



# **FORMULA STUDENT** **SWITZERLAND**

Formula Student Switzerland

Handbook 2021

*Version 1.1*

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## Contents

|                                    |    |
|------------------------------------|----|
| Changelog                          | 3  |
| CH 1 General Informations          | 4  |
| CH 2 Registration                  | 5  |
| CH 3 Important Dates               | 7  |
| CH 4 Competition Site Organization | 8  |
| CH 5 Statics Events                | 11 |
| CH 6 Dynamics Events               | 12 |



## Changelog

- CH 1        Included a rule regarding the time zone and changed all related times to the regarding timezones.
- CH 3        All deadlines included
- CH 4.1     More informations regarding the entering of the event.
- CH 4.5     Added more Team Captain meeting informations
- CH 4.6.1   better phrasing.
- CH 4.10.2   Change regarding the Accumulators dropoff.
- CH 4.11.5   Rules Change regarding the Cell temperature measurment device.
- CH 5.2     Added CBOM and DBOM specified systems.



## **CH 1 General Informations**

### **CH 1.1 Competition**

- CH 1.1.1 There will be only one competition organized for Formula Student Switzerland (FS Switzerland), that is the Electric Vehicle (EV) class.
- CH 1.1.2 The competition time zone is Central European Time (CET) or Central European Summer Time (CEST) from last Sunday of March to last Sunday of October.

### **CH 1.2 Competition Dates and Place**

- CH 1.2.1 FS Switzerland 2021 will be held from 14th until 18th of July 2021.
- CH 1.2.2 Address:  
Switzerland Innovation Park Zürich  
Wangenstrasse 68  
8600 Dübendorf  
Switzerland

### **CH 1.3 Competition Website**

- CH 1.3.1 The official competition website is: <https://www.fsswitzerland.ch>

### **CH 1.4 Vehicle Shipping**

- CH 1.4.1 Teams are advised to consult their shipping company or freight forwarder to ensure that their shipment fully complies with all relevant customs, import/export and aviation shipping requirements.
- CH 1.4.2 Customs and other documents like ATA Carnet, inspecting shipments as well as reporting and documenting damage of the shipment has to be done by the team. [More Informations](#). Feel free to contact us on [info@fsswitzerland.ch](mailto:info@fsswitzerland.ch), if you have any questions.
- CH 1.4.3 Teams, which can't make an ATA Carnet, will be advised to contact us for a Customs declaration for temporary admission.
- CH 1.4.4 All teams using an external shipping or freight forwarder must coordinate the transport with the FS Switzerland Organisation. Contact us on [info@fsswitzerland.ch](mailto:info@fsswitzerland.ch)

### **CH 1.5 Covid-19 pandemic**

- CH 1.5.1 We will adapt to the current rules given by the Swiss government. We will contact the teams when there will be changes regarding the event. The current restriction can be read here: [Applied rules in Switzerland](#)



## CH 2 Registration

### CH 2.1 Team Registration

- CH 2.1.1 The team registration will take place in the form of a quiz on 2021-02-05 9:00 CET. The topic for the quiz is: Formula Student Rules 2021 and basic engineering knowledge.
- CH 2.1.2 All Important informations for the registration quiz you find here: [Registration Information](#)
- CH 2.1.3 Teams must create a team account on the competition website. The deadline for this is 24h before the registration starts (see CH 3.1). Only one member of a team may complete the registration quiz.
- CH 2.1.4 Only one question will be visible at a time and can only be answered once.
- CH 2.1.5 The next question will be unlocked within between 3 min to 15 min.
- CH 2.1.6 Quiz results are based the amount of questions correctly answered. If teams have the same amount of correct answers, the results are ordered on quiz time starting from the opening of the quiz. (see CH 3.1).
- CH 2.1.7 Once the quiz has been successfully completed, the team must register the team for the competition by agreeing to the rules and by selecting a free vehicle number between 01 and 99.
- CH 2.1.8 No feedback, if the answer was correct, will be provided until the results are published.
- CH 2.1.9 The quiz ends at around 2021-02-05 11:00 CET. The result of the registration and the waiting list will be published at about 2021-02-05 20:00 CET.
- CH 2.1.10 Reserved slots (see CH 2.2.2) will be assigned to the teams. All unused reserved slots will be assigned to all other teams, with regard to their quiz result.
- CH 2.1.11 All assigned teams will be placed on the pending list on the competition website. In order to move to the participating list, they have 5 days (120h) to pay the registration fee (see CH 2.3). Once all slots have been filled, all additional teams will be placed on a waiting list (see CH 2.4) and have to pay a waiting list fee. The period to pay the registration and waiting list fee starts 2021-02-06 8:00 CET and ends 2021-02-11 8:00 CET.
- CH 2.1.12 The technical inspection order at the competition will be based on the quiz result.

