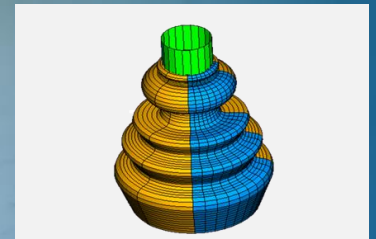


ELEMENT SELECTION IN ABAQUS

SIMULIA COURSE DESCRIPTION



Level: Advanced
Products: Abaqus
Disciplines: Structures

Audience
 This course is recommended for simulation analysts who will perform advanced nonlinear analysis, regardless of industry or application.

Why take this course?

Choosing an element is one of the most fundamental questions that users must answer as they build a finite element model. Many issues should be considered when selecting an element, including: Is there contact in the model? Is the material behavior fully or nearly incompressible? Will the element bend during the analysis? Is the structure thick or thin? Will the mesh become severely distorted? What results are needed from the analysis? Is the analysis a static or dynamic simulation? This course provides an overview of the different element types available in Abaqus for stress analyses. Differences between the Abaqus/Standard and Abaqus/Explicit element libraries are considered. Application-specific recommendations for choosing an element type are provided. The pitfalls and symptoms of choosing incorrect element types are also discussed. Examples and workshops are used to illustrate element behavior and the consequences of choosing incorrect element types for a given problem.

What will you learn?

Upon completion of this course you will be able to:

- Understand the distinguishing characteristics of the wide range of continuum and structural elements available in Abaqus for stress analyses
- Understand modeling features that may cause certain

- types of elements to behave poorly
- Choose appropriate element types for different applications including the effects of fully or nearly incompressible material behavior, contact, bending, etc.

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.

Apply nonlinear analysis techniques to simulate complex structural and multiphysics problems accurately.

– SIMULIA Training Expert Team

What You Need to Know Before Starting

Introduction to Abaqus or equivalent and experience using Abaqus.

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: Solid Elements in Abaqus
Lesson 2: Other Solid Element Types (optional)
Lesson 3: Integration, Hourglassing, & Incompressibility
Demo 1: Hourglass control
Workshop 1: Plane Strain Elements
Lesson 4: Key Properties of Solid Elements
Workshop 2: Plane Stress Elements
Lesson 5: Modeling Bending and Stress Concentrations
Workshop 3: 3-D Solid Elements

Day 2

Lesson 6: Structural Elements in Abaqus
Lesson 7: Conventional Shell Elements
Workshop 4: Shell Elements
Lesson 8: Continuum Shell Elements
Lesson 9: Beam and Frame Elements
Workshop 5: Beam Elements

Want to Learn More?

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

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