

CHARTERED 
INSTITUTE OF PROFESSIONAL CERTIFICATIONS

CERTIFIED AUSTRALIA ELECTRICAL WIRING STANDARDS AND SAFETY COMPLIANCE

**Fully Accredited
By:**

Chartered Institute of
Professional Certifications

CPD
Certification Service

PROGRAM OVERVIEW

Australia's electrical safety regulations are complex. While AS/NZS 3000:2018 (the Australian/New Zealand Wiring Rules) provides a national standard, **each state and territory enforces additional licensing requirements, inspection rules, and local amendments.** For instance, an electrician licensed in New South Wales may not automatically be recognized in Queensland without re-certification. As a result, a 2024 industry survey found that **78% of electrical contractors struggle with inconsistencies between different jurisdictional requirements.**

This certified program will equip you with a profound understanding of Australia's complex electrical wiring standards, safety requirements, and compliance mechanisms across all jurisdictions. You will explore critical components including the **Electrical Safety Acts, the Wiring Rules (AS/NZS 3000), licensing requirements, and safety verification processes.** The program delves into the **distinct requirements across state and territory regulatory frameworks**, examining key legislation such as the Queensland Electrical Safety Act, Victoria's Electricity Safety Act, and New South Wales' electrical safety regulations, highlighting crucial differences that impact compliance strategies.

ACCREDITATIONS



4.8



4.6



PROGRAM OVERVIEW

Throughout the program, you will develop expertise in creating and implementing robust electrical safety management systems that address the unique challenges posed by Australia's diverse **climate conditions and stringent documentation requirements**. You will master techniques for navigating the intersecting demands of electrical standards, energy efficiency regulations, and environmental considerations. Additionally, you will gain practical knowledge in **conducting effective electrical safety inspections, managing compliance documentation, and implementing quality assurance processes** that meet or exceed regulatory expectations.

Upon successful completion, you will attain the **Certification in Australia Electrical Wiring and Safety Compliance**. This certification holds lifelong and not only enhances your professional credentials but also demonstrates expertise in navigating Australia's complex electrical wiring and safety regulations. It also represents your commitment to upholding the highest standards of electrical safety, compliance, and sustainable design.

ACCREDITATIONS



4.8



4.6



KEY SKILLS YOU WILL GAIN

From This Program



**ELECTRICAL WIRING STANDARD AS3000
ELECTRICAL SAFETY COMPLIANCE
RISK ASSESSMENT
EARTHING SYSTEMS**

**SWITCHBOARD INSTALLATION
HAZARD IDENTIFICATION
ELECTRICAL TESTING
WIRING SYSTEM DESIGN AS3008**

**COMPLIANCE AUDITING
FAULT DIAGNOSIS
REGULATORY KNOWLEDGE
CABLE MANAGEMENT**

**INSPECTION PROCEDURES
ELECTRICAL CERTIFICATION
LIGHTNING PROTECTION
CIRCUIT PROTECTION DESIGN
VOLTAGE DROP CALCULATION**

**LOAD CALCULATIONS
SURGE PROTECTION SYSTEMS**

YOUR FACULTY DIRECTOR



Jessica Indrawirawan

Distinguished Electrical Safety and Compliance Expert

Jessica Indrawirawan is a highly accomplished electrical engineering and compliance expert with **over 20 years of industry experience, specializing in Australian electrical wiring standards and safety regulations**. Throughout her distinguished career, she has played a pivotal role in delivering complex electrical design and compliance solutions across diverse sectors, including mining, commercial, residential, industrial, government, telecommunications, and defence.

Jessica has successfully **managed and contributed to hundreds of high-profile projects, such as the Crown Towers Resort, Perth Children's Hospital, Snowy Hydro Plant, and major defence infrastructure projects** across Western Australia and the Northern Territory. She has also been instrumental in numerous large-scale commercial and residential developments. Her technical expertise covers critical areas including **AS3000 Wiring Rules compliance, switchboard design and installation, earthing systems, lightning and surge protection, and energy-efficient wiring solutions aligned with the National Construction Code (NCC)**.

