

1. Title	Wind and repair simple transformers
2. Code	EMELIN105A
3. Range	Correctly use the structural components of transformers, qualified winding copper types, silicon steel sheet, insulation materials, impregnating varnish, general winding equipment, baking stoves, soldering iron and various types of basic testing instruments to wind and repair small power transformers at transformer repair workshops or field locations.
4. Level	1
5. Credit	6
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Construction and basic working principles of transformers</p> <ul style="list-style-type: none"> ◆ Understand the construction and basic working principles of transformers including: <ul style="list-style-type: none"> • Structural components of transformers • Working principles of transformers <p>6.2 Winding and repair of transformers</p> <ul style="list-style-type: none"> ◆ Make preparations for winding transformers under instruction: <ul style="list-style-type: none"> • Arrange materials for winding transformers including structural components of transformers, copper wire for winding with right current-carrying capacity, silicon steel sheet and assembly materials with right magnetic flux, appropriate insulation materials and impregnating varnish • Arrange hand tools and equipment for winding transformers including general winding machines, baking stoves and soldering iron • Arrange testing instruments for winding transformers including multi-meter, insulation resistance tester, power meter, high voltage withstand tester and thermometer ◆ Carry out general winding, impregnation and insulating varnish baking processes as follows under instruction: <ul style="list-style-type: none"> • Assemble structural components of transformers • Wind copper wire windings of transformers • Impregnate insulating varnish • Control the insulating varnish baking process ◆ Use basic testing instruments to conduct the following tests for the winded transformers under instruction such as copper winding resistance test, insulation resistance test, power test, winding pressure test and temperature measurement ◆ Use basic testing instruments to inspect, locate and repair faults of small transformers under instruction

7. Assessment Criteria	The integrated outcome requirements of this unit of competency are: (i) Capable to carry out preparation procedures for winding transformers; (ii) Capable to carry out general winding, impregnation and insulating varnish baking processes; (iii) Capable to use basic testing instruments to conduct tests for transformers; and (iv) Capable to inspect and repair defective small transformers.
8. Remarks	