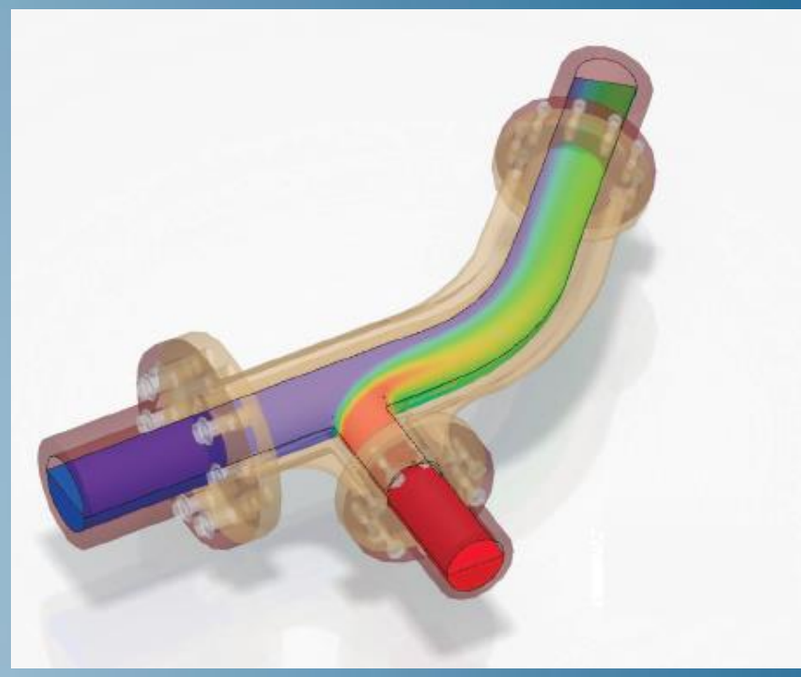
Fluid Mechanics Validation Essentials

R2017x



3DEXPERIENCE®

About this Course

Course objectives

Upon completion of this course you will be able to:

- Search and manage simulation data in the database
- Perform a fluid flow and heat transfer analysis using the Fluid Mechanics Validation app
- Obtain appropriate reports to produce highly efficient designs and/or optimize their performance

Targeted audience

This course is intended for the following role:

- Fluid Dynamics Engineer

Prerequisites

The following course is required prior to taking this one:

- None

4 hours

Day 1

- Lesson 1 — Introduction to the **3D**EXPERIENCE Platform
- Lesson 2 — Fluid Dynamics Engineer Role
- Lesson 3 — Running Simulations
- Workshop 1 — Pressure Drop and Heat Transfer in a Pipe Junction
- Workshop 2 — Conjugate Heat Transfer (CHT) Analysis of an Electronic Package

