



# **Module Resource Manual**

## **Model Orientation Program for Certificate III Electrotechnology Systems Electrician Qualification**

Student Workbook

First Edition

**December 2002**



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## *Attachments*

- A – EE-Oz Training Model
- B – Certificate III in Electrotechnology Systems Electrician Structure\*
- C – Weekly Job Diary Record Sheet\*
- D – CIII Electrotechnology Systems Electrician Module Flow Chart\*
- E – Sample Training Plan\*\*
- F – Application for Make-Up Test
- G – College/Skill Centre Map\*\*

\* Available from EE-Oz Training Standards – [www.ee-oz.com.au](http://www.ee-oz.com.au)

\*\* Provided by College/Skill Centre

## Resources and References

The following textbooks are recommended for this module:

### References:

1. National Electrotechnology Training Package UTE99 for the Electrotechnology Industry, and any replacement thereafter.
2. Certificate III in Electrotechnology Systems Electrician Competency Development Schedule/Program
3. Workplace Assessor Manual Lift Industry - Lift-Skills Australia, September 1999.
3. Electrotechnology Certificate III Systems Electrician User Guide/Profiling System.
4. National Supervision Policy Guideline for Electrotechnology Apprenticeships.

You will need the following items to complete this module:

- pens, pencils, etc.
- calculator
- writing paper.

## **Information for Teachers/Trainers**

This module resource manual contains references and notes. It is intended to assist in delivery of the module and is an example of the depth and breadth of the learning expected.

The topics are arranged in the following learning sequence.

1. Systems Electrician Qualification
2. Electrotechnology Industry Career Opportunities
3. Assessment Policy
4. Student Discipline Policy
5. Attendance at College/Skill Centre
6. Fire and Emergencies at College/Skill Centre
7. Occupational Health and Safety at the College/Skill Centre
8. Mathematics Entry Requirements
9. College/Skill Centre Tour

It is recognised that this is not the only sequence in which the material could be learnt. The suggested program of delivery would be that the nine (9) topics should be presented in the first two weeks of a new apprentice attending College/Skill Centre for the first time.

# 1. Systems Electrician Qualification

<b>PURPOSE</b>
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The purpose of this topic is to provide the student with an understanding of what type of work an Electrician carries out. It also discusses the structure of the Certificate III in Electrotechnology Systems Electrician qualification and the Training Plan format.
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## **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- Describe the type of work an Electrician carries out.
- Define the units of competency.
- State the structure of the Certificate III in Electrotechnology Systems Electrician qualification.
- List the underpinning off-the-job modules, required to support the units of competency for the qualification.
- State the purpose and the typical contents of the work performance modules required to support the on-the-job component of the units of competency for the qualification.
- State the purpose and the format of the Training Plan.

## Contents

- 1.1 Introduction
  - 1.2 What an Electrician Can Do
  - 1.3 Units of Competency
  - 1.4 Course Structure and Completion
  - 1.5 Work Performance Record
  - 1.6 Technical Modules
  - 1.7 Electrical Systems Safety Module or “*Capstone Test*”
  - 1.8 Training Plan
- 

### 1.1 Introduction

Electrotechnology Systems “*Electricians*” are people who are trained to install and maintain electrical components wiring, equipment and systems (lights, motors, heaters, stoves, hot water systems, control systems, etc)

Electricians are found in most industries, such as installing wiring in houses, shops, offices, factories or making electrical equipment and systems work correctly in houses, shops, large buildings, mines, railway systems, electrical energy supply companies, factories, ships, etc.

### 1.2 What an Electrician Can Do

The Systems Electrician will be trained and capable of (competent) doing seven (7) types of work, these are:

- **Installing cable/wiring support and protection equipment** such as conduits (plastic and metal), trunking, cable tray, cable ladder, etc.
- **Installing and terminating wiring systems** for power and control circuits using various types of cables.
- **Installing electrical and electronic apparatus** such as switchboards, protection devices, single phase motors, three phase motors, synchronous motors and alternators, DC motors and generators, lighting, heating, sockets outlets and control devices and systems.
- **Maintaining and repairing electrical apparatus** and associated circuits such as switchboards, protection devices, single phase motors, three phase motors, synchronous motors and alternators, DC motors and generators, lighting, heating, sockets outlets and control devices and systems.
- **Undertaking commissioning procedures** of electrical apparatus and associated circuits such as switchboards, protection devices, single phase motors, three phase motors, synchronous motors and alternators, DC motors and generators, lighting, heating, sockets outlets and control devices and systems.
- **Testing electrical apparatus and circuits** such as insulation resistance tests, polarity tests, continuity earthing testing, checking for correct connections, carrying out circuit isolation, fault-loop impedance testing, testing and performance characteristics of appliance/apparatus, carrying out apparatus calibration and testing for leakage current.

- **Diagnosing and rectifying faults** in electrical apparatus and associated circuits such as switchboards, protection devices, single phase motors, three phase motors, synchronous motors and alternators, DC motors and generators, lighting, heating, sockets outlets and control devices and systems.

To gain these necessary competencies, for the Systems Electrician, you will be required to undertake an approved Training Program that will be delivered by a College/Skill Centre. You will be required to undertake several activities to complete the Program.

Firstly, you will be required to learn how electrical apparatus, equipment and systems work and how to connect, test and repair electrical apparatus, equipment and systems.