Jessica is passionate about advancing electrical safety and compliance standards and actively mentors the next generation of engineers. As an alumni of the Thrive and Ascend Women in Leadership programs, and a member of the 500 Women in Property 2023 initiative, she regularly speaks at industry forums, universities, and public platforms, inspiring young professionals—particularly women—to pursue excellence in STEM and electrical engineering careers.

OUR PARTICIPANTS

Over 70% of FORTUNE 500 Companies Have Attended Our Accredited Programs Before





PROGRAM AGENDA

MODULE 1: INTRODUCTION TO AUSTRALIAN ELECTRICAL WIRING STANDARD AS3000

- Maximum Demand Calculations Domestic, Commercial & Industrial
- Circuit Breaker Settings & Grading (Discriminations vs Cascading)
- Earth Fault Loop Impedance Calculations
- General Earthing Arrangement, Bonding & Selection
- Safety Rules, RCD, Signage & Circuit Labelling
- Clearances from Electrical Equipment & Installation Rules
- What Needs To Be In A Switchboard, Switchroom VESDA, Flooring
- NCC/BCA Codes On Building Class - Section J, Metering, etc.
- Bushfire Considerations On Vents, Fire Proofing
- Minimum Distances From Other Services
- Common Non-Compliances

MODULE 2: WIRING SYSTEM DESIGN & INSTALLATION PRACTICES AS3008

- How To Select The Cable With Adequate Current Carrying Capacity
- The Derrating Factors & How To Apply Them
- The Installation Arrangement & Mechanical Protection
- Wiring In Special Conditions And Environments
- The Soil Conditions, Depth Of Lay, Bunching, Ambient Temperature

- Conduit Selection, Maximum Fill & Arrangement Of Phases
- Cable Types/Sizes - The Pros & Cons, Efficiency, Standardization
- Voltage Drop Calculation & Implications Of Long Lengths
- Spare Capacity For Future Expansion
- Common Non-Compliances

MODULE 3: AS1768:2021 LIGHTNING PROTECTION SYSTEM

- Lighting Risk Assessment Spreadsheet
- The Various Levels Of Lightning Protection
- The Roller Sphere Method & How To Calculate
- The Products And Rules For Vertical Air Terminals
- Use Of Surge Protection
- ARC Flash Calculation (High Level Only) From AS4836
- Industry Best Practice For Lightning Protection Design

MODULE 4: AS1158, AS2560 & AS2293 LIGHTING STANDARDS

- The Different Types Of Light Fixtures & Application
- The Average Minimum/Maximum For Lux Levels
- High Level Overview On AGI32 Or Dialux Program
- Special Lighting Levels, Sensor, Timers & PE Cells



PROGRAM AGENDA

- Difference Between Circuiting And Various Types Of Switching
- Emergency & Exit Lighting Standards & Test Circuits
- Common Non-Compliances

MODULE 5: EARTHING DESIGN & BONDING REQUIREMENTS

- AS2067, AS3017, AS3019, & AS3000
- HV Substation Earthing Systems
- EPR Earth Potential Rise Calculations
- Step & Touch Calculations
- Earthing Bonding
- Earthing Soil Resistivity Testing
- Main Earthing vs MEN Link
- Earthing Electrodes
- Separation From Other Sensitive Services
- Earth Testing Values AS3017
- Common Non-Compliances

MODULE 6: PRINCIPLES OF ELECTRICAL SAFETY & RISK ASSESSMENTS

- As Per AS3000 How To Identify The Hazards & Different Types Of Risks
- How To Use The Risk Matrix As Per AS4836 & Safe Work Australia
- Designing The Risk Controls
- HAZIDS/ HAZOPS
- Monitoring & Review Procedures
- Common Non-Compliances

