using Scientific Calculator.	6	5	2	**Mass ,Weight and Density** : Mass, Unit of Mass, Weight, difference between mass and weight, Density, unit of density, specific gravity of metals.	4	5
3	**Square Root** : Square and Square Root, method of finding out square roots, Simple problem using calculator.	4	5	3	**Speed and Velocity**: Rest and motion, speed, velocity, difference between speed and velocity, acceleration, retardation, equations of motions, simple related problems.	4	5
4	**Ratio & Proportion** : Simple calculation on related problems.	4	5	4	**Work, Power and Energy**: work, unit of work, power, unit of power, Horse power of engines, mechanical efficiency, energy, use of energy, potential and kinetic energy, examples of potential energy and kinetic energy.	4	5
5	**Percentage** : Introduction, Simple calculation. Changing percentage to decimal and fraction and vice-versa.	4	5				

2nd Semester – 42 hrs Duration

Calculation -21 hrs.				Science – 21 hrs.			
Sl. No.	Description	Hrs.	Mark	Sl. No.	Description	Hrs.	Mark
1	**Algebra** : Addition, Subtraction, Multiplication, Division, Algebraic formula, Linear equations (with two variables).	6	10	1	**Heat & Temparature**: Heat and temperature, their units, difference between heat and temperature, boiling point, melting point, scale of temperature, relation between different scale of temperature, Thermometer, pyrometer, transmission of heat, conduction, convection, radiation.	6	10
2	**Mensuration :** Area and perimeter of square, rectangle, parallelogram, triangle, circle, semi circle, Volume of solids – cube, cuboid, cylinder and Sphere. Surface area of solids – cube, cuboid, cylinder and Sphere.	11	10	2	**Basic Electricity**: Introduction, use of electricity, how electricity is produced, Types of current_ AC, DC, their comparison, voltage, resistance, their units. Conductor, insulator, Types of connections – series, parallel, electric power, Horse power, energy, unit of electrical energy.	9	7
3	**Trigonometry:** Trigonometrical ratios, measurement of angles. Trigonometric tables	4	5	3	**Levers and Simple Machines:** levers and its types. Simple Machines, Effort and Load, Mechanical Advantage, Velocity Ratio, Efficiency of machine, Relationship between Efficiency, velocity ratio and Mechanical Advantage.	6	8

SYLLABUS FOR WORKSHOP SCIENCE AND CALCULATION
Code No. WSC- 3rdSem-Gr. A
CTS-SEMESTER-III

Topic No	Workshop Calculation	Workshop Science	Total Hrs.
			42
1	- Geometrical construction & theorem: division of line segment, parallel lines, similar angles, perpendicular lines, isosceles triangleand right angled triangle.	- Forces definition. - Compressive, tensile, shear forces and simple problems. -Stress,strain, ultimate strength, factor of safety. -Basic study of stress-strain curve for MS.	
2	- Area of cut-out regular surfaces: circle and segment and sector of circle.	- Temperature measuring instruments. Specific heats of solids & liquids.	
3	- Area of irregular surfaces. - Application related to shop problems.	- Thermal Conductivity, Heat loss and heat gain.	
4	- Volume of cut-out solids: hollow cylinders, frustum of cone, block section. - Volume of simple machine blocks.	- Average Velocity, Acceleration & Retardation. - Related problems.	
5	- Material weight and cost problems related to trade.	- Circular Motion: Relation between circular motion and Linear motion, Centrifugal force, Centripetal force	
6	- Finding the value of unknown sides and angles of a triangle by Trigonometrical method.		
7	- Finding height and distance by trigonometry.		
8	- Application of trigonometry in shop problems. (viz. taper angle calculation).		