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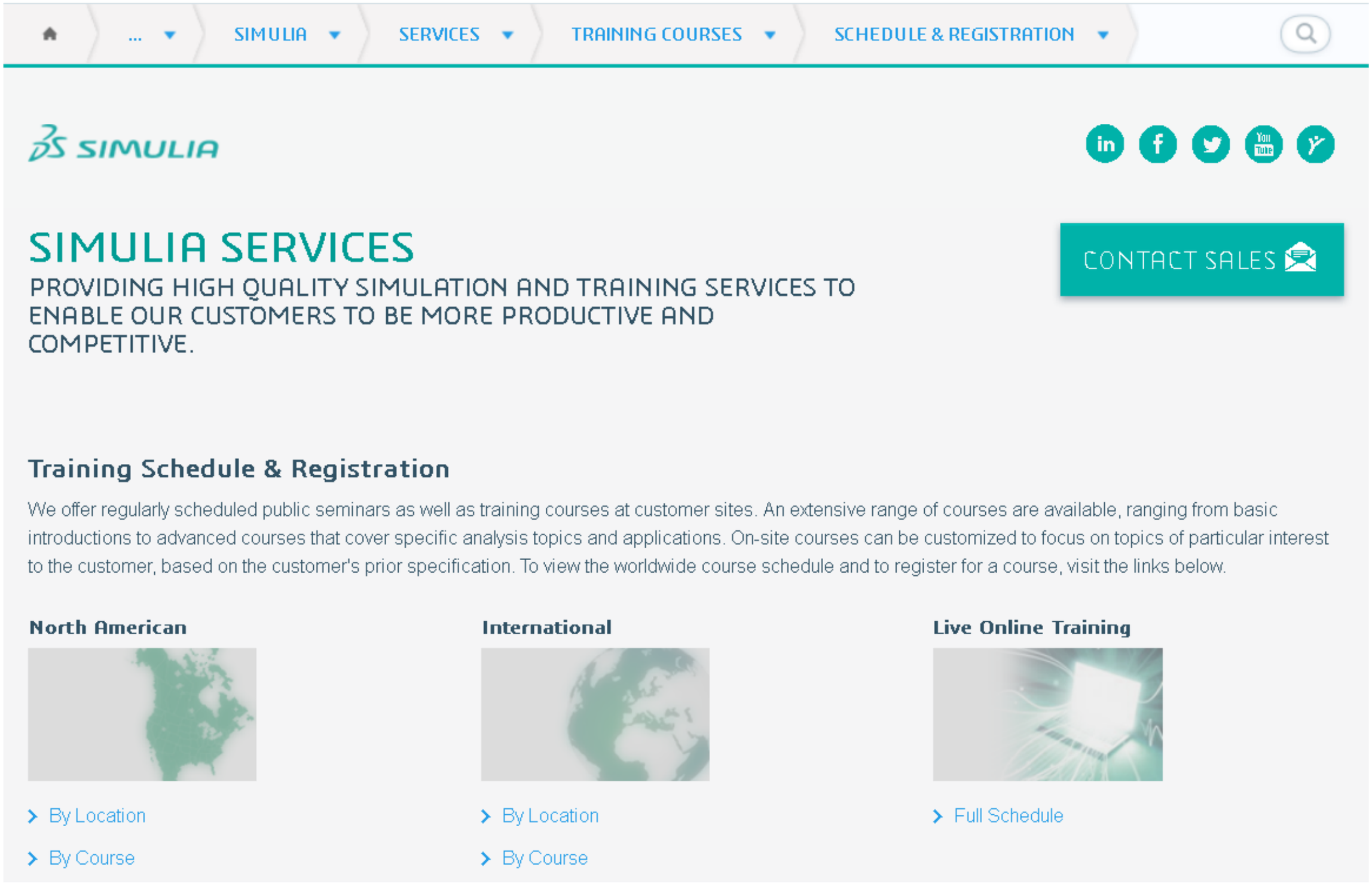

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Revision Status

Lesson 1	2/17	Updated for R2017x
Lesson 2	2/17	Updated for R2017x
Lesson 3	2/17	Updated for R2017x
Workshop 1	2/17	Updated for R2017x
Workshop 2	2/17	New for R2017x

Lesson 1: Introduction to the 3DEXPERIENCE Platform

Lesson content:

- What is the **3D**EXPERIENCE Platform?
- Architecture
- Packaging
- **3D**EXPERIENCE Platform Services
- Connecting to the Platform
- Platform Interface
- Importing and Exporting Data
- Searching Data
- Exploring Data
- Managing Data
- Compute Orchestration Services
- Simulation Conventions
- Workshop Preliminaries

1 hour

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Lesson 2: Fluid Dynamics Engineer Role

Lesson content:

- Fluid Dynamics Engineer Role
- CFD Basics
- Fluid Mechanics Validation App Interface

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30 minutes

Lesson 3: Running Simulations

Lesson content:

- Running a simulation
  - Step 1: Geometry
  - Step 2: Define Fluid Domain
  - Step 3: Selecting Solid Parts
  - Step 4: Materials
  - Step 5: Initial Conditions
  - Step 6: Boundary Conditions
  - Step 7: Outputs
  - Step 8: Review
  - Step 9: Simulate
  - Step 10: Results

1.5 hours

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