

STUDENT'S TASK BOOK

ELECTRICAL INFRASTRUCTURE AND CONSTRUCTION

NCV LEVEL 3



STUDENT NAME: _____

COLLEGE: _____

HOST COMPANY: _____

NATIONAL CURRICULUM (VOCATIONAL)

Electrical Infrastructure and Construction

Elective: Electrical Systems and Construction

LEVEL 3

**Workplace-Based Experience
Learning Programme**

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The Swiss South African Cooperation Initiative (SSACI) is a public-private partnership in development. It has supported vocational training since 2001. SSACI's main aim is to open up pathways to skilled employment for young South Africans.

This logbook was developed by SSACI as part of its FET College Project. SSACI implemented this project with the Department of Education (now Department of Higher Education and Training) and a pilot group of colleges between 2008 and 2010.

The FET College Project provided workplace-based experience (WBE) for engineering students in two NC(V) programmes: Engineering and Related Design, and Electrical Infrastructure Construction. The aim of the project was to better align the curriculum in these two programmes with the needs of industry and produce more employable students. Through this project, WBE logbooks were developed and piloted at level 2, 3 and 4 for these two programmes. This is one of the logbooks developed.

It is hoped that the logbooks developed through the FET College Project are used as a prototype for WBE logbooks in other college programmes.

Task checklist for participating in the WBE programme

CHECKLIST INSTRUCTIONS	
This checklist contains a summary of all the tasks you need to complete as part of your involvement in the workplace-based experience (WBE) programme. Some of these tasks must be completed before the start of your work placement, others during and some after. Use the checklist to help you keep track of what you have done and what you still need to do by ticking off each task after you have completed it.	
THINGS TO DO BEFORE THE START OF YOUR WORK PLACEMENT	
1.	If you are under 18, give your parent / guardian the letter from your college about your participation in the work placement programme (letter to be provided by your college)
2.	Fill in the 'employer and college contact information' form (section 1, page 9 of logbook)
3.	Fill in the 'student profile' form' (section 1, page 10 of logbook)
4.	Complete the 'learning agreement' (section 1, page 11 of logbook). Ensure that it is signed by a college representative, an employer representative and yourself
5.	Get a certified copy of your ID (or passport if you do not have an ID) and paste this into your logbook (section 1, page 12)
6.	Complete the 'indemnity form' (section 1, page 13 of logbook). If you are under 18, this needs to be signed by your parent or guardian. If you are over 18 you need to sign it
7.	With the help of a lecturer, tick off the curriculum checklist (section 2.3, page 16 of logbook). Both you and your lecturer need to sign the completed checklist
8.	Make transport arrangements to get to your host employer. Get transport money from your college, if this is being provided
9.	Find out what personal protective equipment (PPE) your host employer requires and make sure you have this
10.	Read through your logbook very carefully (especially section 5) before your placement so you know what information you will have to find in the workplace to complete it
COMPLETION OF LOGBOOK DURING AND AFTER YOUR PLACEMENT	
11.	Complete the 'workplace induction checklist' (section 3, page 20 of logbook) on the first day of your work placement
12.	During your work placement, fill in your daily journal (section 4, page 21 of logbook). Ask the person who supervised you each day to sign your journal
13.	During and after your placement, answer the questions in section 5 (page 36 of logbook)
14.	After your placement, evaluate your experience (section 6, page 42 of logbook)
15.	Prepare the summary on your work experience (section 7, page 43 of logbook)
COMPLETION OF EMPLOYER SECTIONS AT THE END OF YOUR PLACEMENT, BUT BEFORE YOU LEAVE THE WORKPLACE	
16.	Ask your workplace supervisor to help you tick off the areas of exposure and practice you have received in the curriculum checklist (section 2.3, page 16 of logbook. Both you and your supervisor need to sign the completed checklist
17.	Ask your workplace supervisor to complete the evaluation on you (section 9, page 46 of your logbook)
18.	Ask your workplace supervisor to complete the letter about your placement (section 10, page 47 of logbook). This letter also needs to be stamped with the workplace stamp
PROVIDE FEEDBACK ON YOUR WORKPLACE EXPERIENCE AFTER PLACEMENT	
19.	Share your experience in the workplace with your college and other students. If you are required to do a formal presentation, use the summary you have prepared in section 7 of your logbook

