

Course outline: 131 Drawings E107A
UEENEEE107A - Use drawings, diagrams, schedules, standards, codes and specifications

Qualification:	Certificate III in Electrotechnology Electrician - UEE30811
Applicable to:	Learners, industry/employers, governments, community and Global Energy Training Solutions as the provider
Unit of competency:	Accessible from: http://training.gov.au/Training/Details/UEENEEE107A
Related policies:	<p>Policy & Procedure 1 – Enrolment Policy</p> <p>Policy & Procedure 2 – Credit Transfer & Recognition of Prior Learning</p> <p>Policy & Procedure 3 – Learner Support</p> <p>Policy & Procedure 4 – Assessment</p> <p>Policy & Procedure 5 – Academic Misconduct</p> <p>Policy & Procedure 6 – Alcohol & Other Drugs</p> <p>Policy & Procedure 7 – Access, Equity & Diversity</p> <p>Policy & Procedure 8 – Vulnerable People</p> <p>Policy & Procedure 9 – Work, Health & Safety</p> <p>Policy & Procedure 10 – Incident, Injury & Rehabilitation</p> <p>Policy & Procedure 11 – Competency, & Qualification Assessment Decisions</p> <p>Policy & Procedure 12 – Complaints & Appeals</p> <p>Policy & Procedure 13 – Privacy</p> <p>Policy & Procedure 14 – Fees</p> <p>Policy & Procedure 15 – Industry & Employer Engagement</p> <p>Policy & Procedure 16 – Trainers & Assessors</p> <p>Policy & Procedure 17 – Administration & Other Staff</p> <p>Policy & Procedure 18 – Quality Assurance</p> <p>Policy & Procedure 19 – Business & Financial Risk Management</p> <p>Policy & Procedure 20 – Changes to Qualifications or Business</p> <p>Policy & Procedure 21 – Conflict of Interest</p> <p>Policy & Procedure 22 – Records Management</p> <p>Policy & Procedure 23 – Marketing & Advertising</p>
Monitor and review:	Policy & Procedure 18 – Quality Assurance
Responsibility:	Ben Murphy – as Proprietor
Questions/queries:	Feedback and suggestions welcomed: office@gets.com.au (+61) 02 6262 0077

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1. Material requirements

- AS/NZS 3000:2007 incorporating amendment 1 and 2
- Scientific calculator, ruler, pens and pencils
- Note book
- Hand tools
- Covered footwear
- Internet access (provided)

2. Session summaries

Day 1	
Required Skills and Knowledge	<p>Drawings, diagrams and schedules</p> <p>T1 Architectural drawings encompassing:</p> <ul style="list-style-type: none"> • site plans, floor plans detailed drawings and standard drawings • architectural floor plan to determine the power and lighting or communications / audio/ video layouts required in a domestic installation • site plan to locate the service point, consumers mains, communication services, main switchboard, distribution boards and/or builders supplies. • standard drawing scales to determine the actual lengths represented by dimensions on an architectural drawing. • reading and interpretation of floor plans to determine the location of the electrical/ communication/audio accessories and appliances. • Australian standard symbols used on floor plans to show the location of the accessories and appliances as detailed in an electrical schedule. <p>T2 Electrical drawings encompassing:</p> <ul style="list-style-type: none"> • types of electrical drawings: block, circuit, wiring and ladder diagrams • purpose and application of block, circuit, wiring diagrams and ladder diagrams • Australian standard symbols used to represent components on electrical diagrams. • conventions used in and the features of circuit diagrams • converting a circuit diagram to a wiring diagram • identification of cable type, origin and route from a cable schedule. • developing a cable schedule for a given installation.

Day 2		
Required Skills and Knowledge	T3	<p>Circuit diagrams encompassing:</p> <ul style="list-style-type: none"> • purpose of circuit diagrams in the electrotechnology industry • conventions used in and the features of circuit diagrams • sketching basic circuit diagrams • common symbols used in circuit diagram (Australian Drawing Standard AS/NZS 1102) • developing switching charts to identify the terminals of various types of switches • connecting equipment using circuit diagrams.

Day 3		
Required Skills and Knowledge	T4	<p>Wiring diagrams encompassing:</p> <ul style="list-style-type: none"> • purpose of wiring diagrams in the electrotechnology industry • conventions used in and the features of wiring diagrams • sketching basic wiring diagrams • common symbols used in wiring diagram (Australian Drawing Standard AS/NZS 1102) • connecting equipment using wiring diagrams.

