

# **Brief Introduction of Engineering and Non- Engineering trades currently offered in Government Industrial Training Institutes (ITI's) in the State of Meghalaya.**

## **A) ENGINEERING TRADES:**

### **1. WELDER (Capital Goods & Manufacturing Sector):**

It is a one-year duration course, a trainee is trained on subjects Professional Skill, Professional Knowledge and Employability Skills related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The practical skills are imparted in simple to complex manner & simultaneously theory subject is taught in the same fashion to apply cognitive knowledge while executing task. The safety aspects covers components like OSH&E, PPE, Fire extinguisher, First Aid and in addition 5S being taught. The practical part starts with edge preparation by hacksawing, filing and fitting followed by Oxy Acetylene Welding & Brazing, Oxy Acetylene Cutting, Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding and Spot Welding, Plasma Cutting and Arc Gouging. These processes are widely used in Industries.

### **2. WIREMAN (Power Sector):**

It is a two-year duration course course of Wireman trade a trainee is trained on professional skill, professional knowledge and Employability skills related to job role. In addition to this a trainee is entrusted to undertake project work and extra-curricular activities to build up confidence.

The trainee learns to plan, draw, estimate material/cost and performs various commercial and industrial wiring including installation of inverter, CCTV camera, cable management and temporary electrical wiring at construction site. The trainee practices on illumination system for domestic, commercial and industrial requirements, operation of PAR light on DMX controller (Stage light control), remote control of fan and light, sensors for bathing area, motion detector sensors, kitchen under-cabinet lighting, shelf lighting, closet lighting, cove lighting, display spotlights and LED downlights, etc. He assembles basic electronic circuit like rectifiers and repairs CFL & LED Lamps. The trainee practices to assemble different solar components like charge controller, solar PV panels, batteries etc., and install small solar plant, solar street light, Solar pump and other Solar DC appliances.

### **3. OPERATOR ADVANCED MACHINE TOOL (Capital Goods & Manufacturing Sector):**

It is a two-year duration course, a trainee is trained on subjects- Professional Skill, Professional Knowledge and Employability Skills related to job role. In addition to this, a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The trainees cover all aspect of CNC turning covered starting from machine operations, programming and producing components on actual machine. The CNC milling operation is covered in all aspect of CNC milling covered starting from machine operations, programming and producing components on actual machine. Finally, different basic maintenance of machines is carried out so that trainees get acquainted with a different machine maintenance required in day to day operation.

#### **4. WOOD WORK TECHNICIAN (Construction Sector):**

It is a one-year duration course of “Wood Work Technician” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The trainee learns about elementary first aid, fire fighting, environment regulation and housekeeping etc. The trainee identifies timber/ wood; apply measuring, marking and testing instrument and other holding and supporting hand tools. He will be able to use various saws and portable power saw machines for Ripping, cross cutting, oblique sawing, and curve cutting etc. He will be able to analyse the surface finish with exact sizing by planning operation and apply various shaving tools or portable power planning machine. The trainee can apply various paring tools, analyze, choose the positioning, and employ holding device for chiselling with better finish. He will be able to identify and classify various types of joints, analyze and prepare correct joint at correct position, related with strength and appearance. He will be able to make small wooden job as per drawing with schedule sizes of timber or alternatives of timber i.e. FRP, MDF, FOAM using various hardware, analyze and use various carving tools and convert a wooden block/ piece into a decorative article. The trainee will be able to preserve wooden item through surface finishing with various processes such as painting, polishing, varnishing etc.

#### **5. SURVEYOR (Construction Sector):**

It is a two-year duration course a trainee is trained on subjects viz. Professional Skill, Professional Knowledge, Employability skills related to job role. In addition to this, a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The trainee learns about making topographical map using Level instruments with contours ( Interpolation of contour, preparation of section, computation of volume, setting of simple, compound, reverse, transition and vertical curve), performing survey using Total Station and preparation of map (measurement of angle, co-ordinates and heights, downloading survey data and plotting), making of site plan by Cadastral survey (preparation of site plan, calculation of plot area, etc.), performing road project survey (location survey and preparation of route map, profile/ longitudinal / cross sectional levelling and plotting) and survey drawing using CAD. Drawing of cartographic projection, setting and application of GIS & GPS techniques in various fields, collection and processing of data, performing hydrographic survey (determining hydrographic depth, measuring velocity of flow, determining cross sectional area of river, calculating the discharge of a river, etc.), performing transmission line site survey (making of alignment, conducting detailed survey, final location survey and making of tower foundation pit point), performing railway line site survey, drawing of building by CAD and preparation of estimation are being done as part of practical training.

