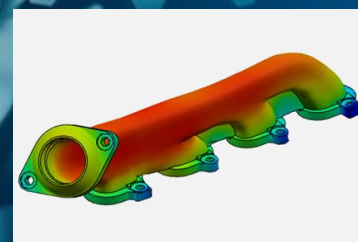


STRUCTURAL SIMULATION: HEAT TRANSFER AND THERMAL-STRESS ANALYSIS

SIMULIA COURSE DESCRIPTION



Level: Advanced
Products: 3DEXPERIENCE
Disciplines: Structures; Thermal

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
- Structural Generative E

Why take this course?

The success of many structural designs requires a thorough understanding of both the thermal and mechanical response of the design. Temperature-dependent material properties, thermally-induced deformation, and temperature variations all may be important design considerations. This course introduces you to the heat transfer and Thermal-Stress capabilities available within 3DEXPERIENCE. Practical examples and workshops are used to illustrate these capabilities.

What will you learn?

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

- Perform steady-state and transient heat transfer simulations

- Perform sequentially-coupled, fully-coupled and adiabatic Thermal-Stress analyses
- Model contact in heat transfer problems

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 required prior to taking this one:

- Structural Simulation Essentials (or equivalent)

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 to Heat Transfer
Lesson 2: Heat Transfer Basics
Lesson 3: Geometry, Material Properties, and Elements
Workshop 1: Reactor Pressure Vessel: Properties and Elements
Lesson 4: Solver Procedures and Convergence
Lesson 5: Boundary Conditions and Loads
Lesson 6: Thermal Interfaces
Lesson 7: Thermal Output and Postprocessing
Workshop 2: Reactor Pressure Vessel: Thermal Simulation

Additional Material

Appendix 1: Heat Transfer Theory

Day 2

Lesson 8: Thermal-Stress Analysis
Lesson 9: Sequentially-Coupled Thermal-Stress Analysis
Workshop 3: Reactor Pressure Vessel: Thermal-Stress Simulation
Lesson 10: Fully-Coupled Thermal-Stress Analysis
Workshop 4: Thermal-Stress Analysis of a Disc Brake
Lesson 11: Adiabatic Analysis

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®

Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens.

With Dassault Systèmes' 3DEXPERIENCE platform, 370,000 customers of all sizes, in all industries, can collaborate, imagine and create sustainable innovations that drive meaningful impact.

For more information, visit: www.3ds.com

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