

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|---|
| 1 | 1 | Theory | All necessary guidance to be provided to the new comers to become familiar with the working of Industrial Training Institute system including stores procedures. Soft Skills, its importance and Job area after completion of training. | Importance of trade training, List of tools & Machinery used in the trade. 2. Safety attitude development of the trainee by educating them to use Personal Protective Equipment (PPE). |
| | 2 | | Importance of safety and general precautions observed in the in the industry/shop floor. Introduction of First | First Aid Method and basic training. 4. Safe disposal of waste materials like cotton waste, metal chips/burrs etc. |
| | 3 | W/Shop calculation | Classification of Unit System Fundamental and Derived Units F.P.S, C.G.S, M.K.S and SI Units ,Measurement Units and Conversion,Factors, HCF, LCM and Problems | 5.Hazard identification and avoidance. 6. Safety signs for Danger, Warning, caution & personal safety message. 7. Preventive measures for electrical accidents & steps to be taken in such accidents. |
| | 4 | Engg. Drawing | Engineering Drawing – Introduction Introduction to Engineering Drawing and Drawing Instruments – -> Conventions -> Viewing of engineering drawing sheets. -> Method of Folding of printed Drawing sheet as per BIS SP: 46-2003 | Use of Fire extinguishers. |
| | 5 | ES | Behavioural Skill-Creating a focused and responsible learning envirnment-Chart paper Activity. | Theory : 3 hrs - Importance of housekeeping & good shop floor practices. Introduction to 5S concept & its application. Occupational Safety & Health: Health, Safety and Environment guidelines, legislations & regulations as applicable. Basic understanding on Hot work, confined space work and material handling equipments Extra curricular activity : 2 hrs |
| | 6 | ES | Self-awareness and confidence building, display professionalism at the institute and work place | Practice and understand precautions to be followed while working in fitting jobs. 10. Safe use of tools and equipments used |

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|------|-----|--------------------|--|--|
| 2 | 1 | Theory | Linear measurements- its units, dividers, calipers, hermaphrodite, centre punch, dot punch, | Identification of tools & equipments as per desired specifications for marking & sawing |
| | 2 | | description and uses of different types of hammers | Selection of material as per application. 13. Visual inspection of raw material for rusting, scaling, corrosion etc. |
| | 3 | W/Shop calculation | Fractions – Addition, Subtraction, Multiplication and Division -> Decimal Fractions - Addition, Subtraction, Multiplication and Division -> Solving Problems by using calculator | Marking out lines, gripping suitably in vice jaws, hacksawing to given dimensions |
| | 4 | Engg. Drawing | Drawing Instrument -> Drawing board, T-square, Drafter (Drafting M/c), Set squares, Protector, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), pencils of different grades, Drawing pins/ Clips. | Sawing different types of metals of different sections. |
| | 5 | ES | Increased Social initiations relationships and networks . Acceptance of peers from different cultures and social groups and work with them . Collaboration with team to prioritise the common goal and compromise individual priorities. | Theory : 3 hrs - Description, use and care of 'V' Blocks, marking off table Extra curricular activity : 2 hrs |
| | 6 | ES | Characteristic of a responsible citizen- Display the same by respecting self, others, environment, care for duty and value for time. | Sawing different types of metals of different sections. |

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| 3 | 1 | Theory | Bench vice construction, types, uses, care & maintenance, vice clamps, hacksaw frames and blades, specification, description, types and their uses | Filing Channel, Parallel. |
| | 2 | | method of using hacksaws. Measuring standards (English, Metric Units), angular measurements. | Filing- Flat and square (Rough finish), |
| | 3 | W/Shop calculation | Square and Square Root -> Simple problems using calculator -> Application of Pythagoras Theorem and related problems | Filing- Flat and square (Rough finish), |
| | 4 | Engg. Drawing | Free hand drawing of – -> Lines, polygons, ellipse etc. | Filing practice, surface filing, marking of straight and parallel lines with odd leg calipers and steel rule. |
| | 5 | ES | Adopting best practices and aspire to follow success stories of individual for personal development. | Theory : 3 hrs - Files- specifications, description, materials, grades, cuts, file elements, uses. Types of files, care and maintenance of files. Extra curricular activity : 2 hrs |
| | 6 | ES | English literacy:-Importance of learning english | Marking practice with dividers, odd leg calipers and steel rule (circles, ARCs, parallel lines). |

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| 4 | 1 | Theory | Marking off and layout tools, dividers, scribing block, odd leg calipers, punches- description, classification, material, care | Marking off straight lines and ARCs using scribing block and dividers. |
| | 2 | | Try square, ordinary depth gauge, protractor- description, uses and cares. Calipers- types, material, constructional details, uses, care & maintenance of | Chipping flat surfaces along a marked line. |
| | 3 | W/Shop calculation | Monthly Test WCS | Chipping flat surfaces along a marked line. |
| | 4 | Engg. Drawing | Monthly Test ED | Marking, filing, filing square and check using tri-square. |
| | 5 | ES | Monthly Test ES | Monthly Test theory |
| | 6 | ES | Different naming words, word used for replacing names, action words, describing people, place and their use. | Monthly Test Practical |

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| 5 | 1 | Theory | Marking media, marking blue, Prussian blue, red lead, chalk and their special application, description. | Marking according to simple blue prints for locating, position of holes, scribing lines on chalked surfaces with marking tools. |
| | 2 | | Use, care and maintenance of scribing block. | Marking according to simple blue prints for locating, position of holes, scribing lines on chalked surfaces with marking tools. |
| | 3 | W/Shop calculation | Ratio and Proportions -> Direct and Indirect proportion -> Percentage -> Changing percentage to decimal | Marking according to simple blue prints for locating, position of holes, scribing lines on chalked surfaces with marking tools. |
| | 4 | Engg. Drawing | Geometrical figures and blocks with dimension | Marking according to simple blue prints for locating, position of holes, scribing lines on chalked surfaces with marking tools. |
| | 5 | ES | Introduction to punctuation-comma, full stop, question mark. | Theory : 3 Hrs Surface plate and auxiliary marking equipment Extra curricular activity : 2 hrs |
| | 6 | ES | Singular plural | Finding center of round bar with the help of 'V' block and marking block. |

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|------|-----|-----------------------|--|--|
| 6 | 1 | Theory | 'V' block, angle plates | Joining straight line to an ARC |
| | 2 | | parallel block, description, types, uses | Joining straight line to an ARC |
| | 3 | W/Shop calculation | Types of metals -> Physical and Mechanical Properties of metals | Joining straight line to an ARC |
| | 4 | Engg. Drawing | Transferring measurement from the given object to the free hand sketches. | Joining straight line to an ARC |
| | 5 | ES | Change of tense-simple present, past; present, past progressive | Theory : 3 Hrs accuracy, care and maintenance. Extra curricular activity : 2 hrs |
| | 6 | ES | Construction of simple senteces-kinds of sentences | Joining straight line to an ARC |

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|------|-----|--------------------|--|--|
| 7 | 1 | Theory | Physical properties of engineering metal: colour, weight, structure, and conductivity, magnetic, fusibility, specific gravity. | Chipping, Chamfering, Chip slots & oils grooves (Straight). |
| | 2 | | Physical properties of engineering metal: colour, weight, structure, and conductivity, magnetic, fusibility, specific gravity. | Chipping, Chamfering, Chip slots & oils grooves (Straight). |
| | 3 | W/Shop calculation | Types of ferrous and non-ferrous metals -> Introduction of iron and cast iron | Filing flat, square, and parallel to an accuracy of 0.5mm. |
| | 4 | Engg. Drawing | Solid objects – Cube, Cuboids, Cone, Prism, Pyramid, Frustum of Cone with dimensions. | Filing flat, square, and parallel to an accuracy of 0.5mm. |
| | 5 | ES | Usege of appropriate words to express themselves | Theory : 3 Hrs Physical properties of engineering metal: colour, weight, structure, and conductivity, magnetic, fusibility, specific gravity. Extra curricular activity : 2 hrs |
| | 6 | ES | Greetings & self indroduction | Chip curve along a line-mark out, key ways at various angles & cut key ways |

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| 8 | 1 | Theory | Mechanical properties: ductility, malleability hardness, brittleness, toughness, tenacity, and elasticity. | Chip curve along a line-mark out, key ways at various angles & cut key ways |
| | 2 | | Mechanical properties: ductility, malleability hardness, brittleness, toughness, tenacity, and elasticity. | Chip curve along a line-mark out, key ways at various angles & cut key ways |
| | 3 | W/Shop calculation | Monthly Test WCS | Sharpening of Chisel. |
| | 4 | Engg. Drawing | Monthly Test ED | File thin metal to an accuracy of 0.5 mm |
| | 5 | ES | Monthly Test ES | Monthly Test theory |
| | 6 | ES | Asking & self introduction | Monthly Test Practical |

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|------|-----|--------------------|--|---|
| 11 | 1 | Theory | Vernier calipers, principle, construction, graduations, reading, use and care. | File radius along a marked line (Convex & concave) & match. |
| | 2 | | Vernier bevel protractor, construction, graduations, reading, use and care | File radius along a marked line (Convex & concave) & match. |
| | 3 | W/Shop calculation | Related problems for mass, volume, density, weight & specific gravity | File radius along a marked line (Convex & concave) & match. |
| | 4 | Engg. Drawing | Drawing lines of given length (Straight, curved) -> Drawing of parallel lines, perpendicular line -> Methods of Division of line segment | Chip sheet metal (shearing). |
| | 5 | ES | Discussions on current happenings. Self, Work, Environment | Theory : 3 Hrs dial Vernier Caliper, Digital vernier caliper. Extra curricular activity : 2 hrs |
| | 6 | ES | Simple writing skills | Chip step and file. |

