DESIGNING ONSITE SANITATION FACILITIES

UNIT CODE: CON/CU/CET/CR/11/6/A

Relationship to Occupational Standards
This unit addresses the unit of competency: Design Onsite Sanitation Facilities

Duration of Unit: **80 hours**

Unit Description

This unit covers the competencies required to design onsite sanitation facilities**.** It involves Collection and analysis of onsite sanitation design data, calculation of onsite sanitation design parameters, drawing onsite sanitation units, designing shit flow diagram and compilation of onsite sanitation design report

Summary of Learning Outcomes

1. Collect onsite sanitation design data
2. Analyse onsite sanitation design data
3. Calculate onsite sanitation design parameters
4. Draw onsite sanitation units
5. Design shit flow diagram
6. Compile onsite sanitation design report

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Learning Outcomes, Content and Suggested Assessment Methods

Learning Outcome	Content	Suggested Assessment Methods
1. Collect onsite sanitation design data	• Area Mapping • Data collection tools • Data collection process • Need for wastewater disposal • Population • Legal framework	• Written Test • Interview • Oral Question • Assignments • Supervised Exercises • Practical Tests
2. Analyze onsite sanitation design data	• Arrangement of data and information • Design software (excel) • Presentation of design data	• Written Test • Interview • Oral Question • Assignments

		• Supervised Exercises • Practical Tests

3. Calculate onsite sanitation design parameters	• Wastewater estimation
	• Population projection
	• Design parameters
	• Design tools
	• Design of Onsite facilities:
	  ○ Design of septic tank
	  ○ Design of bio-digester
	  ○ Design of anaerobic baffled reactors
	  ○ Design of latrines
	  ○ Design of soak pits
	  ○ Eco-san toilets
	  ○ Imhoff tank
		• Written Test
		• Interview
		• Oral Question
		• Assignments
		• Supervised Exercises
		• Practical Tests

4. Draw onsite sanitation units	• Drawing tools, supplies and materials • Drawing of Onsite facilities: • Septic Tank • Bio-Digester • Anaerobic Baffled Reactors • Latrines • Soak Pits • Eco-san Toilets • Imhoff Tank	• Written Test • Interview • Oral Question • Assignments • Supervised Exercises • Practical Tests
5. Design shit flow diagram	• Shit flow diagram design • Fecal waste flow matrix • Sanitation service chain • Risks along the Sanitation Service Chain • Sanitation intervention measures • Faecal sludge management	• Written Test • Interview • Oral Question • Assignments • Supervised Exercises • Practical projects
6. Compile onsite sanitation design report	• Design report format • Design report preparation • Design report submission	• Written Test • Interview • Oral Question • Assignments

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		• Supervised Exercises • Practical Tests

Suggested Methods of Instruction

- Group discussions
- Demonstration by trainer
- Online videos
- Power point presentation
- Exercises by trainee

Recommended Resources

- Scientific Calculators
- Relevant reference materials
- Stationeries
- GPS
- Design Software
- Computer lab
- Relevant practical materials
- Laboratories (chemical, biological & soils)
- Internet
- Surveying equipment
- Drawing room/workstation

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