

ELECTRICAL WORKERS REGISTRATION BOARD



Facilitator's guide

EWRB – COURSE FACILITATOR’S GUIDE

Contents

Introduction	3
About this facilitator’s guide	3
Timing and number of participants	3
About this course	3
Resources	4
Resources	4
Preparation	6
Creating a PowerPoint File	7
Creating handouts	8
Creating assessments	9
Session overview and resources	11
Suggested session plan	12
Appendix 2 – Practical exercises	17
Electrician / Electrical Engineer / Electrical Installer	17
Electrical Service Technician / Associated Tradesperson	18
Electrical Appliance Serviceperson	19
Electrical Appliance Serviceperson (Endorsed)	20
Electrical Inspector	21
Line Mechanic	22
Cable Jointer	23

ABOUT THIS FACILITATOR'S GUIDE

This facilitator's guide will help you to prepare and deliver a competence programme for electrical workers, this can be in order to assess their competence before they apply to renew their EWRB practising licence, to fulfil Limited Certificate requirements or to meet the needs of their Employers' safety regime.

This guide provides instructions on how to deliver the session and the resources you will require. You can also use it to run one-on-one training sessions.

While you are reading this guide, look for the following symbols.



Highlights important information that is an essential part of the course.



Indicates tips and suggestions that you may like to use.

TIMING AND NUMBER OF PARTICIPANTS

This course is designed to take up to four hours to deliver, for up to 20 people with one facilitator. (For courses with a large number of participants, you may need either more time or more facilitators.)

If you have a class of more than 12 people, you may want bring in a second facilitator to help with the the practical exercises.

ABOUT THIS COURSE

Prerequisites

Course participants must be one of the following:

- Registered electrical worker
- Limited Certificate holder*
- Overseas applicant who has completed (or will complete) a Safe Work Practices course as part of the requirement for a Limited Certificate
- A Trainee who has completed an initial trainee safety course may use the competence course as a refresher of that initial training.

* The only exception to this is a non-registered person who does not yet hold a Limited Certificate, who may participate IF they have an EW number (The number assigned to an electrical worker once they have applied to the EWRB for registration, assessment, a trainee licence, or to sit an EWRB examination.)

Participants need to complete the following EWRB e-learning modules before attending this course:

- *About the electrical workers' competence programme*
- *Electrical safety and you.*

Objectives

During this course, the participants must demonstrate their competence and be assessed using the requirements set out by the EWRB.

RESOURCES

For you

- This facilitator's guide, which includes the written assessment questions and answers in [Appendix 1](#)
- Attendance list

For each participant

- Written assessment book, one per participant (this will vary depending on the participant's class of registration)
- Practical exercise worksheets, one per participant (this will vary depending on the participant's class of registration)
- Additional written assessment worksheets
- Additional practical exercise worksheets
- Spare safety glasses, as required
- Spare test instruments for the practical exercises



Encourage participants to bring their own safety glasses and test instruments to the course, as they will know how to use them.



All test instruments must be periodically calibrated, and should be currently 'in test'.

For the room

- Suitable presentation materials (for example, flip chart, marker pens, sticky notes, pens or pencils)
- Laptop with data projector
- Internet connection (optional)
- PowerPoint presentation
- Reference documents relevant to the course content, including the Act, Regulations, and Standards (either hard copies or electronic copies on your laptop)
- Test apparatus for all the tests listed in the practical exercises (see Appendix 2 on pages 78-84 of this guide)
- Copies of the supervision procedures
- Props (for example, equipment or devices for demonstration purposes)



There are two Energy Safety videos on the Standards website (<https://www.standards.govt.nz/news/regulations-and-standards/electrical-industry/>) that have been approved for use in your presentation:

- *An overview of the changes to the Electricity Safety Regulations*
- *Certifying electrical installation work.*

PREPARATION

At least two weeks before the course

- Make sure you've booked a training space big enough for the number of participants and all the test apparatus. There needs to be a table and chair for each person completing the written assessments, and space to set up the test apparatus for the practical exercises.
- Make sure you have a list of the participants' names, occupations, and the companies they work for.
- Send the participants emails to let them know how to prepare for the course (see email template, below).
- Create and print the written assessment books for each licence class (see *Creating a PowerPoint file* on pages 7-8 of this guide).
- Create and print the practical exercise worksheets for each licence class (see *Creating assessments* on pages 9-10 of this guide).
- Create and print the additional written assessment worksheets and additional practical exercises worksheets (see *Creating assessments* on pages 9-10 of this guide).
- Create or update your PowerPoint presentation (see *Creating a PowerPoint file* on pages 7-8 of this guide).
- Create and print a course handout (see *Creating handouts* on page 8 of this guide).



