

BASIC WORKSHOP CONCEPTS

UNIT CODE: ENG/CU/WEL/CC/01/3/A

Relationship to Occupational Standards

This unit addresses the unit of competency: apply basic workshop concepts

Duration of Unit: 30 hours

Unit Description

This unit describes the competencies required by a gas welding worker in order to apply basic calculations, measurements, and workshops while carrying out day-to-day welding works.

Summary of Learning Outcomes

1. Apply basic calculations and measurements
2. Apply workshop tools

Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Apply basic calculations and measurements	<ul style="list-style-type: none">• Basic mathematical operations<ul style="list-style-type: none">• Addition• Subtraction• Division• Multiplication• Manipulation of fraction and mixed numbers• Percentages, averages, ratios and proportions Measurements <ul style="list-style-type: none">• Basic units of measurements (metric and imperial)• Conversion of units• Drawing plane figures• Mensuration – plane figures<ul style="list-style-type: none">• Length, perimeters, areas, and volume• Free hand sketches of plane figures	<ul style="list-style-type: none">• Written tests• Oral questioning• Assignments

<p>2. Apply workshop tools</p>	<ul style="list-style-type: none"> • Workshop safety <ul style="list-style-type: none"> • Hazards and accidents • Movement of materials (manual and mechanical) <ul style="list-style-type: none"> – chains, crane, forklift, etc. • Behaviour in workshop • Machine <ul style="list-style-type: none"> • Guards • Gangways, aisles, etc. • Hand-operated tools e.g. hammers, hacksaws, vices, chisel, files, etc. <ul style="list-style-type: none"> • Use • Dangers • Care and maintenance • Power operated tools e.g. power hand grinder, swage, block, anvil, band saw, cut off grinder, hand power drill, etc. <ul style="list-style-type: none"> • Use • Dangers • Care and maintenance • Cutting techniques <ul style="list-style-type: none"> • Grinding • Sawing • Filing • Chiselling • Verification checklist for safe workshop operations <ul style="list-style-type: none"> • Checklist for safe operation • Checklist for welding environment 	<ul style="list-style-type: none"> • Written tests • Oral questioning • Assignments • Product checklist • Project
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Suggested Methods of Instruction

- Group discussions
- Demonstration by trainer
- Exercises by trainee
- Projects by trainees

Recommended Resources

- Calculators
- Stationery
- Assorted workshop tools
- Videos of safe use of hand-operated tools.
- Videos of safe use of power-operated tools.
- Sample welding safety checklists

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