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| 12 | 1 | Theory | Drilling processes: common type (bench type, pillar type, radial type) | Mark off and drill through holes. |
| | 2 | | gang and multiple drilling machine. Determination of tap drill size. | Drill and tap on M.S. flat. |
| | 3 | W/Shop calculation | Rest, motion, speed, velocity, difference between speed and velocity, acceleration and retardation | Drill and tap on M.S. flat. |
| | 4 | Engg. Drawing | Drawing of Geometrical figures: Definition, nomenclature and practice of – -> Angle: Measurement and its types, method of bisecting | Punch letter and number (letter punch and number punch) |
| | 5 | ES | Communication Skills:-Interview Skill/Confidence Building | Theory : 3 hrs - gang and multiple drilling machine. Determination of tap drill size. Extra curricular activity : 2 hrs |
| | 6 | ES | Professionalism and display of same at the institute and work place | Practice use of different punches |

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| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
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| 13 | 1 | Theory | Safety precautions to be observed in a sheet | Marking of straight lines, circles, profiles and various geometrical shapes and cutting the sheets with snips. |
| | 2 | | Commercial sizes and various types of metal sheets, coated sheets and their uses as per BIS specifications. Shearing machine- description, parts and uses. | Marking of straight lines, circles, profiles and various geometrical shapes and cutting the sheets with snips. |
| | 3 | W/Shop calculation | Quarterly Test WCS | Marking of straight lines, circles, profiles and various geometrical shapes and cutting the sheets with snips. |
| | 4 | Engg. Drawing | Quarterly Test ED | Marking out of simple development Marking out for flaps for soldering and sweating |
| | 5 | ES | Quarterly Test ES | Quarterly Test theory |
| | 6 | ES | Understand the usage of appropriate words to express themselves communicate effectively on telephone. | Quarterly Test Practical |

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|------|-----|--------------------|--|--|
| 14 | 1 | Theory | Marking and measuring tools, wing compass, Prick punch | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |
| | 2 | | tin man's square tools, snips, types and uses. Tin man's hammers | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |
| | 3 | W/Shop calculation | Related problems on speed and velocity | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |
| | 4 | Engg. Drawing | Triangle: different types | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |
| | 5 | ES | Manage personal hygiene and presentation positive body language: adopt and use it appropriately to build a positive impression | Theory : 3 hrs - mallets type-sheet metal tools Parents instructor meeting: 2 hrs |
| | 6 | ES | Different spatial zones: Understanding and need to maintain it, create safe zones for communication | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |

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|------|-----|--------------------|---|--|
| 15 | 1 | Theory | Soldering iron, types, specifications, uses. | Make various joints: wiring, hemming, soldering and brazing, form locked, grooved and knocked up single hem straight and curved edges form double hemming. |
| | 2 | | Trammel- description, parts, uses. | Punch holes-using hollow and solid punches |
| | 3 | W/Shop calculation | Potential energy, Kinetic Energy and related problems with related problems | Do lap and butt joints |
| | 4 | Engg. Drawing | Rectangle, Square, Rhombus, Parallelogram | Do lap and butt joints |
| | 5 | ES | Maintainig appropriate eye-contact in building trust and confidence | Theory : 3 hrs - Hand grooves-specifications and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Impact of touch in a formal environment. Acceptable and unacceptable touch. | Do lap and butt joints |

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| 16 | 1 | Theory | Stakes-bench types, parts, their uses | Bend sheet metal into various curvature form, wired edges- straight and curves. Fold sheet metal at angle using stakes. |
| | 2 | | Various types of metal joints, their selection and application | Bend sheet metal into various curvature form, wired edges- straight and curves. Fold sheet metal at angle using stakes. |
| | 3 | W/Shop calculation | Work, power, energy, HP, IHP, BHP and efficiency | Make simple Square container with wired edge and fix handle. |
| | 4 | Engg. Drawing | Circle and its elements | Make simple Square container with wired edge and fix handle. |
| | 5 | ES | Time mangagement and planning skills interview skills its phases & ways to crack interview | Theory : 3 hrs - tolerance for various joints, their selection & application. Wired edges. Extra curricular activity : 2 hrs |
| | 6 | ES | Handing setbacks/rejection and recover from it with an action plan. | Make simple Square container with wired edge and fix handle. |

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| 17 | 1 | Theory | Solder and soldering: Introduction-types of solder and flux. Composition of various types of solders and their heating media of soldering iron. | Make square tray with square soldered corner |
| | 2 | | Method of soldering, selection and application-joints. Hard solder-Introduction, types and method of brazing. | Make square tray with square soldered corner |
| | 3 | W/Shop calculation | Monthly Test WCS | Make square tray with square soldered corner |
| | 4 | Engg. Drawing | Monthly Test ED | Practice in soft soldering and silver soldering |
| | 5 | ES | Monthly test ES | Monthly Test theory |
| | 6 | ES | Developing strong professional contract/network to gain support in learning process and career as a whole | Monthly Test Practical |

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|------|-----|--------------------|---|---|
| 18 | 1 | Theory | Various rivets shape and form of heads | Make riveted lap and butt joint |
| | 2 | | importance of correct head size. Rivets-Tin man's rivets types, sizes, and selection for various works. | Make riveted lap and butt joint, Drill for riveting. |
| | 3 | W/Shop calculation | Concept of heat and temperature, effects of heat, difference between heat and temperature -> Scales of temperature, Celsius, Farenhieght,Kelvin and Conversion between scales of temperature | Make funnel as per development and solder joints. |
| | 4 | Engg. Drawing | Different polygon and their values of included angles. Inscribed and circumscribed polygons | Make funnel as per development and solder joints. |
| | 5 | ES | Literacy:- Indtroduction to computers and its applications hardware and peripherals, starting and shutting down of computer, basic ofn computer networks. | Theory : 3 hrs - Riveting tools, dolly snaps description and uses. Method of riveting, The spacing of rivets. Flash riveting, use of correct tools, compare hot and cold riveting. Extra curricular activity : 2 hrs |
| | 6 | ES | Basics of Operating System, Types of operating systems, user interface of widows OS/ latest create, copy move and delete files and folders, use of external memory like pen drive, CD,DVD etc, introduction toinbuilt windows apps, tools and features. | Riveting with as many types of rivet as available, use of counter sunk head rivets. |

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|------|-----|--------------------|--|---|
| 19 | 1 | Theory | Safety-importance of safety and general precautions observed in a welding shop. | Welding - Striking and maintaining ARC, laying Straight-line bead. |
| | 2 | | Precautions in electric and gas welding. (Before, during, after) Introduction to safety equipment and their uses. | Welding - Striking and maintaining ARC, laying Straight-line bead. |
| | 3 | W/Shop calculation | Temperature measuring instruments, types of thermometer, pyrometer and transmission of heat - Conduction, convection and radiation | Welding - Striking and maintaining ARC, laying Straight-line bead. |
| | 4 | Engg. Drawing | Lettering & Numbering – -> Single Stroke | Welding - Striking and maintaining ARC, laying Straight-line bead. |
| | 5 | ES | Basic operating of word processing, creating, opening and closing documents, use of shortcuts, creating and editing of text, formatting the text | Theory : 3 hrs - Machines and accessories, welding transformer, welding generators. Extra curricular activity : 2 hrs |
| | 6 | ES | Creating simple documents like resum, letter writing, job application etc., printing document | Welding - Striking and maintaining ARC, laying Straight-line bead. |

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|------|-----|--------------------|---|--|
| 20 | 1 | Theory | Welding hand tools: Hammers, welding description, types and uses, description, principle, method of operating | Making square, butt joint and 'T' fillet joint-gas and ARC. |
| | 2 | | carbon dioxide welding. H.P. welding equipment: description, principle, method of operating L.P. welding equipment: description, principle, method of operating. | Making square, butt joint and 'T' fillet joint-gas and ARC. |
| | 3 | W/Shop calculation | Co-efficient of linear expansion and related problems with assignments | Making square, butt joint and 'T' fillet joint-gas and ARC. |
| | 4 | Engg. Drawing | Lettering & Numbering – Double Stroke | Do setting up of flames, fusion runs with and without filler rod, and gas |
| | 5 | ES | Basic of excel worksheet and its importance creating simple worksheets adding and average function, printing of simple excel sheet. | Theory : 3 hrs - Types of Joints-Butt and fillet as per BIS SP: 46-1988 specifications. Gases and gas cylinder description, kinds, main difference and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Introduction to world wide web. (www) usefull websides web browser-usege, search engine etc. Using popular sites like bharat skills, skill traing related govt. portals, nokari.com, and other job portals. | Do setting up of flames, fusion runs with and without filler rod, and gas |