### CH 2.2 Registration Slots

- CH 2.2.1 FS Switzerland 2021 is limited in total to 25 EV slots.
- CH 2.2.2 Reserved slots for 2021 will be assigned to the following teams: All teams, which were registered for FS Switzerland 2020 and didn't withdraw there slot until 2020-12-31 23:59 CET.
- CH 2.2.3 All remaining and unused reserved slots will become available for all other teams after the registration quiz has been closed on the registration website.



## **CH 2.3 Registration Fee, Waiting list Fee and Campsite Fee**

- CH 2.3.1 The Registration fee is 2000 € and includes a 15-person team. More team members can be registered for 50 € per participant with the Team Member Registration Form (TMRF) deadline (see CH 3.2). Team members may register after this deadline for a fee of 100 € per participant. Due to the pandemic, it may happen, that there will be a team size limitation of minimum 15 team members.
- CH 2.3.2 The waiting list fee is 50 € and will count to the registration fee, when the team comes into the event.
- CH 2.3.3 All pending teams will get an invoice until 2021-02-06 8:00 CET. The registration fee must be paid within 5 days (starting with receiving the invoice and ending on 2021-02-11 8:00 CET).
- CH 2.3.4 All waiting teams will get an invoice until 2021-02-06 8:00 CET. The waiting list fee must be paid within 5 days (starting with receiving the invoice and ending on 2021-02-11 8:00 CET).
- CH 2.3.5 Teams which didn't pay the registration fee will get unregistered and the next team from the waiting list will move to the pending list. Teams which were unregistered and decide again to register, will be placed on last order in the waiting list.
- CH 2.3.6 Teams which didn't pay the waiting list fee will get removed from the waiting list. Teams which were removed and decide again to register, will be placed on last order in the waiting list and have to pay the waiting list fee.
- CH 2.3.7 There will be no refund for the registration fee, when the team decides to withdraw its registration.
- CH 2.3.8 There will be no refund for the waiting list fee for any reason.
- CH 2.3.9 The campsite fee will be announced. (between 50 - 100 € per person.)
- CH 2.3.10 If the event will have to be cancelled due to external reasons like a pandemic before 2021-04-30 23:59 CEST, the registration fee will be refunded. If the event will have to be cancelled due to external reasons after 2021-04-30 23:59 CEST, the registration fee will only be refunded partly to cover the costs. The campsite fee will be refunded in any case of a cancellation of the event.



## **CH 2.4 Waiting List**

- CH 2.4.1 Teams on the waiting list may move to the participating list until 2021-07-01 18:00 CEST. This is possible if a registered team withdraws from the competition. Once a slot on the participating list has become available again, the next team on the waiting list will move to the pending list and has 3 days to pay the registration fee in order to move to the participating list. The 3 days start from the point of receiving the confirmation email. With answering the email, the time can be extended.
- CH 2.4.2 The top five Teams at any time on the waiting list are required to submit all documents and forms by the same deadlines as teams on the participating list. Teams, which enter later the top 5 have one week to upload all missing documents.
- CH 2.4.3 Teams on the waiting and participating lists who find that they will not be able to attend the competition are requested to officially withdraw by notifying the officials. (E-Mail to: [info@fsswitzerland.ch](mailto:info@fsswitzerland.ch))

## **CH 2.5 Team Member Registration Form (TMRF)**

- CH 2.5.1 The Team Member Registration Form has to be uploaded until the deadline. (see CH 3.2) There will be a template on the website.
- CH 2.5.2 If there are changes to the Team Member Registration Form after the deadline, the whole Form has to be sent to: [info@fsswitzerland.ch](mailto:info@fsswitzerland.ch)
- CH 2.5.3 With the TMRF a Valid Health Insurance Certificate (HIC) for Switzerland (e.g. travel insurance) have to be attached.
- CH 2.5.4 All participants will get a personalized standard terms to the team address given at the creation of the team account. This document must be printed out, signed by the participant and brought to the on-site registration.

## **CH 2.6 Visa for Participants**

- CH 2.6.1 If your team or team members require a letter of invitation to obtain a VISA, please send an e-mail to [info@fsswitzerland.ch](mailto:info@fsswitzerland.ch)

# **CH 3 Important Dates**

## **CH 3.1 Team Registration**

- CH 3.1.1 Team registration (see CH 2.1) for all teams starts on 2021-02-05 09:00 CET.

