

# FSG ACADEMY ON-LINE

Workshops free of charge for all students each, provided by our partners.

## FSG Academy - On-Line...

The FSG Academy organises workshops and lectures for the students throughout the year. Since 2016 there are workshops at the FSG event only this year it will be online workshops which will be offered to this all Formula Students. They will give students even more opportunities for further training and to gain expertise on various topics. So take the chance and sign up or participate for these free workshops!

### Wednesday, 18th of August

09:00 - 10:30 Speaker Thorsten Runge **Siemens**

#### Vehicle Performance Analysis with Simcenter and Teamcenter

Simcenter 3D comes with advanced 3D modeling capabilities and simulation solvers that cover a comprehensive range of physics, Simcenter helps you gain better insight into your product's overall performance. This is achieved through a fully integrated and managed, yet open environment, where you perform all CAE pre-and-postprocessing on CAD data from any source for Simcenter and third-party solvers. Tied to the digital thread, engineers and analysts can collaborate on a platform that accommodates all aspects of functional performance. In this workshop is about, as the title says, the missing link for battery electric vehicles.

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

10:00 - 11:30 Speaker Konstantin Heinle & Manuel Hellmuth **Siemens**

#### Simulating Aerodynamics with Simcenter STAR-CCM+

In this contribution Simcenter STAR-CCM+ is presented as the best-in-class software for Formula Student applications, with focus on the Aerodynamics performance. The complete workflow will be presented, from the initial geometry, to the meshing, physical modelling and post-processing. Furthermore, we give an outlook on what is possible with Simcenter STAR-CCM+ in terms of optimizing the shape of your car to make it more aerodynamically efficient. Examples from the Automotive industry and from the world of Formula Student will be presented as well..

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11:00 - 12:30 Speaker Karin Jung **Siemens**

#### VeSys – empowering the next generation of digital talent

VeSys is a suite of wiring and harness design software tools to satisfy the demanding requirements of Formula Student teams where ease-of-use and is as important as functionality. Connect with NX or other MCAD solutions and easily create reports. VeSys is bundled with Analysis capabilities. Analysis helps designers check and validate their designs as they are created. This eliminates errors faster and earlier in the design process. It also shows voltages and currents, highlighting problem areas such as short circuits and validating wire and fuse sizing.

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11:00 - 12:30 Speaker Dr. Helge Schmidt **TEC**

#### Contact Basics and Automotive Low Voltage Connectors

The Workshop will cover:

- Introduction to the basics of contact physics, base materials and contact surfaces for electrical contacts used in connectors
- Overview of the connectors and contact systems in the automotive low voltage boardnet
- Brief view on the operating behaviors, validation and specification of the automotive contacts

Sign-up: [https://fsg.one/TEC\\_Workshop](https://fsg.one/TEC_Workshop)

13:00 - 14:30 Speaker Andreas Erhardt **Siemens**

#### Next Generation Automotive Design with NX

The next generation of vehicles requires a next generation design solution that removes the barriers to innovation with an integrated set of design and validation tools. NX is a single platform that contains all the tools to break down the barriers between disciplines. This presentation gives an overview on:

Most Productive Modeling, Environment, Generative Engineering, Industrialized Additive Manufacturing, Collaborative Design and Management

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

15:00 - 16:30 Speaker Volker Bremers **Siemens**

#### TC - Data management

The „Single Source of Truth“ with Teamcenter for the Formula Student Team.

We will have a look on Teamcenter and how we can work with the collaboration platform. How so store by default NX-, Word-, Excel-, ... Files and different revisions. So, it will be possible to work together from different locations. Also, we have an overview, what is necessary to setup Teamcenter.

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

11:00 - 12:30 Speaker Marcus Eckel **TEC**

#### High Voltage Connectors: Architectures & Design Requirements

The high-voltage components refer to other specification than the familiar 12V components. That leads to higher requirements for design, testing and analytic in product safety.

High Voltage Connectors: Voltage Classes, Architecture, Modular HV connector systems, Design Examples, Standards, Arcing, HV Cable, Finger Protection, Interlock, Shielding, Air- / Creepage Distance, Vibration, Assembly of parts, Validation Contactors, Trends

Sign-up: [https://fsg.one/TEC\\_Workshop\\_2](https://fsg.one/TEC_Workshop_2)

16:00 - 17:30 Speaker Volkswagen Recruiting & Talent Marketing **VW**

#### Jobs & Careers at Volkswagen

Are you interested in entry-level and other career opportunities at Volkswagen? From internships over thesis work to direct entry as a professional. In this talk, we will show you what is possible at Volkswagen. The high-voltage components refer to other specification than the familiar 12V components. That leads to higher requirements for design, testing and analytic in product safety.

High Voltage Connectors: Voltage Classes, Architecture, Modular HV connector systems, Design Examples, Standards, Arcing, HV Cable, Finger Protection, Interlock, Shielding, Air- / Creepage Distance, Vibration, Assembly of parts, Validation Contactors, Trends.

We are looking forward to meeting you.