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|------|-----|--------------------|--|--|
| 21 | 1 | Theory | Setting up parameters for ARC welding machines- | Make butt weld and corner, fillet in ARC welding |
| | 2 | | selection of Welding electrodes. Care to be taken in keeping electrode. | Make butt weld and corner, fillet in ARC welding |
| | 3 | W/Shop calculation | Monthly Test WCS | Make butt weld and corner, fillet in ARC welding |
| | 4 | Engg. Drawing | Monthly Test ED | Make butt weld and corner, fillet in ARC welding |
| | 5 | ES | Monthly Test ES | Monthly Test theory |
| | 6 | ES | Cits Applications , apprenticeship portal (naps), resize images, signing up, online fund transfer, using UPI gateway | Monthly Test Practical |

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| 22 | 1 | Theory | Oxygen acetylene cutting-machine description, parts, uses | Gas cutting of MS plates |
| | 2 | | method of handling, cutting torch-description, parts | Gas cutting of MS plates |
| | 3 | W/Shop calculation | Problem of Heat loss and heat gain with assignments -> Thermal conductivity and insulators | Gas cutting of MS plates |
| | 4 | Engg. Drawing | Lettering & Numbering – Inclined. | Gas cutting of MS plates |
| | 5 | ES | Creating and using an email account like gmail, and any other, usages of cc and bcc, attaching documents checking email and composing email | Theory : 3 hrs - function and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Scanning QR/AR code, sharing best practices and downloading trade Related videos using Wi-Fi, fund Transfer through app like BHIM. | Gas cutting of MS plates |

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| 23 | 1 | Theory | Drill- material, types, (Taper shank, straight shank) parts and sizes. | Mark off and drill through holes. |
| | 2 | | Drill angle-cutting angle for different materials, cutting speed feed. R.P.M. for different materials. | Drill on M.S. flat., File radius and profile to suit gauge |
| | 3 | W/Shop calculation | Boiling point and melting point of different metals and Nonmetals -> Concept of pressure and its units in different system | File radius and profile to suit gauge, Sharpening of Drills |
| | 4 | Engg. Drawing | Dimensioning and its Practice -> Definition, types and methods of dimensioning (functional, non-functional and auxiliary) -> Position of dimensioning (Unidirectional, Aligned) | Practice use of angular measuring instrument |
| | 5 | ES | Entrepreneur skills:- Need of becoming entrepreneur | Theory : 3 hrs - Drill holding devices- material, construction and their uses.- Extra curricular activity : 2 hrs |
| | 6 | ES | Ways to becoming a good entrepreneur | Practice use of angular measuring instrument |

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| 24 | 1 | Theory | Counter sink, counter bore and spot facing-tools and nomenclature, Reamer-material, types (Hand and machine reamer), kinds, parts and their uses, determining hole size (or reaming), Reaming procedure. | Counter sink, counter bore and ream split fit (three piece fitting). |
| | 2 | | Screw threads: terminology, parts, types and their uses | Drill through hole and blind holes. Form internal threads with taps to standard size (through holes and blind holes) |
| | 3 | W/Shop calculation | Introduction and uses of electricity, molecule, atom, how electricity is produced, electric current AC, DC and their comparison, voltage , resistance and their units | Prepare studs and bolt |
| | 4 | Engg. Drawing | Types of arrowhead -> Leader line with text -> Symbols preceding the value of dimension and dimensional tolerance. | Prepare studs and bolt |
| | 5 | ES | Enabling environment available to vecome an entrepreneur | Theory : 3 hrs - Screw pitch gauge: material parts and uses. Taps British standard (B.S.W., B.S.F., B.A. & B.S.P.) and metric /BIS (course and fine) material, parts (shank body, flute, cutting edge). Extra curricular activity : 2 hrs |
| | 6 | ES | Different Govt. institutions/schemes promoting entreprenur viz., Gramin bank, PMMY-MUDRA loan, DIC, SIDA SISI, NSIC, SIDO. | Prepare studs and bolt |

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| 25 | 1 | Theory | Tap wrench: material, parts, types (solid & adjustable types) and their uses | Form external threads with dies to standard size. |
| | 2 | | removal of broken tap, studs (tap stud extractor). | Form external threads with dies to standard size. |
| | 3 | W/Shop calculation | Conductor, Insulator, types of connections- Series and Parallel, -> Ohm's Law, relation between VIR & related problems | Prepare nuts and match with bolts. |
| | 4 | Engg. Drawing | Sizes and layout of drawing sheets -> Selection of sizes -> Title Block, its position and content -> Item Reference on Drawing Sheet (Item list) | Prepare nuts and match with bolts. |
| | 5 | ES | Day to day monitoring mechanism for maintaining an enterprise. | Theory : 3 hrs - Dies: British standard, metric and BIS standard, material, parts, types, Method of using dies. Die stock: material, parts and uses.- Extra curricular activity : 2 hrs |
| | 6 | ES | Different Government schemes supporting entrepreneurship. | Prepare nuts and match with bolts. |

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|------|-----|--------------------|---|--|
| 26 | 1 | Theory | Drill troubles: causes and remedy. Equality of lips, correct clearance, dead centre, length of lips. | File and make Step fit, angular fit, angle, surfaces (Bevel gauge accuracy 1 degree) |
| | 2 | | Drill kinds: Fraction, metric, letters and numbers, grinding of drill. | File and make Step fit, angular fit, angle, surfaces (Bevel gauge accuracy 1 degree) |
| | 3 | W/Shop calculation | Quarterly Test WCS | File and make Step fit, angular fit, angle, surfaces (Bevel gauge accuracy 1 degree) |
| | 4 | Engg. Drawing | Quarterly Test ED | Make simple open and sliding fits |
| | 5 | ES | Quarterly Test ES | Quarterly Test theory |
| | 6 | ES | Examples of successful and unsuccessful entrepreneurs. | Quarterly Test Practical |

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|------|-----|--------------------|---|--|
| 27 | 1 | Theory | Grinding wheel: Abrasive, grade structures, bond, specification, use, mounting and dressing. | File cylindrical surfaces |
| | 2 | | Selection of grinding wheels. Bench grinder parts and use. | Enlarge hole and increase internal dia. Make open fitting of curved profiles |
| | 3 | W/Shop calculation | Electrical power, energy and their units, calculation with assignments | Make open fitting of curved profiles |
| | 4 | Engg. Drawing | Method of presentation of Engg. Drawing -> Pictorial View -> Orthographic View -> Isometric View | Make open fitting of curved profiles |
| | 5 | ES | Maintaining efficiency at workplace:- Factors affecting productivity | Theory : 3 hrs - Radius/fillet gauge, feeler gauge, hole gauge, and their uses, care and maintenance. Parents instructor meeting: 2 hrs |
| | 6 | ES | Improving productivity | Make open fitting of curved profiles |