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PART 1

INTRODUCTION, SUPPORTING DOCUMENTS AND PROGRAMME INFORMATION

INSTRUCTIONS FOR PART 1

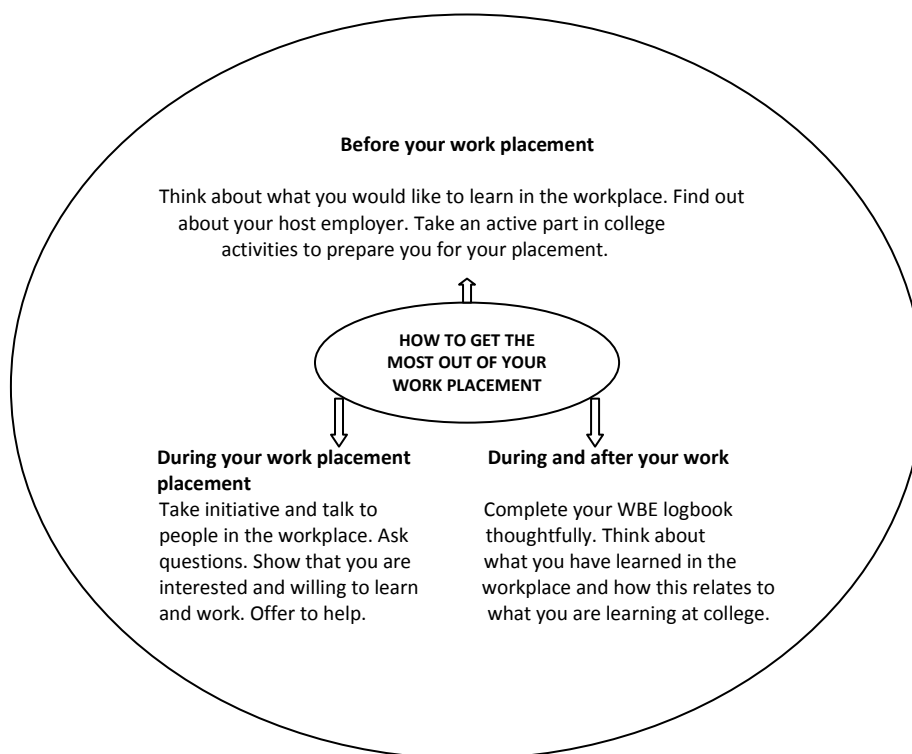
- **Please read the introduction and instructions in section 1 as soon as you can after getting this book.**
- **Before your placement**, complete the following documents in section 1:
 - Employer and college contact information
 - Student profile and contact information
 - Student learning agreement
 - Copy of ID
 - Indemnity form
- **To prepare for your placement** read the information about the WBE programme in section 2.
- Ensure that the curriculum checklist in section 2 is completed (**before and after your placement**).

Section 1: Introduction and supporting documents

1.1 INTRODUCTION AND INSTRUCTIONS

The WBE programme and how to make the most of it

Welcome to the NC(V) Level 3 workplace-based experience (WBE) programme for Electrical Infrastructure Construction. For many of you this will be your first real exposure to a workplace that works in the field in which you are training. We hope that this will be an extremely valuable experience for you. To gain the full benefit from your experience though, you need to make the most of your time in the workplace. Take the opportunity to learn as much as you can about how your host employer operates and the kind of work your course is preparing you to do. Remember you will learn best by asking questions and, whenever possible, taking part in workplace tasks. The diagram below provides ideas on how you can get the most out of your work placement.



Introduction to the logbook and instructions on how to use it

Your WBE logbook is divided into three parts and ten sections.

PART 1 includes information and documents that support your work placement. It also includes information on your WBE learning programme. It has two sections.

- **Section 1** introduces the programme and logbook and includes information on your host employer, your college, and you. It also contains the learning agreement and indemnity you will sign to be part of this programme and a copy of your ID. **Please make sure that all the forms and documents in section 1 are completed before you start your work placement.**

- **Section 2** provides information on the content and outcomes of this WBE programme. A curriculum knowledge and skills checklist is also included in this section. This checklist has two purposes. The first is to give your host employer information on what you are learning at college. This information will help the employer plan what work experience to provide you with during your placement. The second purpose is to provide a record of the actual workplace experience you received during your placement. **The curriculum checklist needs to be completed before you go into the workplace with the assistance of a lecturer and at the end of your work experience with the assistance of an employer representative.**

PART 2 contains the activities you need to complete during and after your placement. There is also a section in this part that will be completed by your college workplace mentor. Part 2 has six sections.

- **Section 3** contains a workplace induction checklist that you should **complete on the first day of your placement.** This checklist will help you clarify what your host employer expects of you and how you will be supervised during your placement.
- **Section 4** is a daily journal. Use the journal to record what you see and do each day that you are in the workplace. You can also include drawings if you would like to. One page has been provided for each day of your placement. There is also a space at the bottom of each page for the person who supervised you to sign off for the day and, if they would like to, make a comment. **Your journal should be completed during your placement.**
- **Section 5** includes questions you need to answer about your WBE and what you have learned. You need to try to answer as many of the questions as possible. **This section should be completed during and immediately after your placement while your memory of it is still fresh.**

Read through section 5 very carefully before the start of your placement so you know what you need to find out in the workplace to answer the questions. This is important as you might not be able to keep your logbook with you at all times due to its size. If this is so, it is suggested you carry a small notebook around with you to make notes in while you are in the workplace. (If your college or employer does not provide a notebook, you will have to buy one). You can then complete your logbook from your notes. **If you are using a small notebook, it is suggested that you make some notes in it to remind yourself about the information you need to collect.**

- **Section 6** gives you an opportunity to evaluate your workplace-based experience. **This section needs to be completed at the end of your placement.**
- **Section 7** requires you to prepare a brief summary on your work placement. This summary can then be used for the presentation your college may require you to do for other students. **Complete section 7 after your placement** using the information you have collected in the other sections.
- **Section 8** provides a space for your college workplace mentor to comment on your placement and logbook. If your mentor visits you while you are in the workplace, he or she may write a comment at this point. Otherwise, he or she will comment after you have completed your placement and handed in your logbook.