## **CH 3.2 Deadlines**

- CH 3.2.1 All required documents and information must be uploaded prior to the deadline.
- CH 3.2.2 All documents must comply with a maximum size of 100MB



| <b>Date</b>      | <b>Deadline</b>                                | <b>Submission</b> |
|------------------|--|-------------------|
| 2021-03-19-13:00 | Impact Attenuator Data (IAD)                   | FSG Account       |
| 2021-03-19-13:00 | Structural Equivalency 3D Model (SE3D)         | FSG Account       |
| 2021-03-19-13:00 | Structural Equivalency Spreadsheet (SES)       | FSG Account       |
| 2021-04-02-13:00 | Electrical System Form (ESF)                   | FSG Account       |
| 2021-04-16-13:00 | SES Approval (SESA)                            | FSG Account       |
| 2021-05-01-13:00 | Team Member Registration Form (TMRF)           | FSCH Teamaccount  |
| 2021-06-04-13:00 | Business Plan Pitch Video(BPPV)                | FSCH Teamaccount  |
| 2021-06-04-13:00 | Design Spec Sheet (DSS)                        | FSCH Teamaccount  |
| 2021-06-04-13:00 | Engineering Design Report (EDR)                | FSCH Teamaccount  |
| 2021-06-25-13:00 | Electrical System Officer Qualification (ESOQ) | FSG Account       |
| 2021-07-01-13:00 | Vehicle Status Video (VSV)                     | FSCH Teamaccount  |
| 2021-07-01-13:00 | Cost Report Documents (CRD)                    | FSCH Teamaccount  |

## **CH 4 Competition Site Organization**

### **CH 4.1 Entering the Competition Site**

- CH 4.1.1 Entering the Competition Site will be possible based on the time schedule published by the event.
- CH 4.1.2 Entering the Competition Site with passenger cars, trucks and trailers is prohibited, except for the assembly and disassembly of the teams pits and social area.
- CH 4.1.3 Assembly of the teams pits will be possible on Tuesday 2021-07-13 based on a schedule published on the event website. If a assigned slot cannot be used, the team must inform the officials in advance. The team will then be assigned a new slot at the end of the schedule.
- CH 4.1.4 Disassembly of the teams pits and social area will be possible on Sunday 2021-07-18 between 30 Minutes after the end of the endurance event and 30 before the scheduled start of the award ceremony.
- CH 4.1.5 Additionally, disassembly of the teams social area will be possible on Monday 2021-07-19 between 08:00 CEST and 12:00 CEST.
- CH 4.1.6 Other dates of arrival and departure may be accepted in special cases and after approval by the officials.

### **CH 4.2 Announcements**

- CH 4.2.1 Prior to the event all announcements will be by email. During the event all announcements will be on the competition website.





### **CH 4.3 Competition Site**

- CH 4.3.1 The use of motorcycles, quads, bicycles, scooters, skateboards, kickboards or other similar mobility devices as well as self propelled devices in general by team members and spectators is prohibited.
- CH 4.3.2 Lost found items must be picked up until Monday 2021-07-19 10:00 CEST at the event control.
- CH 4.3.3 Confiscated goods must be picked up until Monday 2021-07-19 10:00 CEST at the event control.

### **CH 4.4 Welding and Power tool**

- CH 4.4.1 FS Switzerland provides a welding and power tool area. It is possible to weld with own equipment in the welding area only, using appropriate safety gear.
- CH 4.4.2 The welding and power tool area, will be overwatched and can only be used during the opening hours.

### **CH 4.5 Team Briefing**

- CH 4.5.1 During the event, there will be several Team Briefings. Times will be published in the Event Time Schedule.
- CH 4.5.2 Team Captains must attend all Team Captain Briefings.
- CH 4.5.3 Team Captains, all Electrical System Officers (ESOs) and drivers for that day are required to attend the team briefings.

### **CH 4.6 Technical Inspection**

- CH 4.6.1 Every team gets a total of 4 dynamic vests with 2 different colors. In each technical inspection, only 2 team members with vests of the same color are allowed. The tallest driver will be accepted additionally for the required tests only. In the dynamic area, all four vests are accepted simultaneously.



## **CH 4.7 Technical Inspection Time Schedule**

- CH 4.7.1 The technical inspection parts pre-inspection, accumulator inspection, mechanical inspection, electrical inspection will be conducted within a strict time schedule where every team will get a predesignated time slot based on the registration quiz order. The time schedule will be published on the website before the start of the competition.
- CH 4.7.2 The length of these slots is 2 hours for accumulator inspection, 1.25 hours for mechanical inspection, 20 minutes for pre-inspection and 2.5 hours for electrical inspection.
- CH 4.7.3 A team can enter the inspection bay 5 min in advance of the starting time.
- CH 4.7.4 After the end of a time slot a team has 5 min to clear the inspection bay for the next team.
- CH 4.7.5 Teams that are not able to attend an inspection slot must announce, that they need more time to prepare the car for the technical inspection. A new time slot at the end of the inspection order will be assigned.
- CH 4.7.6 If a team shows up later than 15 min unannounced after the starting time of their slot, it will lose its time slot. The team has to queue for Re-Scrutineering to pass the inspection. Additionally 5 penalty points will be deducted from the teams overall score.