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| 28 | 1 | Theory | Pig Iron: types of pig Iron, | Correction of drill location by binding previously drilled hole |
| | 2 | | properties and uses. | Make inside square fit |
| | 3 | W/Shop calculation | Magnetic induction, self and mutual inductance and EMF generation -> Electrical Power, HP, Energy and units of electrical energy | Make inside square fit |
| | 4 | Engg. Drawing | Symbolic representation – different symbols used in the trades -> Fastener (Rivets, Bolts and Nuts) | Make inside square fit |
| | 5 | ES | Personal finance literacy planning, saving, tax govt. schemes for financial safety e.g. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) etc. | Theory : 3 hrs - Cast Iron: types, properties and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Occupational Safety, Health and environment Educaiton:-Introduction ton occupational safety & health at work place, occupational hygiene. Basuc Hazards, chemical, physical (elecrical. Temperature, illumination) ergonomic, biological, vibro acoustic, mechanical, psychosocial hazards, prevention of hazards | Make inside square fit |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|---|
| 29 | 1 | Theory | Interchange ability: Necessity in Engg, field definition, BIS. Definition | Make sliding 'T' fit. |
| | 2 | | types of limit, terminology of limits and fits-basic size, actual size, deviation, high and low limit, zero line, tolerance zone | Make sliding 'T' fit. |
| | 3 | W/Shop calculation | Area and perimeter of square, rectangle and parallelogram -> Area an Perimeter of Triangle | Make sliding 'T' fit. |
| | 4 | Engg. Drawing | Bars and profile sections -> Weld, Brazed and soldered joints | Make sliding 'T' fit. |
| | 5 | ES | Different types of personal protective eaupiment (PPE), Accident prevention techniques | Theory : 3 hrs - Different standard systems of fits and limits. British standard system, BIS system- Extra curricular activity : 2 hrs |
| | 6 | ES | Care of injured & sick at the workplace first-acid & transportation of sick person Basic provisions of safety & health | Make sliding 'T' fit. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|--|
| 30 | 1 | Theory | Method of expressing tolerance as per BIS Fits: Definition, types, description of each with sketch | File fit- combined, open angular and sliding sides |
| | 2 | | Vernier height gauge: material construction, parts, graduations (English & Metric) uses, care and maintenance. | File fit- combined, open angular and sliding sides |
| | 3 | W/Shop calculation | Monthly Test WCS | File internal angles 30minutes accuracy open, angular fit. |
| | 4 | Engg. Drawing | Monthly Test ED | File internal angles 30minutes accuracy open, angular fit. |
| | 5 | ES | Monthly Test ES | Monthly Test theory |
| | 6 | ES | Introduction to environment, ecosystem and factors causing imbalance, pollution and pollutant including liquid, gaseous, solid and hazardous waste, protecting the environment-energy, conservation, ground water, global warming, responsibility about the environment, segregation and disposal of waste | Monthly Test Practical |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|--|
| 31 | 1 | Theory | Wrought iron- : properties and uses. | Make sliding fit with angles other than 90o |
| | 2 | | Wrought iron- : properties and uses. | Make sliding fit with angles other than 90o |
| | 3 | W/Shop calculation | Area and Perimeter of Circle, Semi-circle , circular ring, sector of circle, hexagon and ellipse | Make sliding fit with angles other than 90o |
| | 4 | Engg. Drawing | Electrical and electronics element -> Piping joints and fitting | Make sliding fit with angles other than 90o |
| | 5 | ES | Different actions people that affect other and the environment. | Theory : 3 hrs - Steel: plain carbon steels, types, properties and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Types, causes & effects, areas in india that are prone to be affected, preparedness & mitigation, dos and don'ts-before, during and after any disaster, how to reduce man-made disasters. | Make sliding fit with angles other than 90o |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|--|
| 32 | 1 | Theory | Steel: plain carbon steels, types, properties and uses. | Make sliding fit with angles other than 90o |
| | 2 | | Steel: plain carbon steels, types, properties and uses. | Make sliding fit with angles other than 90o |
| | 3 | W/Shop calculation | Surface area and Volume of solids- cube, cuboids, cylinder, sphere and hollow cylinder | Make sliding fit with angles other than 90o |
| | 4 | Engg. Drawing | Projections -> Concept of axes plane and quadrant | Make sliding fit with angles other than 90o |
| | 5 | ES | -> Concept of axes plane and quadrant | Theory : 3 hrs - Non-ferrous metals (copper, aluminium, tin, lead, zinc) properties and uses. Extra curricular activity : 2 hrs |
| | 6 | ES | Self-Awareness, articulating personal values, value-based decision making, dilemma situations. | Make sliding fit with angles other than 90o |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|--|
| 33 | 1 | Theory | Simple scraper- circular, flat, half round, triangular and hook scraper and their uses | Scrap on flat surfaces, curved surfaces and parallel surfaces and test. |
| | 2 | | Simple scraper- circular, flat, half round, triangular and hook scraper and their uses | Make & assemble, sliding flats, plain surfaces. |
| | 3 | W/Shop calculation | Finding lateral surface area , total surface area and capacity in liters of hexagonal, conical and cylindrical shaped vessels | Make & assemble, sliding flats, plain surfaces. |
| | 4 | Engg. Drawing | Projections -> Concept of axes plane and quadrant | Make & assemble, sliding flats, plain surfaces. |
| | 5 | ES | Identify sources and types of stress (positive/negative stress) | Theory : 3 hrs - Blue matching of scraped surfaces (flat and curved bearing surfaces) Extra curricular activity : 2 hrs |
| | 6 | ES | Managing stress (long term/ short-term) | Check for blue math of bearing surfaces- both flat and curved surfaces by wit worth method |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|---|
| 34 | 1 | Theory | Vernier micrometer, material, parts, graduation, use, care and maintenance. Calibration of measuring instruments. | File and fit combined radius and angular surface (accuracy ± 0.5 mm), angular and radius fit. |
| | 2 | | Introduction to mechanical fasteners and its uses. Screw thread micrometer: Construction, graduation and use. | File and fit combined radius and angular surface (accuracy ± 0.5 mm), angular and radius fit. |
| | 3 | W/Shop calculation | Monthly Test WCS | File and fit combined radius and angular surface (accuracy ± 0.5 mm), angular and radius fit. |
| | 4 | Engg. Drawing | Monthly Test ED | Locate accurate holes & make accurate hole for stud fit. Fasten mechanical components / sub-assemblies together using screws, bolts and collars using hand tools. |
| | 5 | ES | Monthly Test ES | Monthly Test theory |
| | 6 | ES | Handling rejection and building resilience, identify day wasters. | Monthly Test Practical |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|---|
| 35 | 1 | Theory | Dial test indicator, construction, parts, material, graduation, Method of use, care and maintenance. | Make sliding fits assembly with parallel and angular mating surface. |
| | 2 | | Digital dial indicator. | Make sliding fits assembly with parallel and angular mating surface. |
| | 3 | W/Shop calculation | Simple machines, Effort and load, mechanical advantage, velocity ratio, efficiency of machine | Make sliding fits assembly with parallel and angular mating surface. |
| | 4 | Engg. Drawing | Orthographic projections | Make sliding fits assembly with parallel and angular mating surface. |
| | 5 | ES | Labour Welfare legislation:-Benefits guaranteed under various acts- Factories act, apprenticeship act, employees state insurance act(ESI), payment wages act. | Comparators-measurement of quality in the cylinder bores. Extra curricular activity : 2 hrs |
| | 6 | ES | Employees provident fund act, the workmen's compensation act, POSH. Interpret applicable labour and industrial laws. | Make sliding fits assembly with parallel and angular mating surface. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|--|
| 36 | 1 | Theory | Safely precautions to be observed while working on a lathe, Lathe specifications, and constructional features | True job on four jaw chuck using knife tool. |
| | 2 | | Lathe main parts descriptions- bed, head stock, carriage, tail stock, feeding and thread cutting mechanisms. | Face both the ends for holding between centers. |
| | 3 | W/Shop calculation | relation between efficiency | Face both the ends for holding between centers. Lathe operations- |
| | 4 | Engg. Drawing | Orthographic projections | Using roughing tool parallel turn ± 0.1 mm. |
| | 5 | ES | Quality management:-Create awareness on introduction of quality concepts. | Theory : 3 hrs - Holding of job between centers, works with catch plate, dog, simple description of a facing and roughing tool and their applications. Extra curricular activity : 2 hrs |
| | 6 | ES | Concept of Quality Management(QMS), PDCA, Fishbone, 5s, 5d, kaizen. | Using roughing tool parallel turn ± 0.1 mm. Measure the diameter using outside caliper and steel rule. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|--|
| 37 | 1 | Theory | Lathe cutting tools- Nomenclature of single point & multipoint cutting tools, Tool selection based on different requirements and necessity of correct grinding, solid and tipped, throw away type tools | Holding job in three jaw chuck. Perform the facing, plain turn, step turn, parting, deburr, chamfer-corner, roundthe ends, and use form tools. |
| | 2 | | Lathe cutting tools- Nomenclature of single point & multipoint cutting tools, Tool selection based on different requirements and necessity of correct grinding, solid and tipped, throw away type tools | Perform the facing, plain turn, step turn, parting, deburr, chamfer-corner, roundthe ends, and use form tools. |
| | 3 | W/Shop calculation | velocity ratio and mechanical advantage | Shoulder turn: square, filleted, beveled undercut shoulder, turning-filleted under cut, square beveled. |
| | 4 | Engg. Drawing | Method of first angle and third angle projections (definition and difference) | Shoulder turn: square, filleted, beveled undercut shoulder, turning-filleted under cut, square beveled. |
| | 5 | ES | Indtroduction of ISO | Theory : 3 hrs - cutting speed and feed and comparison for H.S.S., carbide tools. Use of coolants and lubricants. Extra curricular activity : 2 hrs |
| | 6 | ES | Preparation to the worid of work:- Identify the difference between job and carrer | Shoulder turn: square, filleted, beveled undercut shoulder, turning-filleted under cut, square beveled. Sharpening of -Single point Tools. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|--|
| 38 | 1 | Theory | Chucks and chucking the independent four-jaw chuck. Reversible features of jaws, the back plate | Cut grooves- square, round, 'V' groove |
| | 2 | | Method of clearing the thread of the chuck-mounting and dismounting, chucks, chucking true, face plate | Cut grooves- square, round, 'V' groove |
| | 3 | W/Shop calculation | Lever and its types | Make a mandrel-turn diameter to sizes. |
| | 4 | Engg. Drawing | Method of first angle and third angle projections (definition and difference) | Knurl the job. Bore holes –spot face, pilot drill, enlarge hole using boring tools. |
| | 5 | ES | Job roles available in respective trades | Theory : 3 hrs - drilling - method of holding drills in the tail stock, Boring tools and enlargement of holes Extra curricular activity : 2 hrs |
| | 6 | ES | Awareness of industries, and the respective professional pathways. | Bore holes –spot face, pilot drill, enlarge hole using boring tools. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|--|
| 39 | 1 | Theory | General turning operations- parallel or straight, turning. Stepped turning, grooving, and shape of tools for the above operations. | Make a bush step bore-cut recess, turn hole diameter to sizes. |
| | 2 | | Appropriate method of holding the tool on tool post or tool rest, Knurling: - tools description, grade, uses, speed | Turn taper (internal and external). |
| | 3 | W/Shop calculation | Quarterly Test WCS | Turn taper (internal and external). |
| | 4 | Engg. Drawing | Quarterly Test ED | Turn taper pins. Turn standard tapers to suit with gauge. |
| | 5 | ES | Quarterly Test ES | Quarterly Test theory |
| | 6 | ES | Awareness of higher education/education/up skilling (short-term) options Steps involved in online application for instructor course, | Quarterly Test Practical |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|---|
| 40 | 1 | Theory | Screw thread definition – uses and application. Square, worm, buttress, acme (non standard-screw threads) | Practice threading using taps, dies on lathe by hand. Make external 'V' thread. |
| | 2 | | Principle of cutting screw thread in centre lathe –principle of chasing the screw thread – use of centre gauge, setting tool for cutting internal and external threads | Make external 'V' thread. |
| | 3 | W/Shop calculation | Measurement of Angle, Trigonometrical Ratios | Prepare a nut and match with the bolt |
| | 4 | Engg. Drawing | Symbol of 1st angle and 3rd angle projection in 3rd angle. | Prepare a nut and match with the bolt |
| | 5 | ES | apprenticeship and different jobs in popular site like the indiagobs.com, naukari.com, monsterindian.com, GOVT.website. | Theory : 3 hrs - use of screw pitch gauge for checking the screw thread.. Parents instructor meeting: 2 hrs |
| | 6 | ES | forms of greeting | Prepare a nut and match with the bolt |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|--|
| 41 | 1 | Theory | Maintenance -Total productive maintenance -Autonomous maintenance -Routine maintenance | Simple repair work: Simple assembly of machine parts from blue prints. |
| | 2 | | Maintenance schedule -Retrieval of data from machine manuals | Simple repair work: Simple assembly of machine parts from blue prints. |
| | 3 | W/Shop calculation | Trigonometric Table | Simple repair work: Simple assembly of machine parts from blue prints. |
| | 4 | Engg. Drawing | Orthographic projection from isometric projection | Rectify possible assembly faults during assembly. |
| | 5 | ES | Use of positive body language | Theory : 3 hrs - Preventive maintenance-objective and function of Preventive maintenance, Extra curricular activity : 2 hrs |
| | 6 | ES | Handling grievances (Use of ask-listen-repeat technique) | Rectify possible assembly faults during assembly. |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|--|---|
| 42 | 1 | Theory | section inspection. Visual and detailed, lubrication survey, system of symbol and colour coding. | Rectify possible assembly faults during assembly. |
| | 2 | | Revision, simple estimation of materials, use of handbooks and reference table. | Rectify possible assembly faults during assembly. Read pressure gauge, temperature gauge, oil level |
| | 3 | W/Shop calculation | Trigonometry-Application in calculating height and distance | Perform the routine maintenance with check list |
| | 4 | Engg. Drawing | Orthographic projection from isometric projection | Perform the routine maintenance with check list |
| | 5 | ES | Relationship building with customers, importance of probing. | Theory : 3 hrs - Possible causes for assembly failures and remedies. Extra curricular activity : 2 hrs |
| | 6 | ES | Use of open-ended/close-ended questions to gauge requirement. | Monitor machine as per routine checklist, Set pressure in pneumatic system |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|--------------------|---|--|
| 43 | 1 | Theory | Assembling techniques such as aligning, bending, fixing, mechanical jointing, threaded jointing, sealing, and torquing. | Assemble simple fitting using dowel pins and tap screw assembly using torque wrench. |
| | 2 | | Dowel pins: material, construction, types, accuracy and uses. | Assemble simple fitting using dowel pins and tap screw assembly using torque wrench. |
| | 3 | W/Shop calculation | Quarterly Test WCS | Assemble simple fitting using dowel pins and tap screw assembly using torque wrench. |
| | 4 | Engg. Drawing | Quarterly Test ED | Assemble simple fitting using dowel pins and tap screw assembly using torque wrench. |
| | 5 | ES | Quarterly Test ES | Quarterly Test theory |
| | 6 | ES | Revision | Quarterly Test Practical |