#### **6. SOLAR TECHNICIAN (ELECTRICAL) (Environmental Science Sector):**

It is a one-year duration course of Solar Technician (Electrical) trade a trainee is trained on professional Skill, professional Knowledge and Employability Skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee learns about safety and environment, use of fire extinguishers, artificial respiratory resuscitation to begin with. He gets the idea of trade tools & its standardization, identifies different types of conductors, cables & their skinning & joint making. Basic electrical laws and their application in different combinations of electrical circuit are practiced along with laws of magnetism. Performs testing by various Electrical Instruments

like Wattmeter, Energy meter, etc. Performs basic Electric energy calculations and understand transmission and distribution of electrical power.

### **7. PLUMBER (Plumbing Sector):**

It is a one-year duration course, a trainee of Plumber trade is trained on subjects Professional Skill, Professional Knowledge and Employability Skills related to job role. In addition to this a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The practical part starts with basic fitting in the beginning and the trainee imparted training on allied trades viz., carpenter, Welding (Gas & Arc), Masonry which leads to multiskilling. In the basic fitting, the skills imparted are marking, sawing, chipping, filing, measurement, soldering, brazing, drilling, grinding and observation of all safety aspects is mandatory. The accuracy achieved is of  $\pm 0.25$  mm. The safety aspects cover components like OSH&E, PPE, Fire extinguisher, First Aid etc. Cutting Pipes in different angle. Joining of pipes of different diameter and angles by gas welding, thread cutting on different types of pipes & fittings accessories.

### **8. PAINTER (GENERAL) (Construction Sector):**

It is a two years duration course of Painter (General) trade, a trainee is trained on Professional Skill, Professional Knowledge, Engineering Drawing, Workshop Calculation & Science and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainees cover to development of craftwork and artistic work on radium/vinyl/thermocol etc. He will also learn the techniques of decorative painting on wooden surface. Practice on internal and external building painting by using different decorative press. He will also learn painting of windows, grill, doors and different metal surface and pipes. The trainees will practice the process of cleaning and painting on metal surface for preventive coating. Maintenance of different pneumatic components of paint gun, compressor, filter, pressure gauge, regulator, valve etc. Practicing of spray painting technique and also work on spray booths. Finding out the aspect ratio of missing of paint, hardener and solvent. Identify and apply of spray painting in home appliances, agricultural equipment's and automotive bodies after removing of dents and recover the damaged parts.

### **9. MECHANICAL MOTOR VEHICLE (Automotive Sector):**

It is a two-year duration, a trainee is trained on subjects- Professional Skill, Professional Knowledge, and Employability Skills related to job role. In addition to this, a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The trainee will learn to perform overhauling of light vehicle/Heavy Vehicle transmission units including Gear box, Single plate clutch assembly, Diaphragm clutch assembly, Constant mesh Gear box, synchromesh gear box, gear linkages, Propeller shaft, Universal Slip Joint, Rear axle assembly, Differential assembly. The trainee will perform overhauling of light vehicle Chassis units, adhering to the specifications and tolerances for the vehicle and the manufacturer's approved overhauling methods, Standard repair methods, health and safety requirements etc. the trainee will learn how to overhaul, repair and service Shackle, Leaf spring, Front axle, Front and rear suspension, Steering Gearbox-worm and roller type, Steering Gearbox- Reticulating ball type, Master cylinder, Tandem Master cylinder, Front and rear brake, Wheel cylinder, Vacuum booster, Air servo unit, Air tank (reservoir) etc. The trainee will also learn to carry out wheel balancing and Wheel Alignment to within acceptable limits.

