

10.1.0 SITE AND WORKSHOP MANAGEMENT

10.1.1 Introduction

The module unit is designed to equip the trainee with skills, knowledge and attitudes to enable him/her to appreciate and apply safe working conditions on site and masonry works.

10.1.2 General Objectives

By the end of the module unit, the trainee should be able to:

- a) Prepare workshop layouts
- b) Observe safety, health and welfare in a construction site
- c) Source, purchase and store materials for construction
- d) Apply appropriate site and office procedures

10.1.3 Module Unit Summary and Time allocation

Site and Workshop Management

Code	Sub-Module Units	Content	Time (Hours)		
			Theory	Practice	Total
10.1.01	Site Preparation	<ul style="list-style-type: none">• Preliminary items for the works• Purpose of preliminary items• Regulations relating to preliminary items	2	1	3
10.1.02	Site Organisation and Planning	<ul style="list-style-type: none">• Meaning of site organisation• Safety, Health and Welfare• Site layout• Workman indemnity	2	2	4
10.1.03	Contracts	<ul style="list-style-type: none">• Parties to a contract• Forms of contract• Types of contracts• Contract documents• Tendering methods• Law of contract	2	1	3
10.1.04	Procurement Procedures	<ul style="list-style-type: none">• Meaning of purchasing terms• Process of purchasing	2	2	4

Code	Sub-Module Units	Content	Time (Hours)		
			Theory	Practice	Total
10.1.05	Storekeeping	<ul style="list-style-type: none"> • Meaning of stores • Reasons for holding stores • Stock control methods • Storekeeping documents • Types of stores 	3	2	5
10.1.06	Introduction to Estimation of Materials	<ul style="list-style-type: none"> • Terms used in material estimation • Role of estimator • Cost components 	3	2	5
10.1.07	Site Office Procedures	<ul style="list-style-type: none"> • Work measurement • Role of sub-contractors and nominated suppliers • Material schedules • Documentation 	2	0	2
10.1.08	Workshop Organization	<ul style="list-style-type: none"> • Meaning of workshop organisation • Safety, Health and Welfare • Workshop layout • Dress code 	2	1	3
10.1.09	Tools, Equipment and Machines	<ul style="list-style-type: none"> • Sources of Finance • Methods of maintenance • Inventories • Safety 	2	2	4
Total			20	13	33

10.1.01 SITE PREPARATION

10.1.01C Competence

The trainee should have the ability to prepare the site for works to commence.

Theory

10.1.01T0 *Specific Objectives*

By the end of the sub-module unit the trainee should be able to:

- a) identify preliminary items for the works
- b) explain the purpose for each preliminary items identified
- c) state the regulations relating to preliminary items

Content

10.1.01T1 Preliminary items for the works

- i) site services
 - water
 - electricity
 - telephone
 - access roads and parking areas
 - hoarding and fencing
 - security
 - sign boards
- ii) insurance

10.1.01T2 Purpose of preliminary items

- i) safety
- ii) health
- iii) communication
- iv) security

10.1.01T3 Regulations relating to preliminary items

- i) Local authority by-laws
- ii) Building code
- iii) IEEE regulations
- iv) Water Act
 - easement
 - permits
- v) National Environment Management Authority (NEMA)
- vi) National Construction Authority (NCA)

Practice

10.1.01P0 *Specific Objectives*

By the end of the sub-module unit the trainee should be able to:

- a) identify relevant authorities granting rights for services
- b) secure authority to remove or install site services

Content

10.1.01P1 Authorities offering services

- i) local authority

- ii) Kenya Power Lighting Company (KPLC)
- iii) Insurers
- iv) Telecommunication service providers
- v) NEMA

Suggested Teaching/Learning Activities

- Demonstration
- Site visits

Suggested Teaching/Learning Resources

- Relevant reference books
- Relevant Acts of parliament
- Reference codes
- Manuals and journals