Trade - Fitter

Syllabus Breakup Daily

| Week | Day | Subject | Theory (02 hours) | Practical (05 hours) |
|------|-----|-----------------------|------------------------------------|---|
| 44 | 1 | Theory | Revision | Project Work |
| | 2 | | Revision | Project Work |
| | 3 | W/Shop calculation | Trigonometry-(Simple Applications) | Project Work |
| | 4 | Engg. Drawing | Reading of fabrication drawing | Project Work |
| | 5 | ES | Revision | Theory : 3 hrs - . Revision Parents instructor meeting: 2 hrs |
| | 6 | ES | Revision | Project Work |

SYLLABUS BREAKS UP OF FITTER: SECOND YEAR

INSTRUCTOR: HARISH PUROHIT

| WEEK No. | LESSON No. | TOPICE | EX. No. | PRACTICAL | SILLKS No. | SILLKS | HOURS |
|----------|------------|---|---------|---|------------|---|---------|
| 01 | 1 | SCREWS: MATERIAL, DESIGNATION. | 01 | MAKE "H"-FITTEING M S FLAT 100X70X10 MM, 50X75X12MM TOL. ±0.04 MM. 17 HRS | 1 | DRILLING, CHAIN DRILLING AND RELIEF HOLES | 22 Hrs. |
| | 2 | SCREWS: SPECIFICATIONS. | | | | | |
| | 3 | SCREWS: PROPERTY CLASSES (E.G. 9.8 ON SCREW HEAD) | 02 | TIGHTENING OF BOLT / SCREW WITH SPECIFIED TORQUE 05 HRS. | 2 | TIGHTEN THE BOLT/SCREW WITH SPECIFIED TORQUE. | |
| | 4 | SCREWS: TOOLS FOR TIGHTENING/ LOOSENING OF SCREWS | | | | | |
| 02 | 5 | BOLTS:- TOOLS FOR TIGHTENING/ LOOSENING OF BOLTS | 03 | TIGHTENING AND LOOSENING OF SCREW/BOLT AS PER ACCESSIBILITY 03 HRS | 3 | SELECT RIGHT TOOL FOR TIGHTENING AND LOOSENING OF SCREW/BOLT | 45 Hrs. |
| | 6 | TORQUE WRENCH- CALCULATION USES | 04 | DOVETAIL SLIDING FIT M S FLAT 50X23X6 MM, 50X26X6 MM-02 NO, 50X63X6 MM. TOL. ±0.1 MM. 20 HRS | 4 | MARK ANGULAR DIMENSION/ANGLE BY SCALE/SET SQUARE WHILE MARKING. | |
| | 7 | SCREW JOINT CALCULATION USES | | | 5 | MARK OFF DIMENSIONS AND RADIUS BY DIVIDER, REMOVE EXCESS MATERIAL BY CHAIN DRILLING ON PART 2 | |
| | 8 | POWER TOOLS: ITS CONSTRUCTIONAL FEATURES, USES. | | | 6 | FIX MALE AND FEMALE PARTS AND ASSEMBLE | |
| 03 | 9 | POWER TOOLS: ITS MAINTENANCE | 05 | TAPPER FITTING M S FLAT 40X35X6 MM, 50X51X6MM TOL.±0.06MM. 05' 20HRS. | 7 | MARK DIMENSIONS WITH A VERNIER HEIGHT GAUGE | 65 Hrs. |
| | 10 | LOCKING DEVICE: NUTS- TYPES (LOCK NUT CASTLE NUT, SLOTTED NUTS) DESCRIPTION AND USE | | | 8 | CALCULATE THE TAPER ANGLE USING SINE BAR AND SLIP GAUGE | |
| | 11 | LOCKING DEVICE: NUTS- TYPES (SWAM NUT, GROOVED NUT) DESCRIPTION AND USE | | | | | |
| | 12 | VARIOUS TYPES OF KEYS. | | | | | |
| 04 | 13 | KEYS-ALLOWABLE CLEARANCES & TAPERS, TYPES USES OF KEY PULLERS | 06 A | BEVEL GAUGE:- PART:BLADE & BOLT 20X110X6MM TOL.±0.06MM. 15' 15HRS. | 9 | MEASURING WITH BEVEL PROTRACTORS AND READING | 85 Hrs. |
| | 14 | SPECIAL FILES: TYPES (PILLAR, DREAD NAUGHT) DESCRIPTION & THEIR USES. | | | | | |
| | 15 | SPECIAL FILES: TYPES (BARROW, WARDING) DESCRIPTION & THEIR USES. | 06 B | LAP FLAT SURFACES USING LAPPING PALT M S FLAT 75X75X12 MM TOL. ±0.02 MM. 05 HRS | 10 | LAP THE SURFACE USING LAPPING PLATE | |
| | 16 | TESTING SCRAPED SURFACES: ORDINARY SURFACES WITHOUT A MASTER PLATE | | | 11 | SMEAR THE LAPPING MEDIUM | |

