

**SKILLS FRAMEWORK FOR AEROSPACE  
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Aerospace and Engineering Fundamentals					
<b>TSC</b>	Gas Turbine Engine Principles Application					
<b>TSC Description</b>	Apply and use principles of gas turbine engines for maintenance, repair, overhaul or manufacturing of aircraft engines and related systems in accordance with the original equipment manufacturer (OEM) manuals and organisational procedures					
<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>
			<b>AER-ACO-3017-1.1</b>	<b>AER-ACO-4017-1.1</b>		
			Apply principles of gas turbine engines and characteristics towards maintenance, repair, overhaul or manufacturing of aircraft engines and support systems	Apply principles of gas turbine engine construction and engine support systems towards maintenance, repair, overhaul or manufacturing of aircraft engines and related system		
<b>Knowledge</b>			<ul style="list-style-type: none"> <li>• Fundamentals and characteristics of gas turbine engine (GTE) and GTE cycle</li> <li>• Characteristics of the main sections of GTE including compression, inlets, combustion, fan blades and exhaust systems</li> <li>• Characteristics of supporting sections of GTE including air system, ignition, indication and engine cowling</li> <li>• Properties and specification of lubricants and fuels</li> <li>• Fundamentals of auxiliary power unit (APU)</li> <li>• GTE installation procedures</li> <li>• Basics of turbo-prop and turbo-shaft engine</li> <li>• Types of fire protection systems</li> <li>• GTE health monitoring, ground operation and maintenance procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Gas Turbine Engine (GTE) performance</li> <li>• Operation and construction of the main sections of GTE, including compression, combustion, inlets, turbines and exhaust sections</li> <li>• Operation and construction of the supporting sections of GTE including air system, ignition, indication and power augmentation</li> <li>• Functions of lubrication and fuel systems</li> <li>• Operations of auxiliary power unit (APU)</li> <li>• Configurations for GTE installation</li> <li>• Layout of fire protection systems</li> <li>• Constructional characteristics of turbo-prop and turbo-shaft engine</li> <li>• GTE health monitoring, ground operation and maintenance procedures</li> </ul>		

**SKILLS FRAMEWORK FOR AEROSPACE  
TECHNICAL SKILLS AND COMPETENCIES (TSC) REFERENCE DOCUMENT**

				<ul style="list-style-type: none"> <li>• Engine storage and preservation</li> </ul>		
<p><b>Abilities</b></p>			<ul style="list-style-type: none"> <li>• Explain GTE operation</li> <li>• Outline the purpose of main components in GTE construction, including compressor inlets, combustion chambers, and exhaust sections</li> <li>• Select lubricants and fuels suitable for GTE, and the functional layout of fuel systems</li> <li>• Define the functional layout of air, starting and ignition, engine indication and fire protection systems</li> <li>• Outline the construction of turbo-prop engine and turbo-shaft engines</li> <li>• Select maintenance procedures for health monitoring of GTE</li> <li>• Interpret engine parameters for normal or abnormal operation</li> <li>• Assess the engine run processes that evaluate the condition of a gas turbine engine</li> <li>• Adhere to technical manuals, SOPs and workplace safety practices</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the parameters affecting the performance of a GTE</li> <li>• Guide construction of the main sections in a GTE, including compressors, inlets, combustion chambers, turbines and exhaust sections</li> <li>• Recommend layout and construction of supporting systems in a GTE, including lubrication, fuel, air, starting and ignition, engine indication and power augmentation</li> <li>• Suggest measures to optimise performance of turbo-prop and turbo-shaft engines</li> <li>• Apply expertise of APUs and guide powerplant installation activities</li> <li>• Review the application of the fire protection system</li> <li>• Prescribe maintenance procedures for GTE and health monitoring</li> <li>• Oversee on ground engine test procedures</li> <li>• Evaluate the requirements for engine preservation and storage</li> <li>• Identify relevant technical manuals, SOPs and workplace safety practices</li> </ul>		