## **10. INFORMATION & COMMUNICATION TECHNOLOGY SYSTEM MAINTENANCE (Information Technology Enable Services Sector) (IT & ITES):**

It is a two-year duration course of Information & Communication Technology System Maintenance trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee learns about installation and customization of Linux operating system. Installation of Printer, Scanner and troubleshoot their faults. Replace/ install Display Driver Card and servicing, configuration of various display units. Replace/ install Sound Card and set properties to adjust sound quality. Maintenance and servicing of UPS. Installation and configuration of Modem, System Resources, Add on Cards, Cables & Connectors. Upgrading, maintenance and troubleshooting of PC. Assemble, replace and troubleshooting various parts of Tablet/ Smart Devices. Browsing internet and work with Cloud Computing. The trainee will be able to set up and configure Networking System using various network devices. Sharing and controlling resource and Internet connection through network. Implement Network Security to protect from various attacks on networking. Installation and basic configuration of Windows Server. Installation, configuration of DNS, Routing and user account customization. Configuration of Server and managing Server Network security and Infrastructure. Installation and basic configuration of Linux server.

## **11. FITTER (Capital Goods & Manufacturing Sector):**

It is a two-year duration course, a trainee is trained on subjects Professional Skill, Professional Knowledge, Engineering Drawing, Workshop Science & Calculation and Employability Skill related to job role. In addition to this a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

Power tool operation, different complex assembling and fitting, fastening, lapping, making gauges, pipe works and pipe joints, Dismantling, overhauling& assembling valves are covered. The accuracy achieved is of an accuracy of  $\pm 0.02$  mm & 10 minutes. Making & using drill jigs, making of critical components, repair & maintenance of power transmission system, making of template & complex gauges, identify different Pneumatic & hydraulic components and circuit construction, repair & maintenance of machinery like lathe, drill, grinding, bench drilling, Inspection of Machine tools, Accuracy testing of Machine tools and erection of simple machines are being performed as part of practical training.

## **12. ELECTRONICS MECHANIC (Electronic & HW Sector):**

It is a two-year duration course of Electronics Mechanic trade, a trainee is trained on professional skill, professional knowledge and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainees will be able to Identify, prepare, terminate, and test various types of electronic cables used in various electronic systems. They assemble a computer system, install OS, Practice with MS office, use the internet, browse, create mail IDs, and download desired data from internet using search engines. Gaining the skill by practicing SMD Soldering and De-soldering of various types of IC Packages. Able to identify the defects and do rework of PCB. They construct and test simple electrical control circuits and various electrical protective devices. The trainees will assemble and test a commercial AM/ FM receiver. They will identify various functional blocks and I/O Ports of a 8051 microcontroller system, Familiarize with the instruction set of 8051 micro controller, interface a model application with the Microcontroller kit and run the application. The trainee will identify and test various types of sensors used in electronic industries and construct and test circuits using various sensors system. They can construct and test analog

and digital IC based application circuits as a part of project work. The trainees will work with DPM Modules to measure various electrical parameters, also interface the LCD modules to display a word.

### **13. ELECTRICIAN (Power Sector):**

It is a two years duration course of Electrician trade a trainee is trained on professional skills & knowledge, Engineering Drawing, Workshop Calculation & Science and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee will study the details of electrical rotating machines viz. DC machines, induction motors, alternators & MG sets and practice on them. The trainee will practice on determining characteristics, their performance analysis, starting, speed control and reversing direction of rotation of machines. He will practice on parallel operation & synchronization of alternators, winding practice and over hauling will be practiced for DC machine and induction motors. Practices on diodes for bridge rectifier, switching devices & amplifiers by electronic components, different wave shape generation and testing by CRO. Designing control cabinet, assembling control elements and their wiring are to be practiced. Speed control of AC/DC motors by electronic controller will be practiced. The trainee will practice on testing, analyzing and repairing of voltage stabilizer, emergency light, battery charger, UPS and inverter. He will gain knowledge of thermal, hydel, solar & wind energy systems. The trainee will practice on distribution system, domestic service line and accessories & their protection by practicing on relay and circuit breaker for operation and maintenance. Install and troubleshoot Electric Vehicle charging stations.

