

## COURSE OUTLINE

<b>Course Title</b>	<b>Carry out Design of Experiment (DOE)</b>
<b>Course Code</b>	<b>CRS-Q-0040258-PRE</b>
<b>Course Description</b>	Design of Experiments (DOEs) refers to a structured, planned method, which is used to find the relationship between different factors (let's say, X variables) that affect a project and the different outcomes of a project (let's say, Y variables). In order to minimize optimization problems, it is important to keep costs low by conducting few experiments. Design of Experiments is useful in this case, as it only necessitates a small number of experiments, thereby helping to reduce costs.
<b>Course Objectives</b>	The 3-day Carry out Design of Experiments course aims to provide learners with generic knowledge, principles and application skills on Design of Experiment methodology and tools. At the end of the course, the student will be able to: <ol style="list-style-type: none"> <li>1) Understand DOE Principles;</li> <li>2) Create and Analyse Full Factorial and Fractional Factorial DOE</li> <li>3) Optimize settings of critical parameters.</li> </ol>
<b>What the Course will cover</b>	<p>Course contents include:</p> <p><b><u>Day 1</u></b></p> <p><b>1. Introduction</b></p> <p><b>2. Factorial Design</b></p> <ul style="list-style-type: none"> <li>○ Factorial Design Concepts</li> <li>○ Creating Full Factorial Design</li> <li>○ Analyze Full Factorial Designs</li> <li>○ Experiment &amp; Exercises</li> </ul> <p><b><u>Day 2</u></b></p> <p><b>3. Blocking &amp; Incorporating Center Points</b></p> <ul style="list-style-type: none"> <li>○ Blocking</li> <li>○ Center Points</li> <li>○ Analyze with Block and Center Points</li> <li>○ Exercises</li> </ul> <p>4. Fractional Factorial Designs</p> <ul style="list-style-type: none"> <li>○ Fractional Factorial Design Concepts</li> </ul> <p><b><u>Day 3</u></b></p> <ul style="list-style-type: none"> <li>○ Create Fractional Factorial Designs</li> <li>○ Analyze Fractional Factorial Designs</li> <li>○ Exercises</li> </ul>

	<p><b>5. Response Optimization</b></p> <ul style="list-style-type: none"> <li>○ Response Optimization Concepts</li> <li>○ Exercises</li> </ul> <p><b>6. Summary</b></p> <ul style="list-style-type: none"> <li>○ Objectives Review</li> </ul> <p><b>7. Participants Cases conceptualized into DOE Projects</b></p> <ul style="list-style-type: none"> <li>○ Application of Appropriate Techniques</li> <li>○ Analyze using Appropriate Techniques</li> <li>○ Generate Report based on DOE for Management</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>	3 days
<b>Course Fee (before subsidy)</b>	\$945
<b>SSG subsidy for Singaporean and PR below 40 yr old</b>	\$360
<b>SSG subsidy for Singaporean above 40yr old</b>	\$850.50