COURSE OUTLINE

Course Title	**System Engineering Thinking (SET)**
Course Code	**CRS-Q-0040011-PTP**
Course Description	The learning units are structured such that under Learning Unit 1, participants first understand the foundation of System Engineering with regard to the key concepts and customer needs. With this fundamental understanding, participants will be able to proceed to Learning Unit 2 on System Engineering Process where they will conduct system feasibility analysis, develop system operational requirements, cite maintenance and support concepts, identify and prioritize technical performance measures, conduct functional analysis, and allocate requirement to sub-systems. The structured process is based on concurrent engineering and incorporates the Engineering Design Process. These processes are performed iteratively with the emphasis on the satisfaction of stakeholder functional, physical and operational performance requirements in the intended use environments achieving lowest life cycle cost and within schedule constraints. Finally, under Learning Unit 3, learners will be able to synthesize and optimize the design, then test, validate and verify whether the system can function according to the system requirements and meet the life-cycle objectives.
Course Objectives	The 2-day System Engineering Thinking course aims to provide learners with generic knowledge, principles and application skills on system engineering. The objective involves front-end planning with long term sustainability in mind. At the end of the course, the student will be able to: 1) Explain the value of upfront System Engineering; 2) Understand customer needs analysis; 3) Conduct system feasibility analysis; 4) Develop system operational requirements; 5) Cite maintenance and support requirements; 6) Identify and prioritize technical performance measures 7) Conduct functional analysis 8) Define requirements and allocate requirements to sub-system 9) Synthesize and optimize design 10) Verify system functions against requirements.

What the Course will cover	Course contents include: **1 System Engineering Concepts** o Introduction to System Engineering o System Requirements o System Feasibility Analysis **2 System Engineering Process** o System Operational Requirements o Logistics and Maintenance Support Concept o Identification and Prioritization of Technical Performance Measures o Functional Analysis o Requirements Definition and Allocation **3 System Synthesis and Verification** o System Synthesis, Analysis and Design Optimization o System Test and Evaluation
Instructional Methods	• Power-points • Case Studies • Video
Assessment Methods	• Written Test • Case Study
Certification	Upon successful completion of the course, the learner will be issued a WSQ Statement of Attainment issued by SSG.
Course Duration	2 days
Course Fee (before subsidy)	$660
SSG subsidy for Singaporean	$240

and PR below 40 yr old	
SSG subsidy for Singaporean above 40yr old	$594