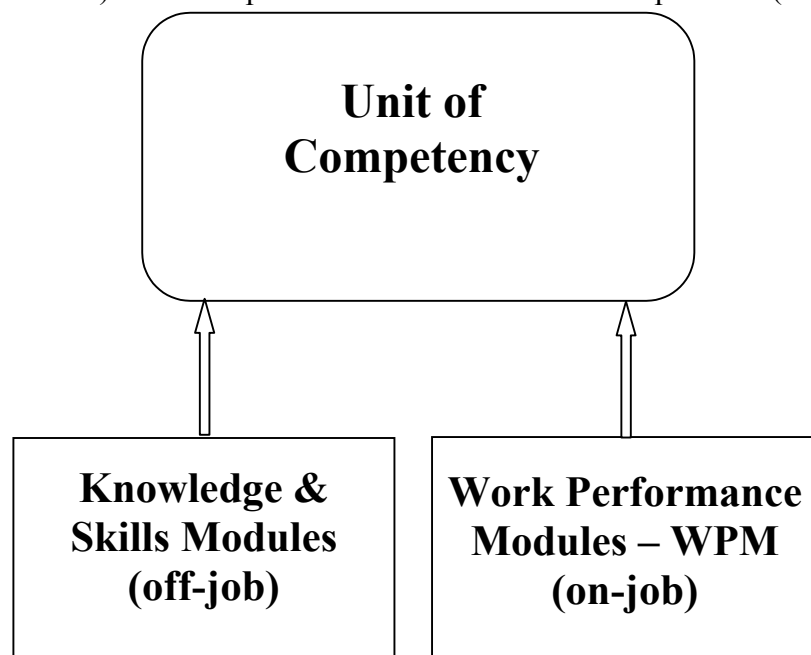
Secondly, you will also require to practice these skills at work, using what you have learned at College/Skill Centre to the level required.

Thirdly, you will be required to undertake an Electrical Safety Systems Test when you have developed sufficient skills and knowledge from your experiences. The College/Skill Centre will determine such and advise you in this regard. You will be deemed competent if you successfully complete each part and, can carry out the seven competencies listed above to become qualified as a Systems Electrician.

### 1.3 Units of Competency

Units of Competency are a way of formally describing the standard and type of work or skill function that an apprentice needs to achieve for a qualification.

There are eight core Units of Competency along with some other optional ones that make up the Certificate III in Electrotechnology Systems Electrician. Each unit of competency is made up of two components, namely knowledge and skills modules (normally delivered off-the-job at College/Skill Centre) and work performance modules - work experience (on-the-job).



## 1.4 Qualification Structure and Completion

The course has two components, namely -

- on-job component where you will learn the practical skills of a electrician and
- off-job component where you will learn the underpinning knowledge and skills used to develop your practical skills, this component is undertaken at the College/Skill Centre.

The course consists of up to 10 competency units which are:-

- core units of competency (8 must be completed of which 7 are technical),
- elective unit of competency (1 must be completed), and/or
- may consist of one optional unit of competency.

The course off-job components consists of 24 knowledge and skills modules which are:-

- modules underpinning the core units of competency (20 modules),
- modules underpinning the specialisation selected by the employer (4 modules) and
- modules underpinning the optional units of competency (depends upon the unit selected).

A K&S Module is a technical subject. It provides the necessary underpinning knowledge and skills and, normally consists of 36 - 40 hours of formal study with assessments.

The course on-job components consists of up to 10 work performance modules:-

- modules detailing the activities you are required to undertake on the job under guidance and supervision from your employer

A work performance module (WPM) must have work experience evidence reported by the employer stating the student has undertaken work to the standard required in the module (That is, formal evidence from the employer to validate the Student's work performance report is required).

### **Notes:**

- **Core Unit of Competency** - this describes the technical work or skill functions that a student needs to achieve in this qualification.
- **Specialisation** - relates to the work environment in which the core technical requirements apply.
- **Elective Unit of Competency** - this describes the supporting organisational quality assurance arrangements that a student needs to achieve in this qualification.
- **Optional Unit of Competency** - this describes the supporting technical work or skill functions within the work environment that a student may wish to achieve in this qualification.
- **Module** - a technical subject module is consisting of 36 - 40 hours of formal study with assessments. These are known as K & S modules. A work performance module describes the workplace activities to be undertaken.

**See Attachment A – EE-Oz Training Standards Training Model, and Attachment B – CIII in Electrotechnology Systems Electrician Qualification Structure**

## 1.5 Work Performance Modules – WPM (Records)

Work performance modules show specifications of the work experience required against the unit of competency in terms of planning, doing and completing whole jobs, the range of equipment/apparatus/tests, etc. and, the form and level of supervision deployed by the workplace supervisor.

### Sample of Work Performance Module

#### NEWP402BA - Test Apparatus and Circuits – Electrical work performance

**Module Purpose:** This module provides methods and criteria for gathering workplace evidence that shows a person has developed towards the levels of performance specified in the Core Electrician's qualification - Unit "*NES402b Test Apparatus and Circuits - Electrical*".

