Student Assessment Guide (Unit of Competency) (Streamlined Training Package)

Faculty	College			
Teaching Section	Electrical Engineering			
Qualification Number and Name	Advanced Diploma of Electrical Engineering			
Unit of Competency Number and Name	UETTDRIS67A Solve problems in energy supply network equipment This unit covers evaluating energy used in buildings and developing and documenting strategies/methods to effectively reduce energy use without compromising occupancy standards. It encompasses working safely, setting up and conducting evaluation measurements and evaluating energy use from measured parameters			
Application				
Prerequisites	Common Unit Group Unit Code Unit Title UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace UEENEEE102A Fabricate, assemble and dismantle utilities industry components UEENEEE104A Solve problems in d.c. Circuits UEENEEE105A Fix and secure electrotechnology equipment UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications UEENEEG101A Solve problems in electromagnetic devices and related circuits UEENEEG102A Solve problems in low voltage a.c. Circuits UEENEEG106A Terminate cables, cords and accessories for low voltage circuits			
Licensing,	 Compliance with permits may be required in various jurisdictions and typically relates to the operation of plant, machinery and equipment such as elevating work platforms, powder operated fixing tools, power operated tools, vehicles, road signage and traffic control and lifting equipment. Permits may also be required for some work environments such as confined spaces, working aloft, near live electrical apparatus and site rehabilitation. Compliance may be required in various jurisdictions relating to currency in First Aid, confined space, lifting and risk safety measures. 			
Required Knowledge & Skills	You will be assessed to prove your competence in the required skills and knowledge below: . KS01-TIS67A Electricity supply and reticulation Evidence shall show an understanding of electricity supply and reticulation systems to an extent indicated by the following aspects: T1 Generation encompassing: primary energy sources power stations power station output			

	□ acts and legislation relating to generation □ renewable energy sources and techniques
	T2 Transmission encompassing: system requirements principal components of a power system voltage levels grid systems acts/legislation relating to transmission future trends
	T3 Distribution encompassing: high voltage distribution systems medium/low voltage distribution systems radial feeders parallel feeders ring main feeders acts/legislation relating to distribution
	T4 Substations encompassing: purpose location layout
Required Knowledge &	T5 Overhead and underground systems encompassing:
Skills	applications □ planning □ installation
	T6 Power distribution system electrical characteristics encompassing: transmission and distribution systems inductance, capacitance and resistance
	T7 Voltage problems in a power distribution system encompassing: low voltage unbalanced voltages voltage rises
	T8 Voltage regulation encompassing: autotransformers with OLTC transformers with OLTC static capacitors load control
	T9 Control of OLTC encompassing: regulation relays control circuits line drop compensation T10 Power distribution system faults encompassing: type/classification of fault typical causes/effects of faults three-phase symmetrical fault levels fault level limitation
	T11 Voltage surges in a power distribution system encompassing: lightning surges switching surges typical surge levels surge impedance, typical values significance of the system surge impedance.
	T12 Metering and metered quantities encompassing: purpose energy maximum demand accuracy classes for metering systems
	T13 Energy and demand meters encompassing:
	construction □ operation

	adjustments testing T14 Metering circuits encompassing: direct metering instrument transformer metering T15 Electronic metering systems and recording meters encompassing: types applications connections T16 Load control encompassing: purpose methods
Assessment criteria	 Before the critical aspects of evidence are considered all prerequisites must be met. Evidence for competence in this unit shall be considered holistically. Each Element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise: A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to: Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement Apply sustainable energy principles and practices as specified in the performance criteria and range statement Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements. Demonstrate an appropriate level of skills enabling employment

• Conduct work observing the relevant Anti Discrimination legislation, regulations,

polices and workplace procedures.

- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
 - Applying OHS practices in the workplace as described in 8) and including:
 - a. Preparing to enter the workplace including, the use of work permits and clearances and isolation permissions. Planning estimation work effectively.
 - b. Understanding and following risk control safe work methods.
 - c. Applying work procedures and instructions as they apply to risk control measures.
 - d. Dealing with accidents and emergencies within the scope of responsibility.
 - e. Participation in consultation processes, identifying hazards and implementing and monitoring control measures.

Dealing with unplanned events

Assessment of this Learning Specification will be based on the evidence that you provide using 2 or more of the following, as prescribed by your local Institute/ College teaching staff:

- Observation of skills in practical exercises and
- Questioning of knowledge using pen and paper tests, essays, oral tests and/or interviews

You will be required to complete all assessments for this unit to demonstrate your competence in this unit.

Sufficient evidence must be collected, using local assessment methods/tools identified in the Assessment Table below to demonstrate both the student's:

Assessment methods & schedule

- 1. **Successful Performance of the Competency**, by meeting the requirements in the Work Performance Specification, and an
- 2. *Understanding of the required skills and knowledge (KS01-H115A)*, by meeting the requirements in the Learning Specification/s.

Assessment event no.	Assessment Name/ Method	Assessment date	Assessment duration	Assessment venue	Assessment outcome		
1	Practical Test	Marked on Week 8	6 weeks	Bldg. K2.11	Satisfactory/Not yet satisfactory		
2	Theory Exam	Week 9	2.5 hours	Bldg. K2.11	Satisfactory/Not yet satisfactory		

Your Transcript of Academic Record lists all of your results in your study to date.