### **14. DRAUGHTSMAN CIVIL (Construction Sector):**

It is a two-year duration course, a trainee is trained on subjects viz. Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The trainee will study single storied building plan in traditional drawing. Knowledge and application of Computer Aided Drafting. Workspace creating drawing using toolbars, commands, and menus. Plotting drawing from CAD. 2D drafting of Doors, Windows, hand railing, wash basin, and plumbing joints. Preparing library folders by creating blocks of regularly used items. Preparation of a sanction plan of double storied RCC flat roof residential building using CAD. Preparation of a drawing of public building by framed structure using CAD. Preparation of bar bending schedule. Drawing of different steel structure joints using CAD. Detail drawing of sanitary fittings and sewerage arrangements using CAD. Detail and sectional drawing of Roads, Bridges, culverts, railway tracks and embankment, Dams, Barrages, Weir and cross drainage works using CAD, schematic diagram of hydro electric project using CAD, Estimating and Cost analysis of different types of buildings and structures, preparation of map using Total Station and location of station point using GPS are being performed as part of practical training.

### **15. DRAUGHTSMAN MECHANICAL ( Capital Goods & Manufacturing Sector):**

It is a two-year duration course, a trainee is trained on subjects- Professional Skill, Professional Knowledge, Employability Skill related to job role. In addition to this, a trainee is entrusted to make/do project work and extracurricular activities to build up confidence.

The trainee will study to develop skill in CAD application practical assignments are given by using commands in various methods. Detail and assembly drawing of machine parts viz., Pulleys, Pipe fittings, Gears and Cams applying range of cognitive and practical skills. Construct production drawing applying quality concept in CAD. Creation of objects in

3D Modelling Space and generate views, print preview to plot in drawing and pdf format. Individual skill is developed by preparing production drawing of machine parts applying conventional sign and symbol by taking measurement. Impart knowledge to draw workshop layout of a production industry considering process path and human ergonomics. In SolidWorks/AutoCAD Inventor / 3D modelling environment, the assignment is to create and plot assembly and detailed views of machine parts with dimensions, annotations, title block and bill of materials.

## **B) NON- ENGINEERING TRADES**

### **1. BAKER & CONFECTIONER (Food Industry Sector):**

The course is of one-year duration. It mainly consists of Domain area and Core area. In the Domain area (Trade Theory & Practical) impart professional skills and knowledge, while the core area (Employability Skill) imparts requisite core skills, knowledge, and life skills.

It is a training period the trainee learns about elementary first-aid, firefighting, environment regulation and housekeeping, etc. The trainee identifies trade tools, kitchen equipment and kitchen operation process. He is aware of the importance of personal hygiene, cleanliness of bakery utensils, food handling and hygiene protective clothing. He practices safe handling of bakery equipments and other hand tools. He identifies basic ingredients, spices used in bakery. The trainee practices and prepares various types of bread and cakes.

### **2. SURFACE ORNAMENTATION TECHNIQUES (EMBROIDERY)( Apparel Sector):**

The course is of one-year duration. It mainly consists of Domain area and Core area. The Domain area (Trade Theory & Practical) imparts professional skills and knowledge, while the core area (Employability Skill) imparts requisite core skills, knowledge, and life skills.

The trainee learns to identify and use embroidery tools with safety precautions in order to prepare basic sample hand stitches (Temporary & permanent stitch); learns to describe & use different types of tracing method carbon paper, tissue paper, tracing paper, water soluble pen, tracing box (light box), hot pressing and wooden block method. He/she is able to demonstrate the basic embroidery stitches flat, loop, crossed, knotted and prepare article; draw, create & place free hand designs with Scribble, Geometrical, Cut Paper or Signature method; state & identify the colour wheel, describe various types of colour, colour schemes & use these colour schemes in different jobs, demonstrate the Enlarged & Reduced forms of design. The trainee also learns to decorate garment's part with a suitable Embroidery design; identify, operate the Zig-Zag machine embroidery parts, demonstrate set the machine for embroidery and develop the different design for the garment components.

### **3. COMPUTER OPERATOR AND PROGRAMMING ASSISTANT (Information Technology Enable Services Sector) (IT & ITES):**

The one-year duration course of Computer Operator and Programming Assistant trade a trainee is trained on professional skill, professional knowledge and Employability skill related to job role. In addition to this, a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee learns about safety and environment, use of fire extinguishers. He learns about trade tools, identifies computer peripherals, internal components, basic DOS commands, Windows and Linux interface and its related software installation process.