#### Student Workplace Assessment Information:

A record of the student's workplace experience is required. Typically, this record will take one of the following forms:

- A developing profile of the student's workplace experience in carrying out tests on apparatus and circuits, to show the development of the skills over time. This profile may take the form of a structured paper based log or electronic profiling system. In either case, the workplace supervisor will confirm the work undertaken, or
- Documented evidence is made available from an approved Workplace Assessor deeming the student/apprentice competent in the relevant unit of competence, or
- A combination of any of the above that enables a valid judgement to be made

#### Assessment criteria:

In judging work performance it is essential that evidence regarding the following aspects of competency is obtained and considered:

Performance is *autonomous and to requirements* and occurs on **at least 2 occasions for each of the following elements** that relate to the Units of Competency. For example in relation to Testing:

##### Element 1 - Plan and prepare for testing

##### Element 2 - Conduct testing

##### Element 3 - Notify completion of test

- for each of the following tests that the following have been performed:
  - Insulation resistance
  - Polarity
  - Short circuit
  - Main earth and protective earth resistance
  - Isolation

- **and, at least 2** of the following tests also have been performed:
  - Fault loop impedance
  - Load current
  - Leakage current
  - Apparatus calibration (eg RCD sensitivity)
  - Operational
  
- **and, in association with at least 4** of the following apparatus and circuits:
  - Fixed wiring
  - Switchboards
  - Protection devices
  - Lighting
  - Heating
  - Socket outlets
  - Single phase motors and their controls
  - Three phase motors and their controls
  - DC machines and their controls
  - Synchronous machines and their controls
  - Control
  - Appliances
  
- whilst applying techniques, procedures, information and resources relevant to performance.

Judgement should be made on evidence gathered from a number of events and over a period, showing the development of competent work performance.

### **Additional Information**

Assessing competence - the WP module is for assessing and recording work performance.

Throughout the duration of the on-job training the apprentice is responsible for maintaining a structured work performance log. Each entry is to be verified and countersigned by the Student's/Apprentice's immediate supervisor. The structured work experience log serves three important purposes. It provides:

- a progressive summary of the amount of work undertaken by the student/apprentice towards each unit of competency
- An overview of the range and types of equipment worked on by the student/apprentice against each unit of competency
- the level of supervision the student/apprentice has been exposed to whilst undertaking the workplace activities. These are:
  - whether close and continuous supervision was needed;
  - whether regular with general direction supervision was given; or
  - whether limited and minimal supervision was needed to successfully complete work undertaken. (Minimal supervision must be within regulatory requirements – refer to EE-Oz Training Standards National Supervision Policy Guideline for Electrotechnology Apprenticeships)

The information obtained in this regard is key to determining when a student/apprentice has developed sufficient on-job requirements to indicate, provided all the off-the-job component is successfully completed, readiness for final assessment.

## Work Experience Documentation

Students/Apprentices will need to record workplace experience throughout their Training Program to be able to show the College/Skill Centre staff evidence of their development and experience. The workplace experience record can be in many different forms, and include but are not limited to the following:

- Diary
- Log Book
- Electronic profiling – data entry cards and quarterly reports (this is the preferred Industry method)
- Web base profiling
- Weekly job diary sheets

Advice regarding detailed information concerning the relevant form and documentation the College/Skill Centre will use is to be provided accordingly. Where there is a delay in introducing the relevant form, it is important that students/apprentices are advised an interim measure to record their work experiences in some way, on a weekly basis, so that they can review and recall what they did and transfer the information to the appropriate medium. They should use a simple weekly job diary sheet/log that has been made up been in the EE-Oz Training Standards Student User Guide for the Certificate III in Electrotechnology Systems Electrician. They should be encouraged to store them in a safe place, like a folder.

*Refer attachment C – Weekly Job Diary Sheet*

### 1.6 Knowledge and Skills Modules (K&SMs)

Knowledge and Skills Modules are generally undertaken at a College/Skill Centre and form the off-job component of the respective units of competency. Typically, the K&S modules are grouped together in lots of eight to form Stage 1, 2 and 3 of the course. These modules form an educational flow and, depends upon the student passing each module to have the best chance of passing the next module in the flow. It is a requirement that any student failing a module must repeat the whole module. In some cases students may be required to repeat a stage if the module failed is a prerequisite module.

***Advice Only: Students failing a module twice (2) in a three-year period must provide supporting documentation why they should be re-enrolled in the course again (College/Skill Centre Policies and Procedures should include such)***

*Refer Attachment D for CIII Electrotechnology Systems Electrician module flow chart.*

### 1.7 Electrical Systems Safety (Capstone Test)

This is the third source of evidence for the qualification. It covers the four essential criteria for being deemed competent as a Systems Electrician. This test is a module. It will normally be undertaken in the latter part of the last year of the apprenticeship.

It will occur when all of the K & S modules (23.5) have been passed and, sufficient evidence of workplace experience against the work performance modules has been received and accepted by the College/Skill Centre Assessor.

## **1.8 Training Plan**

The Training Plan is an important document as it outlines the training requirements for completing the National Certificate III in Electrotechnology Systems Electrician qualification. It includes the following:

- the Title of the national qualification required to be completed,
- the Units of Competency selected as part of the make up of the national qualification,
- the College/Skill Centre selected to provide assistance with the apprentice's vocational development and issue of the National Qualification,
- where the training and assessment activities are to be carried out, and
- who is responsible for carrying out the plan.

Generally, the Training Plan is required to be drawn up within 12 weeks of the apprentice starting College/Skill Centre.

*See Attachment E for sample training plan.*

## Notes:

## 2. Electrotechnology Industry Career Opportunities

PURPOSE
To give students an understanding of the various career opportunities in the Electrotechnology industry.

### OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:

At the end of this topic the student will be able to:

- List the seven main areas of the Electrotechnology Industry, namely Electrical, Electronics, Refrigeration and Air Conditioning, Instrumentation, Computer Systems, Data Communications and Renewable Energy.
- State the qualification levels for a electrical apprentice starting at the Certificate III AQF level.
- List the qualification levels for a electrical apprentice can proceed to on completion of the Certificate III Systems Electrician.