SYLLABUS FOR WORKSHOP SCIENCE AND CALCULATION
Code No. WSC- 4thSem-Gr. A
CTS-SEMESTER-IV

Topic No	Workshop Calculation	Workshop Science	Total Hrs.
			42
1	**Graph:** - Read images, graphs, diagrams – bar chart, pie chart. - Graphs: abscissa and ordinates, graphs of straight line, related to two sets of varying quantities.	- Friction- co-efficient of friction, application and effects of friction in Workshop practice. **Centre of gravity** and its practical application.	
2	Simple problem on Statistics: - Frequency distribution table - Calculation of Mean value. - Examples on mass scale productions. -Cumulative frequency -Arithmetic mean	- Magnetic substances- natural and artificial magnets. - Method of magnetization. Use of magnets.	
3	Acceptance of lot by sampling method (within specified limit size) with simple examples (not more than 20 samples).	- Electrical insulating materials. - Basic concept of earthing.	
4		- Transmission of power by belt, pulleys & gear drive. - Calculation of Transmission of power by belt pulley and gear drive.	
5		- Heat treatment and advantages.	
6		Concept of pressure – units of pressure, atmospheric pressure, absolute pressure, gauge pressure – gauges used for measuring pressure	
7		Introduction to pneumatics & hydraulics systems.	

3rd semester
Workshop Calculation and Science

1. Electronics & Hardware sector
2. Power Generation, Transmission, Distribution, Wiring, and Electrical Equipment
3. IT & ITES

For the Trades of

1. Electronics Mechanic
2. Mechanic Consumer Electronics Appliances
3. Technician Power Electronics System
4. Electrician
5. Electroplater
6. Lift and Escalator Mechanic

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	**Indices:** Laws of indices related problems. **Quadratic Equation:** Introduction, solution of simple Quadratic equation and related problems.	22	1	**Elasticity:** Stress, strain, Modulus of elasticity, elastic limit, Hooks law, young's modulus.	22
2	Solution of simple A.C. circuit with R.L.C. Calculation of power factor etc.		2	**Material:** Introduction, types and properties. Uses of Conducting, Semi-conducting and insulating materials.	
3	**A.C Waveform Calculation:** Calculation of r.m.s, average, instantaneous value, peak value. Peak to peak value, Frequency and wavelength calculation and their relationship		3	**Magnetism:** Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.	
4	**Series And Parallel Connection of Electrical and Electronic components:** 1. Calculation Series and parallel connection of Resistors. 2. Calculation Series and parallel connection of Capacitors. 3. Calculation Series and parallel connection of Inductors. 4. Calculation Series and parallel connection of Batteries. Conversion of power flow to H.P. Calculation of KVA.		4	**Pressure:-** Pneumatic pressure, PSI, bar, atmospheric pressure, pressure gauge and absolute pressure, Heat treatment process.	

4th semester Workshop Calculation and Science
Electronics & Hardware sector

1. Electronics Mechanic
2. Mechanic Consumer Electronics Appliances
3. Technician Power Electronics System

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	**Power supply:** Calculation of SMPS, regulation, Calculation of load and wattage for selection of UPS, calculate of back up time of Battery related to UPS and Load, calculate of voltage regulation , firing angle calculation of ripple factor, voltage regulation of DC voltage. Calculate the regulation of solar power.	22	1	Power transmission by shaft, belts and ropes.	22
2	**Motor parameters & Calculation:** Speed and frequency calculation of A.C motors**,** D.C motors.		2	**Friction:** Law of friction, co-efficient of friction, angle of friction, advantage and disadvantage of friction.	
3	**Modulation:** AM/FM modulation index calculation, calculation of Bandwidth, Percentage of modulation in FM/AM.		3	**Force:** Resolution and Composition of forces. Representation of forces by vectors, simple problems on lifting tackles like Jib wall, crane solution of problems with the aid of vectors, General condition of equilibrium for series of forces on a body.	
4	**Number Systems:** Introduction, Decimal, Binary, Octal, Hexadecimal, BCD code, ASCII code, Bit, Byte, KB, MB, GB, Conversion, Addition, Subtraction, Multiplication, Division, 1st and 2s complement method, 9s and 10s complement method. **Boolean Algebra:** Simplification of Boolean Algebra and equations.		4	**Gravity:** Centre of Gravity, simple experiments stable, unstable and neutral equilibrium.	
5	**Project costing:** Project selection, cost of project, Simple estimation, simple problems on profit and loss , Balance sheet etc.				