HARISH PUROHIT :- INSTRUCTOR

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|----|----|--|--------|---|----|---|----------|
| 05 | 17 | GAUGES INTRODUCTION, | 07 | BEVEL GAUGE: PART –BLADE & BOLT M S ROD 22X40 MM, M S FLAT 20X6X110 MM TOL.±0.06MM. 05’ 15HRS. | 12 | CHECK THE SURFACE QUALITY WITH SURFACE ROUGHNESS STANDARD SET | 100 Hrs. |
| | 18 | GAUGES INTRODUCTION, NECESSITY, TYPES. | | | | | |
| | 19 | LIMIT GAUGE: RING GAUGE, DESCRIPTION AND USES. | | | | | |
| | 20 | LIMIT GAUGE: SNAP GAUGE, DESCRIPTION AND USES. | | | | | |
| 06 | 21 | LIMIT GAUGE: PLUG GAUGE, DESCRIPTION AND USES. | 08 | DOVETAIL FITTING M S FLAT 75X45X10MM-02 NOS. TOL.±0.06MM. 05’. 24HRS. | 13 | FIX MALE AND FEMALE PARTS AND ASSEMBLE | 124 Hrs. |
| | 22 | DESCRIPTION AND USES OF GAUGETYPES (FEELER, SCREW PITCH, RADIUS, WIRE GAUGE) | | | 14 | FINISH AND DEBURR | |
| | 23 | SLIP GAUGE: NECESSITY OF USING, CLASSIFICATION & ACCURACY, SET OF BLOCKS (ENGLISH). | | | | | |
| | 24 | SLIP GAUGE: NECESSITY OF USING, CLASSIFICATION & ACCURACY, SET OF BLOCKS (METRIC). | | | | | |
| 07 | 25 | DETAILS OF SLIP GAUGE. METRIC SETS 46: 103: 112. | 09 | “Y” FITTING M S FLAT 40X73X106 MM,50X83X06 MM TOL.±0.02MM. 16HRS. | 15 | “Y” FITTING | 155 Hrs. |
| | 26 | WRINGING AND BUILDING UP OF SLIP GAUGE AND CARE AND MAINTENANCE | | | | | |
| | 27 | APPLICATION OF SLIP GAUGES FOR MEASURING | 10 | PRECISION DRILLING,REAMING AND TAPPING AND TEST – JOB.M.S. FLAT 75X105X12 MM TOL. ±0.02 MM. 15 HRS | | | |
| | 28 | SINE BAR-PRINCIPLE, APPLICATION & SPECIFICATION. | | | | | |
| 08 | 29 | SINE BAR-PROCEDURE TO CHECK ADHERENCE TO SPECIFICATION AND QUALITY STANDARDS | 11 | UNIVERSAL FITTING WITH TAPPING M S FLAT 65X65X10 MM,75X75X10 MM TOL.±0.02MM. 24HRS. | | | 179 Hrs. |
| | 30 | LAPPING: APPLICATION OF LAPPING | | | | | |
| | 31 | LAPPING: MATERIAL FOR LAPPING TOOLS, LAPPING ABRASIVES | | | | | |
| | 32 | LAPPING: LAPPING ABRASIVES, CHARGING OF LAPPING TOOL. | | | | | |
| 09 | 33 | SURFACE FINISH IMPORTANCE | 12 A-B | ASSEMBLY SLIDING FOR USING KEYS, DOWEL PIN AND SCREW, M.S. FLAT- 65X65X12 MM , 65X35X12MM NO.-02, 75X12X16,CHEESE HD SCREW-M6X20-NO.04, DOWELPIN DIA 06X20 MM 02 NOS. TOL. ±0.02 MM. 25 HRS | 16 | MARK AND PUNCH ALL DIMENSIONS | 204 Hrs. |
| | 34 | TERMS RELATION TO SURFACE FINISH. | | | 17 | DRILL AND REAM THE HOLE | |
| | 35 | EQUIPMENT FOR TASTING SURFACES QUALITY | | | | | |
| | 36 | DIMENSIONAL TOLERANCES OF SURFACE FINISH | | | | | |
| 10 | 37 | HONING: APPLICATION OF HONING, MATERIAL FOR HONING, TOOLS SHAPES. | 13 | FILE & FIT ANGULAR MATING SURFACE M.S-75X35X06 MM-02 NO,75X65X06 MM 01 NO. TOL. ±0.02 MM. 10 MINUTES ANGULAR FITTING. 25 HRS | 18 | CHAIN DRILL HOLE AND REMOVE EXCESS METAL. | 229 Hrs. |
| | 38 | HONING: GRADES, HONING ABRASIVES. | | | 19 | FILE TO SIZE AND MATCH AS PER DRAWING | |
| | 39 | FROSTING- ITS AIM AND THE METHODS OF PERFORMANCE | | | 20 | RELIEF DRILL HOLE OF $\phi\phi$ ϕ 3 MM | |

HARISH PUROHIT :- INSTRUCTOR

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| | 40 | METALLURGICAL AND METAL WORKING PROCESSES SUCH AS HEAT TREATMENT. | | | | | |
| 11 | 41 | VARIOUS HEAT TREATMENT METHODS - NORMALIZING, PURPOSE OF METHOD. | 14 | FILE AND FIT, COMBINED FIT WITH STRAIGHT, ANGULAR SURFACE M.S.-50X90X12 MM,50X50X12 MM TOL. ±0.02 MM. 25 HRS | | | 254 Hrs. |
| | 42 | VARIOUS HEAT TREATMENT METHODS - ANNEALING, PURPOSE OF METHOD. | | | | | |
| | 43 | VARIOUS HEAT TREATMENT METHODS - HARDENING PURPOSE OF METHOD. | | | | | |
| | 44 | VARIOUS HEAT TREATMENT METHODS - TEMPERING, PURPOSE OF METHOD. | | | | | |
| 12 | 45 | VARIOUS HEAT TREATMENT METHODS - PURPOSE OF METHOD, TEMPERING COLOUR CHART. | 15 | MAKE MALE AND FEMALE FITTING PARTS, DRILL AND REAM HOLES M S FLAT 60X60X06 MM TOL. ±0.02 MM. 20 HRS | 21 | MARK AND PUNCH ALL DIMENSIONS | 274 Hrs. |
| | 46 | ANNEALING AND NORMALIZING - ITS METHODS, | | | 22 | DRILL AND REAM THE HOLE | |
| | 47 | CASE HARDENING ITS METHODS, | | | | | |
| | 48 | CARBURISING AND ITS METHODS, | | | | | |
| 13 | 49 | CASE HARDENING PROCESS OF CARBURISING (LIQUID) | 16 | MAKE SLIDING DIAMOND FITTING M S FLAT65X90X10MM, 75X60X10 MM TOL. ±0.02 MM. 20 HRS | 23 | RELIEF DRILL HOLE OF Ø3 MM | 294 Hrs. |
| | 50 | CASE HARDENING PROCESS OF CARBURISING (FLAME HARDENING) | | | 24 | CHAIN DRILL HOLE AND REMOVE EXCESS METAL | |
| | 51 | TAPERS ON KEYS AND COTTERS. | | | | | |
| | 52 | VARIOUS COATINGS FOR PROTECTION ELECTRICAL DEPOSITS, METALLIC COATINGS | | | | | |
| 14 | 53 | VARIOUS COATINGS FOR ELECTRICAL DEPOSITS, METALLIC COATINGS | 17 | DOVETAIL AND DOWEL PIN ASSEMBLY M.S. FLAT 75X65X12 MM,75X30X12 MM 02 NO,40X55X12 MM 01 NO DOWELPIN DIA 05X22 04 NO CHEESE HEAR SCREW M6X24 – 02 NO TOL. ±0.02 MM. 20 HRS | 25 | COUNTER BORE TO REQUIRED DEPTH | 314 Hrs. |
| | 54 | GAUGES | | | 26 | ASSEMBLE PART 1,2 3 WITH DOWEL PINS AND CHEESE HEAD SCREWS. | |
| | 55 | BEARINGS -FRICTION BEARING | | | | | |
| | 56 | BEARINGS ANTI-FRICTION BEARING | | | | | |
| 15 | 57 | ROLLER BEARINGS | 18 | HAND REAMS AND FIT TAPER PIN M S FLAT 65X65X10 MM 02 NO M.SQ 25X27 MM DOWELPIN DIA 06X20 MM 02 NO CHEESE HEAR SCREW M6X18 MM 02 NO TOL. ±0.04 MM. 15 HRS | 27 | MARK SQUARE AND TAPER DOWEL PIN LOCATION | 329 Hrs. |
| | 58 | NEEDLE BEARINGS | | | 28 | STEP DRILL TO REAM TAPER PIN HOLE AND DRILL RELIEF HOLE, CHAIN DRILLING | |
| | 59 | BEARING MOUNTING | | | 29 | FIX TAPER DOWEL PIN AND CHEESE HEAD SCREW AS PER DRAWING FIT PART – 2 IN ASSEMBLE SETTING AS PER DRAWING | |
| | 60 | BEARING CARE AND MAINTENANCE | | | | | |
| 16 | 61 | BEARING MATERIALS | 19 | DRILLING AND REAMING HOLES IN CORRECT LOCATION, FITTING DOWEL PINS, STUD,AND BOLTS M S FLAT 50X70X10MM, 50X75X10 MM,65X25X10 MM M6X16 HAXAGON BOLT 02 NO DOWELPIN DIA 06X20 02 NO STUD M6X20 TOL. ±0.04 MM. 10 HRS | 30 | MARK AND PUNCH HOLE LOCATIONS | 339 Hrs. |
| | 62 | PREVENTION OF CORROSION, ELECTROPLATING | | | 31 | DRILL, REAM, COUNTER BORE AS PER DRAWING, CUT M 6 INTERNAL THREAD TO SUIT BOLT AND STUD | |
| | 63 | PIPES AND PIPE FITTINGS, NAME THE COMMON TYPES OF PIPES, IDENTIFY THE STANDARD PIPE FITTINGS AND STATE THEIR USES | | | | | |
| | 64 | PIPES AND PIPE FITTINGS, NAME THE COMMON TYPES OF PIPES. | | | 32 | ASSEMBLE AS PER DRAWING. | |