PART 3 includes two sections which need to be completed by your host employer at the end of your placement. **You need to make sure that both sections in this part are completed before you leave the workplace.**

- **Section 9** is an employer evaluation of your performance during your placement.
- **Section 10** includes a letter which confirms your placement with the employer and indicates what work experience you received. Make sure that the employer puts its stamp at the top of the letter.

Task checklist for participating in the WBE programme

A one page checklist of all the tasks you need to complete as part of your involvement in the WBE programme is include at the beginning of your logbook on page 3. Use this list to help you keep track of what you need to do before, during and after your placement. Tick off each task when you have completed it.

What to do if you have a problem during your work placement

If you have a problem call your college workplace mentor as soon as possible and discuss it with him or her.

Name of college workplace mentor.....

Phone number

1.2 EMPLOYER AND COLLEGE CONTACT INFORMATION

Employer contact information

Name of employer		
Address of employer		
Employer phone number		
Main employer contact person	Name	
	Contact number	
Second employer contact person	Name	
	Contact number	

College contact information

Name of college		
Information on the college campus at which the student is based	Name of campus	
	Campus address	
	Campus phone number	
The coordinator of the work placement programme	Name	
	Contact number	
College workplace mentor	Name	
	Contact number	

1.3 STUDENT PROFILE AND CONTACT INFORMATION

Full name			
Student contact number			
Address			
Name of parent / guardian		Contact number parent / guardian	
ID number		Age	
Medical aid	Yes	No	Medical aid no.
Drivers licence	Yes	No	Means of transport
Last school attended		Highest school qualification	
NC(V) programme		Level	
Why I chose to study this NC(V) programme			
My future goals			
What I hope to learn during my workplace experience			
Previous work experience I have had			

1.4 STUDENT LEARNING AGREEMENT

Congratulations! You have been selected to participate in the workplace-based experience (WBE) programme for your college programme. This is a wonderful opportunity for you to learn about your chosen occupation and improve your employment prospects.

You will be placed at (employer)

for..... days, from (start date)..... to (end date).....

You need to remember that you are now an ambassador for your college. Your behaviour in the workplace hosting you thus needs to be excellent. During your work placement you need to comply with your college's code of conduct as well as the rules of your host employer. Any problems or discipline matters that arise will be managed by your college.

During your work placement will be required to:

- Adhere to the work hours required by the employer
- Follow the instructions of the workplace representatives responsible for you
- Comply with safety and other rules in the workplace. This includes following the dress code and wearing the required personal protective equipment (PPE)
- Be punctual
- Maintain professional behaviour at all times
- Take responsibility for making your workplace experience valuable
- Complete the activities in your logbook
- Ensure that your host employer completes and signs off the required sections in your logbook

When you return to the college you will be required to:

- Hand in your fully completed logbook
- Give feedback on your workplace-based experience

Student	For the college	For the employer
Name	Name	Name
.....
Signature	Signature	Signature
.....
Date	Date	Date
.....

1.5 CERTIFIED COPY OF ID OR PASSPORT (Paste in)

1.6 INDEMNITY FORM

INSTRUCTIONS FOR COMPLETING THE INDEMNITY FORM

- If you are under 18, your parent or guardian needs to complete the indemnity form and sign it. If you are over 18, you need to complete and sign it yourself.
- Depending on who completes the form, cross out the part that is not relevant. For instance, if you complete and sign the form, cross out the phrase 'parent guardian of the trainee' at the top of the form.

I _____ (full name and surname), the parent/guardian of the trainee / the trainee (cross out part not relevant), hereby indemnify _____ (name of temporary host employer), its employees and its agents against any claims of any nature whatsoever which may be brought against them by the trainee, _____ (full name and surname of the trainee) or any third party or other person claiming on behalf of the trainee arising out of the trainee's death or injury or loss of or damage to the trainee's property as a result of entering into and remaining on _____ (name of temporary host employer)'s premises, whether the claim is based on _____ (name of temporary host employer) negligence or on the negligence of any of its employees or agents for which they may be liable.