4th semester Workshop Calculation and Science

Sector: Power Generation, Transmission, Distribution, Wiring, and Electrical Equipments

For the trades of

1. Electrician
2. Electroplater
3. Lift and Escalator Mechanic

Sl. No.	Description	Hrs.	Sl No.	Description	Hrs.
1	**Number system:-** decimal and binary, Octal Hexa decimal. BCD code, conversion from decimal to binary and vice-versa, all other conversions. Practice on conversions.		1	**Friction: -** Laws of friction, co- efficient of friction, angle of friction, simple problems related to friction. Lubrication Concept on terms like pressure, atomspheric pressure, gauge pressure. Heat treatment necessity difference methods.	
2	**Estimation & costing:-** Simple estimation of the requirement of materials etc. as applicable to the trade. Problems on estimation and costing. **Further Mensuration:-** Volumes of frustums including conical frustums. **Graph-** Basics, abscissa, co-ordinate etc. Y = mx and Y= mx + c graph		2	**Forces: -** Resolution and composition of forces. Representation of force by vectors, simple problems on lifting tackles like jib wall, crane-Solution of problems with the aid of vectors. General condition of equilibriums for series of forces on a body. Law of parallelogram, Triangle Law, Lami's theorem.	
3	Simple Problems on Profit & Loss. Simple and compound interest.		3	**Centre of gravity:-** Centre of gravity concept and C.G. of different lamina. Equilibrium different kinds stable, unstable and neutral. Law of parallelogram force. Triangle law, Lami's theorem stable, unstable and neutral equilibrium.	

3rd semester
Workshop Calculation and Science
For the Trades of

1. Information & Communication Technology System Maintenance
2. Information Technology

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	**Indices:** Laws of indices related problems. **Quadratic Equation:** Introduction, solution of simple Quadratic equation and related problems.	21	1	**Elasticity:** Stress, strain, Modulus of elasticity, elastic limit, Hooks law, young's modulus.	21
2	Solution of simple A.C. circuit with R.L.C. Calculation of power factor etc.		2	**Material:** Introduction, types and properties. Uses of Conducting, Semi-conducting and insulating materials.	
3	**A.C Waveform Calculation:** Calculation of r.m.s, average, instantaneous value, peak value. Peak to peak value, Frequency and wavelength calculation and their relationship		3	**Magnetism:** Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.	
4	**Series And Parallel Connection of Electrical and Electronic components:** 1. Calculation Series and parallel connection of Resistors. 2. Calculation Series and parallel connection of Capacitors. 3. Calculation Series and parallel connection of Inductors. 4. Calculation Series and parallel connection of Batteries. Conversion of power flow to H.P. Calculation of KVA.		4	**Pressure:-** Pneumatic pressure, PSI, bar, atmospheric pressure, pressure gauge and absolute pressure..	

4th Semester
Workshop Calculation and Science

1.Information & Communication Technology System Maintenance
2.Information Technology

Sl. No.	Description	Hrs.	Sl.No.	Description	Hrs.
1	**Network:** Calculation of Network, Speed, Bandwidth, Baud Rate IP Addressing and Subneting Mask calculation DSL speed calculation.	21	4	**Quality Control:** Quality control standard in workshop, concept of 5s and Kaizen	21
2	**Mobile Billing:** Calculation of Mobile billing and internet billing.		5	**Wi-Fi:** Standard of Wi-Fi Network. Antenna and its type.	
3	**Simple and Compound Interest:** Calculation of SI and Compound interest, percentage gain, Profit and Loss calculation.		6	**Data Encryption:** Encryption and Decryption technique.	
				Data Communication: Communication Technique, CSMA/CD.	
				Cyber Security: Rules of Cyber Security	