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| 17 | 65 | PIPES AND PIPE FITTINGS, IDENTIFY THE STANDARD PIPE FITTINGS AND STATE THEIR USES | 20 | MAKING A SNAP GAUGE. M.S.ROD DIA 12X25 MM 02 NO M S FLAT 50X80X10 MM TOL. ±0.04 MM. 25 HRS | 33 | TURN A ROUND TO SIZE AND SHAPE | 364 Hrs. |
| | 66 | BRITISH STANDARD PIPE THREADS, | | | 34 | CHECK THE ROUND ROD INTO GO END AND NO GO END | |
| | 67 | USES OF PIPE FITTING TOOLS | | | | | |
| | 68 | PLUMBING TOOLS - PIPE WRENCH AND CHAIN PIPE WRENCH | | | | | |
| 18 | 69 | PIPE BENDING MACHINES | 21 | SCRAPE EXTERNAL ANGULAR MATING SURFACE AND CHECK ANGLE WITH SINE BAR M S FLAT 65X105X12 MM. TOL. ±0.02 MM. 15 HRS | | CHECK ANGLE WITH SINE BAR. | 379 Hrs. |
| | 70 | PIPES, DIES, DIE STOCKS AND TAPS | | | | | |
| | 71 | STANDARD PIPE FITTING | | | | | |
| | 72 | REPAIR AND MAINTENANCE OF HOUSEHOLD WATER TAPS | | | | | |
| 19 | 73 | VISUAL INSPECTION | 22 | FILING CURVED BEARING SURFACES M.S.FLAT 50X63X10 MM TOL.±0.02MM. 20HRS. | 35 | SCRAPE AND REMOVE HIGH SPOTS ON INTERNAL SURFACE. | 399 Hrs. |
| | 74 | PIPES & PIPE FITTINGS -QUALITY CONTROL | | | 36 | SCRAPE AND TEST CURVED SURFACES | |
| | 75 | PIPES & PIPE FITTINGS -INSPECTION | | | | | |
| | 76 | DRILLING JIG CONSTRUCTIONAL FEATURES, TYPES AND USES | | | | | |
| 20 | 77 | CONSTRUCTIONAL FEATURES OF DRILL JIG | 23 | PREPARATION OF GAP GAUGES M S FLAT 60X60X10 MM, 75X60X10 MM TOL. ±0.02 MM. 15 HRS | 37 | MARK THE PROFILE AS PER DRAWING | 414 Hrs. |
| | 78 | FIXTURES - CONSTRUCTIONAL FEATURES,TYPES AND USES | | | | | |
| | 79 | CONSTRUCTIONAL FEATURES OF A FIXTURE | | | | | |
| | 80 | ALUMINIUM AND ITS ALLOYS, LEAD AND ITS ALLOYS | | | | | |
| 21 | 81 | ZINC TIN AND ITS ALLOYS COPPER AND ITS ALLOYS | 24 | PERFORM LAPPING OF GAUGES(HAND LAPPING ONLY) M S FLAT 75X75X10 MM. TOL. ±0.02 MM. 10 HRS | 38 | PERFORM LAPPING ON SURFACE OF THE GAUGE. | 434 Hrs. |
| | 82 | INSTALLATION,MAINTENANCE OF MACHINERY | | | | | |
| | 83 | INSTALLATION, OF MACHINERY | 25 | PREPARATION OF DRILL GAUGES M S FLAT 55X125X06 MM. TOL. ±0.02 MM. 10 HRS | 39 | FILE AND FINISH THE GAUGE TO THE SHAPE AND SIZE AS PER DRAWING | |
| | 84 | LEVELLING , PREVENTIVE MAINTENANCE | | | 40 | CHECK THE DRILL LIP LENGTH AND ANGLE IN DRILL GAUGE | |
| 22 | 85 | TYPES OF BELTS AND FASTENERS | 26 | FILE AND FIT STRAIGHT AND ANGULAR SURFACES INTERNALLY M S FLAT 65X70X12 MM ,MSQ 25X45 MM TOL. ±0.02 MM. 13 HRS | 41 | FILE ANGLE TOLERANCE OF 10 MINTUES AND ANGLE FACE TOLERENCE OF ±0.02MM | 447 Hrs. |
| | 86 | BELTS TENSION | | | 42 | TO REMOVE INTERNAL MATERIAL BY DRILLING & FILING | |
| | 87 | VEE BELTS AND THEIR ADVANTAGES AND DISADVANTAGES, 'V' BELTS CREEP, SLIP | | | 43 | ASSEMBLE PART 1 & 2 WITH A SLIDING FIT. | |
| | 88 | COUPLINGS - TYPES OF COUPLINGS | | | | | |
| 23 | 89 | PULLEYS - TYPES - SOLID - SPLIT AND 'V' BELT PULLEYS | 27 | FITTING OF PIPES AS PER SKETCH OBSERVING CONDITIONS USED FOR PIPE WORK. G.I.PIPE DIA 25X4.5X6000 MM, BIPCOCK- 1/2 INCH.03 NO ,(BRASS)G I ELBOW ½ INCH 02 NO GI TEE | 44 | FLARE THE END PIPE MARK AND CUT PIPE TO LENGTH USING HACKSAW | 459 Hrs. |
| | 90 | DETERMINING THE SIZE OF CROWNING FACES OF PULLEY BELT LENGTH | | | 45 | JOIN THE FLARE NUT WITH FLARE FITTING AND TEST IT. | |
| | 91 | ELEMENTS OF SPUR GEAR | | | 46 | MARK AND CUT PIPE TO LENGTH USING PIPE CUTTER | |

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| | 92 | TYPES OF GEARS | | ½ INCH 03 NO. GI COUPLING (THD) 1/2 INCH 05 NO. TOL. ±0.02 MM. 12 HRS | 47 | CUT THREADS ON G.I. PIPE USING DIE STOCK | |
| 24 | 93 | REPAIR BROKEN GEAR TOOTH (DOVETAIL BLANK METHOD) REPAIR BROKEN GEAR TOOTH (WELDING METHOD) | 28 | DISMANTLING & ASSEMBLING - GLOBE VALVES, SLUICE VALVES, STOP COCKS, SEAT VALVES AND NON-RETURN VALVE. 25 HRS | 48 | DISMANTLE, SERVICE AND REASSEMBLE A SLUICE VALVE (GLOBE VALVE, GATE VALVE) | 484 Hrs. |
| | 94 | IMPORTANCE OF TECHNICAL ENGLISH TERMS USED IN INDUSTRIES | | | | | |
| | 95 | DIFFERENT TYPES OF DOCUMENTATION AS PER INDUSTRIAL NEEDS | | | | | |
| | 96 | DOCUMENTATIONS - 2 | | | | | |
| 25 | 97 | ESTIMATION AND MAINTENANCE RECORDS | 29 | FIT & ASSEMBLE PIPES, VALVES AND TEST FOR LEAKAGE & FUNCTIONALITY OF VALVES 22 HRS | 52 | FIT THE ELBOW WITH G.I. PIPE | 506 Hrs. |
| | 98 | APPLICATION OF PNEUMATICS | | | | | |
| | 99 | INTRODUCTION OF HYDRAULIC SYSTEM | | | | | |
| | 100 | AIR COMPRESSOR PARTS AND FUNCTION | | | | | |
| 26 | 101 | FRL UNIT (FILTER, REGULATOR, LUBRICATOR) | 30 | MARKING OUT FOR ANGULAR OUTLINES, FILING AND FITTING THE INSERTS INTO GAPS. M.S. FLAT 75X50X06 MM, 75X28X06 MM TOL. ±0.02 MM. 10 HRS | 56 | FILE PART A & B MAINTAIN THE ACCURACY OF H7/G6 FOR FITTING | 531 Hrs. |
| | 102 | APPLICATIONS OF PNEUMATICS | 31 | | | | |
| | 103 | PNEUMATICS ACTUATORS | | | | | |
| | 104 | SINGLE ACTING CYLINDER AND ITS APPLICATION | | | | | |
| 27 | 105 | DOUBLE ACTING CYLINDER AND ITS APPLICATION | 32 A-D | MAKING AN ADJUSTABLE SPANNER: M S FLAT 40X85X08 MM, 30X70X08 MM, DIA 6X58 SCREW SLIDING PLATE IRON SHEET 125X55X1.6 MM DIA 40X18 NURLEEL NUT CSK RIVET DIA 4X18MM 02NO. DIA 2X10MM PIN TOL. ±0.02 MM. 25 HRS | 57 | PREPARE DIFFERENT PARTS REFERRING TO THE DRAWING | 556 Hrs. |
| | 106 | PNEUMATIC VALVES | | | | | |
| | 107 | PNEUMATIC SYMBOLS | | | | | |
| | 108 | NON-RETURN VALVE/CHECK VALVE | | | | | |
| 28 | 109 | SHUTTLE VALVE AND APPLICATION TO CONTROL SINGLE ACTING CYLINDER | 33 | MARKING OF TEMPLATE / GAUGE TO CHECK INVOLUTE PROFILE M.S. 25X63X04 MM, 50X125X04 MM TOL. ±0.02 MM. 25 HRS | 58 | FILE EXTERNAL AND INTERNAL 'V' TO AN ACCURACY OF ± 10 MINUTES. | 581 Hrs. |
| | 110 | PRESSURE CONTROL VALVE | | | | | |
| | 111 | ELECTRO- PNEUMATICS | | | | | |
| | 112 | SYMBOLS FOR HYDRAULIC COMPONENTS | | | | | |
| 29 | 113 | HYDRAULICS FILTER | 34 | UNIVERSAL FITTING. M.S. FLAT 75X75X12MM, | 59 | SQUARE FITTING | 605 Hrs. |
| | 114 | HAZARD AND SAFETY PRECAUTIONS IN | | | 60 | FILING OF SURFACES MAKEN 90° WITH | |