Trainees will work with MS Office package to create word document, practice with excel sheet and get idea to create a good power point presentation, maintain database with MS Access. They will set up and configure a network system of an organization. They will understand and able to work on Advanced excel concepts. They will use internet to search information using browser along with official/ social communication process. Trainees will learn E-commerce system and will be able to browse, select and transact using different E-commerce websites.

#### **4. CATERING & HOSPITALITY ASSISTANT (Tourism & Hospitality Sector):**

The one-year duration course of “Catering & Hospitality Assistant” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

In this course, the trainee learns about different types of outlets and types of meals used in industry, adopt different profiles, dress codes and attributes of a waiter and identifies equipment, glassware tableware, cutlery/crockery and other equipment's. He carries out Institute Housekeeping, Institutional Culture and staffing operations in Hotels. The trainee maintains cleaning schedule, operates various cleaning equipment, makes bed ready for the guest and maintain indoor plants/ flower arrangements. He/she learns to use various modern cookery levels of skill, attitude and behavior in the kitchen. He/she practices use of Kitchen Equipment, Tools Utensils, LPG Stove/ Cooking range, Electric Toaster, Mixer/ Grinder, Food Processor and Water Purifiers etc., undertake their care and maintenance. The Trainee identifies and performs various cuts of vegetable, fruits and preparation of eggs.

#### **5. COSMETOLOGY (Beauty & Wellness Sector):**

The one-year duration course of ‘Cosmetology’ trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The trainee learns to develop good appearance and behaviour, practices tasks as per industry standard and develops good communication skill. He/she is trained to prepare and maintain work area and maintain health and safety at the workplace; carry out epilation and depilation services; illustrate and explain hair structure & hair growth cycle; carry out manicure and pedicure services. The trainee is able to explain anatomy of nail; differentiate and identify nail disease & nail disorders; carry out facial treatments for common skin problems; illustrate and explain skin structure; carry out hair treatment for common hair problems.

#### **6. DATA ENTRY OPERATOR (Information Technology Enable Services Sector) (IT & ITES):**

It is a six months duration course of Data Entry Operator trade a trainee is trained on professional skill, professional knowledge and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee learns about safety and environment, use of fire extinguishers. He learns about trade tools, identifies computer peripherals, internal components, Windows and its related application software installation process. Trainees will work with MS Office package to create word document, practice with excel sheet and power point presentation, edit images and perform file conversion of different formats. They will use internet to search information using browser along with official/social communication process. The trainees will be able to perform commercial net banking operations, sharing of data between devices,

setup and perform video conferencing, setup and link computers for remote access. The trainee will also achieve data entry in English, Hindi/ regional languages with optimal speed and accuracy.

## **7. DIGITAL PHOTOGRAPHER (Media & Entertainment Sector)**

It is a one-year duration course of “Digital Photographer” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The trainee learns about elementary first-aid, firefighting, environment regulation and housekeeping, etc. The trainee identifies trade tools, digital cameras, compact and SLR. The trainee will be able to do the practical by the use of natural light, tungsten light, fluorescent light, single and multiple electronic flash reflectors, exposure meters, studio flash and its accessories. They will also be able to do the practical on various lighting techniques for different lenses and will do practice on special areas of photography in outdoor and indoor condition.

## **8. DRESS MAKING (Apparel Sector):**

It is a one-year duration course of “Dress Making” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skills related to the job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The broad professional skills covered as part of the skill training starts with making hand stitches in the given fabric; Stitching the following using the given fabric: Seams with seam finishes, Darts, Pleats, Tucks, Gathers & Shirrs, Frill, Hem, Casing, Edge Finishing, Neck lines, Placket, Pocket, Collar, Sleeves, Cuff. Then the trainee learns how to fix the fasteners on the given fabric, mend the given fabric as per requirement. He/she is also able to draft a pattern for Ladies Suit & Sew a Ladies' Suit with the help of the given pattern.