D. **DETAILS OF SYLLABUS**

SYLLABUS OF ENGINEERING DRAWING FOR 1ST SEMESTER– 44 hrs. Duration

Sl. No.	Topics	Duration
1.	Engineering Drawing: Introduction and its importance - Relationship to other technical drawing types - Conventions - Viewing of engineering drawing sheets. - Method of Folding of printed Drawing Sheet as per BIS SP:46-2003	2 hrs.
2.	Drawing Instruments : their Standard and uses - Drawing board, T-Square, Drafter (Drafting M/c), Set Squares, Protractor, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), Pencils of different Grades, Drawing pins / Clips.	2 hrs.
3.	Lines : - Definition, types and applications in Drawing as per BIS SP:46-2003 - Classification of lines (Hidden, centre, construction, Extension, Dimension, Section) - Drawing lines of given length (Straight, curved) - Drawing of parallel lines, perpendicular line - Methods of Division of line segment	3 hrs.
4.	Drawing of Geometrical Figures: Definition, nomenclature and practice of - Angle: Measurement and its types, method of bisecting. - Triangle -different types - Rectangle, Square, Rhombus, Parallelogram. - Circle and its elements.	8 hrs.
5.	Lettering and Numbering as per BIS SP46-2003: - Single Stroke, Double Stroke, inclined, Upper case and Lower case.	8 hrs.
6.	Dimensioning: - Definition, types and methods of dimensioning (functional, non-functional and auxiliary) - Types of arrowhead - Leader Line with text	3 hrs.
7.	Free hand drawing of - Lines, polygons, ellipse, etc. - geometrical figures and blocks with dimension - Transferring measurement from the given object to the free hand sketches.	6 hrs.
8	Sizes and Layout of Drawing Sheets - Basic principle of Sheet Size - Designation of sizes - Selection of sizes - Title Block, its position and content - Borders and Frames (Orientation marks and graduations) - Grid Reference - Item Reference on Drawing Sheet (Item List)	6 hrs.
9.	Method of presentation of Engineering Drawing - Pictorial View - Orthogonal View - Isometric view	3 hrs.
10.	Symbolic Representation (as per BIS SP:46-2003) of : - Fastener (Rivets, Bolts and Nuts)	3 hrs.

6

| | - Bars and profile sections
- Weld, brazed and soldered joints.
- Electrical and electronics element
- Piping joints and fittings | |

SYLLABUS OF ENGINEERING DRAWING FOR 2nd SEMESTER– 42 hrs. Duration

Sl. No.	Topics	Duration
1.	Construction of Scales and diagonal scale	3 hrs.
2.	Practice of Lettering and Title Block	3 hrs.
3.	Dimensioning practice: - Position of dimensioning (unidirectional, aligned, oblique as per BIS SP:46-2003) - Symbols preceding the value of dimension and dimensional tolerance. - Text of dimension of repeated features, equidistance elements, circumferential objects.	3 hrs.
4.	Construction of Geometrical Drawing Figures: - Different Polygons and their values of included angles. Inscribed and Circumscribed polygons. - Conic Sections (Ellipse & Parabola)	6 hrs.
5.	Drawing of Solid figures (Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone and Pyramid.) with dimensions.	6 hrs.
6.	Free Hand sketch of hand tools and measuring tools used in respective trades.	6 hrs.
7.	Projections: - Concept of axes plane and quadrant. - Orthographic projections - Method of first angle and third angle projections (definition and difference) - Symbol of 1st angle and 3rd angle projection as per IS specification.	3 hrs.
8.	Drawing of Orthographic projection from isometric/3D view of blocks	6 hrs.
9.	Orthographic Drawing of simple fastener (Rivet, Bolts, Nuts & Screw)	3 hrs.
10.	Drawing details of two simple mating blocks and assembled view.	3hrs.

SYLLABUS FOR ENGINEERING DRAWING
Code No. ED- 3rd Sem-Gr.A
CTS-SEMESTER-III

Topic No	Engineering Drawing	Duration
1.	- Revision of first year topics.	63
2.	- Machined components; concept of fillet & chamfer; surface finish symbols.	
3.	- Screw thread, their standard forms as per BIS, external and internal thread, conventions on the features for drawing as per BIS.	
4.	- Free hand Sketches for bolts, nuts, screws and other screwed members.	
5.	- Free hand Sketching of foundation bolts and types of washers.	
6.	- Standard rivet forms as per BIS (Six types).	
7.	- Riveted joints-Butt & Lap (Drawing one for each type).	
8.	- Orthogonal views of keys of different types	
9.	- Free hand Sketches for simple pipe, unions with simple pipe line drawings.	
10.	- Concept of preparation of assembly drawing and detailing. Preparation of simple assemblies & their details of trade related tools/job/exercises with the dimensions from the given sample or models.	
11.	-Free hand sketch of trade related components / parts (viz., single tool post for the lathe, etc.)	
12.	- Study of assembled views of Vee-blocks with clamps.	
13.	- Study of assembled views of shaft and pulley.	
14.	- Study of assembled views of bush bearing.	
15.	- Study of assembled views of a simple coupling.	
16.	- Free hand Sketching of different gear wheels and nomenclature.	
17.	**Revision**	
18.	Examination	