Suggested Assessment Methods

- Practical tests/assignments
- Written tests
- Oral tests

10.1.02 SITE ORGANISATION AND PLANNING

- 10.1.02C Competence**
The trainee should have the ability to organise a site together with related layouts

Theory

- 10.1.02T0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:
- a) describe site organisation
 - b) state safety rules and regulations to be observed on site
 - c) illustrate a site layout
 - d) explain the site requirements for workmen indemnity

Content

- 10.1.02T1 Meaning of site organisation
- 10.1.02T2 Safety, health and welfare
- 10.1.02T3 Site layout
- 10.1.02T4 Workmen indemnity
 - i) OSHA
 - ii) WIBA

Practice

- 10.1.02P0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:
- a) illustrate a site layout
 - b) identify environmental factors affecting site layout

- c) organize material storage on site

Content

- 10.1.02P1 Site organisation and layout
- 10.1.02P2 Site layouts and the environment
- 10.1.02P3 Material storage

Suggested Teaching/Learning Resources

- Relevant reference books
- Chalkboard
- Journals
- OSHA
- WIBA

Suggested Teaching/Learning Activities

- Demonstration
- Site visits

Suggested Assessment Method

- Written tests

10.1.03 CONTRACTS

10.1.03C Competence

The trainee should have the ability to:

- i) Distinguish types of contracts
- ii) Identify methods of contracts

Theory

10.1.03T0 *Specific Objectives*

By the end of the sub-module unit, the trainee should be able to:

- a) define the terms contract and tendering
- b) explain the role of each party involved in building contracts
- c) outline various types of contracts
- d) identify different types of contract documents
- e) describe various methods of tendering
- f) explain the Law of Contract

Content

10.1.03T1 Definition of:

- i) contract
- ii) tendering

10.1.03T2 Parties to a contract

- i) Client
- ii) Contractor
- iii) Architect
- iv) Quantity surveyor
- v) Engineer
- vi) Local authority
- vii) Building inspector
- viii) Factory inspector
- ix) Clerk of works
- x) Sub contractors
- xi) Suppliers
- xii) Forms of contracts

- 10.1.03T3 Forms of contracts
- i) with bills of quantities
 - ii) without bills of quantities
- 10.1.03T4 Types of contracts
- i) lump sum
 - ii) labour only
 - iii) management
 - iv) package deal
 - v) negotiated
- 10.1.03T5 Contract documents
- i) drawings
 - ii) specifications
 - iii) bill of quantities
 - iv) conditions of contract
 - v) articles of agreement
 - vi) form of tender
 - vii) schedule of rates
- 10.1.03T5 Tendering methods
- i) open tendering
 - ii) selective tendering
 - iii) negotiated tendering
 - iv) serial tendering
- 10.1.03T6 Law of contract
- i) formation
 - ii) factors making a contract null and void
 - iii) limits of contractual obligation
 - iv) performance and discharge of a contract
 - v) remedies for breach of contract

Practice

- 10.1.03P0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:
- a) identify contract and tendering documents
 - b) tender for simple masonry works
 - c) enter into a simple masonry contract

Content

- 10.1.03P1 Tendering documents
- i) Drawings
 - ii) Specifications
 - iii) Bill of Quantities
 - iv) Form of tender
- 10.1.04P2 Tendering procedure
- 10.1.03P3 Agreement

Suggested Teaching/Learning Methods

- Demonstrations
- Discussions

Suggested Teaching/Learning Resources

- Text books
- General conditions of contract manual
- Field visits
- Charts
- Law of contract
- Computers

Suggested Assessment Methods

- Oral tests
- Written tests
- Practical exercises
- Assignments

Practice

10.1.04 PROCUREMENT PROCEDURES

10.1.04C Competence

The trainee should have the ability to purchase construction materials

- 10.1.04P0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:
- a) procure materials according to statutory requirements
 - b) apply work ethics and integrity

Theory

- 10.1.04T0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:
- a) define purchasing terms
 - b) describe the purchasing process

Content

- 10.1.04P1 Materials procurement
i) Public Procurement and Disposal Act
- 10.1.04P2 Work ethics and integrity