## **CH 4.8 Pre-Inspection**

- CH 4.8.1 Pre-Inspection and driver Egress will be conducted in the pit, where the technical inspectors will visit the teams according to a predesignated time slot based on the registration quiz. During that time only the drivers may be present.
- CH 4.8.2 A team that is not present or ready can arrange a new appointment at the event control.
- CH 4.8.3 Pre-inspection must be completed latest before the tilt test.
- CH 4.8.4 The driver egress is mandatory for all drivers. Before participating in a dynamic event, the driver must have passed the egress test.

## **CH 4.9 Re-Inspection**

- CH 4.9.1 The re-inspection for the mechanical and electrical will take place in the technical inspection area and the accumulator re-inspection will take place in the accumulator tent.
- CH 4.9.4 The re-inspection will be handled according to the “first-in-first-out-principle”.
- CH 4.9.5 The re-inspection slots have no fixed starting times, but are limited to 30 min duration.
- CH 4.9.6 If more than 30 min is needed the team must queue again for another re-inspection.



## **CH 4.10 Accumulator Inspection**

- CH 4.10.1 Accumulator inspection will take place in the accumulator tent.
- CH 4.10.2 All TS accumulators must be brought to the accumulator tent latest until 60 minutes after the beginning of the teams slot defined in CH 4.1.3.
- CH 4.10.3 If a team misses the deadline, a penalty of 10 points is deducted of its overall score for every commenced 12 hours up to a maximum of 30 penalty points.
- CH 4.10.4 The team has to register the accumulator delivery at the accumulator tent.

## **CH 4.11 Rules**

- CH 4.11.1 FS Switzerland 2021 will comply with the "Formula Student Rules 2020" (FS Rules) published by Formula Student Germany here: <https://www.formulastudent.de/fsg/rules/>
- CH 4.11.2 FS Rules together with this handbook form the regulations for FS Switzerland. In case of ambiguity to the FS Rules, the FS Switzerland Rules are given priority over the FS Rules.
- CH 4.11.3 All rules questions regarding FS Rules must be asked using the FSG rules tracker at <https://www.formulastudent.de/officials/rules-questions/>. As FS Switzerland officials have access to this tool, only rules questions and FAQ from FSG will be accepted at FS Switzerland 2021.
- CH 4.11.4 All rules questions regarding this handbook must be asked via [rules@fsswitzerland.ch](mailto:rules@fsswitzerland.ch)
- CH 4.11.5 Rule EV 5.8.5. will not apply to FS Switzerland 2021.

# **CH 5 Statics Events**

## **CH 5.1 Engineering Design**

- CH 5.1.1 The Engineering Design event will be held according to section S3 of the Formula Student Rules 2021.
- CH 5.1.2 There will be Engineering Finals. The number of teams in the final, will be announced.

## **CH 5.2 Cost and Manufacturing**

- CH 5.2.1 The Cost and Manufacturing event will be held according to section S2 of the Formula Student Rules 2021.
- CH 5.2.2 For FS Switzerland 2021 a DBOM (see S 2.5) for the "Suspension System" must be submitted.
- CH 5.2.3 For FS Switzerland 2021 a CBOM (see S 2.5) for the "Electrical System" must be submitted.



### **CH 5.3 Business Plan Presentation**

- CH 5.3.1 The Business Plan Presentation event will be held according to section S1 of the Formula Student Rules 2021.
- CH 5.3.2 There will be Business Plan Presentation Finals.
- CH 5.3.3 Deep Dive Topic will be announced in a later version.

## **CH 6 Dynamics Events**

### **CH 6.1 Dynamic Area and Dynamic Vests**

- CH 6.1.1 The Charging area is a separated dynamic area including separate entrance restrictions.
- CH 6.1.2 Only four members per team may enter the Charging Area and the Dynamic Area at the same time. They have to wear the dynamic vest in both areas. One of them must be an Electrical System Officer (ESO). Each team gets four dynamic vests.
- CH 6.1.3 Inside the charging area, team members must not wear any conductive jewelry and must not wear any conductive objects of any kind which could touch the accumulator.

### **CH 6.2 Dynamic Disciplines**

- CH 6.2.1 The Skid Pad Event will be held according to section D4 of the Formula Student Rules 2021.
- CH 6.2.2 The Acceleration Event will be held according to section D5 of the Formula Student Rules 2021.
- CH 6.2.3 The Autocross Event will be held according to section D6 of the Formula Student Rules 2021.
- CH 6.2.4 The Endurance Event will be held according to section D7 of the Formula Student Rules 2021.