If a participant does not pass their written assessment, they need to complete additional questions while in the course to demonstrate understanding in that specific competency area. Likewise, if they fail any part of the practical exercises, they need to complete a further exercise to demonstrate understanding. If, at this point, they are still unable to demonstrate competence, you will need to advise the Board, and come up with a plan for competence development with the participant.

Email template (suggested)

Dear [participant name],

We're looking forward to seeing you on [date] at [venue] for the EWRB Electrical Workers Competence course.

Before you attend the course, you are required to complete two short online learning modules. These modules will provide an overview of the Electrical Workers Competence Programme, and review the key points you'll need to know to complete the written assessment and practical exercises. You can access them [here](#).

Please also bring the following items with you to the course:

- e-learning certificate (you'll get this once you've completed the online modules)
- test instruments
- safety glasses, if required
- copies of the Standards
- EWRB practising licence card (for identification purposes).

If you have any questions please feel free to contact me directly.

Kind regards,

[Your name]

The day before the course

- Make sure your laptop and data projector are working properly (if using).
- Check the test apparatus is operational, and that you have the correct test apparatus available for the different licence classes.

On the day

- Ensure that you begin setting up an hour before the course is due to start.
- Set up:
 - your laptop and data projector
 - the test apparatus
 - tea, coffee and water for breaks.

After the session

- Log onto the EWRB website and update each participant's record to show their results. You must do this within **5 working days**.
- Follow up on any questions or actions that you could not complete during the course.
- Follow up with any participants who did not complete the e-learning modules before the course. Remind them that the online learning is a required component of the Electrical Workers Competence Programme, and must be completed before the EWRB can renew their licence.

CREATING A POWERPOINT FILE

Your PowerPoint file should include the key information that you will cover during the News and Discussion session, based on the latest *Electricity Industry News* document which is included with the rest of the competence course material online, and *Electron* magazine, which can be downloaded from the EWRB website. You may also want to find other websites, articles, and media to refer to during this session.

Your presentation may include:

- the agenda, housekeeping information and what they'll cover
- risks or hazards, and any safety measures they must take
- legislation changes relevant to the electrical workers attending the course, and how these changes affect them
- supervision requirements for trainees
- testing and certification requirements
- earthing requirements
- video, animations or images
- discussion points for the group.

If you include pages from the Regulations, Standards or similar documents, add references at the bottom of the slide.



The EWRB document *Practising Licence and Competence Programme Rules.pdf* sets out the content that you must cover for each category of electrical worker. You can access this document at:
<http://www.ewrb.govt.nz/assets/EWRB/files/about-the-board/Practising-Licence-and-Competence-Programme-Rules.pdf>



Tips to help you create effective PowerPoint presentations

- Keep your slides simple. Use bullet points to summarise the key messages.
- Don't use too many animations or transition effects, as these can be distracting.
- If you have time before the course, try your presentation on the computer and monitor you'll be using on the day. Computer settings vary, which means that your presentation may not display properly on all machines.
- Think about the best place to stand while you are showing the PowerPoint slides, so you don't block the participants' view. You may want to use a laser pointer to highlight points of interest on the screen.

CREATING HANDOUTS

Handouts are resources that the participants can take away with them at the end of the course, and can refer to when they are back on the job. Handouts should contain the key information that you'd like the participants to remember after the course.

The content may include:

- legislation changes relevant to the electrical workers attending the course, and how these changes affect them
- key sections of the Regulations and Standards, with references
- test procedures
- supervision requirements
- earthing requirements
- spaces for participants to take notes.



Tips to help you create effective handouts

- Use large fonts that are easy to read, and don't use multiple fonts on one page.
- Don't put too much information on a page, and leave plenty of 'white space' to help make the text easy to read.
- Include images, where relevant, to illustrate key concepts.
- Include space for participants to take notes.

CREATING ASSESSMENTS

You will need to create written assessment books, practical test sheets, and additional question sheets for each category of electrical worker attending the course. You will need to download the following files (all in Microsoft Word).

- One of the assessment book templates:
 - *Assessment Book TemplateMarch2017.docx*
 - *Assessment Book TemplateMarch2017.doc*
- One of the assessment question banks:
 - *Assessment Question Bank March2017.docx*
 - *Assessment Question Bank March2017.doc*

Note: The .doc format is for Microsoft Word versions 97-2003; the .docx format is for later versions of Word.

