**CERTIFICATE PROGRAM IN AUTOMOTIVE MANUFACTURING JOB ROLES**

**UNDER**

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

**OF**

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

**FOR**

**Plastic Moulding Technician/Operator Level 4**

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:**

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**SUMMARY**

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| **Qualification Title** | **Certificate in Plastic Moulding Technician/Operator Level 4** |
| **Qualification Code** | **USP4401** |
| **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- Plastic Moulding Shop and jobs roles for operating/ handling Plastic Moulding machines |
| **Entry requirements and / or recommendations** | Minimum Educational Qualification: ITI-Mechanical  Age 18 years to 35 years |

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

Reading, writing and communication skills, ability to plan and prioritize, quality consciousness, safety orientation, Physique to sustain strenuous conditions, Dexterity, Ability to use fingers, hands and feet with ease to complete the assigned task (Dexterity), high precision and sensitivity to problem solving and sensitivity towards safety for self and equipment.

1. **LEARNING OUTCOMES :-**

* **Industrial System Mandatory Training Content-**

1. Industrial Working environment awareness and knowledge
2. Job role & responsibility
3. System, machine, mechanism knowledge
4. IMTE (Inspection, measuring and test equipment) knowledge
5. Health Safety Environment (HSE)- 5S, PPE, Fire & Safety and First- Aid Knowledge
6. Industrial/Engineering drawing study
7. Practical exposer and real time On-Job-Training (OJT)
8. Motivation, Behavioral and communication skills
9. Inter departmental activities

* **Domain Training Content-**

1. Relevant standards and procedures followed in the company
2. Different types of products manufactured by the company
3. Different parameters pertinent to moulding process like heater temperature, hydraulic pressure/ air pressure/ vacuum pressure, rotating speed of the screw, operating current and voltage, injection time, refilling time etc. and the impact of these parameters on the process output
4. Various types of plastics like thermoplastics/ thermosetting plastics and the additives to be used
5. Different types of tools and machinery to mould the plastic and trim the output
6. Various types of coolants and their properties
7. How to visualize final product output and hence decide on the key steps to be followed
8. Different types of cleaning techniques, moulding processes and associated equipment
9. Different types of moulding processes, associated equipment like dies, screw/ reciprocating screw/ plunger, heaters etc. and their working
10. Number of heaters required to generate the given temperature/ current requirement
11. Moulding defects and how they are generated, how they can be prevented, different consumables used in the melt shop
12. Extruder operation, melting process, and safety process of handling hot molten plastic and control mechanisms for the extrusion machine
13. Impact of operator’s work on moulding quality at in house and at customers, how to improve customers satisfaction
14. **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 :- USP4401**  **Module :-** BSDM (Plastic Moulding Technician/ Operator Level 4 ) | | | | |
| **RATIONALE & OBJECTIVE OF THE MODULES** | | Reading, writing and communication skills, ability to plan and prioritize, quality consciousness, safety orientation, Physique to sustain strenuous conditions, Dexterity, Ability to use fingers, hands and feet with ease to complete the assigned task (Dexterity), high precision and sensitivity to problem solving and sensitivity towards safety for self and equipment. | | | | |
| **MODULE COMPETENCE** | | This role primarily involves managing the specifications of the plastic and its granules, setting up and operating the Moulding, machinery and forming & finishing the output. 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** | | | 10 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** | **PLASIC MOULDING PROCESS AND TECHNIQUES** | | |  |  |
|  |  | | 2.1 Understand the right plastic moulding methodology and process | 20 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, plastic moulding line | 8 DAYS | |
|  |  | | 3.2 Hazards and safety aspects involved in plastic moulding activities and usage of relevant PPEs |
|  |  | |  |  |  |
| **4** | **MAN, MATERIAL, MACHINE, METHOD, STANDARDS AND DOCUMENTATIONS** | | |  |  |
|  |  | | 4.1 Team work and inter departmental co-ordinations | 20 DAYS | |
|  |  | | 4.2 Understand mechanical, assembly symbols used in the plastic moulding 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 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** | | | 20 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, Drilling M/c, Preheater, Crusher, Injection Moulding Machine and other plastc processing machine, Mixer, Pneumatic Tools, Torque Ranch, Vernier Caliper, Micrometer, PPE (Personal Protective Equipments), First Aid Kit, Fire Extinguishers, Operating Manuals, Work Instruction SOP's, Jigs & Fixtures, Grinding Machine, 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, knife/ blade, Allen Key, Spanner Set, Spindle Key, Drill Vice, Machinist Vice, Hand Vice, Vice Grip, Pliers, wooven Safety Gloves, Aprons, Safety Glasses, safety helmets, Ear Plug, Safety Shoes, Cleaning Agents, Cleaning Cloth, Waste Container, Dust Pan, Brush Set, Liquid Soap, Hand Towel |