

FSG ACADEMY ON SITE

23 workshops free of charge for 25 students each, provided by our partners. Please register for each on the booth of the partner.

FSG Academy - a successful story...

The FSG Academy organises workshops and lectures for the students throughout the year. Since 2016 there are workshops at the FSG event! These workshops will be offered to this years participants by the partners of Formula Student Germany. They will give students even more opportunities for further training and to gain expertise on various topics. So take the chance and sign up for these free workshops!

Any Questions? Please ask for Esther Tromp in the FSG Forum or write an email to academy@formulastudent.de

Wednesday, 7th of August

09:00 - 10:30 - South Stand Room A **Mahle**

ChargeBIG - The missing link for battery electric vehicles

Aktuell steigen die Zulassungszahlen für Elektrofahrzeuge stärker als der Ausbau der Ladeinfrastruktur nachkommt, somit reduziert sich die Anzahl an Ladepunkten pro Elektrofahrzeug. Gleichzeitig steht die Behauptung im Raum, dass fehlende Ladeinfrastruktur und Engpässe in den Energienetzen der Verbreitung der Elektromobilität im Wege stehen. chargeBIG zeigt auf, dass eine neue ergänzende Technologie, neben einzelnen Ladepunkten für den Carport und Schnelladern an der Autobahn, diese Probleme erfolgreich lösen kann.

Sebastian Ewert (Mahle Hed of chargeBIG)

10:45 - 12:15 - South Stand Room A **MathWorks**

Model-Based Design for Formula Student with Simulink

Development of a Formula Student race car is bound to a tight schedule. Therefore, it is hugely important that your first prototype is optimized using simulation and testing to rule out software errors. Model-Based Design helps to speed up the development, and allows you to model your vehicle, to perform analysis and system optimization through simulation. You can tune your control strategies, and automatically create code to run on your hardware. Control and test your algorithms using Speedgoat hardware directly from Simulink leveraging Simulink Real-Time.

Eva Pelster (MathWorks) & Michael Lüthy (Speedgoat)

10:45 - 12:15 - South Stand Room B **Siemens**

Simulating Aerodynamics with Simcenter STAR-CCM+

The complete workflow for simulating the aerodynamics of a race car will be presented during a live software demonstration, including geometry preparation, meshing, choice of appropriate physical models and post-processing. Case studies, best practices and user experiences will be addressed to show the capabilities of Simcenter STAR-CCM+ for a detailed and trustworthy investigation of the complex physical phenomena involved in the aerodynamic investigation of race cars.

Claudio Santarelli

13:00 - 14:30 - South Stand Room A **Brose**

Effective Presentations - How To Convince Your Audience

In this workshop you will learn more about how to give successful presentations. We will provide tips and elaborate what to pay attention to while preparing and giving the presentation. Any questions are very welcome.