Written assessment books

The written assessments should contain 10 questions, chosen from the question bank. Follow these instructions to create each assessment book.

- Download and open the assessment book template file.
- Save the file using a different name, so you don't overwrite the template.
- Enter the category of electrical worker on the title page and on page 2.
- Open the file Assessment question bank.doc.
- Find the questions for the appropriate category of electrical worker, and copy and paste 10 questions into your document.
- Save the file.

Practical exercise worksheets

The format of the practical exercise worksheets will depend on the types of exercises the participants need to complete. You will need to create your own worksheet; see the guidelines below for content.

A list of the required tests for each category of electrical worker is given in Appendix 2 on pages 78-84 of this guide.

Your practical exercise worksheets may include the following information:

- participant details (name, date, course venue, EWRB number)
- the category of electrical worker the tests are intended for
- equipment required
- instructions about how to complete the tests and record results
- a space to record the outcome of the assessment
- a space for the facilitator's signature and the participant's signature, to show that you both agree with the outcome.

Additional worksheets

You will also need to create additional written and practical exercise worksheets to give to participants who do not achieve 100 per cent on the initial assessments. Save these as separate documents.



- Keep your written assessment questions and practical exercise worksheets separate. (You may want to mark one assessment while the participants are working on the other assessment.)
- Make sure that the questions in the assessments are not split over two pages.
- Remember to save your files regularly.

Session overview and resources

This course is designed to take **up to four hours** to deliver, for up to 20 people with one facilitator. (If you have a class of more than 12 people, you may want bring in a second facilitator to help with the the practical exercises.)

You may also need to factor in additional time for anyone who does not pass either the written assessment or the practical exercises.





Adjust the times for each topic based on the categories of electrical workers attending the course, and the number of people in the group.



TIMING	TOPIC	RESOURCES
15 minutes	1 Introduction	<ul style="list-style-type: none"> Facilitator's guide Laptop and data projector PowerPoint Presentation Attendance list
1 hour, 30 minutes	2 Discussion and news	<ul style="list-style-type: none"> Facilitator's guide Laptop and data projector PowerPoint Presentation
30 minutes	3 Written assessments (including marking and giving out additional questions, where required)	<ul style="list-style-type: none"> Facilitator's guide Written assessment books Additional written assessment worksheets Reference documents
1 hour 30 minutes	4 Practical exercises (including marking and giving out additional questions, where required)	<ul style="list-style-type: none"> Facilitator's guide Practical exercise worksheets Additional practical exercise worksheets Safety glasses Test apparatus and test instruments Reference documents
15 minutes	5 Wrap up	


Suggested session plan






This is a suggested session plan only, and experienced facilitators may prefer to use their own session plans. Ensure that your course covers the latest industry news and updates, the written assessments, and the practical exercises. (Refer to the EWRB's *Practising Licence and Competence Programme Rules* document for more information about competence course requirements..)

TOPIC AND TIMING	ACTIONS	KEY MESSAGES AND NOTES	RESOURCES
1 Introduction <i>15 minutes</i>	Welcome the participants to the course, introduce yourself, and ask the participants to introduce themselves.		
	Ask the participants to sign the attendance list, and record their practising licence number.		<ul style="list-style-type: none"> Attendance list
	 If there is anyone in the group you don't know, check their practising licence. It is your responsibility to ensure that the participants are who they say they are.		
	Talk through any housekeeping issues.	<ul style="list-style-type: none"> Toilet locations. Break times. What to do in the event of an emergency, including: <ul style="list-style-type: none"> emergency exits assembly points the location of first aid and defibrillator kits. Any risks or safety issues they need to be aware of. 	<ul style="list-style-type: none"> PowerPoint presentation
	 As the facilitator, it is your responsibility to ensure that the participants are aware of any risks, and the safety measures in place.		
	Set the ground rules for the course.	<ul style="list-style-type: none"> Turn mobile phones off. This is a safe space for questioning and discussion. There's no such thing as a stupid question. All discussion in this course should be kept confidential. Do not live the test apparatus until instructed to do so. 	