Name (full name and surname)

Designation (parent/guardian or trainee)

Signature

Date

Section 2: Programme overview

INSTRUCTIONS FOR SECTION 2

- Read the information about the WBE programme in 2.1 and 2.2 **(before your placement)**.
- Complete the curriculum checklist in section 2.3 **(before and after your placement)**.

2.1 OBJECTIVES AND OUTCOMES OF THE WORKPLACE-BASED EXPERIENCE PROGRAMME

Programme objectives

To provide you with work exposure and experience in real workplaces that is relevant to your field of study and thereby:

- Develop your understanding of the industry you are training to work in and the career you are studying toward;
- Improve your competence and work-readiness; and
- Improve the alignment between the NC(V) and industry.

Learning outcomes

By the end of the workplace-based experience programme you will be able to:

- provide a general description of the work and work process of your host employer;
- describe in detail and analyse at least one task that that you were involved in during your placement;
- discuss and comment on the workplace's approach to fault finding and maintenance;
- discuss and comment on the safety procedures followed in the workplace;
- discuss and comment on the quality procedures followed in the workplace;
- describe and demonstrate the practical skills you were able to develop during your placement; and
- share your experience in the workplace with your classmates through an oral presentation.

2.2 WORKPLACE-BASED EXPERIENCE PROGRAMME THEMES

The WBE learning programme is designed to build on what you are learning at college. It has four broad themes:

- Theme 1: Work and work processes in a workplace
- Theme 2: The job of an artisan or technical worker
- Theme 3: Safety in the workplace
- Theme 4: Quality: Ensuring that work is correct and of a high standard

Theme 1: Work and work processes in a workplace

This theme focuses on what workplaces working in your field of training do and how they work. The workplace you visit will be working in the manufacturing, maintenance, electrical, or electronics fields. While in the workplace you could observe or participate in tasks that might involve diagnosing and repairing faults, routine maintenance, assembly of components, or installations. In the process you will be exposed to different types of tools, equipment and machines. The actual exposure you get will depend on the type of workplace you visit and the way it structures your time with it. However, it is hoped that during your placement you will be exposed to whole work processes from the beginning to the end of a task and to the work of different departments. This will help you to develop an understanding of the work done by the workplace and the way different jobs work together to make this possible.

Theme 2: The job of an artisan or technical worker

The focus of this theme is on the actual work done by different kinds of artisans and technical workers who work in your field of training. During your work placement, you will observe, work with and talk to people who work in your trade area. This will give you a better idea of the work you are training to do. In addition, you will be able to see how it fits into the whole work process of a workplace. Through working with artisans and technical workers you will also have a chance to increase your knowledge and skills in your trade area.

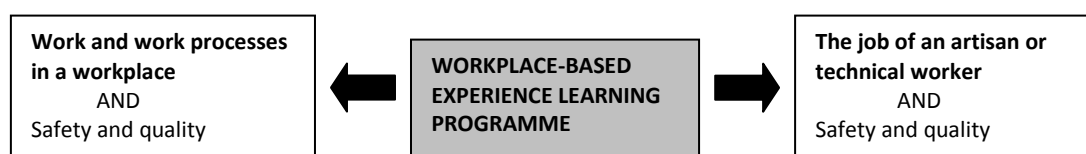
Theme 3: Safety in the workplace

Safety is a central part of every aspect of the work of the kinds of workplaces you are training to work in. As such, working safely is an important part of your college curriculum and is a key theme this WBE learning programme. During your work placement you will be exposed to how safety is practiced in a real workplace. You will find out about your host employer's safety rules and the safety procedures followed by each artisan or technical worker you work with.

Theme 4: Quality: Ensuring that work is correct and of a high standard

Like safety, quality underlies the work of any workplace. Good quality work is essential for employers to survive and succeed in their industry. During your work placement you will be exposed to how quality is practiced in a real workplace. You will find out about your host employer's quality procedures and what artisans and technical workers do to ensure the quality of their work.

The four themes work together in the following way:



2.3 CURRICLUM KNOWLEDGE AND SKILLS CHECKLIST

The curriculum checklist below provides a summary of the main content areas you should have covered in your NC(V) programme by the end of the year.

Before your work placement, get a lecturer to help you tick off all the items in the checklist that you have already covered at college. Tick the theory column if you have only covered the item theoretically. If you have covered it theoretically and practically, tick both the theory and practice columns. Both you and the lecturer need to sign that the information included in the list is correct. This information will be useful to the workplace hosting you as it will be able to see what you know and can practically do. This will help it to provide you with relevant work exposure.

At the end of your work placement, ask your workplace supervisor to help you tick off the items in the checklist that you observed or were practically involved in. Both you and your workplace supervisor need to sign that the information included in the list is correct. **Make sure that your checklist is properly completed so that you have an accurate record of your workplace experience.** This will be helpful when you are trying to find work or get into an apprenticeship.

