|  |  |  |  |
| --- | --- | --- | --- |
| Title | **Perform drilling machine operations** | | |
| Level | **3** | **Credits** | **4** |

|  |  |
| --- | --- |
| Purpose | This competency standard identifies the competencies you need to perform drilling machine operations using different tools and equipment, in accordance with approved procedures. You will be expected to produce holes, counter boring, counter sinking, and reaming using drilling machine..You will be required to operate the tools and equipment safely by complying the organizational safety policy and approved procedures.  Your underpinning knowledge regarding drilling machine operations will be sufficient to provide you with the basis for your work. |

|  |  |
| --- | --- |
| Classification ISCED | 0715 Mechanics and metal trades |

|  |  |
| --- | --- |
| Available grade | Competent / Not yet competent |

|  |  |
| --- | --- |
| Modification history | N/A |

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Competency** | **Performance Criteria** | **Knowledge and Understanding** | **Tools & Equipment** |
| **B1.Produce holes using drilling machine** | ***You must be able to:***  **P1.** Observe personal and work place safety.  **P2.** Set up drilling machine for producing holes according to job requirement.  **P3.** Manipulate the machine tool controls safely and correctly in line withoperational procedures.  **P4.** Produce components to the required quality and within the specifieddimensional accuracy.  **P5.** Carry out quality sampling checks at suitable intervals.  **P6.** Shut down the equipment to a safe condition on conclusion of themachining activities. | ***You must know and understand:***  **K1.** Safety precautions.  **K2.** Procedure of setting up of drilling machine.  **K3.** Safe procedure for operating drilling machines.  **K4.** Types of drilling machines.  **K5.** Selecting and adjusting speed and feed of drilling machine.  **K6.** Importance of coolants in drilling operations.  **K7.** Methods and techniques of quality checks. | **T1**. Drilling Machines **T2**. Drill chuck with Key **T3**. Machine Vice  **T4**. Marking Tools  **T5**. Measuring Tools  **T6**. Drill Sleeve and Socket  **T7**. Personal Protective Equipment |

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Competency** | **Performance Criteria** | **Knowledge and Understanding** | **Tools & Equipment** |
| **B2. Perform counter boring and counter sinking** | ***You must be able to:***  **P1.** Select relevant tools according to the information given in engineering drawings and job specifications.  **P2.** Ensure tooling is correct in terms of size, shape, type, and grade for the work.  **P3.** Position the work-piece in the drill in such a way that it is aligned, secured and stable during drilling.  **P4.** Adjust speeds and feeds of drill in accordance with the size, type, and hardness of work-piece material, so that the drill performs optimum cutting without damage to work-piece. | ***You must know and understand:***  **K1.** Different types of drilling tools and their implications.  **K2.** Importance of selecting right drilling tool for the job specifications.  **K3.** Methods and techniques for positioning the work-piece in the drill to ensure proper alignment and stability during drilling.  **K4.** Using speeds and feeds chart for different types of materials and their hardness.  **K5.** Specific safety precautions during boring and sinking operations. | **T1**. Counter drill **T2**. Cutting oil **T3**. Tri square  **T4**. Measuring Tools |
| **B3. Perform machine reaming** | ***You must be able to:***  **P1.** Observe personal and workplace safety.  **P2.** Clamp work-piece in the vice properly.  **P3.** Select reamer according to hole size and drawing requirements  **P4.** Set reamer in the drill chuck according to procedure. | ***You must know and understand:***  **K1.** Safety precautions.  **K2.** Selecting reamer according to hole size.  K3. Types of reamers (straight teeth or helical teeth).  K4. Method of setting reamer in the drill chuck.  K5. Importance of using lubricants during | **T1**. Drilling Machines **T2**. Drill chuck with Key **T3**. Machine Vice  **T4**. Measuring Tools  **T5**. Personal Protective Equipment |

|  |  |  |  |
| --- | --- | --- | --- |
| **Unit of Competency** | **Performance Criteria** | **Knowledge and Understanding** | **Tools & Equipment** |
|  | **P5.** Use lubricants during reaming for smooth cutting.  **P6.** Ensure proper alignment of the reamer during operations. | reaming.  K6. Importance of alignment of the reamer during operations. | **T6**. Reamers |