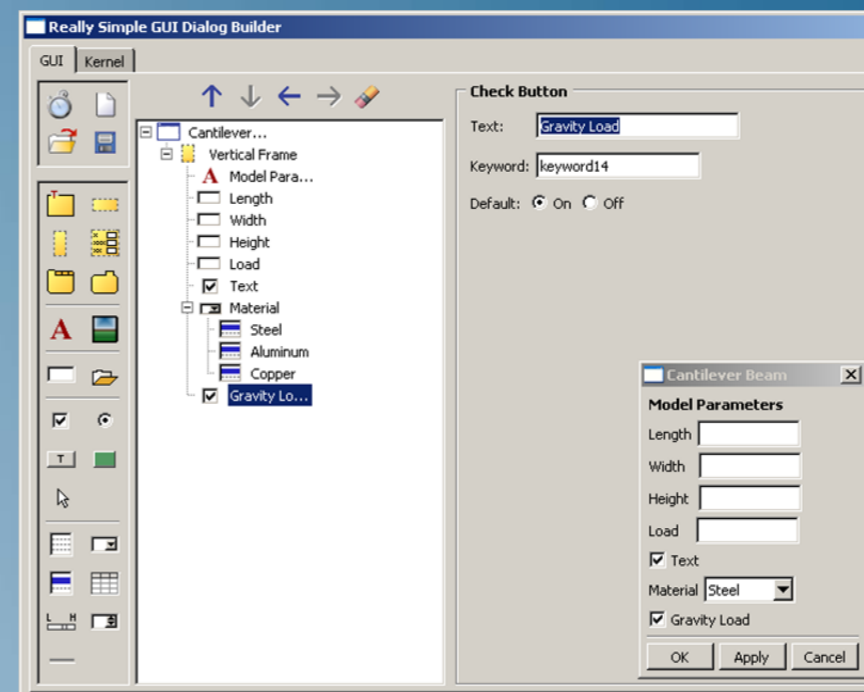


Advanced Abaqus Scripting

Abaqus 2021



About this Course

Course objectives

- ▶ Help students to develop a high level understanding of the Abaqus scripting capabilities and gain some proficiency.
- ▶ Organize and present the deeper technical details of Python and the Abaqus Scripting Interface.
- ▶ Expose the strengths and weaknesses of Abaqus scripting.
- ▶ Encourage the student to use scripting in new ways.

This course will take a deeper dive into:

- ▶ The Abaqus Scripting Interface (ASI)
- ▶ The core functionality of the Python language and libraries

Targeted audience

Simulation Analysts

Prerequisites

Experience scripting with Python and Abaqus is recommended.



2 days

Day 1

- ▶ Lesson 1
 - Python Core Language: Advanced Topics
 - ▶ Workshop 1
 - Practice Using a Few More Python Basics
 - ▶ Workshop 2
 - Working with Exceptions

- ▶ Lesson 2
 - Functions, Modules, Packages & Performance
 - ▶ Workshop 3
 - A Brief Look at the NumPy Module

- ▶ Lesson 3
 - Manipulating Strings and Files
 - ▶ Workshop 4
 - Parsing Files
 - ▶ Workshop 5
 - Input and Output with the Shelve Module

- ▶ Lesson 4
 - Object Oriented Programming
 - ▶ Workshop 6 (Optional)
 - Classes
 - ▶ Workshop 7 (Optional)
 - Special Method Attributes

Day 2

- ▶ Lesson 5
 - Workshop 8
- ▶ Lesson 6
 - Automating a Bottle Top Load Analysis
 - Study a Plug-in to Convert Flat Mesh into Cylindrical Shape
- ▶ Lesson 7
 - Miscellaneous Topics
 - Basic Scripting Style Considerations
- ▶ Lesson 8
 - Stretching Horizons