Suggested Teaching/Learning Activities

- Demonstration
- Discussion
- Exercises
- Site visits

Content

- 10.1.04T1 Meaning of purchasing terms
- i) contract
 - ii) tenders
 - iii) purchase orders
 - iv) quotations
 - v) sources of materials
 - vi) specifications
 - vii) delivery requirements
 - viii) requisition
 - ix) invoices
 - x) payment certificates
- 10.1.04T2 Process of purchasing

Suggested Teaching/Learning Resources

- Relevant reference books
- Hand outs
- ICT
- Public procurement and disposal act

Suggested Assessment Methods

- Assignments
- Tests

10.1.05 STOREKEEPING

10.1.05C Competence

The trainee should have the ability to keep inventories and track use of materials, tools and equipment.

Theory

10.1.05T0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:

- explain the meaning of holding stores
- give reasons for holding stores
- discuss various methods of stock control
- outline various documents used in storekeeping
- name different types of stores

Content

- 10.1.05T1 Meaning of stores
- 10.1.05T2 Reasons for holding stores
- 10.1.05T3 Stock control methods
- 10.1.05T4 Storekeeping documents
- 10.1.05T5 Types of stores

Practice

10.1.05P0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:

- purchase materials and stores
- organize stock control and storekeeping

Content

- 10.1.05P1 Purchasing of materials and stores
- 10.1.05P2 Stock control and storekeeping

Suggested Teaching / Learning Activities

- Discussion
- Note taking
- Illustration

Suggested Teaching / Learning Resources

- Text books
- Public Procurement and Disposal Act
- Inventory control documents
- Inventory control software

Suggested Assessment Methods

- Written tests
- Oral tests
- Assignments

10.1.06 INTRODUCTION TO ESTIMATION OF MATERIALS

10.1.06C Competence
The trainee should have the ability to compute quantities of materials and build-up unit rates for costing tasks

Theory

10.1.06T0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:

- a) define terms relating to estimation of materials
- b) identify techniques of analysing materials for estimation
- c) explain the role of an estimator
- d) explain the components of cost for a given product

Content

10.1.06T1 Terms used in material estimation

- i) actual measurements
- ii) nominal measurements

10.1.06 T2 Techniques of analysing materials for estimation

- i) taking off

- ii) squaring
- iii) abstracting
- iv) working up
- v) billing

10.1.96T3 Role of an estimator

10.1.06T4 Cost components

- i) material
- ii) labour
- iii) overheads
- iv) profit
- v) contingencies
- vi) plant

Practice

10.1.06P0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:

- a) built up a unit rate for a given task
- b) verify cost components of a given task

Content

10.1.06P1 Unit rate

- i) labour
- ii) material
- iii) production cost (plant)
- iv) profit and overheads

10.1.06P2 Cost components

Suggested Teaching/ Learning Resources

- Textbooks
- Price lists
- Cutting lists

- Samples of completed projects
- Resource persons

Suggested Teaching / Learning Activities

- Discussion
- Assignments
- Site visits

Suggested Assessment Method

- Class exercises
- Oral tests
- Written tests
- Assignments

- d) explain different office practices

Content

- 10.1.07T1 Work measurement
- 10.1.07T2 Role of sub-contractors and nominated suppliers
- 10.1.07T3 Material schedules
- 10.1.07T4 Office practices
 - i) Report writing
 - ii) memo writing
 - iii) filing systems
 - iv) letter writing
 - v) ICT
 - vi) Information security

10.1.07 SITE OFFICE PROCEDURES

10.1.07C Competence

The trainee should have the ability to organise a site office and its related activities

Theory

10.1.07T0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:

- a) outline methods of work measurement
- b) outline the roles of sub-contractors and nominated suppliers
- c) prepare material schedules

Practice

- 10.1.07P0 *Specific Objectives*
By the end of the sub-module unit, the trainee should be able to:
 - a) direct operations of a site office
 - b) follow appropriate procedures to measure efficiency of different methods of carrying out tasks
 - c) convene gang site meetings

