APPLY WORKSHOP TECHNOLOGY PRINCIPLES

UNIT CODE: ENG/OS/AME/CC/04/4/A

UNIT DESCRIPTION

This unit describes the competencies required by an individual in order to interpret working drawings, choosing of appropriate tools and materials. It also involves marking out of the work pieces and producing components as per the drawing. It also involves performing finishing processes.

ELEMENTS AND PERFORMANCE CRITERIA

Element These describe the **key outcomes** which make up workplace function (to be stated in active voice).	**Performance criteria** These are **assessable statements** which specify the required level of performance for each of the elements (to be stated in passive voice). **Note: *bold and italicized terms are elaborated in the range***
1. Interpreting working drawings	1.1 Reading and extraction of ***information*** (dimensions, tolerances, BS/ANSI Drawing Standards, geometric ISO symbols & abbreviations) 1.2 Development of working procedure/ operational plan
2. Choosing of appropriate tools and materials	2.1 Select ***PPE*** according to specific context 2.2 Types of hand tools 2.3 Using hand tools. 2.4 Using ***machine tools*** 2.5 Selection of tools as per the specific operation 2.6 Inspection and/or recalibration of tools 2.7 Demonstration of correct handling of tools. 2.8 Selection of material for the given component
3. Marking out of work piece(s)	3.1 Use of marking out tools 3.2 Laying out work piece(s) 3.3 Transfer of dimensions onto the work piece(s)
4. Producing components as per the drawing	4.1 Set up work piece on ***work holding device*** securely. 4.2 Perform suggested ***operations*** but not limited to:
5. Performing finishing processes	5.1 Finishing ***processes***

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

Variable	Range
1. PPE (personal protective equipment) include but not limited to:	• Dust coats/overalls • Gloves • Eye shields • Boots, • Helmets/hats • Masks
2. Information: include but not limited to:	• Dimensions, • Tolerances, • BS/ANSI drawing standards, • Geometric iso symbols & abbreviations)
3. Machine tools include but not limited to:	• Drilling machines • Grinders
4. Work holding devices include but not limited to:	• Vices • Chucks • Clamps
5. Operations include but not limited to:	• Tapping • Drilling • Boring • Filing • Grinding • Soldering/brazing • Welding
6. Processes include but not limited to:	• Polishing • Filing • Grinding • De-burring • Painting of components

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate ability related to:

- Communication
- Team work
- Problem solving
- Planning and organizing
- Self-management
- Measurement
- Use of tools and equipment

Required Knowledge

The individual needs to demonstrate knowledge of:

1. Types of tools, equipment and PPE
2. National legislation and regulations
3. Safe working practices and procedures to be followed when working in an engineering workshop
4. Safety and environmental hazards associated with workshop tools and equipment
5. Using workshop tools and equipment
6. Basic maintenance and servicing of workshop tools, equipment and machines

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: • Interprets working drawings • Chooses appropriate tools and materials • Marks out work piece(s) and produces components as per the drawing • Performs finishing processes
2. Resource Implications	The following resources must be provided: • Tools and equipment • A functional agricultural engineering workshop

3. Methods of Assessment	Competency in this unit may be assessed through: • Observation (performance checklist) • Oral • Written • Third party report • Practicals
4. Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.