SYLLABUS FOR ENGINEERING DRAWING
Code No. ED- 4thSem-Gr. A
CTS-SEMESTER-IV

Topic No	Engineering Drawing	Duration
1.	- Free hand Details and assembly of simple bench vice.	63
2.	- Reading of drawing. Simple exercises related to missing lines, dimensions. How to make queries.	
3.	- Simple exercises relating missing symbols. - Missing views	
4.	- Simple exercises related to missing section.	
5.	-Free hand sketching of different types of bearings and its conventional representation.	
6.	- Free hand sketching of different gear wheels and nomenclature/ Simple duct (for RAC). Free hand sketch of Reciprocating compressor – open type (for RAC)	
7.	- Solution of NCVT test. - Simple exercises related to trade related symbols. - Basic electrical and electronic symbols	
8.	- Study of drawing & Estimation of materials.	
9.	- Solution of NCVT test papers.	
10.	**Revision**	
11.	Examination	

3rd semester--- Engineering Drawing

Sector: Electronics & Hardware

For the Trade of

1. Electronics Mechanic
2. Mechanic Consumer Electronics Appliances
3. Technician Power Electronics System

Sl. No.	Topics	Duration in Hours
1	**CRO: -** Block diagram of Cathode Ray Oscilloscope (CRO). Block diagram of Digital storage Oscilloscope (DSO). Front panel view of CRO & DSO.	66
2	**Surface Mounting devices (SMD):-** Front panel view of SMD station. IC package of SMD.	
3	**Electrical Protective Devices:-** Symbol of MCB (Miniature Circuit Breaker), ELCB (Earth Leakage Circuit Breaker), DOL starter, Relays.	
4	**Microcontroller:-** Block diagram of 8051. Pin configuration of 8051.	
5	**Modulation: -** Block diagram of super Heterodyne Radio Receiver. Block diagram of AM and FM receiver.	
6	**Power supply:** Block diagram of SMPS. Block diagram of UPS-ONLINE, OFFLINE, LINE INTERACTING.	

4rd semester---- Engineering Drawing
Sector: Electronics & Hardware
For the Trade of

1. Electronics Mechanic
2. Mechanic Consumer Electronics Appliances
3. Technician Power Electronics System

Sl. No.	Topics	Duration in Hours

1	**Symbol of electronic component:-**
	  A. Thermocouple
	  B. Strain Gauge
	  C. LVDT(Linear variable differential transformer)
	  D. Proximity Sensor
		66

2	**DTH system:-** Block diagram connections of Home system. Direct To Home(DTH).	
3	**Cell Phone:-** Block diagram of cell phone receiver system.	
4	**Generator:-** Front panel control for function Generator.	

5	**Project related Drawings:-**
	  A. Dancing LED's
	  B. Smoke detector
	  C. Mobile charger
	  D. Metal detector	

DETAILS OF SYLLABUS
3RD SEMESTER ENGINEERING DRAWING

Sector: Power Generation, Transmission, Distribution, Wiring, and Electrical Equipments

For the trades of

1. Electrician
2. Electroplater
3. Lift and Escalator Mechanic

Sl. No.	Topics	Duration in Hours
1	**Sign & Symbol Trade related** **Alternating Current** Drawing of simple electrical circuit using electrical symbols. Drawing of sine square & triangular waves. Diagram of battery charging circuit. Practice in reading typical example of circuit containing R, L & C. Reading of electrical drawing.	66
2	**Electronic components** Symbols for electronic components. Diode, Transistor, Zener diode, S.C.R., UJT, FET, I.C. Diac, Triac, Mosfet I.G.B.T etc. Drawing of half wave, Full wave and Bridge rectifier circuit. Drawing circuit for a single stage Amplifiers and Multi stage Amplifies and types of signals. Drawing of circuit containing UJT, FET & Simple power control circuits. Free hand drawing of Logic gates and circuits.	
3	**Electric wirings & Earthing** Detailed diagram of calling bell, & Buzzers etc Free hand sketching of Staircase wiring. Drawing the schematic diagram of plate and pipe earthing. Diagram for electroplating from A.C and D.C source.	
4	**DC machines** Graphic symbols for Rotating machines. Sketching of brush and brush gear of D.C. machines. Sketching of D.C. 3-point and 4-point starter . Layout arrangement of D.C. Generators & motors, control panel. Exercises on connection to motors through Ammeter, voltmeter & K.W. meters of electrical wiring diagram. Drawing the schematic diagram of D.C. motor speed control by Thyristor / DC Drive.	
5	**Transformer** Graphic symbols for Transformers. Free hand sketching of transformer and auxiliary parts and sectional views. Sketching a breather. Drawing the diagram of typical marking plate of a distribution transformer.	
6	**Illumination** Free hand sketching of Mercury vapour lamp, sodium vapour lamp, Fluorescent tube (Single & Twine), MHL lamp and their connection.	

