

REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

POST VOCATIONAL EDUCATION: F. E. T. INSTITUTIONS

SYLLABUS FOR

INSTALLATION RULES

NATIONAL EXAMINATION & ASSESSMENT

CODE NUMBER

11040432

EXAMINATION INSTRUCTION NO. 19 OF 2002

Date of implementation

August 2002

First examinations

November 2002

1. AIMS

1.1. GENERAL AIMS

- 1.1.1. The general aim is to teach the theoretical knowledge contained in SA standards and codes of practice, SABS 0142 Part 1 of 2001 and the OHS Act 85 of 93 (latest publication), which are pertinent, and to ensure that it can be applied realistically in practice.
- 1.1.2. The fundamental principles underlying these codes of practice are primarily intended to ensure the safety of persons, livestock and property against hazards that may arise during the normal operation and the proper functioning of an installation.

1.2. SPECIFIC AIMS

Any person attempting the examination must be able to apply the Regulations set out; to design, construct, inspect, verify and to test electrical installations accordingly, and thereby ensure a safe and healthy environment.

2. DURATION OF COURSE

One trimester for each examination (part time)
It is recommended that the entire syllabus be lectured over a period of 6 months (two trimesters) due to the extent of the new syllabus.

3. EXAMINATION

- 3.1 Two three-hour national examination papers will be set comprising 100 marks each.
No admission requirements are necessary.
- 3.2 The pass mark for Paper 1 and Paper 2 is 50%.

Both examination papers may be written during the same examination period. However, candidates need not pass both examinations during the same trimester, but the second examination must be passed within 12 months of the first, otherwise both examinations must be re-written. However, if a candidate obtains 75% of 100 marks in any one of the examinations, he will be permanently exempted from re-writing that examination. An aggregate of 50 % for both question papers must be obtained to pass the instructional offering Installation Rules. An appropriate statement of results will be issued.

For accreditation purposes all candidates must also have proof of Competence with regards to the required level unit standards prescribed by the Department of Labour (Implementation date of this requirement to be advised by Department of Labour).

- 3.3 No condonation will be considered.

- 3.4 Taxonomies such as knowledge, understanding and application are important aspects of these examinations and the proportion of these in the question papers should be as follows:

Knowledge	-	20%
Understanding	-	30%
Application	-	50%

- 3.5 During the examinations, tables for the applicable codes will be provided.

4. THE SYLLABUS FOR PAPER 1 AND PAPER 2 WILL CONSIST OF THE FOLLOWING:

4.1. Specific Content

Installation Rules - First Paper

- 4.1.1. OSH ACT 85/93 - Electrical Installation Regulation (Including Latest Amendments)

SECTIONS 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

- 4.1.2 OSH ACT 85/93 - Electrical Machinery Regulations

Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

- 4.1.3 SABS 0142 of 2001 Part 1

SECTION 1 - SCOPE

SECTION 2 - NORMATIVE REFERENCES

SECTION 3 - DEFINITIONS (Application questions)

SECTION 4 - COMPLIANCE

SECTION 5 - FUNDAMENTAL REQUIREMENT

SECTION 6 - ANNEXURES

SECTION 7 - SPECIAL INSTALLATIONS AND LOCATIONS

Annexure D - (informative)

Example of assessing estimated and connected load all types of installations.

Annexure F – (informative)

Recommended bending of cables

Annexure G - Conduit size for single core cables.

Annexure J - (informative)

Explanation of IP ratings

Annexure M - (informative)

Electricity supply systems

Annexure P - (informative)

Authority for issuing a Certificate of Compliance

Annexure Q – (informative)

IEC symbols associated with switchgear

SABS 0198 Part 2 - Selection and Handling of Cables.

(Scope, Definitions, Choice of Cable, Method of Installation) Only

No calculations.

SABS 0292 - Earthing of low voltage distribution systems.

(Code)

SABS 1507 - Electrical cables

(Scope, Definitions, General Requirements, Specific Requirements, Packing and Marking) Only.

TOTAL MARKS: 100

Installation Rules – Second Paper

4.2. SABS 0142 Part 1 of 2001

SECTION 6 INSTALLATION REQUIREMENTS

SECTION 8 VERIFICATION, CERTIFICATION

(Including Sections 8.8.1; 8.8.2; 8.8.3 - Certificates)

SECTION ANNEXURES

Annexure B - (informative)

Limits of " arm's" reach

Annexure C - (informative)

Installation components

Annexure E – (informative)

Calculation of Volt drop

Annexure H - (informative)

Distribution board Routine Test Certificate

Annexure K - (informative)

Notification of potential danger

Annexure L - (informative)

Installations surge protection devices (SPDs) into low voltage systems

Annexure N - (informative)

Earthing arrangements and equipotential bonding of information
Technology installation for functional purposes

Annexure O – (informative)

Classification of safety services necessary for medical locations

SABS 0313 - Lightning protection for electrical installations
(Code)

SABS 1473 Part 1 - Low voltage switch gear and control gear
assembly

(For future implementation)

**SABS IEC 60439 Part 1 - Low voltage switch gear and Control gear
assembly (Clause 7) Only**
SABS 0142 Part 2 - (Future implementation)

TOTAL MARKS: 100

**NOTE: CHANGES TO ANY OF THE CODES, STANDARDS OR
REGULATIONS WILL BE IMPLEMENTED AFTER AN EXAMINATION
INSTRUCTION IS ISSUED BY THE DEPARTMENT OF EDUCATION TO ALL
EXAMINATION CENTRES.**