## **9. DRIVER CUM MECHANIC (LMV) (Automotive Sector):**

It is a Six Months duration course, a trainee of ‘Driver cum Mechanic (LMV)’ trade is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this a trainee is entrusted to make / do project work and Extra Curricular Activities to build up confidence.

After completion of this course the trainee will be able to drive Light Motor Vehicle drive safely on the assigned route without Company of a senior driver and will ensure Road worthiness of the vehicle through pre-operational checks also the trainee will drive in conformance to standard driving practices and follow Traffic Regulations and maintenance of good road conduct. Apart from driving the vehicle the trainee will also be able to carry out the Basic Servicing of vehicle, carry out checks of steering and suspension system for its road worthiness, Basic Servicing of front and rear wheels, brake, check ignition circuit for proper functioning.

## **10. FLORICULTURE & LANDSCAPING (Agriculture Sector):**

It is a one-year duration course of “Floriculture & Landscaping” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The trainee learns about agro-meteorology, importance of different elements of weather and climate of agriculture. Soil properties, soil management, formation of soil

moisture and its conservation. Role of organic matter in soil and its recycling water and their management. Soil fertility, fertilizers, manures and management of soil fertility & productivity. Fundamentals of floriculture, nursery and seed production. Practicing simple and tongue layering, ground layering, air layering or goo tee. Planting materials and their cultivation practices etc.

### **11. FRUITS AND VEGETABLES PROCESSING (Food Industry Sector):**

It is a one-year duration course of 'Fruits and Vegetables Processing' trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to the job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

The trainee learns to identify the spoilage in fruits and vegetables and state the reason for the spoilage; prepare and pack perishables for storage and then store under refrigerated conditions with safety precautions; identify and select fresh fruits and vegetables with the help of checklist; prepare fruit juices with juice extracting machines with safety precautions and preserve fruit juices with addition of preservatives and determine the acidity and TSS content. The learner practices on identification of spices and food additives by visual inspection; learns to prepare and package fruit beverages such as Squashes, RTS, Nectar, Cordial, Crush and Syrup by using appropriate machines such as pulper, juice extractor, autoclave, and corking machine with safety precautions, determine the acidity and TSS content; prepare and preserve Tomato products by using appropriate machines such as pulper, autoclave, and corking machine with safety precautions, determine acidity and TSS content; prepare, dry and storage fruits and vegetables with appropriate methods such as drying, cabinet drying and solar drying with safety precautions and determine the moisture etc.

### **12. HORTICULTURE (Agriculture Sector):**

It is a one-year duration course of 'Horticulture' trade a trainee is trained on professional skill, professional knowledge and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work, extracurricular activities and on job training to build up confidence.

It is a one-year duration course the trainee learns about agro-meteorology, importance of different elements of weather & climate of agriculture, farm power and machinery, types and application of farm power, farm electricity, agricultural implements, basic knowledge on plant biology, Renewable energy, Soil properties, concept of formation of soil moisture and its conservation, role of organic matter in soil and its recycling water and their management, Soil fertility, fertilizers, manures & management of soil fertility and productivity, Introductory horticulture, fundamentals of horticultures, Importance and scope of horticulture, classification of horticultural plants etc.

### **13. MULTIMEDIA, ANIMATION & SPECIAL EFFECTS (Information Technology Enable Services Sector) (IT & ITES):**

It is a one-year duration course of Multimedia, Animation & Special Effects trade a trainee is trained on professional skill, professional knowledge, and Employability skill related to job role. In addition to this, a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

During one-year duration, the trainee learns about safety and environment, use of fire extinguishers. They learn about computer peripherals, Windows interface and its related software installation process. Trainees will work with MS Office package for basic knowledge

of computer. Trainees will work with Photography like Adobe Photoshop to edit image, retouch and fixing image using colour, filter and for digital painting. They also learn and experience with application software with Adobe Photoshop illustrator for advance editing and graphic design. The trainees also learn Videography to practice the craft of film making, video streaming with advance features of camera.

#### **14.MASON (BUILDING CONSTRUCTOR) (Construction Sector):**

It is a one-year duration course a trainee of Mason (Building Constructor) trade is trained on subjects Professional Skill, Professional Knowledge and Employability Skills related to job role. In addition to this a trainee is entrusted to make/do project work and Extra Curricular Activities to build up confidence.

