

SITE AND WORKSHOP MANAGEMENT

INTRODUCTION

The subject is intended for trainees taking carpentry, masonry and plumbing craft courses.

The subject is aimed at providing trainees with sufficient knowledge to enable them to manage the sites and workshop efficiently.

GENERAL OBJECTIVES

At the end of this course-unit, the trainee should be able to:-

- a) select an appropriate site for a workshop.
- b) interpret the regulations governing the construction industry
- c) plan a workshop and site layout.
- d) prepare and use documents used for ordering and supplying of materials, construct planning and office practice.
- e) prepare programmes of activities for a construction project.
- f) distinguish the roles of the parties involved in the building process.
- g) make appropriate decisions relating to maintenance and replacement of tools, equipment and plants
- h) identify sources of finance for buying or hiring tools, equipment and plant.

CODE	TOPIC	SUB-TOPIC	TIME
14.2.1.S	IDENTIFICATION OF WORKSHOP SITE	<ul style="list-style-type: none"> - Market survey - Local authority regulations - Services - Transport 	2
14.2.2.S	REGULATIONS GOVERNING WORKSHOP DESIGN	<ul style="list-style-type: none"> - Welfare - Health - Safety 	2
14.2.3.S	WORKSHOP LAYOUT	<ul style="list-style-type: none"> - Working area - Storage area - Machine shop - Offices 	4
14.2.4.S	MATERIALS	<ul style="list-style-type: none"> - Ordering procedure - Supply procedure - Documentation in supply of materials - Storage - Materials control 	6
14.2.5.S	TOOLS, EQUIPMENT AND MACHINES	<ul style="list-style-type: none"> - Acquisition - Maintenance - Inventory 	6
14.2.6.S	PREPARATION FOR CARRYING OUT THE WORKS	<ul style="list-style-type: none"> - Site services - Insurance - Local Authority permit - Regulations relating to the site works. 	2

IDENTIFICATION OF WORKSHOP SITE 2 HOURS

2.151

Specific Objectives

At the end of this topic the trainee should be able to:-

- a) select a suitable site for a given workshop.
- b) list local authority requirements governing the establishment of a given workshop.
- c) state the essential services required for a given workshop.
- d) select appropriate mode of transport for a given situation.

2.1.S11 - Selection of a workshop site

- i) acquiring the workshop site
- ii) availability of raw materials
- iii) services
- iv) communication
- v) market

2.1.S12 - Local Authority requirements

- i) location relating to neighbourhood
- ii) Local authority planned zones
- iii) Other requirements eg., rates, permits etc.

2.1.S13 - Essential services for a workshop

- i) water
- ii) electricity
- iii) gas
- iv) telephone
- v) access roads/parking areas.

14.2.1.S14

Means of Transport

- i) roads
- ii) railway

14.2.2S

REGULATIONS GOVERNING WORKSHOP DESIGN (2HOURS)

14.2.2.S1

Specific Objectives

At the end of this topic, the trainee should be able to:-

state the regulations governing the design of given workshop.

14.2.2.S11

Regulations

- i) safety
- ii) health
- iii) welfare

14.2.3.S

WORKSHOP LAYOUT (4 HOURS)

14.2.3.S1

Specific Objectives

At the end of this topic, the trainee should be able to:-

plan the layout for a given workshop.

14.2.3.S11

Layout for a given workshop

- i) working area
- ii) storage area
- iii) machine area
- iv) offices
- v) tools store

Specific Objectives

At the end of this topic the trainee should be able to:-

- a) prepare documents used in ordering and supplying of materials
- b) keep proper records of incoming and outgoing materials.
- c) identify the correct method of storing a given material on site and in the workshop
- d) maintain proper records for the purpose of materials control.
- e) exercise proper control in the use of materials.
- f) maintain security in connection with materials both in the workshop and on site.

511 Ordering and supplying materials

Materials procurement documents

- requisition
- local purchase order (L.P.O.)
- delivery notes
- advice notes
- invoices

512 Records of Materials

- 1) materials record book

- ii) materials transfer forms
- iii) inventories
- iv) materials delivery book

14.2.4.S.3 Storage of materials

- i) timber
- ii) cement
- iii) sand and aggregates
- iv) pipes
- v) sheet metal
- vi) small articles

14.2.4.S.4 Material control records

- i) issue of materials
- ii) schedules

14.2.4.S.5 Control in the use of materials

- i) wastage
- ii) cleanliness
- iii) pilfering and theft

14.2.4.S.6 Security of materials

- i) stores
- ii) watchman
- iii) fencing and holding
- iv) site lighting
- v) security alarms

TOOLS, EQUIPMENT AND MACHINES (6 HOURS)

5.5

Specific Objectives

5.51

At the end of this topic the trainee should be able to:-

- a) identify sources of capital finance for tools, equipment and machines
- b) explain various methods of maintaining tools equipments and machines
- c) explain how inventories are prepared and kept.

