

Specification of Competency Standards
for the Fashion Industry
Unit of Competency

Functional Area - Quality System & Sustainability

Title	Apply design of experiments for quality improvement
Code	108239L5
Description	Apply design of experiments (DOE) to optimise operations or achieve quality improvement in a fashion business. This applies to individuals who are required to apply DOE to facilitate systematic optimisation of an operation or quality improvement in a fashion business.
Level	5
Credit	3
Competency	<p>Performance Requirements</p> <p>1. Knowledge in the subject area</p> <p style="padding-left: 40px;">Be able to:</p> <ul style="list-style-type: none"> • understand the principles and fundamentals of design of experiments (DOE) • examine the common applications of DOE in the fashion industry (e.g. production process improvement) • critically evaluate the time and budget implications of different experimental designs (e.g. full factorial method) • apply statistical techniques for experimenting with processes with the objective of optimising them <p>2. Application and process</p> <p style="padding-left: 40px;">Be able to:</p> <ul style="list-style-type: none"> • select a process or an area for analysis and improvement • determine the objectives of the experiment (e.g. solve process problem) • select an appropriate factorial design for the experiment and determine whether resource requirements are practical • conduct first run and other experiments in series and record the data of each • analyse data using statistics package in line with objectives • design experiment to confirm correlations identified and carry it out • analyse data from confirming experiment and decide if the results can be confirmed • determine the most appropriate approach for implementing improvement <p>3. Exhibit professionalism</p> <p style="padding-left: 40px;">Be able to:</p> <ul style="list-style-type: none"> • ensure the experiment has been properly conceived and conducted to avoid biases • complete the experiment in the most cost-effective manner
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to accomplish:</p> <ul style="list-style-type: none"> • Systematic application of design of experiments to facilitate optimisation of operation or quality improvement in a fashion business, which take into consideration the improvement needs and available resources.
Remark	