SIEMENS
Ingenuity for life

What's new in Simcenter Amesim Student Edition

Providing tomorrow's engineers with industry-leading system simulation technology

Simcenter™ Amesim™ software is used by many original equipment manufacturers (OEMs) and suppliers in the automotive, aerospace, heavy equipment and other advanced industries. As a result, mastering Simcenter Amesim and, therefore, system simulation, will help you embark on an engineering career.

Providing you with a fully redesigned interface, the new version of Simcenter Amesim Student Edition enables you to complete studies and team projects faster, while delivering accurate simulation results. In addition, the new set of tools aim to make studies and the interpretation of results intuitive for students, enhancing their learning experience.

Delivering professional industrial technology
How can engineering students easily balance product performance in an intelligent system? And how can they achieve optimized designs?

Benefits
- Gain access to multi-domain system simulation software used in industry
- Prepare for the job market by learning industry-leading system design technology
- Rapidly complete engineering academic team projects or homework
- Easily perform design analysis of your engineering ideas and benefit from being able to review attractive renderings of those ideas
- Put theory into practice

Features
- Fully redesigned user interface
- Study manager tool to perform batch studies with a single, efficient workflow
- An intuitive CAD environment to visualize results and understand the influence of parameters
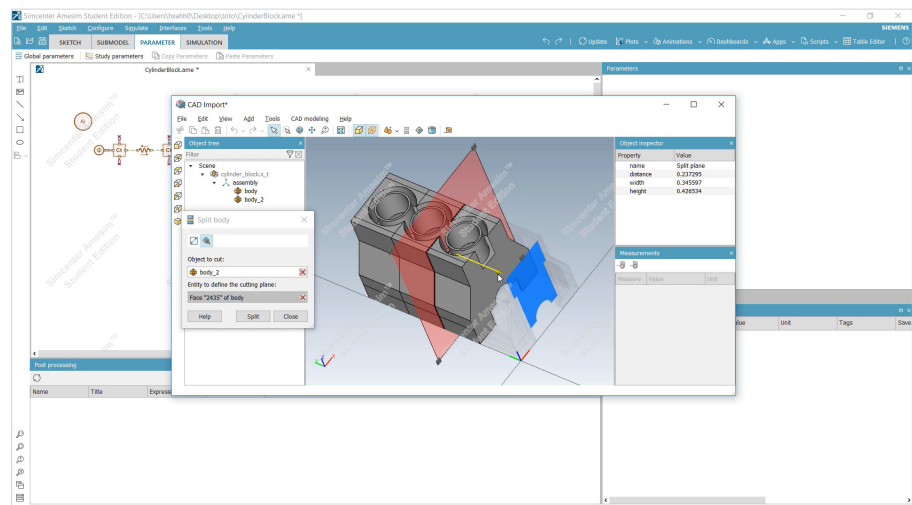
Summary
As an engineering student, building new skills to prepare for the challenges of the job market is essential. Like multibody simulation, finite element or computational fluid dynamics (CFD) analysis, the model-based systems engineering (MBSE) approach has become complementary to traditional approaches requested by industrial companies.

siemens.com/simcenter

What's new in Simcenter Amesim Student Edition

Features *continued*

- Ready-to-use validated Simcenter Amesim libraries: mechanical, signal, hydraulic, pneumatic, thermal and electrical

- New surrogate modeling capabilities to rapidly develop highly detailed models

- Use phase change materials to accurately represent latent heat energy

With the current drive for smarter and more environmentally friendly products, engineering innovation has taken on a new meaning. Engineers are facing a paradigm shift whereby the mechanics, electronics and software in a new design are simultaneously optimized as an integrated mechatronics system. Hence, simulation has proven to be the right answer to reduce the number of prototypes, as well as project development time and costs.

By offering students a new free version of Simcenter Amesim, Siemens Digital Industries Software is taking a role in promoting engineering innovation.

Working together with students to boost results

Using Simcenter Amesim Student Edition simplifies multi-domain system integration by enabling students to connect validated components. It includes mechanical, signal, hydraulic, pneumatic, thermal and electrical libraries. By using this version of Simcenter Amesim Student Edition, students can enjoy several new components, such as the phase

change material component, which enables students to directly represent latent heat energy storage using the material supplier's specification sheets. Students can also benefit from the built-in surrogate modeling capabilities, enabling users to mimic data coming from complex CFD calculations using artificial neural networks. These library components are based on the analytical representation of physical phenomena. They can be directly executed using Simcenter Amesim solvers. Therefore, Simcenter Amesim Student Edition helps save enormous amounts of time by eliminating the need for extensive programming.

