

WSQ Precision Engineering Advanced Certificate

WSQ COURSE NAME : Perform Design Verification Using Simulation – Basic (For Analysts)

PRODUCT COURSE NAME : 1. ANSYS Workbench – DesignModeler
2. ANSYS Workbench – Meshing Application Introduction
3. ANSYS Workbench Mechanical – Introduction

TRAINING DURATION : 6 x 8hrs sessions

* Creditable for QUT Master program and Continuing Development (CPD) courses offered by the Professional Engineers Board (PEB) Singapore.

*** Singaporeans and Permanent Residents may receive up to 90% funding on course fees from the Singapore Workforce Development (WDA). Terms and conditions apply.**

OBJECTIVES

This Competency Standard enables trainees to create and modify geometry in preparation for analysis, as well as to generate quality meshes for their finite element analysis (FEA) and/or computational fluid dynamics simulations. It will then train participants to perform the most common FEA simulations, such linear static structural analysis and steady-state thermal analyses.

WHO SHOULD ATTEND

This Competency Standard is intended for engineers who are required to create and modify geometry, generate mesh, and perform basic structural and thermal analyses.

PRE-REQUISITES

Engineering knowledge and familiarity with computer (PC or workstation) are required.

COURSE SYLLABUS

Days One and Two: ANSYS DesignModeler

- ANSYS Workbench Overview
- Graphical User Interface
- Sketch Mode
- 3D Geometry
- Advanced 3D Geometry
- Working with CAD
- Parametric Modeling
- Concept Modeling

Day Three: ANSYS Meshing

- Meshing Application Overview
- Meshing Methods for 3D Geometries
- Common Meshing Application Controls
- Tetrahedral Meshing
- Sweep Meshing
- Multizone Meshing
- Meshing 2D Geometries

Days Four, Five and Six: ANSYS Mechanical

- ANSYS Mechanical Overview
- Mechanical Basics
- General Preprocessing
- Static Structural Analysis
- Vibration Analysis
- Thermal Analysis
- Linear Buckling Analysis
- Results Post-processing
- CAD & Parameters

Each course chapter is followed by "hands-on" workshops and exercises.

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