

<b>TSC Category</b>	Process Engineering Management					
<b>TSC</b>	Process Optimisation					
<b>TSC Description</b>	Optimise the production and efficiency of process plants through analysing and reviewing process unit, equipment and plant performance					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
				ECM-PEG-4004-1.1	ECM-PEG-5004-1.1	ECM-PEG-6004-1.1
				Analyse process optimisation techniques based on established technologies to select appropriate techniques and approaches to optimise process unit, equipment and production performance	Evaluate the selection and use of process optimisation techniques and approaches to manage the optimisation of process units, equipment and production	Drive the adoption of new and emerging technologies for process optimisation
<b>Knowledge</b>				<ul style="list-style-type: none"> <li>Process optimisation principles</li> <li>Principles of process automation and control systems</li> <li>Yield analysis techniques</li> <li>Process and equipment design principles</li> <li>Chemical process simulators</li> <li>Process design operating limits</li> <li>Equipment life spans and servicing requirements</li> <li>Engineering calculations on upsizing of piping and equipment</li> <li>Statistical methods to correlate present and historical data on equipment and plant performance</li> <li>Cloud-based analytics</li> </ul>	<ul style="list-style-type: none"> <li>Process optimisation and simulation principles</li> <li>Predictive modelling techniques</li> <li>Chemical process simulators</li> <li>Integrated automation and control systems</li> <li>Data analytical techniques</li> <li>Process cycle efficiency methods</li> <li>Methods to determine equipment and system predicted efficiency levels versus lifespan methods</li> </ul>	<ul style="list-style-type: none"> <li>Operational excellence tools</li> <li>New and emerging technologies and tools for process optimisation</li> <li>Techniques to review the suitability of new and emerging technologies for process optimisation</li> </ul>

				<ul style="list-style-type: none"> <li>• Statistical methods and analysis for optimisation of process parameters</li> </ul>		
<b>Abilities</b>				<ul style="list-style-type: none"> <li>• Conduct field data gathering and data analysis</li> <li>• Monitor, analyse and adjust process control parameters using local and remote set points, cascade, ratio control modes and loop tuning within control systems</li> <li>• Produce technical reports and recommend optimisation improvement</li> <li>• Liaise with internal production and maintenance teams on optimisation activities</li> <li>• Apply process optimisation principles to systems</li> <li>• Apply cloud-based analytics to process optimisation</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the selection and use of process optimisation techniques and approaches</li> <li>• Review statistical analyses on equipment and plant performance</li> <li>• Evaluate the adjustment of process control parameters to ensure their effectiveness</li> <li>• Validate recommendations of process optimisation with predictive process models using chemical process simulators</li> <li>• Lead process loop tuning on integrated systems</li> <li>• Review cause and effect of optimisation actions on product quality and yield</li> <li>• Recommend continuous improvement on process optimisation techniques and approaches</li> </ul>	<ul style="list-style-type: none"> <li>• Drive the adoption and implementation of new and emerging technologies for process optimisation and system integration</li> <li>• Review new and emerging technologies to make business improvement and adoption recommendations</li> <li>• Build team capabilities in process optimisation and operational excellence</li> </ul>