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| | | HYDRAULIC SYSTEM | | 50X51X12MM TOL. ±0.02 MM. 24 HRS | | EACH OTHER(FILING OF OUTSIDE CORNERS,INSIDE CORNERS) | |
| | 115 | HYDRAULIC PUMPS | | | | | |
| | 116 | PRESSURE RELIEF VALVE | | | 61 | LEARN TO WORK EFFECTIVELY | |
| 30 | 117 | TUBE AND PIPE ASSEMBLY | 35 | SCRAPE FLAT SURFACES M S FLAT 75X75X6 MM. TOL±0.02 MM. 16 HRS | 62 | PARALLELISM CHECKING | 621 Hrs. |
| | 118 | HYDRAULIC CYLINDERS (LINEAR ACTUATORS) | | | | | |
| | 119 | HYDRO MOTORS (ROTARY ACTUATORS) | | | | | |
| | 120 | DIRECTION CONTROL VALVE | | | | | |
| 31 | 121 | FLOW CONTROL VALVE | 36 | BANDING AND RIVETING M S STRIP 30X157X03 MM. TOL±0.02 MM. 12 HRS | | | 643 Hrs. |
| | 122 | VARIABLE FLOW CONTROL | 37 | WING COMPASS (LEG 1) M S FLAT 40X135X608MM. TOL±0.02 MM. 10 HRS | | | |
| | 123 | COMMON MAINTENANCE PROCEDURES FOR HYDRAULIC CONTROL SYSTEM | | | | | |
| | 124 | COMMON MAINTENANCE PROCEDURES FOR PNEUMATICS CONTROL SYSTEM | | | | | |
| 32 | 125 | FIXING GEAR WHEEL FOR VARIOUS PURPOSE DRIVES | 38 | WING COMPASS (LEG 2). M S FLAT 40X135X608MM. TOL±0.02 MM. 10 HRS | | | 658 Hrs. |
| | 126 | LUBRICATION METHODS | 39 | WING COMPASS (SLIDE , RIVET) M S STRIP 100X60X1.8MM. M.S. ROD DIA 14X30MM TOL±0.02 MM. 05 HRS | | | |
| | 127 | CUTTING FLUIDS | | | | | |
| | 128 | CLUTCHES AND TYPES | | | | | |
| 33 | 129 | WASHER TYPES AND CALCULATION OF SIZES | 40 | HEXAGONAL(MALE) M.S. ROD DIA 32X43 MM TOL.±0.02MM. 20HRS | 63 | FILE AND FINISH MATTING PARTS WITHIN +0.02 MM USING O.S.MICROMETER | 678 Hrs. |
| | 130 | CHAIN AND WIRE ROPE FOR POWER TRANSMISSION | | | 64 | FILE AND FINISH MATING PARTS HAVING ANGULAR SURFACES WITHIN +10' ACCURACY USING VERNIER BEVEL PROTRACTOR | |
| | 131 | CHAINS AND SPROCKETS | | | | | |
| | 132 | LUBRICANTS AND LUBRICATION | | | | | |
| 34 | 133 | FOUNDATION BOLTS AND TYPES | 41 | HEXAGONAL FITTING M.S. FLAT 50X51X10 MM TOL.±0.02MM. 20HRS | 65 | USE OF GAUGES | 698 Hrs. |
| | 134 | MOVING EQUIPMENT WITH CROWBARS | | | | | |
| | 135 | PRECISION SPIRIT LEVEL | | | | | |
| | 136 | COMMON INSTRUMENTS FOR GEOMETRICAL TEST | | | | | |
| 35 | 137 | ROPES | 42 | HEXAGONAL & OPEN RADIUS FIT M.S. FLAT 50X65X06 MM, 65X40X06 MM TOL.±0.02MM. 20HRS | | | 718 Hrs. |
| | 138 | PULLEY BLOCK, PLUMB BOB | | | | | |
| | 139 | SLING LOAD FOR SHIFTING | | | | | |
| | 140 | FORK PALLET TRUCK LIFT | | | | | |
| 36 | 141 | TYPES OF CRANES | 43 | SQUER FITTING M.S. FLAT 50X51X6 MM, 40X40X6 MM. TOL.±0.02MM. 15HRS | | | 733 Hrs. |
| 37 | | | 44 | "S" FITTING M.S.FLAT50X51X6 MM, 25X43X6 MM. TOL.±0.02MM. 16HRS. | | | 749 Hrs. |

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| 38 | | | 45 | RECTANGULAR INSERT. M.S. FLAT 50X43X10MM,50X21X10 MM TOL.±0.02MM. 12HRS | | | 761 Hrs. |
| 39 | | | 46 | PREPARE DIFFERENT TYPES OF DOCUMENTATION AS PER INDUSTRIAL NEED BY DIFFERENT METHODS OF RECORDING INFORMATION. 25 HRS | 66 | PREPARE AND FILL UP PRODUCTION CYCLE TIME IN FORMAT • PREPARE AND FILL UP DAILY PRODUCTION REPORT IN FORMAT • PREPARE AND FILL UP MANUFACTURING STAGE INSPECTION REPORT FORMAT. | 786 Hrs. |
| 40.A | | | 47 A | DISMANTLE, REPLACE AND ASSEMBLE FRL UNIT. 05 HRS | 67 | MOUNT AND READ PRESSURE ON THE PRESSURE GAUGE. | 806 Hrs. |
| 40.B | | | 47 B | IDENTIFY THE PARTS OF A PNEUMATIC CYLINDER. 05 HRS | 68 | IDENTIFY PNEUMATIC ELEMENTS FROM THEIR OUTLOOK | |
| 40.C | | | 47 C | DISMANTLE AND ASSEMBLE A PNEUMATIC CYLINDER 05 HRS | 69 | CLEAN AND INSPECT THE PARTS FOR WORNOUT AND DAMAGE PARTS | |
| 40.D | | | 47 D | DISMANTLING AND ASSEMBLING OF SOLENOID VALVES 05HRS | 70 | REMOVE THE VALVE, • CHECK FOR SCRATCHES, • CLEAN AND REASSEMBLE | |
| 41.A | | | 48 A | IDENTIFY HYDRAULIC COMPONENTS - PUMPS, RESERVOIR, FLUIDS, PRESSURE RELIEF VALVE (PRV), FILTERS, DIFFERENT TYPES OF VALVES, ACTUATORS AND HOSES. 05 HRS | 71 | IDENTIFY AND LOCATE THE ELEMENT IN A HYDRAULIC CIRCUIT | 821 Hrs. |
| 41.B | | | 48 B | INSPECT FLUID LEVELS, SERVICE RESERVOIRS, CLEAN/ REPLACE FILTERS. 05 HRS | 72 | IDENTIFY THE VARIOUS HYDRAULIC ELEMENTS USED IN POWER PACK | |
| 41.C | | | 48 C | INSPECT HOSE FOR TWIST, KINKS AND MINIMUM BEND RADIUS. INSPECT HOSE/TUBE FITTINGS 05 HRS | 73 | CHECK THE HYDRAULIC PIPE FITTINGS. | |
| 42 | | | 49 | DISMANTLE, OVERHAULING & ASSEMBLE CROSS SLIDE & HAND SLIDE OF LATHE CARRIAGE 25 HRS | 74 | DISMANTLE THE COMPOUND REST FROM THE CROSS SLIDE REMOVE OUT THE CARRIAGE UNIT FROM THE MACHINE BED | 846 Hrs. |
| 43.A | | | 50 A-B | PERFORM ROUTINE CHECK OF MACHINE AND DO REPLENISH AS PER REQUIREMENT. 10 HRS | 75 | • CHECK THE MACHINE RUNNING CONDITION • CHECK THE OIL LEVEL • CHECK THE SLIDING MOVEMENT. | 856 Hrs. |
| 43.B | | | 51 | INSPECTION OF MACHINE TOOLS SUCH AS ALIGNMENT, LEVELING 10 HRS | 76 | INSPECT DRILLING MACHINE TOOL SUCH AS ALIGNMENT, LEVELLING | 866 Hrs. |

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| 44.A 44.B 44.C | | | 52 | ACCURACY TESTING OF MACHINE TOOLS SUCH AS GEOMETRICAL PARAMETERS 15 HRS | 77 | CHECK THE ALIGNMENT OF THE MAIN SPINDLE AND THE TAILSTOCK SPINDLE OF A LATHE • CHECK THE PARALLELISM OF THE TAILSTOCK SLEEVE WITH RESPECT TO BEDWAYS. • PERFORM PRACTICAL TEST ON TURNED COMPONENT. | 881 Hrs. |
| 44.D 44.E | | | 53 | PRACTICING, MAKING VARIOUS KNOTS, CORRECT LOADING OF SLINGS, CORRECT AND SAFE REMOVAL OF PARTS 05 HRS | 78 | • BIND THE ROPE ENDS WITH BINDING WIRE • TIE SIX TYPE OF KNOTS WHICH IS USED IN MATERIAL HANDLING USING MANILA ROPE. | 886 Hrs. |
| 45 | | | 54 | ERECT SIMPLE MACHINES(LATHE) 20 HRS | 79 | • ERECTION OF LATHE MACHINE | 906 Hrs. |
| 46 | | | 55 | ERECTION OF DRILLING MACHINE & POWER HACKSAW MACHINE. 25 HRS | 80 | • ERECTION OF DRILLING MACHINE • ERECTION OF POWER HACKSAW MACHINE • TESTING THE MACHINES AFTER ERECTION | 931 Hrs. |
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