"This is an ungraded unit; therefore your academic result will be recorded and reported to you as *Competent* (AC) or *Not Yet Competent* (NC)".

Reporting assessment outcomes

If you achieved competency in this unit but are unable to finish the qualification, you will receive a Transcript of Academic Record showing only the units you completed. A **Statement of Attainment** for the unit/units you have successfully completed will also be provided. Please contact the Head Teacher to initiate this process.

Your final reported results can be accessed from the DET Student Portal https://portal.det.nsw.edu.au

Recognition and credit transfers: you can apply to have your previous study, work

Resources

required for

assessments

and/or life experiences recognised. Recognition of Prior Learning will be determined according to TAFE NSW Recognition Policy.

Please see <u>Recognition for previous learning and experience - TAFE</u> for further information.

This unit is assessed using specific resources/tools:

Learner Resource Manual

Students don't need to purchase any Learner Resource Manual:

Principal References

It is advised that students have access to the following reference books as the main references:

- Generation, Transmission and Utilization of Electrical Power By AT Starr
- Basic Training Manual 16-12 Electrical Trades-Cable, conduits, busbar
- Trades-Cable, conduits, busbar Some components of Learning outcome 3
- Electrical Distribution Engineering (2nd Ed) by Anthony j Pansini, The Fairmont Press Inc 1991
- Electrical Power Distribution & Transmission by Luceson Faulkenberry & walter Coffer, Prentice Hall, 1996
- Electrical Power Transmission System-By R Robert Eata & Edward Cohen, Prentice Hall, 1972
- Site Surveying & Levelling By John Clancy + Internet downloaded article-Software package for line route survey
- +Transmission line mechanical design
- Electrical Power Transmission System-By R Robert Eata & Edward Cohen, Prentice Hall, 1972

Australian Standards

AS 1026, 1023, 1034, 1042,1078,1117,1158,1190,1202, 1220,1222,1243, 1284, 1359,1360,1469,1531,1675,1680,1746,1767,1768,1798,1824,1883,1930,1931,

2005,2006,2184,2209,2263,2264,2326,2374,2421,3000,3116,3274

You will also be provided with

- Access to a simulated environment containing information similar to that which you may encounter in a workplace.
- Access to computer systems for real time assessments sufficient to enable participation in the assessment process.

Other Resources

To complete this unit successfully you should bring the following equipment to class with you:

- pens, pencils, notepaper, soft rubber eraser
- scientific calculator Casio fx-100AU PLUS
- USB memory Stick

Your teacher will provide feedback no later than three (3) weeks after all assessment activities have been conducted.

Assessment feedback, review or appeals

If you would like to request a review of your results or if you have any concerns about your results, contact your teacher or head teacher.

You will have three weeks from the date you receive your results in which to make an appeal and request a review.

You will receive a response within **ten working days** after receipt of the request. Your Head Teacher will address the appeal in accordance with Assessment Guidelines for TAFF NSW.

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Assessment

guidelines

You must submit assessment work and attended scheduled assessments on the required dates.

- **If you miss an assessment** you must discuss the issue of the missed assessment with your teacher within <u>seven days</u>, or at your first class attendance after the assessment, whichever occurs first.
- If you miss an exam, or arrive late by more than 30 minutes after the commencement of the exam, due to illness or circumstances beyond your control, you should contact the teacher of this unit.
- If you are deemed unsatisfactory in an assessment event you will be eligible to receive one (1) additional reattempt to demonstrate competence. Speak to your teacher for further information.
- For final examinations in Category A or B (exams that are centrally set and timetabled) you have 10 working days. Your teacher will inform you about the revised examination date which may not be until the following year.
- If you engage in cheating such as copying, colluding with another person, using
 unauthorised notes, or allowing another person to copy your work, you will be
 liable for disciplinary action as per <u>Student Discipline Policy TAFE NSW</u> Whatever
 the form of assessment, it is essential that the work you are assessed on is your
 own. To validate the authenticity of your submitted work it may be checked used
 anti plagiarism software in addition it may be stored for future plagiarism
 checking.

TAFE NSW provides learners with every reasonable opportunity to have their work assessed and where possible each case of learner absence from an assessment will be considered on an individual basis. However, where there are no extenuating circumstances, the following penalties apply:

- where the results of the unit are recorded in marks, when the assessment is up to seven days late the result achieved by the learner is reduced by 15%
- when the assessment is more than seven days late, the result recorded is recorded as "not yet competent"
- for non-attendance at an assessment on a negotiated date, the result is recorded as "not yet competent".

You can view information related to assessment in *Every Student's Guide to Assessment in TAFE NSW*, which is available from www.tafensw.edu.au/courses/assessment.

Assessment: reasonable adjustments

If you are a student with a disability it is important for you to indicate this on your enrolment form and make contact with the Teacher / Consultant for Students with a Disability in your Institute for further information. If possible, this should happen before you enrol. They will provide you with appropriate information about the range of units available. Teachers and teacher consultants will arrange for students with a disability to be given reasonable adjustment in assessment on an individual needs basis.

Teachers may make reasonable allowances for the learners, based on the evidence provided, in accordance with the <u>Assessment Policy - TAFE NSW</u> This may relate to the timeframe for submitting/attempting the assessment task or to an alternative form of assessment evidence to be used for assessing the learner's level of achievement.

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