

Annexure-“A”

Recommended Syllabus by the committee

| Sr. No. | Topic | Particular | Description |
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| 1. | Mathematics (Matric Standard) | Unit, Fraction, Roots and Power, Mensuration, Algebra, Trigonometry | Fundamental and Derived Units F.P.S, C.G.S, M.K.S and SI Units, Factors, HCF, LCM and Problems, Ratio and Proportion, Direct and Indirect proportion, Percentage, Finding cube root, Area and Perimeter of Circle, Semi-circle, circular ring, sector of circle, hexagon and ellipse, Finding lateral surface area, total surface area and capacity in liters of hexagonal, conical and cylindrical shaped vessels, Area of cut – out regular surfaces – circle, segment and sector of circle, Algebra – Theory of indices, Algebraic formula, related problems, Trigonometry-Application in calculating height and distance. |
| 2. | Science (Matric Standard) | Material Science, Mass, Weight, Volume, and Density, Speed and Velocity, Work Power and Energy, Heat & Temperature and Pressure, Levers and Simple Machines, Friction, Elasticity, | Physical and Mechanical Properties of metals, classification of steel, effect of alloying element on steel, Properties and uses of rubber, timber and insulating materials, Mass, volume, density, weight & specific gravity, Rest, motion, speed, velocity, acceleration and retardation, Work, power, energy, HP, IHP, BHP and efficiency, Scales of temperature, Conduction, convection and radiation, Thermal conductivity and insulators, pressure and its units, Simple machines, Effort and load, mechanical advantage, velocity ratio, efficiency of machine, relation between efficiency, velocity ratio and mechanical advantage, Laws of friction, co-efficient of friction, angle of friction, Lubrication, Elastic, plastic materials, stress, strains and their units and young modulus, Factor of Safety |
| 3. | Engg. Drawing (ITI Standard) | Engineering Drawing Conventions, layout, types of lines, Dimensioning and technique, Drawing Instruments, Symbols used in drawing. Drawing of geometrical figures. | Sizes and layout of drawing sheets, Types of arrowhead, Leader line with text, Position of dimensioning (Unidirectional, Aligned), Different symbols used for conventions (Carpentry joints, welding joints), different drawing symbols used in Mechanical, Civil, Electrical, Electronics, Apparel, chemical Architectural and food process, hospitality and safety). Geometrical figures like angle, triangle, circle, rectangle, parallelogram, lettering and numbering single stroke. |
| 4. | Employability and communication skills foundations | Constitutional Values, citizenship, Becoming a professional in 21 st | Our constitution guiding principles, value and ethics, protecting our environment, behavior and attitude, critical thinking and decision making, time management in workplace, problem solving, 21 st century employability skills, naming words, |

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| | (ITI Standard) | Century, Basic English Skills, Communication Skills, Essential digital skill, Diversity and inclusion, financial and legal literacy, entrepreneurship, carrier development and goal setting, customer service, Getting ready for job and Apprenticeship. | singular, plural, pronoun, action words, describing words, object, surroundings and process, punctuations, kind of sentences, writing simple sentences, importance of communication, verbal, non-verbal communication, work place communication, effective team work, managing conflicts, handling criticism. Basics of computers, exploring windows, basic of MS-Word, function of MS-Excel, internet safety, using search engines. Gender stereotypes, understanding gender based discrimination, gender equality POSH act. Money management, basics of banking, mobile banking apps, salary savings, loan and insurance. Legal literacy. Entrepreneur mindset, understanding customer need, market scan, building business plan, basic legal function needed for any business, accounting and funding for business. Goal setting, job market research. Customer service and relationship building, type of customers, identification of customer need and communication with customer. Personal grooming and hygiene, managing stress in the workplace, preparing resume, interview and professional networking. Enrolling for apprenticeship. |
| 5. | Basic Workshop Foundation (ITI Standard) (Combined syllabus all trade basic skills) | Production/manufacturing processes(Fitting, Turning, Machining, Plumbing, welding, foundry, forging, sheet metal, carpentry), chemical processes, Beauty and wellness process and materials, plastic processing, food & beverage material & processes, Basis Textile & Apparel Processes, Non metal fabrication processes, IT & computer Hardware literacy, Basic electronics, Basic Electrical and wiring, Basic Automotive and Motor Vehicle, Basic Architectural and construction/civil engineering, | Safety, safety signs, personnel protective equipments, fire extinguishers, fire safety practice, Lifting and handling heavy loads, workshop measurement instruments (foot rule, scribe, different calipers etc.) work holding devices such as bench vice, pin vice, leg vice, pipe vice etc. Types of files, chisels, marking media, surface plates, angle plate, angular measuring instruments, vernier caliper, screw gauge, letter and number punches, tap & die sizes, sheet metal tools and seams, solders, rivets and riveting, arc and gas welding, Metal Inert Gas (MIG) welding and Tungsten Inert Gas (TIG) welding. Different process of metal joining, brazing. Welding electrodes. Oxy-acetylene flame and use, type of welding joints and its application. Different type of tread cutting. Anvil, forging hand tools like tong, hammer, heating temperature of steel for forging. Types of milling cutters and operations, types of reamers. Types and identification of wood, types of carpentry joints, types of carpentry operational and cutting tools. Different pipe joints, Joining material of pipe, Types of water pump, Different types of valves and cocks. Chemical process like distillation, oxidation, factorization, melting, etc. Hair structure & hair growth cycle, Manicure, pedicure, identify nail disease nail disorders, skin structure. Type of plastic, polymerization, Use of plastic and moulding process. Cooking and finishing technique of food, health, hygiene and safety of food, restaurant layout and equipment, afternoon and high teas. Fabric fundamental, hand stitches, tucks seams, pockets, collar, sleeves, human body figures, pattern, drafting and layout, designing new garments. Types of computers, |

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| | | | <p>computer networking topologies, types of network, communication media and connectors, network components, protocols, server concept, DNS, types of printers and scanners. Basic electrical concept, current and voltage, AC/ DC supply, Different type of fuses. Ohms law, measuring and calculating resistance in circuit. Types of AC/ DC motors and generators, transformers, synchronous motor, power transmission. Inductor and inductance, energy meter. Soldering, Semi conductor materials and devices, P and N type semiconductor. Half and full wave rectifier, ripple factor, filter for rectifier. Transistor and amplifier. AC and DC power supply. Over load protection. Un- interrupted power supply. Relays. Basic logic gates and its truth table. Computer input/ output devices, specification of processors, semi conductor memories, RAM/ ROM /PROM/ EEPROM/ EVPROM/ HDD/ FDD, interface, Hard disk partition. Scanner and multi function devices. Classification of vehicle, types of engine, difference between two stroke and four stroke, engine cooling system, diesel engine injection system, types of clutch, brake, steering, limit, fit and tolerance, frame and suspension system, wheel and tyre, lighting system of vehicle, motor vehicle act. Types and characteristics of Civil Construction like stone, brick, lime, cement, timber, steel, sand etc. and their uses, types of protective material, paint, varnishes, metal, plastic its characteristics and uses. Building construction foundation, lintel, arches. Types of foundations, types of proofing treatment of building structure. Principle of chain, compass, plain table survey, leveling, contour, theodolite survey, method of plotting. Types of Windows, ventilator, stair, roof and roof covering, floor, door. Steel structures. House drain of building. Roads, curve gradient, road drainage, different type of road. Bridge and culvert, railways, irrigation, canals, dams, power project.</p> |
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