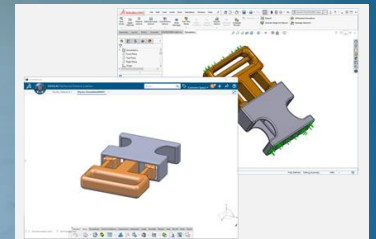


STRUCTURAL SIMULATION ESSENTIALS

SIMULIA COURSE DESCRIPTION



Level: Fundamental
Products: 3DEXPERIENCE
Disciplines: Structures

Audience
 This course is intended for all roles that enable the Structural Scenario Creation and Mechanical Scenario Creation apps, including:

- Structural Performance Engineer
- Structural Mechanics Engineer
- Structural Analysis Engineer

Why take this course?

This course is an introduction to structural simulation on the 3DEXPERIENCE platform using the Structural Scenario Creation or Mechanical Scenario Creation app. The basics of Finite Element Modeling with the Structural Model Creation app and post processing with the Physics Results Explorer app are included to provide an end-to-end view of the simulation process. You can use geometry imported/created on the 3DEXPERIENCE platform or designed with SOLIDWORKS.

What will you learn?

Upon completion of this course, you will be able to:

- Create complete Finite Element models for structural and thermal simulations
- Perform structural (linear and nonlinear; statics and dynamics) and thermal simulations
- View and evaluate simulation results

Explore Your Learning Options

Live Sessions	Engage in Real-Time, interactive group workshops guided by experts. Learn and collaborate live in your preferred language and time zone.	Join a live session
On-Demand Learning	Access expert-designed courses anytime, anywhere. Perfect for independent learners looking to build skills on their schedule.	Start Learning Now
Private Training	Exclusive, tailor-made sessions designed to meet your team's unique goals with expert guidance.	Contact Us for Custom Training



Gain hands-on experience and master real-world workflows through guided, practical training sessions.

Run simulations collaboratively within the 3DEXPERIENCE platform, connecting design, data, and analysis seamlessly.

– SIMULIA Training Expert Team

What You Need to Know Before Starting

The following course is strongly recommended prior to taking this one:

- Getting Started with Physics Simulation

Agenda for Virtual Live Sessions

Participate in hands-on, real-time workshops where you'll gain practical expertise. Here's what you'll cover:

[Join an Instructor Led Session](#)

Day 1

Lesson 1: Introduction
Workshop 1: Getting Started with the 3DEXPERIENCE Platform (optional)
Lesson 2: Getting Started with Simulation
Workshop 2: Buckle Clip Insertion
Lesson 3: Meshing – Basics
Workshop 3a: Intersecting Pipes – Tetrahedron Mesh
Workshop 3b: Pump – Mesh
Workshop 3c: Reinforced Panel – Mesh (optional)
Lesson 4: Materials and Section Properties
Workshop 4a: Intersecting Pipes – Material and Section Properties
Workshop 4b: Pump – Material and Section Properties
Workshop 4c: Reinforced Panel – Material and Section Properties (optional)
Lesson 5: Connections
Workshop 5a: Pump – Connections

Day 3

Lesson 10: Dynamic Simulations
Workshop 10: Vibrating Cantilevered Plate
Lesson 11: Nonlinear Dynamics
Workshop 11: Pipe Whip Simulation
Lesson 12: Quasi-static Simulations
Workshop 12a: Bending of a Thin Tube
Workshop 12b: Channel Forming (optional)
Lesson 13: Heat Transfer Simulation (optional)
Workshop 13: Thermal Simulation of a Pump Housing (optional)

Day 2

Workshop 5b: Reinforced Panel – Connections (optional)
Lesson 6: Steps and Static Simulations
Workshop 6: Creep of a Pipe Intersection
Lesson 7: Loads, Restraints and Initial Conditions
Workshop 7: Analysis of a Reinforced Panel (optional)
Lesson 8: Interactions
Workshop 8: Pump Model – Steps, Loads and Contact
Lesson 9: Running Simulations and Postprocessing
Workshop 9a: Nonlinear Static Analysis of a Pump Assembly
Workshop 9b: Threaded Connector Analysis (optional)

Additional Material

Appendix 1: Element Selection Criteria
Appendix 2: Cloud-based Simulation Roles
Appendix 3: More Connections and Rigid Bodies
Appendix 4: Contact Pairs

Want to Learn More?

Expand your knowledge by exploring our [course Catalog](#) and browsing learning paths on [Eduspace](#), our dedicated e-learning platform.

Join the Community!

[Join the SIMULIA community](#) to connect, learn, and stay updated.



3DEXPERIENCE®

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