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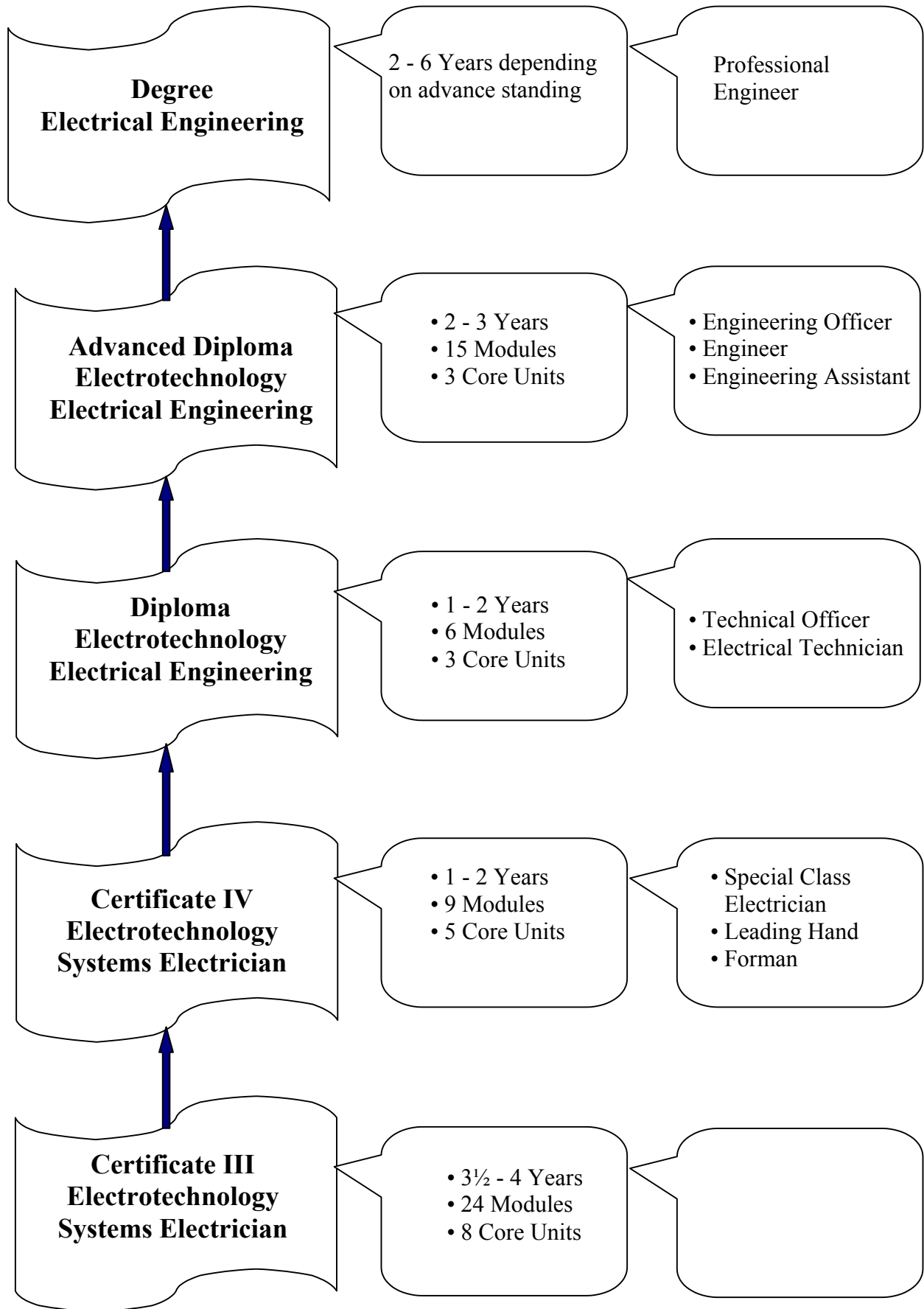
- 2.1 Introduction
  - 2.2 Career Path - Electrotechnology Industry - Systems Electrician
- 

### 2.1 Introduction

The Electrotechnology Industry can be divided into seven (7) sub industries, these are:

- Electrical
  - Electronics
  - Refrigeration and Air Conditioning
  - Instrumentation
  - Computer Systems
  - Data Communications
  - Renewable Energy
- 
- **Electrical** - covers the installation, maintenance and repair of systems, equipment and devices used to generate, transport and convert electrical energy into other forms of energy such as heating, lighting, mechanical, chemical.
  - **Electronics** - covers the installation, maintenance and repair of systems, equipment and devices used for communications, entertainment and electro-medical equipment.
  - **Refrigeration and Air Conditioning** - covers the installation, maintenance and repair of systems, equipment and devices used for the cooling of a space or its contents to a lower temperature than the ambient atmosphere (refrigeration) and provision of clean air to an area at a control temperature and humidity (air conditioning).
  - **Instrumentation** - covers the installation, maintenance and repair of systems, equipment and devices used in the measurement and control of process system data and parameters for industrial and commercial use.
  - **Computer Systems** - covers the installation, maintenance and repair of systems, equipment and devices used for processing and control, communications and storage of information. This includes personal computers, computer networks, peripherals, supervisory control and data acquisition systems, modems, bridges, servers, routers and automatic data capture equipment.
  - **Data Communications** - covers the installation, maintenance and repair of systems, equipment and devices used for the distribution of audiovisual and data between points of transmission and reception.
  - **Renewable Energy** - Renewable energy (sources) are those, which are derived from the sun or other natural processes. They are also replenishable over relatively short time periods. They include sunlight, wind, falling water, sustainable biomass, wave motion, tides, and geothermal energy. They do not include coal, oil, natural gas or nuclear power.