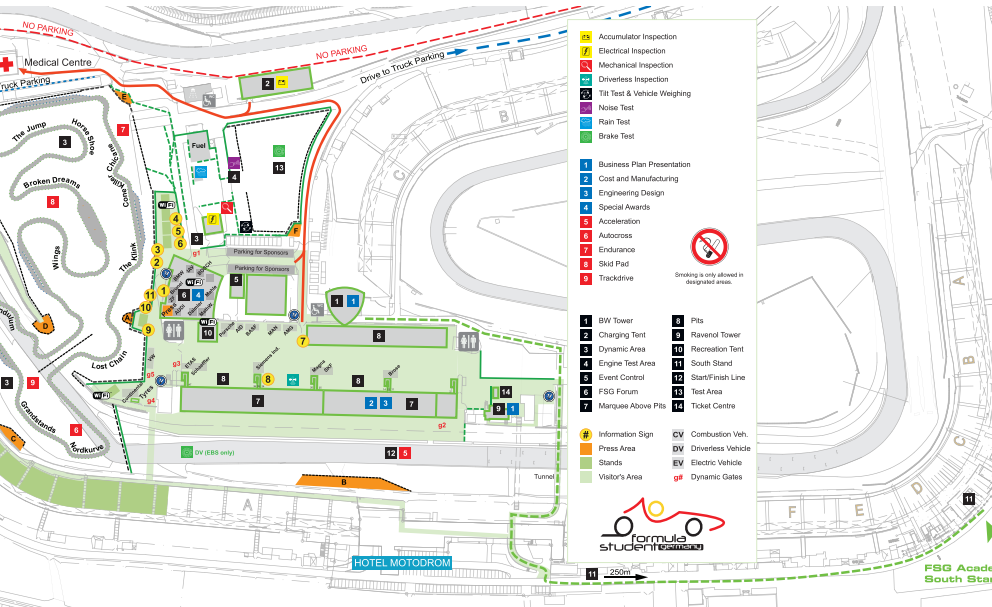
Michelle Brehm & Tina Rahnenführer

13:00 - 14:30 - South Stand Room B **Porsche**

Workshop CAE Simulation @ Porsche

We are going to give a brief overview about the CAE Process and the simulations carried out at the Porsche AG. The focus will be set on our major activities from crash simulations over optimization and big data analysis right up to fluid simulations. Furthermore, we will set focus on the qualifications you need to start your internship or thesis with us.

Dr. Pit Schwanitz



Wednesday, 7th of August

14:45 - 16:15 - South Stand Room A **Siemens**

Electrical System & Harness Design

Overview on creating:

- Electrical systems design and schematics data
- Harness design including data exchange to MCAD 3D
- Required documentation
- Wiring designs including data exchange to MCAD 3D
- Formboard design

Question & Answers.

Karin Jung

14:45 - 16:15 - South Stand Room B **MathWorks**

Vehicle Modeling for Formula Student

Creating a virtual prototype of your race car is essential to saving time on a tight development schedule. Through vehicle modeling you can evaluate your design ahead of having your first real prototype. The simulation can be used to find bugs early, compare different variants and find the best configuration for maximum scores, or optimize the system performance. In this session you will learn how to use different MathWorks tools such as Simulink, Simscape and Powertrain Blockset to model your vehicle.

Eva Pelster

Thursday, 8th of August

09:00 - 10:30 - South Stand Room A **MathWorks**

Model-Based Design for Formula Student with Simulink

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Eva Pelster (MathWorks) & Michael Lüthy (Speedgoat)

10:45 - 12:15 - South Stand Room A **SKF**

Automotive Business @ SKF

Everything that keeps a car rolling. From wheel ends to transmission, clutch, suspension, engine and e-powertrain.

Daniel Back & Julian Veeh, Automotive Application Engineers

10:45 - 12:15 - South Stand Room B **Siemens**

Virtual Driverless Track Testing with Siemens' PreScan

PreScan is a physics-based simulation platform that is used in the automotive industry for development of autonomous driving systems and Advanced Driver Assistance Systems (ADAS) that are based on sensor technologies such as radar, laser/lidar, camera and GPS. PreScan can be used from model-based controller design (MIL) to real-time tests with software-in-the-loop (SIL) and hardware-in-the-loop (HIL) systems. It is an essential tool for efficient development of driverless automation systems.

Frank Rijks

13:00 - 14:30 - South Stand Room A **Audi**

FS Driverless: from the race track to the streets

In the past, many motor racing technologies resulted in innovations for consumer vehicles. Audi believes that the developments in driverless racing can make a contribution to highly automated vehicles for the road. In this interactive session we will be discussing how this can be the case for the technology that you developed for your FSD car. What are your ideas and visions? Come and join the discussion!

Dr. Marvin Raaijmakers & Stephanie Cramer

13:00 - 14:30 - South Stand Room B **Porsche**

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Dr. Pit Schwanitz

14:45 - 16:15 - South Stand Room A **Volkswagen**

Solid-State Batteries in the Race for E-Mobility

With increasing focus on sustainable living and upcoming changes in mobility behavior, e-mobility is becoming more and more important for industry and society. Accordingly, high energy and power batteries are highly sought-after and the group of solid-state batteries in particular is holding great promise to become jack-of-all-trades and fulfill all wishes. In the talk, I will answer three very basic questions: What is a solid-state battery? Why should you care about it? Is it going to revolutionize the world we live in?