NC(V) ELECTRICAL INFRASTRUCTURE CONSTRUCTION

Elective: Electrical Systems and Construction

Incorporates Levels 2 and 3

SUBJECTS

Fundamental subjects	Level 2 core subjects	Level 3 core subjects
<ul style="list-style-type: none"> • Language • Mathematics or Mathematical Literacy • Life Orientation 	<ul style="list-style-type: none"> • Electrical Principles and Practice • Workshop Practice • Electronic Control and Digital Electronics • ELECTIVE: Electrical Systems and Construction 	<ul style="list-style-type: none"> • Electrical Principles and Practice • Electrical Workmanship • Electronic Control and Digital Electronics • ELECTIVE: Electrical Systems and Construction

KNOWLEDGE AND SKILLS CHECKLIST

Knowledge and skills developed			Confirmation of training provided			
			Training provided in COLLEGE		Observation / practice in the WORKPLACE	
			Theory	Practice	Observation	Practice
TOPIC 1	Correctly select use, care for and maintain tools and equipment	Hand tools , e.g. screwdrivers, spanners, pliers, hammer, wire stripper and side cutter and crimping tools				
		Power tools and equipment , e.g. drilling machines (hand held & pedestal), angle grinder, orbital sander and jigsaw				
		Marking off equipment , e.g. scribe, rulers, punches, measuring tapes and squares				
		Electrical measuring and testing equipment , e.g. tong-tester, meggar and multimeters				
		Electronic measuring instruments , e.g. digital multimeter or oscilloscope				
TOPIC 2	Basic understanding of electrical principles, materials and components, and wire ways	Distinguish between DC, AC, single phase and three-phase AC supply systems				
		Do calculations to implement load balancing in a three-phase supplied system				
		Do calculations for resistors, capacitors, inductors & grouping of cells in series, parallel & series-parallel				
		Identify common electrical materials and components (including different types of conductors, cords and cables)				
		Identify materials and components used in the distribution of electricity				
		Identify different types of wire ways and say how conductors and cables are installed in these				

		Calculate current flow and use look-up tables to select wire and cable sizes				
		Explain construction and operating principle of transformers				
	TOPIC 3	Read and draw electrical diagrams	Diagrams of electrical sub-circuits , e.g. lights / socket outlets from a circuit breaker; a geyser circuit with isolator; a stove circuit with isolator (single and three phase)			
			Wiring diagrams (of electrical installations, motors, transformer and relay circuits)			
	TOPIC 4	Operate on low voltage networks	Know regulations and procedures for working on low voltage networks			
			Understand low voltage network diagrams			
			Know different earthing systems and steps to take in earthing apparatus			
			Know how to carry out various tasks on low voltage systems , e.g. replace a circuit breaker in a meter box, replace a fuse holder or element, or connect a new customer to an energised service box			
	TOPIC 5	Know how to join and cut electric components	Explain methods to join electric cords, conductors and electric cables			
			Join low voltage cables with terminal blocks & joining kits			
			Solder electronic circuitry and join electric cables			
			Weld (basic gas and arc welding)			
			Gas (oxy-acetylene) cutting			
	TOPIC 6	Understand how to test and find faults in electrical equipment & installations	Know different tests to use , e.g. insulation resistance test, earth & earth leakage test, earth continuity test, replacing of fuses, visual and mechanical inspection			
			Test and find faults in electrical components and equipment , e.g. circuit breakers, switches, cabling, thermostats, transformers & earth leakage relays			
			Issue a certificate of competence			
	TOPIC 7	Know the process and regulations for testing, installing and replacing basic electrical circuits and systems	Distribution board (single phase as in typical household)			
			Electrical supply entry to a dwelling (cables and conductors)			
			House wiring (single phase only): lighting sub-circuit and socket-outlet			
			Circuits in fixed appliances : stove sub-circuit and geyser			
			Electric metering units or measuring instruments			
			Low voltage transformers			
			Earthing and bonding on electrical installations			
	TOPIC 8	Wire, commission, test and inspect a single-phase domestic installation	Understand relevant laws and regulations			
			Draw or interpret plans, drawings & circuit diagrams			
			Install wire ways			
			Install systems like distribution board & geyser			
			Know checks & tests needed to commission			
			Complete a certificate of compliance			
	TOPIC 9	Maintain and repair appliances, power tools, and light systems	Basic maintenance and repair of domestic appliances , e.g. kettles, irons, stoves, geysers, fridges, washing machines and tumble dryers			
			Basic maintenance and repair of power tools , e.g. hand drills, grinders, orbital sanders and jig saws			
			Basic maintenance and repair lighting systems			