## 2.2 Career Path - Electrotechnology Industry - Systems Electrician



## Notes:

### 3. Assessment Policy

PURPOSE
The purpose of this topic is to provide the student with the assessment policy, which will apply to the Certificate III Electrotechnology Systems Electrician qualification knowledge and skills modules.

#### OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:

At the end of this topic the student will be able to:

- State the responsibilities of students in completing the qualification.
- State the responsibilities of the teachers/trainers in delivery of the Certificate III Electrotechnology Systems Electrician qualification.
- Describe the procedures student must follow when absence from classes.
- State the assessment structure for the K&S modules and state the module grades.
- Describe the procedures student must follow when absent from an assessment event.
- State the qualification award grade.
- Describe the process that students must follow to apply for advance standing.
- Describe the process that students must follow to apply for results review.

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  - 3.2 Responsibilities of Students
  - 3.3 Responsibilities of Teachers/Trainers
  - 3.4 Attendance - Absence
  - 3.5 Assessment
  - 3.6 Absence from a Assessment Event
  - 3.7 Award Grade
  - 3.8 Advanced Standing
  - 3.9 Results Review Procedures
  - 3.10 Further Advice
- 

### 3.1 Introduction

This assessment policy is effective from January 2003, relates to all K&S modules in the Certificate III Electrotechnology Systems Electrician Qualification (Course number \_\_\_\_\_) and is designed to ensure that:

- quality of outcomes is maintained in the course undertaken, and
- student knowledge and skill development, and progression is effective.

If you are undertaking the qualification as a requirement of your current employment then you should discuss this policy with your employer.

During your first week of classes, teachers/trainers will provide you with detailed information covering qualification content, assessment and module learning contents and assessment.

### 3.2 Responsibilities of Students

All work you submit should comply with the specifications given by your teacher/trainer. It must be your own work and not the work of others, unless properly acknowledged, or where group work forms part of the assessment activity. Heavy penalties will be imposed if you cheat or copy (plagiarise) the work of others.

You need also to take responsibility for your learning through attendance and positive participation in class and in the commitment of time necessary for fulfilling module outcomes (homework, etc).

It is your responsibility to have the relevant resources necessary for each module. These will be identified by your teacher/trainer and may include:

- student workbook
- text or reference books
- scientific calculator
- other materials, for example, stationary and safety equipment.

Please note, you will not be admitted to class without the required safety equipment.

### 3.3 Responsibilities of Teachers/Trainers

Your teacher/trainer will present well planned and prepared teaching materials in a safe environment, which is free from harassment and disruption of learning. They will be fair and equitable in their treatment of students.

Your teacher/trainer has a responsibility to -

- commence classes on time
- conclude classes on time
- to inform you of the specific details of the assessment of each module (module outline)
- maintain a record of student assessment and performance and to ensure the privacy of these results.

### 3.4 Attendance - Absence

To maximise your opportunity to successfully complete the Training Program – and receive your qualification of competency, you should be punctual, regular and diligent in attending all sessions offered for each K&S module in the course.

You will need to give satisfactory explanation for any absence. You will need to provide supporting information to your teacher/trainer when:

- you are absent from two or more consecutive lessons
- you have missed an assessment event or failed to submit an assignment
- you miss an assessment due to circumstances beyond your control
- you have missed activities such as industrial visits and activities in specialist facilities
- you have failed to complete tasks associated with recording you workplace activities as required.
- you know in advance that you will be absent from a class assessment

***Where an assessment is to form part of any lesson activity you must notify your class teacher, the head teacher or appointed trainer within 24 hours of the missed assessment.***

### 3.5 Assessment

All K&S modules will be assessed by two or more tests and quizzes, assignments, tutorials, etc. These tests/assignments will assess your overall performance against the module purpose.

Detailed information on the completion requirements for each module will be given and be explained to you by your class teacher/trainer at the commencement of each module in the form of the module outline. In general, K&S modules will be assessed and graded on the following basis:

- to gain a pass (P) in a module you must achieve a mark of 50% or more
- to gain a credit (C) in a module you must achieve a mark of 70% or more
- to gain a distinction (D) in a module you must achieve a mark of 83% or more.

**Note: All work submitted for assessment must be your own. Plagiarism (copying or using someone else's work) is not permitted and will be treated as a breach of discipline.**

### **3.6 Absence from an Assessment Event**

If you are absent from a assessment event then you must provide suitable written evidence, which satisfactorily explains your absence before you will be eligible to sit for any make up events. This evidence could be a doctor's certificate, sheriff's certificate, or a letter from your employer. You must complete the form '*Application for Make-Up Test*' and submit the form to your class teachers/trainers as soon as possible (ASAP).

**Refer Attachment F for Application for make-Up Test form**

### **3.7 Award Grade**

This course provides an ungraded award.

### **3.8 Advanced Standing**

You may be eligible for advanced standing in the course. Advanced standing may be granted for other College/Skill Centre subjects/modules that you may have studied prior to your enrolment in this course, or for other studies for which a non-standard exemption may be applied for. Non-standard exemptions are granted in recognition of your prior learning of other forms. Ask your teacher/trainer for more details.