TOPIC AND TIMING	ACTIONS	KEY MESSAGES AND NOTES	RESOURCES
	<p>Check that all the participants have completed the <i>Electrical Safety and You</i> e-learning module. (Ask to see their printed certificates.)</p> <p> If a participant has not completed the e-learning modules, they may attend the course at your discretion.</p> <p>If they do attend the course, tell them that they need to complete the online modules within 5 working days, or the EWRB will not be able to renew their licence.</p>		
<p>2 Discussion and news <i>1 hour, 30 minutes</i></p>	<p>Introduce the topic.</p>	<ul style="list-style-type: none"> • Before they start their assessments, participants will take some time to review the key concepts that they need to do their jobs safely. • They'll also look at the latest industry news and legislation updates, and find out how these changes impact their jobs. 	
	<p>Start a discussion about the latest industry news, changes in practice, and regulations.</p> <p> Give the participants plenty of opportunities to ask questions and guide the discussion. This is their chance to clarify anything they are unsure about.</p>	<ul style="list-style-type: none"> • Use your laptop and data projector to display any relevant documents or media. • Make sure you talk through the latest legislation changes, and explain what this means for the participants. 	<ul style="list-style-type: none"> • Laptop and data projector • PowerPoint presentation • <i>Electricity Industry News</i> document • <i>Electron</i> magazine • Supervision procedures

TOPIC AND TIMING	ACTIONS	KEY MESSAGES AND NOTES	RESOURCES
3 Written assessments <i>30 minutes</i>	Hand out the written assessment books and introduce the session.	<ul style="list-style-type: none"> Participants have approximately 15 minutes to complete the questions in their written assessment books. This assessment is open book, so they may look at their reference documents at any point. They can help each other find the relevant information to answer a question, but they should not tell each other the answers. 	<ul style="list-style-type: none"> Written assessment books Reference documents, or online reference material
	Check whether there are any questions.		
	Start the written assessments.		
	After 15 minutes, ask the participants to stop writing, and mark their papers.	<ul style="list-style-type: none"> The answers to the written assessment questions are given in Appendix 1 on pages 17-77 of this guide. Possible marking approaches include: <ul style="list-style-type: none"> participants mark their own papers, or mark the paper of the person sitting next to them the facilitator marks the written assessments while the participants are completing their practical exercises. Choose the approach that works best for the group. 	<ul style="list-style-type: none"> Additional written assessment worksheets Facilitator's guide
	<div style="display: flex; align-items: center;">  <p>You must mark the written assessments during the course. Any participant who does not achieve 100 per cent in the written assessment will need to complete additional questions for the same competency skill (for example, testing or certification). Anyone who is unable to demonstrate competence after completing additional questions will need further training and assessment, and should be reported to the Board.</p> </div>	<ul style="list-style-type: none"> Possible outcomes are: <ul style="list-style-type: none"> Pass Fail Incomplete 	<ul style="list-style-type: none"> Written assessment books
	Once you have marked a participant's written assessment, write the outcome in the box on page 2 of their written assessment book.		

TOPIC AND TIMING	ACTIONS	KEY MESSAGES AND NOTES	RESOURCES
	Sign off the written assessment as complete, then ask the participant to sign.		<ul style="list-style-type: none"> Written assessment books
4 Practical exercises <i>1 hour, 30 minutes</i>	Hand out the practical exercise worksheets and introduce the session.	<ul style="list-style-type: none"> Split the participants into appropriate groups, based on their registration category and experience. They should complete the tests listed on their practical exercise worksheets and record their results. Remind the group about the risks they might encounter during the practical exercises. This assessment is open book, so they may look at their reference documents at any point. They can help each other find the relevant information to help them complete the exercises, but they should not tell each other the answers. 	<ul style="list-style-type: none"> Practical exercise worksheets Reference documents
	 As the facilitator, it is your responsibility to ensure that adequate safety procedures are in place, and that the participants are aware of the risks. Make sure they understand what is required for each exercise before they start.		
	While the participants are working, walk around the room answering questions and demonstrating procedures, as appropriate.	<ul style="list-style-type: none"> If anyone fails their practical exercises, give them the opportunity to complete additional practical exercises. 	<ul style="list-style-type: none"> Additional practical exercise worksheets
	Once a participant has completed their practical exercises, mark their answers, and write the outcome in the box on the front page of their practical exercise worksheet.	<ul style="list-style-type: none"> Possible outcomes are: <ul style="list-style-type: none"> Pass Fail Incomplete 	<ul style="list-style-type: none"> Practical exercise worksheets
	 You must mark the practical exercises during the course. Any participant who does not achieve 100 per cent in the practical exercises will need to complete additional exercises for the same competency skill (for example, testing or certification). Anyone who is unable to demonstrate competence after completing additional exercises will need further training and assessment, and should be reported to the Board.		