Getting started with system simulation is no longer an issue. There is interactive help available that consists of dedicated examples to enable students to easily get started with physical analysis. Comprehensive sets of methods, representations and animation capabilities are provided, which help students analyze their system. Further, students can access tutorials and interact directly with our experts thanks to the Simcenter System Simulation forum.
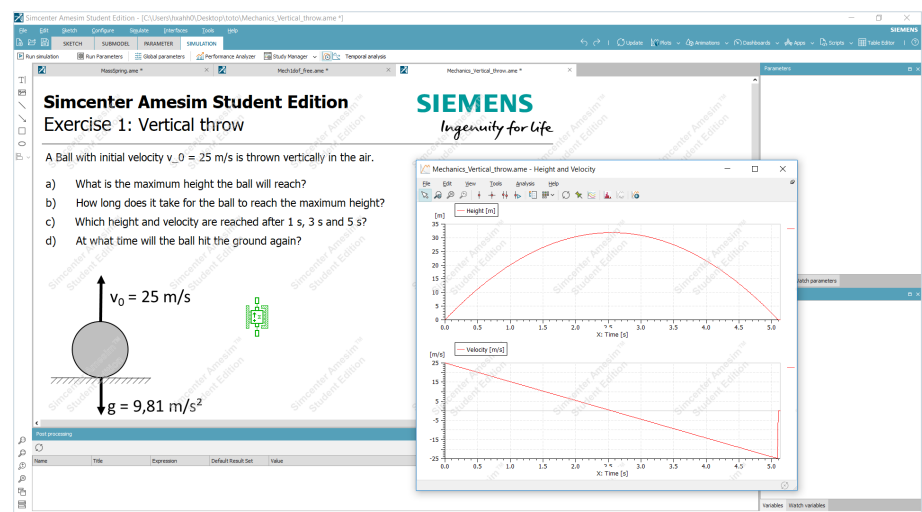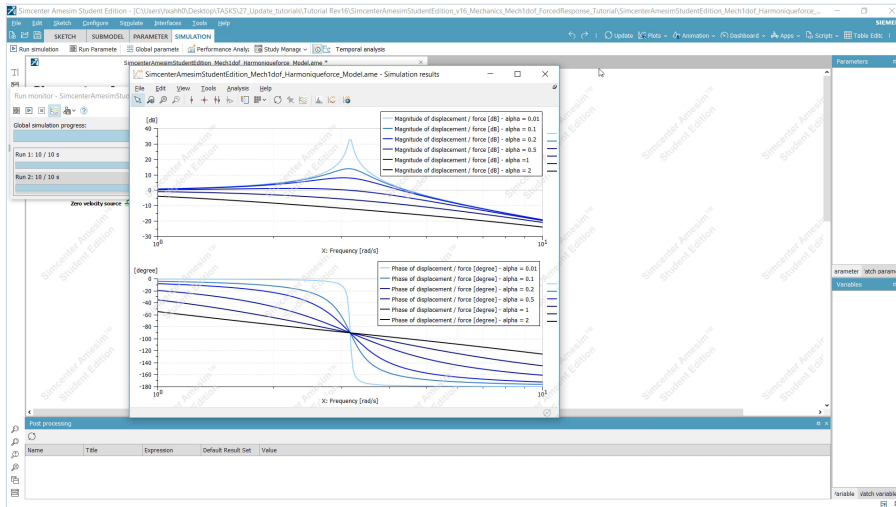
Creating multiple studies with multiple variables can be complex and time consuming. Simcenter Amesim Student Edition includes a study manager tool that enables students to perform batch studies. Therefore, students can set, run and postprocess a batch from a single place. Hence, students can efficiently process their studies with a simplified workflow.

Improving the learning experience with dedicated tools

Energy efficiency and green design are a must-have today in system performance analysis. Therefore, the power/energy analysis tool has been improved and enables students to quickly identify losses, storage and conversions with their contribution over time, and compare system variants for designs and parameterization. Students can customize plots by using curve symbols, managing axes or making plot density vary, which will give a more accurate rendering of their results. They help students explain and highlight the behaviors of the system they are designing. Therefore, students can adapt the required level of modeling to get the most efficient design.