TOPIC 10	Basic ability to work with electric machines and control gear using correct procedures and regulations	AC motors: inspect, clean, connect & disconnect				
		DC motors: inspect, clean, connect & disconnect				
		Generators: inspect, clean, connect & disconnect				
		Alternators: inspect, clean, connect & disconnect				
		Plan for, install and commission single-phase AC machines and control gear				
		Connect small single phase machines and control gear				
TOPIC 11	Basic understanding of electronic control and digital electronics	Know function of basic electronic components				
		Read and draw basic electronic circuit diagrams				
		Construct basic series and parallel circuits on breadboards				
		Understand digital electronic principles and can work within the binary system				
		Assemble and boot a personal computer				
		Basic understanding of function and construction of transducers used in process control				
		Demonstrate a basic knowledge of PLCs				
TOPIC 12	Use safe and correct trade and worksite procedures	Use safety measures and equipment and work safely with equipment and machines including live equipment				
		Use standard electrical trade practices and procedures , e.g. Code of Practice				
		Know steps to follow to isolate or lock out an apparatus on a low voltage network				
		Install and use testing and measuring equipment in accordance with accepted standards				
		Use a full and correct work procedure for tasks , e.g. plan & prepare, carry out task, check compliance / quality, report on work, and carry out housekeeping				
		Read a job card				
		Report and record all job activities, problems and incidents according to accepted standards				
		Use lifting techniques correctly				
		Basic knowledge on how to handle & store chemicals				
		Apply basic first aid procedures				
		Apply basic fire fighting				
			Signatures (College)	Signatures (Workplace)		
				
			Lecturer	Company rep		
				
			Student	Student		

PART 2

PROGRAMME ACTIVITIES

INSTRUCTIONS FOR PART 2

There are six sections in part 2.

- **Section 3** contains a workplace induction checklist that you should **complete on the first day of your placement**. This checklist will help you clarify what your host employer expects of you and how you will be supervised during your placement.
- **Section 4** is a daily journal. Use the journal to record what you see and do each day that you are in the workplace. **This section should be completed during your placement.**
- **Section 5** includes questions you need to answer about your WBE and what you have learned. You need to try to answer as many of the questions as possible. **This section should be completed during and immediately after your placement while your memory of it is still fresh.**
- **Section 6** gives you an opportunity to evaluate your workplace-based experience. **This section needs to be completed at the end of your placement.**
- **Section 7** requires you to prepare a brief summary on your work placement. This summary can then be used for the presentation your college may require you to do for other students. **Complete section 7 after your placement** using the information you have collected in the other sections.
- **Section 8** provides a space for your college workplace mentor to comment on your placement and logbook. **This section will be completed by your mentor during or after your placement.**

Section 3: Workplace induction checklist

INSTRUCTIONS FOR COMPLETING THE INDUCTION CHECKLIST

Please tick off the items in the checklist below once you have completed them. You also need to fill in the additional information required. **This checklist should be completed on the first day of your placement.**

Item	Tick
1. I have the name and address of my host employer	
2. I have the name and contact number of the person in the workplace who is responsible for me during my placement	
<i>Name of my supervisor:</i>	
<i>Contact number for my supervisor:</i>	
3. I know who I will be reporting to on a day-to-day basis in the workplace	
<i>Names of the people I will report to daily</i>	<i>When I will report to this person</i>
4. I have been introduced to the people I will be working with	
5. I know the rules of my host employer	
6. I know what my host employer expects of me while I am in the workplace	
<i>Things they expect of me include:</i>	
a)	
b)	
c)	
d)	
e)	
7. I know what time I need to be at work daily and when lunch and tea breaks are. These are as follows	
<i>Work hours:</i>	
<i>Lunch time:</i>	
<i>Tea times:</i>	
8. I have been given a tour of workplace premises and will be able to find my way around	
9. If I have a problem during my placement I know what to do	

Section 4: Daily journal

INSTRUCTIONS FOR COMPLETING THE DAILY JOURNAL

- Make a journal entry for each day you are in the workplace. One page has been provided for each day of your placement up to a maximum of ten days.
- Your journal should be a daily record of your workplace experience. Use it to describe what you see and do each day. You can also include drawings, diagrams, notes, calculations or workplace documents.
- A few extra pages have been included at the end of the journal if you need more space. If this is still not enough space, you can paste or staple more pages into your logbook.
- Ask the person who supervised you each day to sign off for that day in the place provided and, if they would like to, make a comment about how the day went.

Section 5: WBE programme questions

INSTRUCTIONS FOR COMPLETING SECTION 5

- Please answer as many of the questions in this section as you can.
- You do not need to answer them in a particular order. The information you collect on a day-to-day basis will depend on how your host employer structures your placement. As you get information, you can fill it in.

5.1 OVERVIEW OF WORKPLACE AND ROLE PLAYED BY PEOPLE IN YOUR TRADE

5.1.1 What does the workplace hosting you do?

.....

.....

.....

5.1.2 Name two departments or sections in the workplace and up to three jobs in each. Indicate by ticking 'yes' or 'no' if the jobs you have mentioned are in your field of training.

