**CERTIFICATE PROGRAM IN AUTOMOTIVE MANUFACTURING JOB ROLES**

**UNDER**

**RECRUIT-TRAIN- DEPLOY (RTD) MODEL SCHEME**

**OF**

**BIHAR SKILL DEVELOPMENT MISSION (2018-22)**

**FOR**

**Machining Assistant Level 2**

It’s Objective, learning outcomes, Modules, assessments and material list

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| Submitted to **:-**  **BIHAR SKILL DEVELOPMENT MISSION (BSDM)** | Submitted By **:-**  **UDYAMI SAHYOG PARISHAD**  **(IN CONSORTIUM WITH VGR ENGINEERING SERVICES PVT. LTD AND EAKTA ENTERPRISES)** |
| Session: FY 2018-19 |

**CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE**

**Name and address of submitting body:**

**UDYAMI SAHYOG PARISHAD**

**(IN CONSORTIUM WITH VGR ENGINEERING SERVICES PVT. LTD. AND EAKTA ENTERPRISES)**

**NH-8, Behrampur Road, Behind Haryana Roadways Workshop, Udyog Vihar Phase-VII, Sector-35, Opp. Services Engineering Industries, GURUGRAM-122004 (Haryana)**

**Name and contact details of individual dealing with the submission:**

**Name :** Er. Virender Kumar Bhardwaj

**Position in the organization** : President & Managing Director

(Udyami Sahyog Parishad)

**Tel number(s) :** 9810690553

**Website** : www.skillindiausp.com

**E-mail address : usp.infosnp@gmail.com**

**SUMMARY**

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| **Qualification Title** | **Certificate in Machining Assistant Level 2** |
| **Qualification Code** | **USP3502** |
| **Duration of the Course** | **3 Months** |
| **Nature and purpose of the qualification** | **Nature**  Technical Training  **Purpose**  To prepare Skilled Industrial workforce through Skill Development Program and Livelihood generation for youths |
| **Body/bodies which will award the qualification** | BSDM, Udyami Sahyog Parishad and Employer Jointly |
| **Occupation(s) to which the qualification gives access** | Automotive Manufacturing- Machine Shop and jobs roles for operating/ handling production machines, Assisting the operators, material handling and related activities |
| **Entry requirements and / or recommendations** | Minimum Educational Qualification: Class 8th/9th  Age 18 years to 35 years |

1. **OBJECTIVE OF THE COURSE: -**

Basic understanding of the machining and housekeeping process, Basic reading, writing and communication skills, safety orientation, ability to do physical tasks like lifting, holding etc. Ability to lift objects required during the operations – either manually or using lifts, chains without displaying fatigue, hands and feet dexterity, good vision

1. **LEARNING OUTCOMES :-**

* **Industrial System Mandatory Training Content-**

1. Job role & responsibility
2. System, machine, mechanism knowledge
3. IMTE (Inspection measuring and test equipment) knowledge
4. 5S Environment Health & Safety, PPE Knowledge
5. Industrial/Engineering drawing study
6. Practical exposer and real time on job training

* **Domain Training Content-**

1. Types of manufacturing processes used
2. Different types of products manufactured by the company
3. Type of Machines
4. Types of machining processes
5. Machine parameters setting
6. Types of tools used in the machining process
7. Knowledge of usable materials movement to work place/ Line/ Station
8. Knowledge of Loading and unloading of parts in fixtures
9. Type of CNC Controllers
10. Tools used for lifting objects
11. The application of coolant and lubricants
12. Basic arithmetic and calculation methods
13. **MODULE- THREE MONTHS (CERTIFICATE PROGRAM IN MANUFACTURING JOB ROLES)**