The practical part starts with basic constructional parts (Masonry) and the trainee imparted training on allied trades viz., carpenter (which leads to multi-skilling). In the basic carpentry the skills imparted are marking, sawing, Planning, chiselling, measurement, drilling, grinding of tools and observation of all safety aspects is mandatory. The safety aspects cover components like OSH&E, PPE, Fire extinguisher, First Aid etc. Masonry deals with making masonry brick wall as per drawing leaving space for door & window opening, Preparation of R.C.C casting, Construction of cavity wall, Laying out of building plan, diagonal check-up, fixing up of excavation lines, Wall & ceiling plastering, Making of different types of floor determining and Formation of Slope.

#### **15.SOIL TESTING AND CROP TECHNICIAN (Agriculture Sector):**

It is a one-year duration course of “Soil Testing and Crop Technician” trade a trainee is trained on professional skill, professional knowledge and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

This course primarily deals with soil testing. The trainee learns about safety and environment, Elementary first aid and fire fighting. He gets the idea of trade tools, apparatus & their standardization, calibration and identifies different types of Laboratory equipment's. Preparation of standard solution and chemical reagents for soil testing. The trainee will practice different soil testing methods to determine various properties viz. soil texture, pH value, moisture content, Electric conductivity, hydraulic conductivity, organic carbon, Cat ion exchange capacity etc. Training will be provided for the estimation of macro and micronutrients and also elements of environmental concern in soil samples. Trainee will also be able to examine the quality of irrigation water, generate soil test report and recommend fertilizer, dosage and their method of application based on soil properties. The trainee learns to use modern technology (GPS/GIS) for collection of data and input recommendations.

#### **16.STENOGRAPHER SECRETARIAL ASSISTANT (ENGLISH) (Office Administration & Faculty Management Sector):**

It is a one-year duration course of “Stenographer Secretarial Assistant (English)” trade a trainee is trained on professional skill, professional knowledge, and Employability skill related to job role. In addition to this a trainee is entrusted to undertake project work and extracurricular activities to build up confidence.

The trainee learns about safety and environment, use of Stenographer Secretarial Assistant English, artificial respiratory resuscitation to begin with. He/she gets the idea about the computer hardware & its peripherals, classify the consonants & its direction /joining the consonants, distinguish between long & short vowels, Describe Logograms, Grammalogues Contraction & use of ‘the’ /punctuation mark. Understand Diphthong, Prepare Windows operating system on computer, compare all types of alternative forms & recognize the finger positioning on the computer keyboard, Compare all types of alternative

forms & recognize the finger positioning on the computer keyboard, Recognize the direction of SHR & SHL, Observed curved hooked strokes and compound consonant, Recognize Final Hooks, Recognize Final Hooks, List the prefixes, List the suffixes, Identify the monetary units & use it. Also includes shorthand, translation, and note taking techniques and applies on computer for speed typing in MS-Word.

### **17.WEAVING TECHNICIAN FOR SILK & WOOLLEN FABRICS (Textile & Handloom Sector):**

It is a one-year duration course of “Surface Ornamentation Techniques (Embroidery)” trade, a trainee is trained on Professional Skill, Professional Knowledge and Employability Skill related to job role. In addition to this, a trainee is entrusted to undertake project work, extracurricular activities and on-the-job training to build up confidence.

In one-year duration, the trainees will identify the types of operation of the weaving machine used in the industry with the raw materials used. They will also identify the different types of fibre, yarn and its characteristics. They will be trained to select the parts of loom, practice and monitor the operation. They will be able to prepare bobbin and cone and carry out the operation of drafting, denting, gaiting up of looms. They will also operate primary motions, secondary motions and auxiliary motions in weaving machines. They will identify the causes and remedies in woven fabric defects. They assist in analyzing the different patterns adopted in weaving of silk and woollen fabrics. They will also apply methods for finishing silk and woollen fabrics. The trainees will assist to plan, design plain weave and satin with the draft and peg plan. They will assist in estimation of cost of folded yarn and calculation of conversion table for yarn count.

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