DETAILS OF SYLLABUS

4th SEMESTER ENGINEERING DRAWING

Sector: Power Generation, Transmission, Distribution, Wiring, and Electrical Equipments

For the trades of

1. Electrician
2. Electroplater
3. Lift and Escalator Mechanic

Sl. No.	Topics	Duration in Hours
1	**Three phase Induction motor** Free hand sketching of Slip-ring and Squirrel cage Induction motor. Typical wiring diagram for drum controller operation of A.C. wound rotor motor. Drawing the schematic diagram of Autotransformer starter, DOL starter and Star Delta Starter. Drawing the schematic diagram of A.C. motor speed control by SCR /AC Drive.	66
2	**Alternator** Tracing of panel wiring diagram of an alternator. Drawing the schematic diagram of automatic voltage regulators of A.C. generators.	
3	**Winding** Drawing the development diagram for D.C. Simplex Lap & Wave winding with brush position. Drawing the development diagram of A.C 3 – Phase, 4 Pole 24 slots single layer winding.	
4	**Control Panel** Practice in reading panel diagram. Local & Remote control of Induction motor with inching. Forward & Reverse operation of Induction motor Automatic Star Delta Starter Automatic star delta starter with change of direction of rotation Sequential control of three motors.	
6	**Distribution of Power** Types of insulator used in over-head line. (Half sectional views) Different type of distribution systems and methods of connections. Layout diagram of a substation. Single line diagram of substation feeders.	

DETAILS OF SYLLABUS

SYLLABUS OF ENGINEERING DRAWING FOR 3RD SEMESTER –63 hrs. Duration

1. Information & Communication Technology System Maintenance
2. Information Technology

Sl. No.	Topics	Duration in Hours
1	**Free Hand Sketching** Tools used in Computer maintenance such as Crimping tools, Punching tools, Soldering iron etc	63
2	**Block Diagrams** Personal Computer, Monitor using CRT (Cathode Ray Tube) , LCD (Liquid Crystal Display) and LED (Light Emitting Diode), Scanner, UPS (Uninterrupted Power Supply), SMPS(Switch Mode Power Supply), Printers(Inkjet, Deskjet & Laser)	
3	**Layout Diagrams** Cables, Connectors, Expansion Cards, CPU, CPU Sockets, Motherboard,	
4	**Polarity Diagram** Different types of computer RAM Modules.	
5	**Pin layout** Different types of cables & connectors used in computer system, & associated peripheral & network.	

SYLLABUS OF ENGINEERING DRAWING FOR 4ᵀᴴ SEMESTER–63hrs. Duration

1. Information & Communication Technology System Maintenance
2. Information Technology

Sl. No.	Topics	Duration in Hours
1	**Block Diagrams** Network Topologies, OSI Model, TCP/IP Suite, Client- Server Network, Network Devices-Modem, Router, Switch, Repeater	63
2	**Internal View** Mobile, Laptop, Tablet PC	
3	**Conceptual Diagrams** Bluetooth, Wi-Fi, Network Security, Internetworking, connection with LCD/LED Projector with computer.	
4	**Internal Connections** Lab Network, Method of connecting Network devices, LAN setup using Modem	
5	**Internet Setup Diagram** • Networking Block diagram of computers with different network components • Free hand sketches of straight & cross cables used in networking • setup diagram of modem-based internet connection • Setup diagram of Wi-Fi Internet connection	