Day 4		
Required Skills and Knowledge	T5	<p>Building construction drawings and diagrams encompassing:</p> <ul style="list-style-type: none"> • building types: timber frame, brick veneer, double brick and metal frame. • identification of different types of: footings, floors, external walls, roofs, interior walls • typical cable routes through buildings, structures and premises • sequence of each constructional stage for brick, brick veneer and timber cottages • identification of the stages at which the electrical/communications - first and second fixing occurs in the constructional sequence • areas of cooperation between electrical/communications and other building trades <p>Introduction to regulations, compliance standards and codes</p>
	T1	<p>Regulation for undertaking electrical work encompassing:</p> <ul style="list-style-type: none"> • scope of work covered by licensing in the electrotechnology industry (Electrical licensing) • legislative requirements for ensuring electrical or electronic equipment is safe i.e. compliance requirements of electrical installations

Day 5		
Required Skills and Knowledge	T2	<p>Standards philosophy and format encompassing:</p> <ul style="list-style-type: none"> • performance verses prescriptive requirements • purpose of technical standards and their development • role of standards Australia/New Zealand, International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC) • how standards are used in compulsory and accreditation compliance schemes. • arrangement and use of technical standards in relation to electrical and electronic work • how to read and apply a standard. • Standards and codes that apply to all types of electrical installations • Standards include Standards mandated under regulation (e.g. Wiring Rules) or by an authority, deemed-to-comply standard and local service requirements (e.g. Service rules). • Codes include those applicable to electrical safe working practices and some aspects of the Building Code of Australia.
	T3	<p>Purpose, format and content of typical job specifications encompassing:</p> <ul style="list-style-type: none"> • NATSPEC specification system - provide the most common templates on which job specification are written.

3. Elements and Performance Criteria

Elements and Performance Criteria require practice and demonstration in the work place.

Element		Performance Criteria	Work Performance
1:Prepare to use drawings, diagrams, schedules and manuals.	1.1	Established OHS risk control measures and procedures are followed.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	1.2	The need for drawings, diagrams, schedules or manuals is determined from the nature of the work to be undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	1.3	Established routines and procedures are followed to obtain drawings, diagrams, schedules or manuals required for the work to be undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
2:Use drawings, diagrams, schedules and manuals to obtain job information	2.1	Drawings, diagrams, schedules and/or manuals are selected, appropriate to the work being undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	2.2	Drawings, diagrams and schedules are interpreted using knowledge of drawing layouts, conventions and symbols.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	2.3	Dimensions are extracted from drawings and diagrams for application to work undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	2.4	Location of equipment is determined from equipment schedules and location diagrams.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	2.5	Manuals are reviewed to ascertain their format and where information relevant to the work to be undertaken is located.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	2.6	Information given in manuals is interpreted in relation to the work to be undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
3:Use drawings, diagrams, schedules and manuals to convey information and ideas	3.	Drawing conventions are used in neat freehand drawings to convey information and ideas to others involved in the work to be undertaken.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	3.2	Drawing conventions are used to neatly correct freehand original job drawing to show final 'as-installed' arrangement.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	3.3	Corrected drawings are forwarded to appropriate person(s) in accordance with established procedures.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
4:Prepare to use compliance standards, codes and specification.	4.1	Compliance Standards and Codes that apply to particular disciplines are sought and obtained.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	4.2	The format of compliance Standards and Codes that apply to particular disciplines are reviewed and understood.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed
	4.3	The purpose and format and typical content of job specifications are reviewed and understood.	<input type="checkbox"/> Satisfactory <input type="checkbox"/> Needs improvement <input type="checkbox"/> Not performed

4. Assessments

Assessment	When	Satisfactory mark/outcome
Theory assessment 1	Day 5	70%
Practical assessment 1	Day 2	100%
Practical assessment 2	Day 4	100%
Workplace Observation	After theory and practical assessments	Must be valid, sufficient, authentic and current
Employer Competency report		
Structured workplace experience interview		
Note: Once all theory, practical and on-site assessments are complete, competency assessment decisions can be made in conjunction with the learner, employer and registered training organisation.		

5. Version control

Version	Date of release	Author	Authorised by	Position	Rational for change
V1	5/10/2015	Ben Murphy	Ben Murphy	Proprietor	Initial release
V2	7/2/2017	Ben Murphy	Ben Murphy	Proprietor	Added Elements and Performance Criteria