Understanding and visualizing the influence of the parameters of a simulation is primordial for the learning process. The new version enables students to visualize their model with a new animation tool that students can use to animate objects in a scene. Students can create animated

Leverage the revamped user experience

The user interface (UI) of the new version of the Simcenter Amesim Student Edition has been fully redesigned. Thanks to enhancements such as restructuring menus, the brand-new library tree and fully vectorized sketch, students have a more intuitive and optimized browsing experience. This new version is a user-friendly tool for new and experienced users.

For everyday modeling tasks, you often need to import data coming from experimental measurements or available numerical results. Simcenter Amesim Student Edition allows selecting and importing data contained in various types of text or spreadsheet files by automatically converting this data to Simcenter Amesim standard tables. The data import capability enables students to focus on valuable and interesting tasks.

System simulation can require using simulated 3D objects. The new version of Simcenter Amesim Student Edition relies on the capabilities of the computer-aided design (CAD) import tool, which enables For everyday modeling tasks, you often need to import data coming from experimental measurements or available numerical results. Simcenter Amesim Student Edition allows selecting and importing data contained in various types of text or spreadsheet files by automatically converting this data to Simcenter Amesim standard tables. The data import capability enables students to focus on valuable and interesting tasks.

System simulation can require using simulated 3D objects. The new version of Simcenter Amesim Student Edition relies on the capabilities of the computer-aided design (CAD) import tool, which enables students to import/export CAD files and realize basic modeling operations and measurements. It provides students with quick access to an intuitive CAD environment, which saves them time by simplifying their workflow.
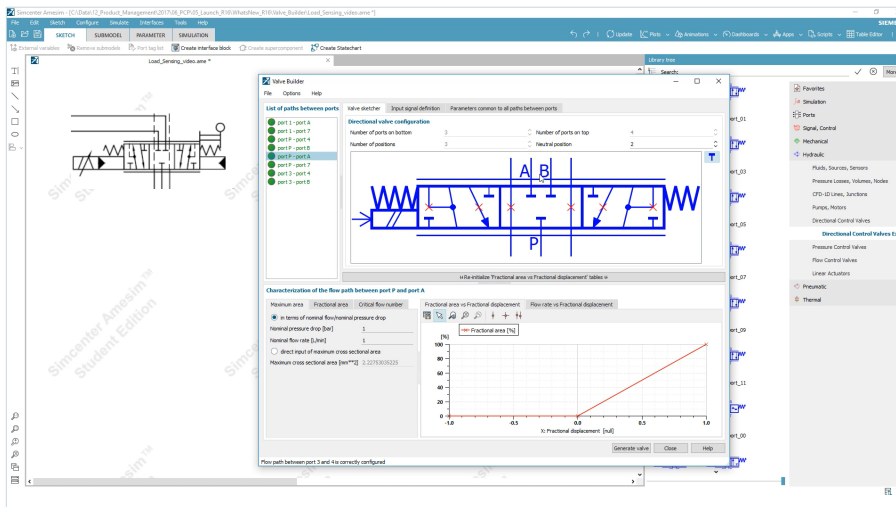
Extending value for educational purposes

Siemens Digital Industries Software offers the Simcenter Amesim Academic Bundle, which is designed for use in classrooms and laboratories. Specially conceived for universities, it delivers complete Simcenter Amesim capabilities.

Discover the free and easily download-able version of Simcenter Amesim Student Edition available on our website.

representations of their Simcenter Amesim software simulation results by creating objects in 3D animation and link-ing them to the parameters of the simulation.

Enhancing the accessibility

Simcenter Amesim Student Edition provides scripting facilities that enable students to control Simcenter Amesim with the MATLAB® environment, Python, Microsoft Visual Basic for Applications and Scilab. This open platform allows students to take full advantage of the powerful, object-oriented nature of Modelica® as a modeling language. Therefore, students can develop, improve and re-use modeling libraries to describe multi-domain dynamic systems based on their libraries or other available libraries.

Simcenter Amesim Student Edition allows students to make stable text annotations in native languages and use multiple

languages (Japanese, Russian and Chinese) in sketches and plots. Since engi-neering schools are often composed of many international students, this means working and interacting on a common study project should not be a problem.

Minimum system requirements:

- Windows Vista, 7, 8, 10 (32-bit or 64-bit)
- 64-bit Intel or compatible processors (AMD)
- At least 2 gigabytes (GB) of random access memory (RAM) available for Simcenter Amesim only
- At least 3 GB of disk space required for installation
- A PDF reader
- Intel Itanium 1 and 2 are not supported

Siemens Digital Industries Software
siemens.com/plm

Americas   +1 314 264 8499
Europe   +44 (0) 1276 413200
Asia-Pacific +852 2230 3333