5.511

Sources of capital finance

- i) loans
- ii) grants
- iii) savings

5.512

Maintenance of tools, equipments and machines

- i) routine maintenance by own staff
- ii) overhauls/repairs by recognized agents.

5.513

Preparation and keeping of inventories

- i) purpose of inventory columns
- ii) updating the inventory
- iii) handing over/taking over.

6.5

PREPARATION FOR CARRYING OUT THE WORKS (2 HOURS)

6.51

Specific Objectives

At the end of this topic the trainee should be able to:-

- 14.2.6.51
- a) identify preliminary items for the works
 - b) explain the purpose of each of the preliminary items identified
 - c) state the regulations relating to preliminary items

14.2.6.S11

Preliminary items for the works

- i) site services
 - water
 - electricity
 - telephone
 - access roads and parking areas
 - holding and fencing
 - sign boards
- ii) Insurance

14.2.6.S12

Purpose of preliminary items

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

14.2.6.S13

Regulations relating to preliminary items

- i) Local authority
- ii) building code
- iii) electrical installation Act
- iv) water Act

THREE COURSE UNIT SUMMARY AND TIME ALLOCATION (44 HRS)

TOPIC	SUB-TOPIC	TIME
SITE LAYOUT	<ul style="list-style-type: none"> - provision of amenities - hoarding and fencing - storage areas - plant positioning - sign boards - security/safety 	6
PLANT AND EQUIPMENT	<ul style="list-style-type: none"> - routine maintenance - seasonal (random) maintenance - buying and hiring - transport. 	6
CONTRACTS	<ul style="list-style-type: none"> - client and building team - types of contracts - contract documents - basic tendering 	6
SITE ORGANISATION	<ul style="list-style-type: none"> - structure of the firm - span of control - leadership - motivation - discipline 	6
OFFICE PRACTICE	<ul style="list-style-type: none"> - office equipments - filing systems - methods of communication - office documents - taxation - site meetings 	6
CONTRACT PLANNING	<ul style="list-style-type: none"> - site investigation - methods of communications - calculation sheets - plant schedule - sub-contractors - construction programmes 	10

CODE	TOPIC	SUB-TOPIC	TIME
14.3.7. S	LABOUR RELATIONS	<ul style="list-style-type: none">- Trade unions- Industrial training- Regulations governing employment- Factories act	

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STAGE THREE (6 HOURS)

3.1.S SITE LAYOUT (3 HOURS)

3.1.S1 Specific Objectives

At the end of this topic, the trainee should be able to:-

prepare a suitable site layout for a given site.

3.1.S11 Site Layout

- i) amenities
- ii) storage area
- iii) plant area
- iv) sign board
- v) site security

3.2.S PLANT AND EQUIPMENTS

3.2.S1 Specific Objectives

At the end of this topic the trainee should be able to:-

- a) explain various methods of maintaining plants and equipment
- b) identify sources of finance for buying or hiring plant and equipment,
- c) identify the most appropriate mode of transportation.

3.2.S11 Maintaining plants and equipment

- i) routine maintenance by own staff
- ii) planned maintenance

.14.3.2.S12 Sources of finance

- i) financial institutions
- ii) donors
- iii) savings

14.3.2.S13 Transport

- i) buying
- ii) hiring

14.3.3.S' CONTRACTS (6 HOURS)

14.3.3.S1 Specific Objectives

At the end of this topic the trainee should be able to:-

- a) explain the roles of the parties involved in a project.
- b) explain the various types of contracts
- c) identify different types of contract documents
- d) describe a given method of tendering.

14.3.3.S'11 Roles of parties involved in a project

- i) client
- ii) architect
- iii) quantity surveyor
- iv) civil engineer
- v) structural engineer
- vi) local authority's building inspector
- vii) clerk of works
- viii) sub-contractors
- ix) suppliers

4.3.3.S12 Types of contracts

- i) labour only contracts
- ii) cost reimbursement contracts
- iii) target cost contracts
- iv) package deal

4.3.3.S13 Contract documents

- i) bills of quantities
- ii) specifications
- iii) drawings
- iv) conditions of contract
- v) form of tender

4.3.3.S14 Tendering methods

- i) open tendering
- ii) selective tendering
- iii) negotiated tenders

4.3.4.S SITE ORGANISATION (6 HOURS)

4.3.4.S1 Specific Objectives

At the end of this topic, the trainee should be able to:-

- a) explain the structures of a given firm.
- b) explain the importance of discipline in a given firm.
- c) explain ways of motivating workers in a given firm.