### **3.9 Results Review Procedures**

You may request your teacher/trainer to review any results awarded. If you are not satisfied after discussions with the teacher/trainer you may seek an appointment with the respective supervising teacher/trainer. You may request a review of final results awarded for each module. Ask for more information if and when required.

### **3.10 Further Advice**

If you need more information or wish to clarify any aspect of this or any other topic then talk to your class teacher/trainer, the Senior or Head Teacher or Trainer Supervisor. If you remain unsatisfied contact the respective Director/Manager of the College/Skill Centre.

## 4. Student Discipline Policy

<b>PURPOSE</b>
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This topic outlines the student discipline codes, which will apply at this College/Skill Centre and in College/Skill Centre generally.
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### **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- List the student's rights when undertaking study at College/Skill Centre.
- State the responsibilities that students must carried out.
- List the penalties for breach of discipline, which will apply to student enrolled in College/Skill Centre courses.
- State the types of penalties, which may be given by the College/Skill Centre management when a breach of discipline occurs.

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- 4.1 Student Discipline Policy
  - 4.2 Students Rights
  - 4.3 Students Responsibilities
  - 4.4 Penalties for Breach of Discipline
  - 4.5 Types of Penalties
- 

### 4.1 Student Discipline Policy

A College/Skill Centre provides students with the opportunity to study, learn and develop knowledge and skills in a safe and healthy educational and social environment.

When you sign and date your enrolment/student entry form you declare that the information you have given is correct and you agree to abide by the discipline policy set down by the College/Skill Centre.

### 4.2 Students Rights

Students have a range of rights. These include but are not limited to:

- Being treated fairly and with respect and courtesy by College/Skill Centre staff and students.
- Providing a safe learning environment free from discrimination and harassment.
- Being provided in the first week of each class with course and subject/module information including an outline of the subject/module, assessment requirements, health and safety requirements and information about support services.
- Receiving regular information about academic progress and a results notification sheet at the conclusion of the subject or module (end of each semester).
- Receiving a testamur (credential) on successful completion of a qualification.
- A review of results or other decisions affecting their progress including an appeal if charged with a breach of student discipline.
- Facilities, equipment and teaching staff that meet program and/or curriculum specifications.
- Recognition of prior learning and life experiences.
- Privacy concerning College/Skill Centre records containing personal information, subject to statutory requirements.
- Lodge a complaint or suggestion for improvement without fear of retaliation or victimisation.

### 4.3 Students Responsibilities

In turn Students have a responsibility to:

- Treat other students and College/Skill Centre staff with respect and fairness and not behave in a way that could offend, embarrass or vilify others.

- Follow any reasonable direction from a member of College/Skill Centre staff.
- Follow all safety practices and instructions.
- Do all assessment tasks and examinations honestly and not engage in plagiarism, collusion or cheating.
- Abide by any College/Skill Centre Computer Users Code of Conduct.
- Return or renew, where applicable, library resources by the due date.

In fairness to all, students must not:

- Litter, swear or spit.
- Drink or eat in classrooms and other learning areas.
- Harass fellow students or staff.
- Threaten or assault fellow students or staff.
- Damage, steal, modify or misuse College/Skill Centre property.
- Be under the influence of alcohol or non-prescribed drugs.
- Smoke in classrooms, learning areas, College/Skill Centre buildings, and doorways. Students may be able to smoke only in open areas **away** from buildings, building entry points, doors and windows.
- Disrupt classes or other activities by using mobile phones, pagers or other electronic devices.
- Carry or use any prohibited weapons and/or prohibited drugs on College/Skill Centre premises.

#### **4.4 Penalties for Breach of Discipline**

A breach of discipline can occur when a student acts (on or off College/Skill Centre premises) in a way that adversely affects the freedom of others to study, work or participate in College/Skill Centre activities and/or prejudices the management in a, College/Skill Centre or where applicable, Student Association activities. A breach of discipline may incur penalties as listed in any prevailing policy of the College/Skill Centre.

Typically the process is, that a designated officer will be requested to consider (e.g. within 2 days of the breach) if the student has a case to answer. If there is a case, notice in writing will be delivered (either by pre-paid post or served personally) to the student within the prescribed days (e.g. 21 days) of the breach, detailing all relevant information along with a copy of the Policy. The student will have a right to make either oral and/or written submission if desired.

#### **4.5 Types of Penalties**

Penalties can be as follows:

- Reprimand
- A fine (not exceeding \$\_\_\_\_)
- Payment of compensation
- Failure in an examination
- Exclusion from use of specified facilities (for a period up to 12 months)
- Set conditions for future behaviour
- Suspension from classes (for a period up to 12 months)
- Expulsion.

## Notes:

## 5. Attendance at College/Skill Centre

<b>PURPOSE</b>
This topic outlines to the student the importance of attending classes, how the attendance is recorded and reported. It also explains how the Student's Attendance Record Card is filled out and used as a record for the student.

### **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- Explain the importance of attending classes at College/Skill Centre.
- Describe the process of how attendance for each class is recorded and reported.
- Complete the College/Skill Centre Student's Attendance Record Card entries.

## Contents

- 5.1 Introduction
  - 5.2 Attendance Records
- 

### 5.1 Introduction

It is very important that you attend all classes at College/Skill Centre to maximise your progress through the qualification. The material taught to you at College/Skill Centre is critical to the knowledge and skills development, which underpins your work experience.