MODULE 7: QUALITY ELECTRICAL DRAWINGS & DOCUMENTATION

- Electrical Layout Drawings
- GA General Arrangement Drawings
- Block Diagrams
- Schematics
- Wiring Loop Diagrams/Terminations
- Single Line Diagram
- Detailed Circuits
- Earthing Diagrams
- Legend, Notes, Scale Bar, North, Drawing References, Revision
- Specification & Preferred Equipment List

MODULE 8: ENERGY EFFICIENCY & SUSTAINABLE WIRING PRACTICES

- The Building Classifications BCA/NCC Code
- Energy Efficiency - Section J Volume 1
- Rules For BWU Timer
- Rules For Energy Efficiency - Sensor, Timers, Window Switching, Etc.
- Requiring U Factor For Heat Load Calculation Which Impacts Lighting
- Chassis Separation Over A Certain Area Milli Square
- Smart Separate Metering
- Lighting Power Density Calculation (W/msq)
- NCC Impacts On The Requirement For Fire Alarm Systems
- Common Non-Compliances



PROGRAM AGENDA

MODULE 9: TESTING & CERTIFICATION OF ELECTRICAL INSTALLATIONS

- Test Reports In Accordance To AS3000
- Workplace Electrical Safety To AS3760
- LV Installations & Certifications To AS3017
- Installation & Inspection Of Switchboards To AS61439
- Common Non-Compliances

MODULE 10: DESIGN COORDINATION WITH OTHER DISCIPLINES

- Information Required From Other Disciplines That Impact The Electrical Design
- Electrical Parameters Require By Others To Finalize Their Design (Matrix)
- Understanding When They Will Need This Input Within The Schedule
- Standardizing Major Routes For Common Trenching
- Coordinating Separation From Other Services To Design Width Of Trench
- Width Of Trench Can Have Environmental Impacts, Contamination, Etc.
- Bushfire, Biodiversity, Traditional Owner (TO) Engagement Requirements
- Equipment Selection Can Impact Electrical Load Significantly
- Pit Placement, Clashing Conduits, Depth Under Road, Minimum Cover
- 3D Modelling, Clash Detection And Walk Through For All Disciplines

MODULE 11: SCOPE OF WORK AND TENDER DOCUMENTS

- Typical Inclusions
- Specific In Exclusion
- Details On Hold Points
- Provisional Sum
- D&C - Design & Construct

MODULE 12: AS1670 FIRE DETECTORS, WARNING & ALARM SYSTEM

- Types Of Detectors Smoke vs Heat
- Spacing And Requirements Of Detection
- Dry vs Wet Fire Detection & Sprinkler Systems
- Using Fire Retardant Cable And Metal Conduits For Safety Equipment
- Connection To The Early Warning Intercom System (EWIS)
- FIP Function - FDCIE (Fire Detection Control & Indicating Equip)
- Tie Into Any Building FDCIE & Requirements For Load Shedding For Distribution Board And Cut Off to MSSB Closing Air Vents In Fire
- The Building Codes BCA/NCC Impact On This Design Requirement

YOUR CHARTER DESIGNATION



Chartered Institute of Professional Certifications' programs are unique as they provide you with professional charter designations and marks that can be used across your lifetime once you have completed our programs.

Upon successfully attending this program, you will be awarded with the **Certification in Australia Electrical Wiring and Safety Compliance** that can be used in your resume, CV and other professional credentials. This certification is industry-recognized with lifelong validity.

Globally demanded and recognized, this certification will amplify your expertise in ensuring safe and compliant electrical design, installation, and maintenance in accordance with Australia's latest wiring and safety standards. It also validates your capability to develop and implement comprehensive electrical compliance frameworks aligned with Australian Standards, the National Construction Code (NCC), and industry best practices. This program is developed by Chartered Institute of Professional Certifications and the content of this program has been certified by CPD Certification Service as adhering to highest standards of continuing professional principals.

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Certifications Since 2009

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We Thank You for Your Ongoing Support
of Our Programs

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