Additional Material

▶ Appendix 1

- Workshop 12
- Workshop 13

Optional Topics

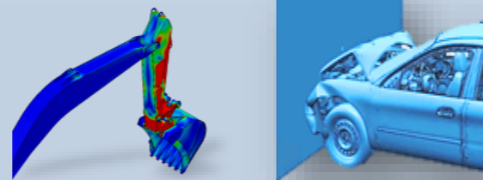
Job Monitoring

Working with the keywordBlock Object

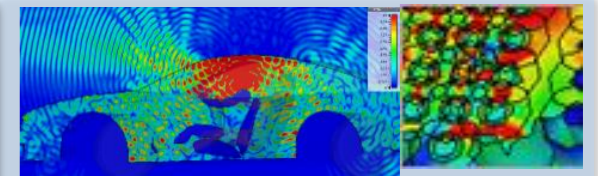
SIMULIA

- ▶ SIMULIA is the Dassault Systèmes brand for realistic simulation solutions.
- ▶ Advanced simulation portfolio covering simulation disciplines such as structural mechanics, computational fluid dynamics and electromagnetic field simulation, for a true multiphysics simulation approach.

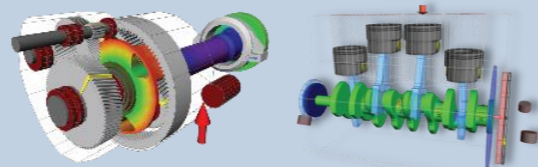
Structures



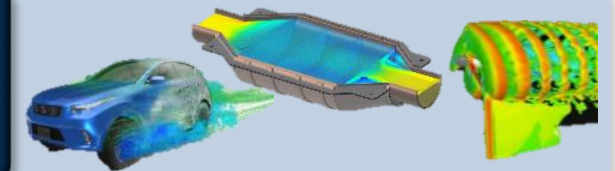
Electromagnetics



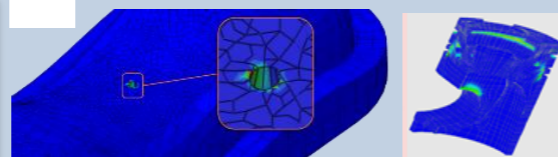
Multibody



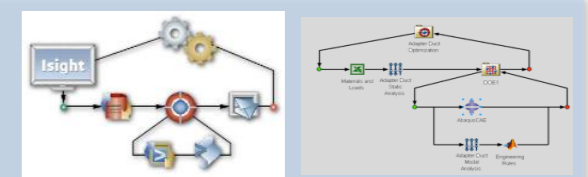
Fluids



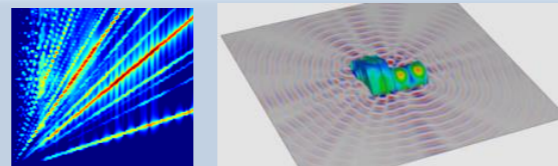
Durability



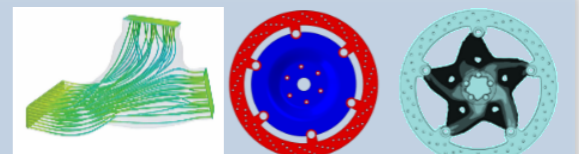
Automation



Vibro-acoustics



Optimization



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Revision Status

Lesson 1	11/20	Updated for Abaqus 2021
Lesson 2	11/20	Updated for Abaqus 2021
Lesson 3	11/20	Updated for Abaqus 2021
Lesson 4	11/20	Updated for Abaqus 2021
Lesson 5	11/20	Updated for Abaqus 2021
Lesson 6	11/20	Updated for Abaqus 2021
Lesson 7	11/20	Updated for Abaqus 2021
Lesson 8	11/20	Updated for Abaqus 2021
Appendix 1	11/20	Updated for Abaqus 2021
Workshop 1	11/20	Updated for Abaqus 2021
Workshop 2	11/20	Updated for Abaqus 2021
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Workshop 9	11/20	Updated for Abaqus 2021
Workshop 10	11/20	Updated for Abaqus 2021
Workshop 11	11/20	Updated for Abaqus 2021
Workshop 12	11/20	Updated for Abaqus 2021
Workshop 13	11/20	Updated for Abaqus 2021