Name or department or section	Names of jobs in the department or section	Is this job in your trade area?			
		Yes		No	
Department / Section 1:	1	Yes		No	
	2	Yes		No	
	3	Yes		No	
Department / Section 2:	1	Yes		No	
	2	Yes		No	
	3	Yes		No	

5.1.3 Provide an **overview of the whole work process in the workplace**. For instance, if you are visiting a factory, you need to describe the process from the beginning when the raw materials come into the factory to the end when the completed product leaves. Or, if you are visiting a workplace that provides a service, you need to describe the process from the point at which the employer receives a request for its service to the point at which it has completed providing the service.

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5.1.4 What role do people who are working in your trade play in the work process you have described above?

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5.2 THE WORKPLACE’S APPROACH TO FAULT FINDING AND MAINTENANCE

5.2.1 In this section you will report on how the workplace approaches fault finding and maintenance. First read the information in the box below and then answer the questions that follow.

INFORMATION BOX

What is maintenance?

Maintenance is carried out to ensure that systems, components, equipment and machines function as effectively as possible and do not become damaged or break down. ‘Preventative maintenance’ or ‘servicing’ involves checking, cleaning, lubricating and replacing worn parts and components at pre-planned intervals. A well documented record of actual work done is also kept.

Many workplaces work according to a maintenance schedule that involves daily and weekly checks and adjustments as well as services at periodic intervals. This kind of preventative maintenance is usually referred to as ‘routine maintenance’.

Some workplaces adopt a ‘run to breakdown’ approach to maintenance. With this approach, equipment and machines are allowed to breakdown before maintenance is carried out. This approach is used when repairs are easy and cheap to carry out.

What is fault finding?

If a component, machine or piece of equipment stops functioning properly or breaks down, the cause of the problem will need to be identified so that it can be repaired. Faults may become evident during operation or maintenance. Fault finding is a process of identifying and diagnosing the causes of faults. It often forms part of the maintenance and repair process. The fault finding process is assisted by the use of a systematic step-by-step approach that includes performing different checks and tests, referring to manufacturer’s or service manuals and maintenance records.

5.2.2 Name some of the different kinds of systems, components, machines, appliances and / or equipment the workplace installs, maintains or repairs. For example, light systems, cable ways, switches, power tools, motors, generators and domestic appliances.

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5.2.3 Answer the questions below on the use of **fault detecting aids and equipment**.

Are any of the following aids used to identify faults? Tick yes or no.				
• Testing and checking with fault detecting equipment	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Visually checking for the fault	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Checking maintenance and service records	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Consulting the manufacturer's or service manual	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Are any other aids used to identify faults? If yes, note these below.				
Name three kinds of fault detecting equipment / instruments (meters or testers) used in the workplace. Note the purpose of each piece of equipment.				
Three kinds of fault detecting equipment used	What is this piece of equipment used for?			

5.2.4 Describe the **approach used to identify faults** in one of the systems, components, machines, appliances or pieces of equipment the workplace installs, maintains or repairs.

Name of the system, component, machine / appliance or piece of equipment
What are some of the typical faults that occur with this machine, component or piece of equipment?
Describe the approach used to diagnose problems or faults in this machine, component or piece of equipment. If a step-by-step approach is used, note the steps in the process.

5.2.5 What is the workplace's **approach to servicing and maintenance**? That is, what approach does it take to prevent malfunctioning or breakdown of the systems, components, machines, appliances or pieces of equipment it installs and services?

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5.2.6 The last part of this activity requires you to **think about and assess the workplace's approach to fault finding and maintenance**.

Are there any differences between the workplace's approach to fault finding and what you have learned about this at college?				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>		
If you answered yes, what are the main differences?									
Are there any differences between the workplace's approach to maintenance and what you have learned about this at college?				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>		
If you answered yes, what are the main differences?									
Do you think that the workplace could improve its approach to maintenance and / or diagnosing faults in any way? Answer the questions that follow.									
Approach to fault finding				Approach to maintenance					
Could the workplace improve its approach to this?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Could the workplace improve its approach to this?	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
If you answered yes, please say how you think this could be improved in the space below.				If you answered yes, please say how you think this could be improved in the space below.					

5.3 REPORT ON A TASK CARRIED OUT IN THE WORKPLACE

This section requires you to describe and analyse one of the tasks that you observed or were involved in. Examples of tasks you could report on include:

- Maintaining or repairing a power tool, motor, transformer or domestic appliance
- Installing a wire way, circuit breaker, distribution board, metering system, machine or security system
- Wiring a factory or house
- Assembling a personal computer
- Replacing electronic components on a circuit board

Name of task							
Task start date		Task end date		Total time to complete:			
Names and job titles of the people involved in doing the task							
Name			Job title				
Name of department or section in which the task was done							
Summary of what was done							
Were any of the following things done before the task was carried out? Tick yes or no.							
• Instructions were obtained on how to do the task				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Permission to do the task was obtained				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Drawings or diagrams were obtained				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• The manufacturer's manual was obtained				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Tools, equipment, materials and / or replacement parts were obtained				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• The environment in which the task was to be done was checked to ensure that it was clean and safe				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• The component, machine or circuit to be worked on was isolated or locked out				Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

Did the task involve any of the following processes (tick yes or no)? More than one answer can be ticked.									
• Reading a circuit diagram	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	• Wiring	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Fault finding	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	• Installation	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Maintenance or repair	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	• Welding	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Testing functioning / quality	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	• Soldering	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
• Inspecting for compliance	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	• Commissioning	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Were any other work processes used? If yes, note these below.									
What safety precautions were followed when doing the task?									
What checks were done to ensure correctness, functioning and / or quality?									
Why was this task done?									
What role did you play in the task? Did you observe or participate? If you participated, what did you do?									
What did you learned from observing or participating in this task?									