### 5.2 Attendance Records

Your attendance, as well as any missed time (late to class or leaving early) for each class is recorded by your teachers/trainers in a Class Roll Book, which is later entered into a College/Skill Centre Record Roll Book System. Your employer will receive a report showing your attendance and results each semester.

A report by the class teacher/trainer to the employer, either by phone, fax or email will be made of students/apprentices who are absent from or late for classes. Students/apprentices late to class will only be admitted to class at the next break or where minimum disruption will occur to the learning of the other students. Remember your employer is paying you to attend College/Skill Centre.

#### Student's Attendance Record Cards

These cards are used to notify your employer of attendance at College/Skill Centre and are signed by your class teacher/trainer. The Card has three sections, these are:-

- Section A - *Student Details* - this is where the student records their personal details.
- Section B - *Advice to Employer* - this gives a brief description to the employer of the purpose of the card and requires the employer/supervisor to sign the card as acknowledgement.
- Section C - *Attendance Details* - this is where each attendance at College/Skill Centre is recorded and signed by the class teacher/trainer.

## How to Complete the Student's Attendance Record Cards

### Section A - Example

#### Student's Attendance Record

Year 2003

#### Section A

#### Student

Name Kim Citizen

ID Number 272728007

#### Course

Name Electrotechnology Systems Electrician

#### College/Skill Centre/Campus

Location Conduit College, Flux Ville

Contact Person "Teachers/Trainers Name"

Phone Number "Teachers Phone Number"

#### Employer

Business Name Brighter Electrical

Contact Person Ms B Spark

Phone Number 09 97397899

### Section C - Example

#### Section C

Date DD/MM	Time			Teacher's Signature	Employer's Signature
	Start	Finish	Lost		
37297	8	12	-	B. Ohm	B. Spark
37297	12.45	14.45	-	A. Amp	B. Spark
37297	14.45	16.45	-	W. Volt	B. Spark

## Notes:

## 6. Fire and Emergencies at College/Skill Centre

<b>PURPOSE</b>
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The purpose of this topic is to ensure students know the correct procedures in the case of a fire or evacuation of the building needs to be carried out.
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### **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- Identify the designated fire and emergency exits for the building.
- State the procedure to follow in the event of a fire.
- State the procedure for evacuation of the building.
- State the assembly point for the respective premises.

## Contents

- 6.1 Introduction
  - 6.2 In the Event of a Fire
  - 6.3 Evacuation
- 

### 6.1 Introduction

You should become familiar with all designated fire and emergency exits and procedures at the College/Skill Centre and especially those exit points closest to your laboratory/practical room.

Anyone removing, damaging or interfering with fire extinguishers, hoses or any other fire safety equipment will be liable to severe penalties. Lives may depend on this equipment. Anyone interfering with it should be reported to a College/Skill Centre staff member.

### 6.2 In the Event of a Fire

If a fire starts, do not panic. If you are the first to notice, immediately tell your teachers/trainers or another staff member.

Students are not required to fight a fire.

You may however use the fire extinguisher or hoses if the fire is small and can be easily controlled.

Only do this if you are absolutely confident that you can handle it and will not be in danger.

Leave the building if requested, or if it seems the fire cannot be controlled.

### 6.3 Evacuation

Depending on the situation your teachers/trainers may commence evacuation. You will be required to:

- Close all windows and doors (don't lock)
- Proceed at a brisk walking pace to the nearest fire exit and leave the building.
- Assemble as instructed.
- Stay with your class group. Do not wander off or collect personal belongings from closets/lockers.
- Remain at the assembly point for roll call by the teacher/trainer. Failure to answer your name may endanger someone else looking for you.
- If you are assisting to control the fire or notifying other classes, report to the assembly point as soon as you leave the building.
- Do not yell "fire".
- Do not push or bustle others - panic is very dangerous once started.
- Do not use the lifts.

## 7. Occupational Health and Safety at the College/Skill Centre

### PURPOSE

The purpose of this topic is to provide students with the occupational health and safety requirements of the College/Skill Centre to which all students are to comply with. It also provides guidelines for mobile phones and personal belongings at College/Skill Centres.

### OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:

At the end of this topic the student will be able to:

- State where eye protection must be worn while on College/Skill Centre premises.
- State the type of acceptable footwear, which must be worn while on College/Skill Centre premises.
- State precautions required for long hair and beards in practical rooms and electrical laboratories.
- State the procedures if any personal injuries occur on College/Skill Centre premises.
- Describe the College/Skill Centre policy on mobile phones and personal belongings on College/Skill Centre premises.
- State the minimum dress regulations required in practical rooms and electrical laboratories.
- State precautions required when working near revolving machinery in practical rooms and electrical laboratories.

## Contents

- 7.1 Occupational Health and Safety
  - 7.2 Eye Protection
  - 7.3 Footwear
  - 7.4 Hair and Beard
  - 7.5 Injuries on College/Skill Centre Premises
  - 7.6 Mobile Phones
  - 7.7 Personal Belongings
  - 7.8 Dress Regulations
  - 7.9 Revolving Machinery
- 

### 7.1 Occupational Health and Safety

Students are required to comply with the occupational health and safety requirements of the College/Skill Centre. In the interests of health and safety, a student is required to observe acceptable standards of personal cleanliness, and to observe standard safety practices (including the wearing of approved clothing and the use of protective equipment).

