







# Complete Course List: Simcenter Amesim

 Instructor-led training	 On-demand training library	 Xcelerator Academy Membership
**Virtual lab environment included in offer		 Add-on vLab hours available for purchase

Simcenter Amesim Getting Started
+
Hydraulic System Simulation



or

Simcenter Amesim


9 Chapters

LEARNING PATH

### Getting Started with Simcenter Amesim

Introduction to the Simcenter Amesim, use of the software as well as the modeling and simulation process

**What is Simcenter Amesim?**

- Simcenter Amesim is a mechatronics system simulation platform
- System simulation allows to characterize the dynamic (non-linear) behavior of a system or a component
- Mathematical representation uses time domain
- Platform based on the C++ and the modelica languages
- Application (e.g. thermal management, power electronics, ...)

**PREVIEW CHAPTER**  
Simcenter Amesim Overview

6 Chapters

LEARNING PATH

### Introduction to Hydraulic System Simulation

Learn important basic hydraulic concepts, get a global view on hydraulic libraries and components, and learn how to build hydraulic models in Simcenter Amesim.

**Hydraulic Libraries in Simcenter Amesim**

**Why 3 libraries?** Each library is specific and answers different needs

- HTC** (Hydraulic Thermal Circuit) is a library for system simulation. The components are 3D and 2D hydraulic characteristics.
- MC** (Mechanical Circuit) is a library for system simulation. The components are 3D and 2D mechanical characteristics.
- EC** (Electrical Circuit) is a library for system simulation. The components are 3D and 2D electrical characteristics.

**PREVIEW CHAPTER**  
Libraries and components for hydraulic modeling

5 Chapters

LEARNING PATH

### Design and Simulate Thermal Fluid Systems

Introduction to the basics of thermal systems modeling and overview of component libraries. Work through examples to understand the modeling process.

**General introduction to thermal fluid system modeling**

Thermal fluid system is everywhere...

- Large systems like:
  - Engine cooling circuit, lubrication circuit, ...
  - 2D or 3D model
- Thermal simulation of commercial off-the-shelf (COTS) systems like:
  - Power battery cooling circuit, aircraft engine, ...
- And small systems:
  - Cooling system designed for smart phone, wearable device, ...
  - CPUs, GPUs, etc.

**PREVIEW CHAPTER**  
Introduction to Thermal Fluid system modeling