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14.3.4.S11 Structure of a given firm

- i) managerial
- ii) supervisory
- iii) operatives

14.3.4.S12 Discipline

- i) warnings
- ii) interdiction
- iii) termination of service

14.3.4.S13 Motivation

- i) incentives
- ii) responsibility
- iii) promotion
- iv) security
- v) welfare

14.3.5.S' OFFICE PRACTICE (6 HOURS)

14.3.5.S1 Specific Objectives

At the end of this topic the trainee should be able to:-

- a) list essential office equipment;
- b) explain the systems of filing;
- c) list different methods of communication;
- d) explain the use of a given office document;
- e) differentiate the various types of taxation;
- f) explain the importance of site meetings;

3.5.511

Office equipment

- i) typewriters
- ii) duplicating machine
- iii) photocopiers
- iv) calculators
- v) word processor

3.5.512

Filing systems

- i) Numerical filing
- ii) Alphabetical filing
- iii) Subject filing

3.5.513

Methods of communication

- i) Oral
- ii) written

3.5.514

Office documents

- i) day worksheets
- ii) time sheets
- iii) payment vouchers
- iv) diaries

3.5.515

Taxation

- i) income tax
- ii) national hospital insurance fund
- iii) national social security fund
- iv) local authority service charge
- v) union deals

3.5.516

Site meetings

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14.3.6.S

CONTRACT PLANNING (10 HOURS)

14.3.6.S1

Specific Objectives

At the end of this topic the trainee should be able to:-

- a) explain the importance of site investigation;
- b) identify the site operations and construction methods to be used;
- c) select the types of mechanical plant to be used for a given contract;
- d) identify the required number of subcontractors for the project;
- e) explain how construction programmes are prepared;
- f) use calculation sheets in the preparation of contracts programmes.

14.3.6.S11

Importance of site investigation

- i) access to site
- ii) distance from main roads
- iii) availability of working space
- iv) availability of service
- v) existing structures
- vi) concealed services
- vii) trespass precautions
- viii) ground/soil conditions
- ix) site clearance problems
- x) nearest bench mark
- xi) tipping facilities/areas

14.3.6.S12

Site operations and construction methods

- i) identification of construction operations

- ii) investigation of system of constructions
- iii) method statement.

8.13 Types of mechanical plant required

i) use of:

- concrete mixers

- dumpers

- bull-dozers

- rollers

- cranes

- back actors

- mechanical shovel

ii) preparation of plant schedule

8.14 Sub-contractors for the project

i) identification of sub-contractors work

ii) quotations from sub-contractors

iii) sub-contractors schedule

iv) attendance for sub-contractors

v) nominated and approved sub-contractors

8.15 Construction programmes

i) need for programme charts

ii) programmed operations

iii) bar charts

iv) critical path networks

8.16 Programme calculation sheets

i) calculation sheets based on bill of quantities

ii) calculation sheets based on actual measurement.

14.3.7.S LABOUR RELATIONS (4 HOURS)

14.3.7.S1 Specific Objectives

At the end of this topic the trainee should be able to:-

- a) explain the role of trade unions in the construction industry
- b) explain the importance of industrial training
- c) explain the regulations governing employment in the construction industry
- d) explain the importance of factories act with regard to the construction industry.

14.3.7.S11 Role of trade unions in construction industry

- i) definition of trade union
- ii) needs for trade unions
- iii) functions of trade unions
 - social functions
 - industrial functions
- iv) advantages and disadvantages of trade unions
- v) causes of industrial disputes
- vi) Kenya building, construction & allied workers union.
- vii) settlement of industrial disputes
 - Role of - Kenya Industrial disputes court
 - Ministry of labour
 - C.O.T.U.

12 Industrial training

- i) need for training
- ii) apprenticeship
 - in-house training (on-job)
 - D. I. T. training programmes
- iii) Training institutes
- iv) National polytechnics

13 Regulations governing employment in construction industry.

- i) contract of employment (terms and conditions)
- ii) redundancy
- iii) duties of employees
- iv) duties of the employer

14 Factories Act

- i) health provision
- ii) welfare provisions
- iii) safety provisions
- iv) notification of accidents and industrial diseases.