### 7.2 Eye Protection

Students must provide and wear acceptable eye protection in the workshop when using drills or grinding machines. Students who fail to do so will be excluded from the workshop area and given other work to undertake. The provision of acceptable eye protection is the responsibility of the student.

### 7.3 Footwear

A student *are not be permitted* to enter or remain in any site location, practical room or electrical laboratory if barefooted or wearing footwear that is not appropriate or does not offer sufficient protection. Footwear such as open-toed shoes, platform shoes, stiletto heels, thongs, saddles and non-leather joggers *are not* permitted in these areas.

### 7.4 Hair and Beard

Students whose hair or beard is not cut short wholly confined close to the head or face not be permitted to enter or remain in practical room, workshop or laboratory, where there is revolving machinery.

### 7.5 Injuries on College/Skill Centre Premises

Students must inform their teacher/trainer about injuries suffered while on College/Skill Centre premises or property or during course activities away from College/Skill Centre premises. They are to complete an Injury Report Form, if injured in these circumstances.

## **7.6 Mobile Phones**

Mobile phones, pagers and other electronic devices **must** be switched off in practical rooms, workshops and laboratories **not** brought into examinations.

## **7.7 Personal Belongings**

Students are responsible for their personal belongings at the College/Skill Centre. Liability will not be accepted for loss or damage. Students bring personal property onto any College/Skill Centre premises will be at their own risk.

## **7.8 Dress Regulations**

Where personal protective clothing equipment is a specified requirement for class, a student shall not be permitted to enter remain in any teaching area unless wearing required items. Students are responsible for providing their own protective clothing and equipment. All shirts must have sleeves, i.e. no singlets or tank tops.

## **7.9 Revolving Machinery**

When students are working with revolving machinery they should wear close fitting clothing. This is to reduce the risk getting entangled with machinery parts where guards cannot be fitted.

## Notes:

## 8. Mathematics Entry Requirements

<b>PURPOSE</b>
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The purpose of this topic is to provide the student with the minimum mathematic levels required for the Certificate III in Electrotechnology Systems Electrician qualification.
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### **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- Identify areas of weakness in the required mathematic levels for the Systems Electrician qualification.
- State the various methods available at the College/Skill Centre to receive help in mathematics.

## Contents

- 8.1 Introduction
  - 8.2 Mathematical Areas
- 

### 8.1 Introduction

To be able to develop and acquire the skills necessary for the Systems Electrician, a high level of understanding of basic principles is required. The Electrotechnology area is a form of engineering based on a number of mathematical principles and therefore a sound knowledge of basic mathematics is required to understand these principles.

### 8.2 Mathematical Areas

All students entering into this qualification need to have a sound understanding of the following ten (10) areas of mathematics, the last three areas are very important when studying alternating current (ac) theory which is covered in Applied Electricity - AC.

- **Decimals** - be able to add, subtract, multiple and divide using decimals.
- **Fractions** - be able to add and subtract using fractions.
- **Percentages** - be able to convert percentages to decimals and use percentages to solve problems.
- **Graphs** - be able to draw and interpret graphs.
- **Multiples and Sub Multiples** - be able to convert multiples and sub multiples.
- **Ratios & Proportions** - be able to use ratios in problem solving.
- **Transposition** (changing the subject of equations) - be able to change the subject of the equation.
- **Areas and Volume** – be able to calculate areas and volumes of various geometrical shapes
- **Trigonometry and Pythagoras’ Theorem** - be able to be able to use sine, cosine, tangent ratios and Pythagoras’ Theorem - to solve problems in right angle triangles- to solve problems in right angle triangles.
- **Constructions of Angles and Triangles** - be able to construct angles and triangles to scale using ruler, protractor and a pair of compasses from written detail.

## 9. College/Skill Centre Tour

<b>PURPOSE</b>
To provide students with a guided tour of the College/Skill Centre and the layout of the Electrotechnology - Electrical Section.

### **OBJECTIVES - TO ACHIEVE THE PURPOSE OF THIS TOPIC:**

At the end of this topic the student will be able to:

- Locate relevant rooms in the Electrotechnology Section
- Locate the main areas at the College/Skill Centre, namely the evacuation meeting point classes for the Building; the administration/reception area; the library, where applicable; student records and cashier area; canteen facilities; student amenities/association rooms; automatic teller machine (ATM); and any College/Skill Centre bookshop.

## Contents

- 9.1 Electrotechnology Centre – Electrical Section
- 9.2 College/Skill Centre Layout

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### 9.1 Electrotechnology Centre – Electrical Section

The Electrotechnology Centre – Electrical Section is located \_\_\_\_\_

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- Customer Service Centre, Lighting Laboratories, Electrical Installation Practical Rooms, workshops, Electrical Laboratories, Callout Rooms, Stores and Toilets.
- Electrical Laboratories, Rotating Machines Laboratories, Senior Head/Head Teachers/Senior Trainers’ Offices, Teachers’ Offices, Teachers’ Lunchrooms and Toilets.
- High Power Electrical Laboratories, PC Repair Laboratories, and Flexible Learning Centre (Computer Managed Learning).

### 9.2 College/Skill Centre Layout

Important locations:

- Evacuation meeting point for classes
- Administration and Reception
- Library – where applicable
- Student Records and Cashier area
- Canteen - where applicable
- Student Amenities/Association Rooms
- Automatic Teller Machine (ATM) - where applicable
- College/Skill Centre Bookshop - where applicable

***Refer Appendix G for College/Skill Centre Map showing the evacuation meeting point.***

## Notes: