

SIMULIA Material Calibration Essentials

Course Code	SIM-en-MCAL_F
Brand & Release	3DEXPERIENCE® R2021x-R2022x
Duration	1.5 days
Level	Fundamentals
Prerequisites	Familiarity with the 3DEXPERIENCE platform

Objectives:

This course is an introduction to methods in the Material Calibration app used to determine optimized material parameters, check the goodness of fit compared to test data, and export materials for use in Abaqus or 3DEXPERIENCE structural simulation.

Class Structure:

Upon completion of this course you will be able to:

- Import and plot material test data, configure optimization settings
- Calibrate material models with the numerical and analytical execution modes
- Create materials for physics simulation or export to an Abaqus input file format
- Use FE-based calibration with a physics simulation or an imported Abaqus input file
- Delete simulations, calibration data, or created materials

The course is intended for the following Roles:

- Structural Mechanics Engineer
- Structural Analysis Engineer
- Durability and Mechanics Engineer
- Structural and Durability Engineer
- Composite Structures Analysis Engineer
- Additive Manufacturing Analysis Engineer
- Product and Packaging Analysis Engineer
- Composite Structures Performance Engineer
- Material Calibration Engineer
- Tire Analysis Engineer

Class Lessons:

Lesson 1: Material Calibration Overview

Lesson 2: Metal Plasticity

Lesson 3: Isotropic Tabular Plasticity

Lesson 4: Hyperelasticity

Lesson 5: Elastomeric Foams

Lesson 6: Viscoelasticity

Lesson 7: Optimization and Advanced Tools

Lesson 8: Crushable Foams

Lesson 9: FE-based Calibration

Lesson 10: Data Management for Material Calibration