

## COURSE OUTLINE

<b>Course Title</b>	<b>Apply Failure Modes and Effects Analysis Techniques (FMEA)</b>
<b>Course Code</b>	<b>CRS-Q-0032187-PRE</b>
<b>Course Description</b>	Failure Mode & Effects Analysis (FMEA) is a tool for identifying all potential modes of failure, possible causes and effects of failure on the system or interface. The purpose is the early identification of failures so that they can be eliminated or minimized through design correction at the earliest time. FMEA enables improvements and corrective actions to be implemented for design, process control, maintenance and service. FMEA is one of the requirements in ISO 2001.
<b>Course Objectives</b>	At the end of the course, participants will be able: <ol style="list-style-type: none"> <li>1. Improve process through eliminating failure modes</li> <li>2. Reduce warranty costs through early problem detections</li> </ol>
<b>What the Course will cover</b>	<p>Course contents include:</p> <p><b><u>DAY 1</u></b></p> <ol style="list-style-type: none"> <li><b>1 FMEA Overview</b></li> <li><b>2 Design FMEA</b> <ul style="list-style-type: none"> <li>○ Aim of Design FMEA</li> <li>○ Benefits of Design FMEA</li> <li>○ Understanding customers' needs</li> <li>○ Creating Design FMEA Team</li> <li>○ Inputs to Design FMEA</li> <li>○ Defining scope of Design FMEA</li> <li>○ Part Name and Function</li> <li>○ Potential failure modes</li> <li>○ Potential effects of failure</li> <li>○ Severity of failures</li> <li>○ Classification of failures</li> <li>○ Potential causes of failures</li> <li>○ Probability of occurrences</li> <li>○ Current Process Control</li> <li>○ Detectability</li> <li>○ Risk Priority Number</li> <li>○ Recommended Actions</li> <li>○ Responsible person</li> <li>○ Action results</li> <li>○ Criticality Matrix</li> <li>○ Hierarchy of mitigation</li> <li>○ Case study 1 – Design FMEA</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>○ Failure Modes of Mechanical devices</li> <li>○ Failure Modes of Electronics devices</li> </ul> <p><b>DAY 2</b></p> <p><b>2 Process FMEA</b></p> <ul style="list-style-type: none"> <li>○ Relationship of Design and Process FMEA</li> <li>○ Aim of Process FMEA</li> <li>○ Process FMEA</li> <li>○ Aim of Process FMEA</li> <li>○ Benefits of Process FMEA</li> <li>○ Understanding customers' needs</li> <li>○ Creating Process FMEA Team</li> <li>○ Inputs to Process FMEA</li> <li>○ Defining scope of Process FMEA</li> <li>○ Process/inspection Flowchart</li> <li>○ Process function/requirements</li> <li>○ Potential failure modes</li> <li>○ Potential effects of failure</li> <li>○ Severity of failures</li> <li>○ Classification of failures</li> <li>○ Potential causes of failures</li> <li>○ Probability of occurrences</li> <li>○ Current Process Control</li> <li>○ Detectability</li> <li>○ Risk Priority Number</li> <li>○ Recommended Actions</li> <li>○ Responsible person</li> <li>○ Action results</li> <li>○ Case study 2 – Process FMEA</li> <li>○ Assessment</li> </ul>
<b>Instructional Methods</b>	<ul style="list-style-type: none"> <li>● Power-points</li> <li>● Case Studies</li> <li>● Video</li> </ul>
<b>Assessment Methods</b>	<ul style="list-style-type: none"> <li>● Written Test</li> <li>● Case Study</li> </ul>
<b>Certification</b>	Upon successful completion of the course, the learner will be issued a WSQ Statement of Attainment issued by SSG.
<b>Course Duration</b>	2 days
<b>Course Fee (before subsidy)</b>	\$400

<b>SSG subsidy for Singaporean and PR below 40 yr old</b>	\$238
<b>SSG subsidy for Singaporean above 40yr old</b>	\$350