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| **DURATION :- THREE MONTHS**  **CERTFICATE PROGRAM IN MANUFACTURING JOB ROLES** | | | | | | |
| **MODULE CODE & NAMES** | | **Code :- USP3502**  **Module :-** BSDM (Machining Assistant L2) | | | | |
| **RATIONALE & OBJECTIVE OF THE MODULES** | | Basic understanding of the machining and housekeeping process, Basic reading, writing and communication skills, safety orientation, ability to do physical tasks like lifting, holding etc. Ability to lift objects required during the operations – either manually or using lifts, chains without displaying fatigue, hands and feet dexterity, good vision | | | | |
| **MODULE COMPETENCE** | | The Helper role is responsible for small time routine jobs like cleaning, washing, fetching and holding tool for the operators, loading and unloading of work pieces on the machine setup, bringing raw material and spare parts from the stores etc. After completion of training our placement cell will provide job opportunity in Corporate/Manufacturing Company/Unit. | | | | |
| **MODE OF DELIVERY** | | Theory, Practical & OJT | | | |
| **Sr. N.** | **ELEMENTS/TOPICS** | | | **PERIOD** | **DAYS** |
| **1** | **AWARENESS OF INDUSTRIAL CULTURE/ SYSTEMS, JOB ROLES AND RESPONSIBILITIES** | | | 6 DAYS | |
|  |  | | 1.1 Types of Industries |
|  |  | | 1.2 Types of industrial workings |  |  |
|  |  | | 1.3 Industrial working Hierarchy |  |  |
|  |  | | 1.4 Job Roles, Behavior and Motivation |  |  |
|  |  | | 1.5 Job Responsibilities |  |  |
|  |  | | 1.5 Career selection, Livelihood generation |  |  |
|  |  | | 1.6 Career Growth through Loyalty, Hard work |  |  |
|  |  | |  |  |  |
| **2** | **MACHINING PROCESS AND TECHNIQUES** | | |  |  |
|  |  | | 2.1 Understand the right machining methodology and process | 18 DAYS | |
|  |  | | 2.2 Understand the material required and the equipment availability |
|  |  | | 2.3 Clearly understanding the does and don’ts of the manufacturing process |  |  |
|  |  | | 2.4 SOPs/ Work Instructions |  |  |
|  |  | |  |  |  |
| **3** | **5-S, ENVIRONMENT, HEALTH AND SAFETY AWARENESS** | | |  |  |
|  |  | | 3.1 Understand 5 S and Safety related aspects related to the work station, machining line | 6 DAYS | |
|  |  | | 3.2 Hazards and safety aspects involved in machining activities and usage of relevant PPEs |
|  |  | |  |  |  |
| **4** | **MAN, MATERIAL, MACHINE, METHOD, STANDARDS AND DOCUMENTATIONS** | | |  |  |
|  |  | | 4.1 Team work and inter departmental co-ordinations | 14 DAYS | |
|  |  | | 4.2 Understand mechanical, assembly symbols used in the machining process |
|  |  | | 4.3 Plan and organize the design/ process/quality documents received from internal customers |  |  |
|  |  | | 4.4 Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions |  |  |
|  |  | | 4.5 Understanding of various machines, systems behavior and working principles with knowledge of parts |  |  |
|  |  | | 4.6 Quality check points |  |  |
|  |  | | 4.7 Equipment manuals and process documents to understand the equipment and processes better |  |  |
|  |  | | 4.8 Material knowledge and behavior |  |  |
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| **5** | **INSPECTION, MEASURING, TESTING EQUIPMENTS KNOWLEDGE AND USES** | | | 14 DAYS | |
|  |  | | 5.1 The method of reading and interpreting the various gauges |
|  |  | | 5.2 Concerned quality instruments use, observations on parts and recording of readings |  |  |
|  |  | | 5.3 Preparing inspection sheet |  |  |
|  |  | | 5.4 Defect observations |  |  |
|  |  | | 5.5 Poka-Yoke and Kaizens |  |  |
|  |  | | 5.6 Drawing study and readings |  |  |
|  |  | | 5.7 Limit samples |  |  |
|  |  | | 5.8 Finishing operations and final packing |  |  |
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| **6** | **ASSESSMENT/ TESTS, ASSIGNMENTS/ PROJECT** | | |  |  |
|  |  | | 6.1 Weekly test on theory contents | 12 DAYS | |
|  |  | | 6.2 Weekly Assignments/Projects |
|  |  | | 6.3 Workshop during each day Practical |  |  |
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1. **ASSESSMENT / EXAMINATION**

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| **1** | **BASIC/INTERNAL ASSESSMENT** | (During Training period stages) | **P/T** | **MARKS** |
|  |  | 1. Assignment to make an assembly as per spec. by various given child parts | P |  |
|  |  | 1. Internal assessment test as per theory contents learned | T |  |
| **2** | **FINAL PROJECT PRESENTATION** | ( Final stage of completion of session) |  |  |
|  |  | 1. Display & Submission of Assignments | P |  |
|  |  | 1. Final test on complete Assembly techniques | T |  |

1. **Material List**

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| **TEACHING & TRAINING AIDES/ INSTRUMENTS/ MACHINES etc.** | Laptop, White Board, Marker, Projector, Stationary, Hand Tools, Puppy Dial, Lathe machine, milling machine, surface grinder, Drilling M/c, Pneumatic Tools, Torque Ranch, Vernier Caliper, Micrometer, Bore Gauge, Depth Gauge, PPE (Personal Protective Equipment), First Aid Kit, Fire Extinguishers, Operating Manuals, Work Instruction SOP's, Jigs & Fixtures, Grinding Machine, Milling Machine, Lathe Machine, EDM, CNC Wire cut, Bench Vice, V-Block, Clamps, Try Square, Combination Square, Dividers, Bevel Protector, Surface Plate, Hacksaw Frame Adjustable, Files Collets, Drills and Taps, End Mills, Ball Peen Hammer, Adjustable Wrench, Screw Driver Set, Pliers, Cutters, Allen Key, Spanner Set, Spindle Key, Drill Vice, Machinist Vice, Hand Vice, Vice Grip, Pliers, Leather Safety Gloves, Leather Aprons, Safety Glasses, safety helmets, Ear Plug, Safety Shoes, Cleaning Agents, Cleaning Cloth, Waste Container, Dust Pan, Brush Set, Liquid Soap, Hand Towel |