Anja Bielefeld, PhD-Student at Volkswagen Group Innovation COI Battery

14:45 - 16:15 - South Stand Room B **Siemens**

Teamcenter Workshop - TC at VMware

This workshop aims to illustrate how to use Teamcenter on a virtual machine. A requirement of this workshop is that Teamcenter is properly installed within the Formula Student Team. Using the example of a Formula Student Team, it will be shown how to install Teamcenter faster and simpler. The objective is to build a Teamcenter Community that works together in the future.

Kalle Dietz & Naz Aydemir

Friday, 9th of August

09:00 - 10:30 - South Stand Room A **MathWorks**

Vehicle Modeling for Formula Student

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Eva Pelster

09:00 - 10:30 - South Stand Room B **Continental**

Design Thinking - the user centric approach

Formula Student seasons can be quite stressful - there are a lot of things to do in a very short amount of time. How can you be creative during this time, e.g. regarding new vehicle or marketing concepts? In this workshop, Jakob will show you how you can use Design Thinking methods to solve problems, create innovative solutions and have a successful Formula Student season!

Jakob Schneider (Global Team Lead Project & Process Management)

10:45 - 12:15 - South Stand Room A **Volkswagen**

Your career at Volkswagen - Tips for a job interview

What matters in a job interview? How should your documents look like? Our workshop will show you how to prepare yourself for a job interview. With our tips you will be prepared to show your personality in a new way and to convince a potential employer to hire you.

Marcel Ewald, HR Marketing at Volkswagen Group Services

10:45 - 12:15 - South Stand Room B **Siemens**

Teamcenter Product Cost Management

TcPCM 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 customers homegrown data and calculation methodologies. In addition there is a content database available, which contains relevant worldwide information about machines, reference processes and cost factors. It can be the basis for profitable pricing with the customer, connected to a profitability calculation.

Thomas Blaschczok

13:00 - 14:30 - South Stand Room A **Daimler**

Wheel of Life - My Energy Balance

The Wheel of Life is the ideal tool to find out your individual energy balance. The participants themselves evaluate which personal factors give them energy or steal energy. The aim of this workshop is to identify these positive and negative energy sources through self-assessment, reflection and various group discussions. At the end of this workshop you will be able to find appropriate solutions to cope with the triggers and how to use your energy more efficiently in the future.

Dr.-Ing. Miriam Lozano Aviles

13:00 - 14:30 - South Stand Room B **Continental**

Diving into myths and fables of hiring expectations

You've always wanted to know how Recruiting works in real life? Then join Karen and Fabian to get an authentic insight and interactive hands-on tips for the perfect start into your professional career.

Karen Fieser & Fabian Aichert (Recruiting Specialists)

14:45 - 16:15 - South Stand Room A **Siemens**

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Claudio Santarelli

14:45 - 16:15 - South Stand Room B **MathWorks**

Developing Automated Driving Systems with MathWorks Tools

Developing Automated Driving Applications with MATLAB and Simulink. In this session you will learn how MATLAB and Simulink provide a development environment for components in Advanced Driver Assistance Systems (ADAS) and Automated Driving (AD) applications. You will see examples that you can use to get started developing.

- Vision detection algorithms with deep learning
- Sensor fusion algorithms with recorded and live data
- Longitudinal (ACC) and lateral (LKA) control algorithms with synthetic sensor data demands

Dr. Christoph Hahn

16:30 - 18:00 - South Stand Room A **Porsche**

Simulation of Li-Ion batteries

Within actual automotive development, lithium-ion batteries have an important role. As example in today's battery electric vehicles lithium-ion batteries are indispensable. In case of using Li-ion batteries in BEVs it is necessary to understand this technology in all details. Therefore simulation of these batteries is a good tool to understand and optimize application in BEVs.

Lars Hovestadt

16:30 - 18:00 - South Stand Room B **Brose**

How To Apply Successfully For A Job

In an open discussion, we will work through the application and interview process. You will get an insight perspective from HR and may ask all questions you have in regard to how to apply successfully for a job.

Tina Rahnenführer



FORMULA STUDENT GERMANY

INTERNATIONAL DESIGN COMPETITION