TOPIC AND TIMING	ACTIONS	KEY MESSAGES AND NOTES	RESOURCES
	Sign off the practical exercises as complete, then ask the participant to sign.		<ul style="list-style-type: none"> Practical exercise worksheets
5 Wrap up <i>15 minutes</i>	Explain how the participants will receive their licences, and what to do if they wish to appeal the process.	<ul style="list-style-type: none"> Once they meet all the requirements, the EWRB will send them their licence. If they want to appeal, they should contact the EWRB. 	
	Check whether anyone has any questions.		
	Thank the participants for their time and end the session.		
	 Remember to update the participants' results in the EWRB database within 5 working days.		

Appendix 2 – Practical exercises



This section sets out the types of tests that are required for each class of electrical worker, but **it is up to you to design the tests themselves.** (See *Creating assessments* on pages 8-9 of this guide.)

Electrician / Electrical Engineer / Electrical Installer

Practical exercises

- 1 Visual Inspection
- 2 Measurement of resistance (protective earth, main earth, and equipotential bonding conductors)
- 3 Insulation resistance of low-voltage cables, transformers, fittings, and appliances
- 4 Correct circuit connections
- 5 Measurement of AC voltage and DC voltage
- 6 Earth Fault Loop impedance measurement
- 7 Determination of prospective short circuit current
- 8 Determining electrical polarity (mains, sub-mains, fittings, and appliances)
- 9 Testing of Residual Current Devices (RCDs)



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Electrical Service Technician / Associated Tradesperson

Practical exercises

- 1 Visual Inspection
- 2 Measurement of resistance (protective earth, main earth, and equipotential bonding conductors)
- 3 Insulation resistance or AC leakage current of low-voltage cables, fittings, and appliances
- 4 Measurement of AC voltage or DC voltage
- 5 Earth Fault Loop impedance measurement of sub-circuits
- 6 Determining electrical polarity (mains, sub-mains, fittings, and appliances)
- 7 Testing of Residual Current Devices (RCDs)



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Electrical Appliance Serviceperson

Practical exercises

- 1 Visual inspection
- 2 Measurement of protective earthing, conductor resistance
- 3 Insulation resistance or AC leakage current of appliances or equipment, within limits of work
- 4 Measurement of AC voltage or DC voltage
- 5 Determining electrical polarity (subcircuits, fittings, and appliances)
- 6 Testing of Residual Current Devices (RCDs)



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Electrical Appliance Serviceperson (Endorsed)

Practical exercises

- 1 Visual inspection
- 2 Measurement of protective earthing, conductor resistance
- 3 Insulation resistance or AC leakage current of appliances or equipment, within limits of work
- 4 Measurement of AC and DC voltage
- 5 Earth Fault Loop impedance measurement of sub-circuits relating to connection at permanent connection units (PCUs)
- 6 Determining electrical polarity (subcircuits, fittings, and appliances)
- 7 Testing of Residual Current Devices (RCDs)



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Electrical Inspector

Practical exercises

- 1 Visual Inspection
- 2 Measurement of resistance (protective earth, main earth, and equipotential bonding conductors)
- 3 Insulation resistance of low-voltage cables, fittings, and appliances
- 4 Correct circuit connections
- 5 Measurement of AC voltage and DC voltage
- 6 Earth Fault Loop impedance measurement
- 7 Determination of prospective short circuit current
- 8 Determining electrical polarity (mains, sub-mains, fittings, and appliances)
- 9 Testing of Residual Current Devices (RCDs)



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Line Mechanic

Practical exercises

Note: Exercises 1-5 apply to all Line Mechanics.

- 1 Visual Inspection
- 2 Measurement of earth resistance
- 3 Insulation resistance of high-voltage equipment, within limits of work
- 4 Measurement of AC and DC voltage using proximity detectors and multimeters where applicable
- 5 Determining electrical polarity and phasing (where applicable)

Note: Exercises 6-7 only apply to Line Mechanics undertaking Distribution work.

- 6 Earth Fault Loop impedance measurement, and determination of prospective short circuit current
- 7 Determining electrical polarity (mains) and phasing



This section sets out the types of tests that are required for each class of electrical worker, but it is up to you to design the tests themselves. (See *Creating assessments* on pages 8-9 of this guide.)

Cable Jointer

Practical exercises

- 1 Visual Inspection
- 2 Measurement of resistance (earth bank and equi-potential bonding conductors)
- 3 Insulation resistance of low-voltage and high-voltage equipment (cables, transformers, and fittings)
- 4 Measurement of earth conductor current
- 5 Measurement of AC and DC voltage
- 6 Earth Fault Loop impedance measurement, and determination of prospective short circuit current
- 7 Determining electrical polarity (mains) and phasing