To join: [https://fsg.one/VW\\_Workshop](https://fsg.one/VW_Workshop)

### Thursday, 19th of August

09:00 - 10:30 Speaker Marc Maendl **Siemens**

#### Testing – the Difference between success and failure

Testing is today a hard business. More and more properties should be validated, and this should happen in less time. An additional task is that you only can perform a test with hard- and software. This is possible only in a late stage of development. Late changes are very expensive and quick fixes less helpful. Our tool landscape allows to handle this high-performance tasks. This presentation should give an overview of the spirit we follow, show an overview over the important tools and go deeper in our portfolio for measurement systems and test examples.

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10:00 - 11:30 Speaker Susan Faust **Siemens**

#### Polarion - Software & verification management

In order to achieve autonomous driving, vehicles are equipped with a variety of sensors and software, such as distance sensors, in order to trigger a possible autonomous braking behavior in case of a collision. The use and reliability of such sensors and related software has to be tested by different verification processes. Only when the optimal sensor and software configuration can be determined in a simulation and all conceivable errors can be excluded, the vehicle can be put on the road. But how can such a development and simulation process look like?

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11:00 - 12:30 Speaker Sebastian Schmid **Siemens**

#### Amesim - Model-based design of an electric drivetrain

Learn how you can use Simcenter Amesim and its integrated tools for the model-based design of an electric drivetrain of a sports car. Along a typical automotive V-cycle we dive into the different possibilities of system simulation to help you reduce your development time and improve the quality of your final product. Let us explore how battery design, thermal management and e-machine sizing can be tackled with Simcenter Amesim.

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11:00 - 12:30 Speaker Veer Alakshendra, Senior Technical Evangelist **MathWorks**

#### 3D Scenes for Driverless Competitions with RoadRunner

RoadRunner is a base product from MathWorks to design 3D scenes for automated driving simulations. 3D scenes built with RoadRunner can be exported to be used in automated driving simulators and game engines. In this technical session, you will learn how to create 3D scenes for driverless competitions. (Event password: MathWorks1)

To join: [https://fsg.one/MathWorks\\_Workshop](https://fsg.one/MathWorks_Workshop)

13:00 - 14:30 Speaker Thomas Blaszczyk **Siemens**

#### Teamcenter Product Cost Management ext Generation Automotive Design with NX

Siemens ToPCM is a database oriented calculation software. Beginning at purchase price analysis via product- or tool costing it results into a clear offer and finally a structured cost break down. The costing model can be tailored, based on your own data and calculation methods. Also there is a database, which contains worldwide info about machines, reference processes, material prices and cost factors. For Formula Student it helps you to create the calculation of your complete car in a clear structure and fulfill the challenges of your business case.

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

14:00 - 15:30 Speaker Markus Uhlig **Faurecia**

#### Cockpit of the future - are we there, yet?

Over the last years, the automotive industry was highly affected by very disruptive mobility megatrends known as CASE (Connected, Autonomous, Shared, Electrified). FAURECIA, as a leading global automotive supplier, has been playing a very active role in this transformation since the beginning. Markus Uhlig from FAURECIA Design will give you an insight on the current state of development and future challenges of the "Cockpit of the future". Join under this link: [https://fsg.one/Faurecia\\_Workshop](https://fsg.one/Faurecia_Workshop)

15:00 - 16:30 Speaker Manuel Hellmuth & Leon Reketat **Siemens**

#### Q & A: Simcenter STAR-CCM+

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

15:00 - 16:30 Speaker Andreas Erhardt **Siemens**

#### Q & A: NX

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

16:00 - 17:30 Speaker Volkswagen Recruiting **VW**

#### Recruiting Networking Hour

Ask us anything!

Do you have questions about starting a career at Volkswagen? You would like to receive useful tips for job interviews? Participate the Networking Hour with our recruiters and get exciting tips for your application at Volkswagen! We are looking forward to meeting you.

To join: [https://fsg.one/VW\\_Workshop\\_2](https://fsg.one/VW_Workshop_2)

### Friday, 20th of August

10:00 - 11:30 Speaker Marc Maendl **Siemens**

#### Q & A: Simcenter Test

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

11:00 - 12:30 Speaker Susan Faust **Siemens**

#### Q & A: Polarion

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

11:00 - 12:30 Speaker Veer Alakshendra, Senior Technical Evangelist **MathWorks**

#### Vehicle Modeling Techniques using MATLAB and Simulink

Are you starting to design your car for the next competition? Do you and your team want to learn more about MATLAB and Simulink? Join the technical session to get an overview of various modeling techniques using MathWorks tools. The MathWorks engineer will demonstrate examples related to vehicle dynamics, suspension system, electric vehicle powertrain, high fidelity full vehicle model, etc. (Event password: MathWorks1)

To join: [https://fsg.one/MathWorks\\_Workshop](https://fsg.one/MathWorks_Workshop)

13:00 - 14:30 Speaker Sebastian Schmid **Siemens**

#### Q & A: Simcenter Amesim

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)

14:23 - 15:53 Speaker Markus Uhlig **Faurecia**

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15:00 - 16:30 Speaker Thomas Blaszczyk **Siemens**

#### Q & A: Teamcenter Costing

Sign-up: [https://fsg.one/Siemens\\_Workshop](https://fsg.one/Siemens_Workshop)



# FORMULA STUDENT GERMANY

## INTERNATIONAL DESIGN COMPETITION