

Specification of Competency Standards
for the Testing, Inspection and Certification Industry
Unit of Competency

Functional Area - Testing Operations

Title	Perform biological and biochemical tests
Code	105803L4
Range	This unit of competency (UoC) covers the abilities to carry out tests on biological samples independently for qualitative and quantitative analysis on different cell types, species and biologically active compounds by applying appropriate biological procedures and skills in testing laboratories.
Level	4
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> 1. Possess knowledge of theories and laboratory techniques on manipulation of cell / tissues <ul style="list-style-type: none"> • Employ theories of cell biology, molecular biology and biochemistry. • Identify relevant laboratory techniques on manipulation of organelles/ cells/ tissues, e.g.: <ul style="list-style-type: none"> ○ cell fractionation, ○ solvent extraction, ○ bio-molecule detection. • Explain physical and biochemical characteristics of cells. 2. Perform biological and biochemical tests on samples <ul style="list-style-type: none"> • Determine and follow appropriate test methods based on the nature of samples. • Prepare appropriate solutions and reagent for biological / biochemical tests, e.g.: <ul style="list-style-type: none"> ○ buffer solutions, ○ reagents in detection kits, extraction kits. • Apply suitable techniques for the classification of a cell or species. • Apply suitable techniques for analysing biological activity. • Operate suitable equipment for carrying out biological and biochemical tests independently, e.g.: <ul style="list-style-type: none"> ○ polymerase chain reaction (PCR) instrument, ○ flow cytometer. • Adjust testing parameters of equipment based on nature of samples. • Record test data accurately and document measurement uncertainty. 3. Exhibit professionalism <ul style="list-style-type: none"> • Ensure all biological / biochemical laboratory works are carried out accurately in a safe and clean environment.
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"> • carry out biological / biochemical test on the sample safely and independently by applying appropriate biological procedures and equipment, • record test data and observations accurately, • analyse test results for characterisation of the sample for further laboratory works.
Remark	