

WORKSHOP TECHNOLOGY PRINCIPLES

UNIT CODE: ENG/CU/AME/CC/04/4

Relationship to Occupational Standards:

This unit addresses the unit of competency: Apply workshop technology principles

Duration of Unit: 20 hours

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.

Summary of Learning Outcome

1. Interpreting working drawings
2. Choosing of appropriate tools and materials.
3. Marking out of the work pieces
4. Producing components as per the drawing
5. Performing finishing processes

Learning Outcomes, Content and suggested assessment methods

Learning outcome	Content	Suggested assessment methods
1. Interpreting working drawings	<ul style="list-style-type: none">• Reading and extraction of information (dimensions, tolerances, BS/ANSI drawing standards, geometric iso symbols & abbreviations)• Development of working procedure/ operational plan	<ul style="list-style-type: none">• Administration of written and oral tests• Assessment of worksheet/ operation plans
2. Choosing of appropriate tools and materials	<ul style="list-style-type: none">• Types of hand tools• Using hand tools.• Using machine tools• Selection of tools as per the specific operation• Inspection and/or recalibration of tools• Demonstration of correct handling of tools.	<ul style="list-style-type: none">• Observation of correct selection of tools for specific operation• Observation of inspection and/or recalibration of tools

	<ul style="list-style-type: none"> • Selection of material for the given component 	<ul style="list-style-type: none"> • Observation of appropriate handling of tools • Administration of oral and written questions
3. Marking out of work piece(s)	<ul style="list-style-type: none"> • Use of marking out tools • Laying out work piece(s) • Transfer of dimensions onto the work piece(s) 	<ul style="list-style-type: none"> • Observation of laying out of work piece(s) • Assessment of transferred dimensions • Administration of oral and written questions
4. Producing components as per the drawing	<ul style="list-style-type: none"> • Secure work piece on work holding device securely. • Perform suggested operations but not limited to: <ul style="list-style-type: none"> ○ Tapping ○ Drilling ○ Boring ○ Filing ○ Grinding ○ Sawing ○ Turning ○ Soldering/brazing ○ Welding 	<ul style="list-style-type: none"> • Practical • Assessment of the produced component
5. Performing finishing processes	<ul style="list-style-type: none"> • Finishing • Polishing • Filing • Grinding • De-burring • Painting of components 	<ul style="list-style-type: none"> • Observation of degree of surface finish • Assessment of finished surface(s) using inspection tools • Assessment of finished surface(s) visually

Suggested Delivery Methods

- Demonstration by trainer
- Discussions

- Practical work by trainee(s)
- Exercises
- Industrials visits
- Internet.
- Simulation

List of Recommended Resources

Tools and equipment suggested but not limited to:

- Welding
- Drilling machines
- Vices
- Burnishing machine
- Cutting tools
- Combination square
- Centre punch
- Centre lathe
- scribes
- calipers
- Dies and taps
- Surface plate
- V-blocks
- Dial gauge
- Die stock
- Engineer's square
- File card
- Assorted Files
- Assorted hand tools
- Hammers
- Measuring tools
- Drill bits
- Assorted inspection tools and equipment
- Jigs and fixture
- Pliers
- Rotary disc abrasive grinder
- Reamers
- Saw
- Screwdrivers
- Tap wrench
- V-block
- Workbenches
- Mops/ Brooms and buckets
- Firefighting equipment
- First Aid kit

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