Publication date : 11/18/2024

Course : SolidWorks, simulation

Practical course - 2d - 14h00 - Ref. SWU
Price : 1380 € E.T.

SOLIDWORKS is CAD software developed by Dassault Systèmes. It's one of the market leaders in 3D design, yet relatively easy to learn. At the end of this course, you'll be able to define a virtual environment with real-life conditions to test your product designs.

Teaching objectives

At the end of the training, the participant will be able to:

- Master the analysis process
- Control meshes, stress concentrations and boundary conditions
- Analyze assemblies with contacts and connectors
- Knowing, analyzing and refining compatible/incompatible meshes
- Analyze thin components
- Know the mixed mesh of hulls, volumes and beams
- Thermoelastic analysis
- Adapting to different scenarios

Intended audience

Those involved in projects requiring the use of SOLIDWORKS analysis functions on designs (design engineers, etc.).

Prerequisites

Familiarity with SOLIDWORKS software (having taken the SOLIDWORKS initiation and advanced training courses or having a good grounding in mechanical engineering).

Practical details

Hands-on work

Discussions, experience sharing, demonstrations, tutorials and case studies.

Teaching methods

Active pedagogy based on case studies, carried out in agile mode, and assessment of skills acquired throughout the course.

Course schedule

PARTICIPANTS

Those involved in projects requiring the use of SOLIDWORKS analysis functions on designs (design engineers, etc.).

PREREQUISITES

Familiarity with SOLIDWORKS software (having taken the SOLIDWORKS initiation and advanced training courses or having a good grounding in mechanical engineering).

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

1 Simulation basics

- Why simulate?
- Import a part or assembly into SOLIDWORKS.
- SOLIDWORKS Simulation interface.
- Static, thermal and frequency analysis.
- Quick illustration of other analyses.
- Stages in the analysis process.
- Pre-treatment, post-treatment, treatment.
- Create meshes.
- Capitalize on studies.
- Produce reports.

Hands-on work
Apply constraints to simple elements.

2 Mesh control

- Mesh control.
- Focus on stress concentrations.
- Description of the effect of boundary conditions.

Hands-on work
Analysis of angular supports.

3 Assembly analysis

- Contact analysis.
- Connecting components and connectors.

Hands-on work
Case studies on a tool with local contact and articulated elements.

4 Mesh modification and optimization

- Compatible/incompatible meshes.
- Mesh control in an assembly.
- Analysis using low-quality coarse mesh.
- Analysis of a high-quality mesh.

Hands-on work
Use of a case study.

5 Analysis of thin components

- Thin components.
- Refined volume mesh.
- Volumetric and shell elements.
- Creation of hull elements.
- Comparison of results.

Hands-on work
Case studies: pulley, bracket or stirrup.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

6 Mixed mesh

- Beam impression.
- Mixed-mesh beam and volume elements.
- Mixed-mesh shells and volume elements.

Hands-on work
Analysis of a mixed particle separator and pressure vessel mesh.

7 Adapting the mesh

- Adaptive mesh.
- Geometry preparation.
- Adaptive method H.
- Adaptive method P.
- Complementarity of H and P methods.

Hands-on work
Refine the mesh of a diamond jack.

8 Thermo-elastic analysis

- Stationary thermal analysis.
- Transient and radiation thermal analysis.
- Thermo-elastic analysis.

Hands-on work
Study of a thermal expansion joint.

Times

Courses take place from 09:00 to 12:30 and from 14:00 to 17:30.
Participants may arrive beginning at 08:45. Breaks and lunches are complimentary.
For four- and five-day hands-on courses, sessions end at 16:00 on the last day of the course, regardless of the teaching mode..

Dates and locations

REMOTE CLASS
2026 : 6 July, 14 Sep., 7 Dec.

PARIS LA DÉFENSE
2026 : 6 July, 14 Sep., 7 Dec.