Content

- 10.1.07P1 Office procedures
- 10.1.07P2 Methods of work measurements
- 10.1.07P3 Site meetings

Suggested Teaching/Learning Activities

- Discussion
- Illustration
- Demonstration
- Site visits
- Visiting offices

Suggested Teaching/Learning Resources

- Relevant reference books
- Filing cabinets
- Computers
- External discs

Suggested Assessment Method

- Written tests
- Oral questions
- Observations

10.1.08 WORKSHOP ORGANISATION

10.1.08C Competence

The trainee should have the ability to organise a workshop

Theory

10.1.08T0 *Specific Objectives*

By the end of the sub-module unit, the trainee should be able to:

- a) describe workshop organisation
- b) state safety rules and regulations to be

observed in workshop

- c) illustrate workshop layout
- d) describe the appropriate workshop dress code

Content

10.1.08T1 Meaning of workshop organisation

10.1.08T2 Safety, health and welfare

10.1.08T3 Workshop layout

10.1.08T4 Workshop dress code

Practice

15.2.08P0 *Specific Objectives*

By the end of the sub-module unit, the trainee should be able to:

- a) illustrate a workshop layout
- b) identify factors affecting workshop layout
- c) organize material storage in workshop
- d) demonstrate workshop dress code

Content

10.1.08P1 Workshop organisation and layout

10.1.08P2 Factors affecting workshop layout

10.1.08P3 Material storage

10.1.08p4 Workshop dress code

	<p><i>Suggested Teaching/Learning Activities</i></p> <ul style="list-style-type: none"> - Demonstration - Discussion 		<p>tools, equipment and machines</p> <ul style="list-style-type: none"> b) explain various types of maintaining tools, equipment and machines
	<p><i>Suggested Teaching/Learning Resources</i></p> <ul style="list-style-type: none"> - Relevant reference books - Chalk board - Journals - Charts 		<ul style="list-style-type: none"> c) explain how inventories are prepared and kept d) describe safety precautions related to tools, equipment machines and personnel
	<p><i>Suggested Assessment Methods</i></p> <ul style="list-style-type: none"> - Projects - Written tests - Oral tests - Assignments - Practice 		<p><i>Content</i></p>
		10.1.09T1	Sources of finance <ul style="list-style-type: none"> i) loans ii) grants iii) donations iv) savings
10.1.09	TOOLS, EQUIPMENT AND MACHINES	10.1.09T2	Types of maintenance <ul style="list-style-type: none"> i) routine maintenance ii) preventive maintenance iii) planned maintenance
10.1.09C	Competence The trainee should have the ability to acquire, maintain, store and safely operate masonry tools, equipment and machines	10.1.09T3	Inventories <ul style="list-style-type: none"> i) purpose of inventory columns ii) updating the inventory iii) handing over/taking over
	Theory	10.1.09T4	Safety for: <ul style="list-style-type: none"> i) personal ii) tools, equipment and machines iii) working environment
10.1.09T0	<i>Specific Objectives</i> By the end of the sub-module unit the trainee should be able to: <ul style="list-style-type: none"> a) identify sources of capital finance for 		

Practice

10.1.09P4 Safety

10.1.09P0 *Specific Objectives*
By the end of the sub-module unit the trainee should be able to:

- a) source finance for acquisition of tools, equipment and machines
- b) apply different types of maintenance
- c) prepare and keep inventories
- d) demonstrate safety in handling tools, equipment and machines

Suggested Teaching / Learning Activities

- Discussion
- Illustration
- Demonstrations
- Practice

Suggested Teaching / Learning Resources

- Text books
- Manuals
- Schedules
- ICT
- Charts
- The Factories Act

Content

10.1.09P1 Identification of the appropriate source of finance

10.1.09P2 Types of maintenance

10.1.09P3 Preparation and maintenance of inventories

Suggested Assessment Methods

- Written tests
- Assignment
- Practice
- Continuous assessment