Section 6: Student evaluation of workplace-based experience

INSTRUCTIONS FOR COMPLETING THE EVALUATION

Answer the questions that follow about your workplace experience.

1. Did you feel adequately prepared by your college for your work placement? Explain your answer. For instance, did you have some information about the employer hosting you? Did you know what would be required of you and how to complete your logbook?

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2. Was your workplace-based experience relevant to what you have learned in your programme at college? If yes, give a few examples of how it related to this.

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3. Rate and comment on the value of your workplace-based experience.

Not at all useful	Not that useful	Fairly useful	Very useful	Extremely useful

Give reasons for your rating

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What did you find most valuable about your workplace-based experience?

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What did you find least valuable about your workplace-based experience?

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4. How do you think your experience could have been improved?

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5. Do you have any other comments?

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Section 7: Headings for presentation on workplace-based experience

INSTRUCTIONS FOR COMPLETING SECTION 7

Use the headings below to prepare a brief summary on your workplace-based experience. If you need to make a presentation, you can then refer to the information in this section.

1. What does the workplace do?

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2. Name a few of the jobs in your trade area that are found in the workplace.

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3. What role do people who are working in your trade play in the workplace?

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4. What is your impression of the way people in the workplace relate to each other and work together?

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5. Provide a summary of the main things you were involved in and learned during your placement.

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6. Was this learning experience valuable for you? Give a reason for your answer.

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Section 8: College mentor comment

INSTRUCTIONS

This section has been provided for your college workplace mentor to comment on your placement and logbook. If your mentor visits you while you are in the workplace, he or she may write a comment at this point. Otherwise, he or she will comment after you have completed your placement and handed in your logbook.

(To be completed by college mentor)

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Mentor name	Signature	Date

PART 3

EMPLOYER EVALUATION OF STUDENT AND LETTER CONFIRMING WORK EXPERIENCE PROVIDED

INSTRUCTIONS FOR PART 3

Part 3 includes two sections which need to be completed by your host employer at the end of your placement. **You need to make sure that both sections in this part are completed before you leave the workplace.**

- **Section 9** is an employer evaluation of your performance during your placement.
- **Section 10** includes a letter which confirms your placement with the employer and indicates what work experience you received. Make sure that the employer puts its stamp at the top of the letter.

Section 9: Employer evaluation of student

Please complete the following evaluation on the student hosted.

Name of student

1. Rating of students. Circle the number that best applies in each case where 1 = very poor, 2 = poor, 3 = fair, 4 = good, and 5 = very good.

ITEM BEING RATED	RATING				
Knowledge of technical field. The student displayed knowledge of his / her technical field appropriate to his / her level of study.	1	2	3	4	5
Practical competence. The student was able to effectively carry out tasks at a level appropriate to his / her level of training.	1	2	3	4	5
Ability to learn. The student was able to easily learn new things.	1	2	3	4	5
Interest in work. The student asked questions and showed an interest in the work.	1	2	3	4	5
Takes initiative. The student looked for work to do and acted voluntarily.	1	2	3	4	5
Communication skills. The student was able to make her / himself adequately understood and could follow spoken and written instructions.	1	2	3	4	5
Punctuality. The student arrived at work on time and kept time.	1	2	3	4	5
Housekeeping and tidiness. The student displayed the correct attitude to housekeeping activities and willingly engaged in these.	1	2	3	4	5
Safety. The student understood and followed safe work practices.	1	2	3	4	5
Attitude and cooperation. The student showed willingness and had a good attitude and was able to get along with others.	1	2	3	4	5

2. Overall comments on the student's performance

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3. Does the student display the qualities you would look for in an employee? Please explain.

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Name Job Title.....

Signature

Section 10: Employer letter to confirm student work experience provided

Employer letterhead / stamp

Date.....

Confirmation of student work experience

This letter serves to confirm that(name of student)
spent(number of days) with(name of employer)
from to (placement dates) to gain workplace
experience. At the time, the student was completing level 2 / level 3 / level 4 (circle relevant
year of study) of the National Certificate (Vocational) in Electrical Infrastructure Construction at
..... (name of college). Key areas in which work
exposure and experience were provided include:

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Name of employer representative

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Job title

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Signature