

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

Functional Area - Testing Operations

Title	Perform microbiological tests
Code	105802L4
Range	This unit of competency (UoC) covers the abilities to carry out microbiological tests independently for qualifying and/or quantifying the samples aseptically by applying appropriate microbiological procedures and skills in testing laboratories.
Level	4
Credit	4 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of theories and practical procedures on microbiological tests</p> <ul style="list-style-type: none"> <li>• Employ basic theories of aseptic procedures, cell biology, biochemistry and microbiology.</li> <li>• Apply technical principles on handling and processing of samples containing micro-organisms, e.g.: <ul style="list-style-type: none"> <li>○ culturing and sub-culturing,</li> <li>○ separation, isolation and identification.</li> </ul> </li> </ul> <p>2. Perform microbiological tests on samples</p> <ul style="list-style-type: none"> <li>• Determine appropriate test methods based on the nature of sample.</li> <li>• Carry out appropriate processing techniques on microbiological specimens for qualifying sample, e.g.: <ul style="list-style-type: none"> <li>○ smearing and streaking,</li> <li>○ staining,</li> <li>○ biochemical and serological identification.</li> </ul> </li> <li>• Carry out appropriate processing techniques on microbiological specimens for quantifying sample, e.g.: <ul style="list-style-type: none"> <li>○ cell seeding,</li> <li>○ culturing and sub-culturing.</li> </ul> </li> <li>• Prepare and use appropriate pure control organisms for microbiological work and aseptic applications.</li> <li>• Carry out tests on pure cultures independently to assist in the biochemical and immunological identification of micro-organisms.</li> <li>• Record the number and/or size of micro-organisms in samples accurately and analyse test results with an estimation of measurement uncertainty.</li> </ul> <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> <li>• Ensure all microbiological laboratory works are carried out in a safe and clean environment.</li> </ul>
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"> <li>• carry out microbiological test on the sample independently by applying appropriate microbiological procedures and aseptic technique and using appropriate control organisms,</li> <li>• record test data and observations accurately,</li> <li>• analyse test results for characterisation of the sample for further laboratory works.</li> </ul>
Remark	