

### 32.3.0 TRADE PROJECT

#### 32.3.01 Introduction

The module unit is designed to enable the trainee apply theory, practical competence and knowledge gained in the training institutions, industrial attachment and the informal training to produce high quality, reliable and functional products and research reports.

The project should be based on the trade area and may take one or more of the following forms:

- a) Design and construction
- b) Investigation in a course related subject
- c) Institutional or industrial based research

The trainee will work independently but under the supervision of her/ his trainers. The time allocated to this unit is for the purpose of trainee-trainer contact during consultations, monitoring and evaluation. Trainees will need to commit adequate time to the project in order to gain the necessary skills and also meet the objectives of the Module unit.

#### 32.3.02 General Objectives

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

- a) Gather technical information diligently
- b) Design an item in the trade area taking into consideration preferred design methods
- c) Construct the designed with industrial quality finesse
- d) Carry out investigations or research work diligently
- e) Compile a project report
- f) Write technical reports clearly with correct interpretation of initial objectives

#### 32.3.03 Module Unit Summary and Time Allocation

##### Trade Project

| Code   | Sub-Module Unit       | Content  | Time Hrs |
|--------|-----------------------|--|----------|
| 32.3.1 | Technical Information | <ul style="list-style-type: none"><li>• Sources of technical information</li><li>• Gathering procedures</li></ul>  | 6        |
| 32.3.2 | Design                | <ul style="list-style-type: none"><li>• Design procedures</li><li>• Design aids</li><li>• Design methods</li></ul> | 4        |

|              |                                     |   |           |
|--------------|-------------------------------------|---|-----------|
| 32.3.3       | Construction                        | <ul style="list-style-type: none"> <li>• Construction considerations</li> <li>• Construction tools</li> <li>• Product finishes</li> </ul> | 12        |
| 32.3.4       | Investigation and Research Projects | <ul style="list-style-type: none"> <li>• Investigation and research</li> </ul>  | 8         |
| 32.3.5       | Compilation of Project Report       | <ul style="list-style-type: none"> <li>• Compilation of project report</li> </ul>   | 6         |
| 32.3.6       | Technical Reports                   | <ul style="list-style-type: none"> <li>• Layout of technical report</li> <li>• Preparation of technical reports</li> </ul>                | 8         |
| <b>Total</b> |                                     |   | <b>44</b> |

easytvvet.com

**32.3.1 TECHNICAL INFORMATION**

**Theory**

32.3.1T0 *Specific Objectives*  
By the end of the sub-module unit, the trainee should be able to:

- a) discuss sources of technical information
- b) describe procedures for gathering technical information

*Content*

32.3.1T1 Sources of technical information

- i) Books
- ii) Magazines
- iii) Technical journals
- iv) Manuals, catalogues and application data sheets
- v) Industrial and research institutions
- vi) Consultations

32.3.1T2 Gathering procedures

- i) Note taking
- ii) Photocopying
- iii) Reading
- iv) Video and photo shooting

**32.3.1C Competence**

The trainee should have the ability to: identify sources of information

*Suggested teaching/Learning Activities*

- Discussion
- Illustration
- Note taking

*Suggested teaching/Learning Resources*

- Books
- Magazines
- Technical journals
- Manuals, catalogues and application data sheets
- Industrial and research reports

*Suggested Evaluation Methods*

- Oral tests
- Timed written tests
- Assignments

**32.3.2 DESIGN**

**Theory**

32.3.2T0 *Specific Objectives*  
By the end of the sub-module unit, the trainee should be able to:

- a) use proper design procedures to develop a product design
- b) use design aids
- c) apply preferred methods for design

*Content*

32.3.2T1 Design development

- i) Objectives of design
- ii) Specifications
- iii) Block diagram
- iv) Block schematic diagrams
- v) Circuit diagrams
- vi) Wiring diagrams
- vii) Calculated and preferred values of components
- viii) Special considerations
- ix) Cost

- 32.3.2T2 Design aids
- x) Operational manual
  - i) Theoretical knowledge of subject
  - ii) Suitable computer packages
- 32.3.2T3 Preferred methods
- i) Module arrangement
  - ii) Assembly arrangement

**32.3.2C Competence**  
The trainee should have the ability to: come up with a product design

*Suggested teaching/Learning Activities*

- Discussion
- Illustration
- Note taking
- Practice on design

*Suggested teaching/Learning Resources*

- Sample designs
- Sample projects

*Suggested Evaluation Methods*

- Oral tests
- Timed written tests
- Assignments
- Project

**32.3.3 CONSTRUCTION**

**Practice**

- 32.3.3P0 *Specific Objectives*  
By the end of the sub-module unit, the trainee should be able to:
- a) make correct construction considerations for a given design

- b) use correct tools for the construction
- c) make a high quality stem finish

*Content*

- 32.3.3P1 Construction considerations
- i) Choice of materials
  - ii) Layout of components, modules assembly and controls
  - iii) Wiring
  - iv) Interconnection
  - v) Production of printed circuit boards (PCB's)
  - vi) Step by step construction
  - vii) Testing and test points
  - viii) Calibration
  - ix) Reliability
  - x) Construction of devices e.g. coils, transformers, casings etc
  - xi) Handling of components and finished equipment
  - xii) Labeling

- 32.3.3P2 Construction tools
- i) Tools used for the construction
  - ii) Proper use of tools
  - iii) Instruments

- 32.3.3P3 Finishes
- i) PCB's
  - ii) Assembly
  - iii) Wiring
  - iv) Mechanical parts
  - iv) Casing
  - v) Labeling

**32.3.3C Competence**

The trainee should have the ability to: construct a functional electrical/mechanical item

*Suggested teaching/Learning Activities*

- Discussion
- Illustration
- Note taking
- Practice on design

*Suggested teaching/Learning Resources*

- Sample designs
- Sample projects

*Suggested Evaluation Methods*

- Oral tests
- Timed written tests
- Assignments
- Project

**32.3.4 INVESTIGATION AND RESEARCH PROJECT**

**Practice**

32.3.4P0 *Specific Objective*  
By the end of the sub module unit, the trainee should be able to explain investigation and research procedures.

*Content*

32.3.4P1 Investigation and research

- i) Objectives
- ii) Information and data gathering
- iii) Procedures
- iv) Presentation
- v) Findings
- vi) Conclusions

**32.3.4C Competence**

The trainee should have the ability to: undertake investigative and research projects

*Suggested teaching/Learning Activities*

- Discussion
- Illustration
- Data collection
- Data analysis

*Suggested teaching/Learning Resources*

- Sample project reports

*Suggested Evaluation Methods*

- Oral tests
- Timed written tests
- Assignments
- Projects

**32.3.5 COMPILATION OF PROJECT REPORT**

**Practice**

32.3.5P0 *Specific Objective*  
By the end of the sub-module unit, the trainee should be able to compile a project report

*Content*

32.3.5P1 Compilation of Project Report

- Sample trade projects

### 32.3.6 TECHNICAL REPORTS

#### Practice

#### *Suggested Evaluation Methods*

- Oral tests
- Timed written tests
- Assignments
- Projects

#### 32.3.6P0 *Specific Objectives*

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

- outline the layout of a technical report
- write a good technical report

#### *Content*

#### 32.3.6P1 Layout of technical report

- Subject title
- Objectives
- Specifications
- Background information
- Resources
- Design / findings
- Conclusions / recommendations

#### 32.3.6P2 Presentation

- Flow of ideas
- Content
- Communication
- Appearance of written work

#### 32.3.6C Competence

The trainee should have the ability to:

- Write technical reports
- Compile a project report
- Construct a trade related project

#### *Suggested Teaching/Learning*

#### *Resources*

- Sample project reports
- Sample technical reports