



Formula Student Spain 2016
24th to 28th August

Rules
(Electric & Combustion Vehicles)
Release 1.0 – 17.03.2016

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1. Important Dates

1.1. Competition Dates and Location

Formula Student Spain 2016 will take place from Wednesday 24th to Sunday 28th of August 2016. The event will take place at the Circuit de Barcelona-Catalunya, in Montmeló (Barcelona).

1.2. Registration

All registration details can be found in the competition [website](#).

1.3. Structural Equivalency Spreadsheet (SES)

April, 18th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT A STRUCTURAL EQUIVALENCY SPREADSHEET.

A blank copy of this form will be supplied to all teams. Additionally, all teams must submit a 3 dimensional CAD model of the frame / monocoque including all members of the primary structure in "IGES" file format.

The Structural Equivalency Spreadsheet and the 3D model must be submitted no later than April, 18th, 2016 at 1200 CEST. Late submissions will be penalized with -10 (minus ten) points per each day, up to a maximum of -70 points, which will be taken off the team's Total Score. Teams which miss the SES or 3D model deadline by more than 7 days will be removed from the FSS 2016 competition.

In the event that the FSS Organization requests additional information or calculations, teams have 7 days from the date of the request to submit the requested information. Late submissions will be penalized with -5 (minus five) points per each commenced day, up to a maximum of -50 points, which will be deducted from the team's Total Score.

Filenames:

SES_CAR#_Team Name.pdf (e.g. SES_01_Team Name.xls)

IGES_CAR#_Team Name.igs (e.g. IGES_01_Team Name.igs)

1.4. Impact Attenuator Data (IAD)

April, 18th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT AN FSS IMPACT ATTENUATOR DATA FORM.

All teams must submit a FSS IAD form, along with the test results, description of the test setup, the used test equipment and photo documentation of the IAD before and after the test. A template of this IAD form will be supplied to all teams.

Impact Attenuator Data must be submitted no later than April, 18th, 2016 at 1200 CEST.

Late submissions will be penalized with -10 (minus ten) points per each commenced day, up to a maximum of -70 points, which will be deducted from the team's Total Score.

Teams which miss the IAD deadlines by more than 7 days will be removed from the FSS 2016 competition.

In the event that the FSS Organization requests additional information or calculations, teams have 7 days from the date of the request to submit the requested information.

Late submissions will be penalized with -5 (minus five) points per each commenced day, up to a maximum of -50 points, which will be deducted from the team's Total Score.

Filename: IAD_CAR#_Team Name.pdf (e.g. IAD_01_Team Name.pdf)

1.5. Engineering Design Report and Design Spec Sheet (DR, DSS)

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT THE ENGINEERING DESIGN REPORT AND THE DESIGN SPEC SHEET.

The Engineering Design Report and the Design Spec Sheet must be submitted no later than June, 13th, 2016 at 1200 CEST.

A blank FSS Engineering Design Spec Sheet Form will be supplied to all teams.

Late submissions will be penalized with -10 (minus ten) points per each commenced day, up to a maximum of -100 points, which will be deducted from the team's Engineering Design Event Score. No report submitted will result in a score of zero for the Engineering Design Event.

Filenames:

DR_CAR#_Team Name.pdf (e.g. DR_01_Team Name.pdf)

DSS_CAR#_Team Name.xls (e.g. DSS_01_Team Name.xls)

1.6. Cost Report (CR)

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT THE COST REPORT AND DELIVER A PRINTED VERSION.

The Cost Report consists of two parts, a printed written report and an electronic report.

All teams must upload of the cost tables as a Microsoft Excel® file (.xlsx). The maximum allowed number of tabs must not exceed what has been given in the FSS_Master_eBOM. These tabs must also be given the same names as those stated in the FSS_Master_eBOM. The FSS Master eBOM will be supplied to all teams. The FSS Master eBOM includes the following tabs and naming:

“Cost Summary”, “BOM”, “Brake System”, “Engine & Drivetrain”, “Frame& Body”, “Instruments & Wiring”, “Miscellaneous, Fit & Finish”, “Steering System”, “Suspension and Shocks”, “Wheels & Tires”, “Revision Log”. All necessary assemblies and parts from each section must be included within the respective section. For other data, use the Cost Report Supporting Material file.

All teams must upload the supporting material as one separate .pdf file.

The supporting material should consist of drawings, exploded view drawings and/or pictures of your vehicle which allows the Judges to understand your BOM.

Both files must be submitted no later than June, 13th, 2016 at 1200 CEST.

The printed written report and any addenda must be delivered in a binder at the Competition during the Team Registration. In case of differences between the written copy and the electronic copy, which are not covered by addenda per FSAE Rule S4.17, the electronic copy will be judged.

Late submissions will be penalized with -10 (minus ten) points per each commenced day, up to a maximum of -80 points, which will be deducted from the team's Cost Event Score. No report submitted will result in a score of zero for the Cost Event.

Filenames:

BOM_CAR#_Team Name.xlsx (e.g. BOM_01_Team Name.xlsx)

CRSM_CAR#_Team Name.pdf (e.g. CRSM_01_Team Name.pdf)

1.7. Business Plan Executive Summary (BPES)

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT THE BUSINESS PLAN EXECUTIVE SUMMARY.

The Business Plan Executive Summary must be submitted no later than June, 13th, 2016 at 1200 CEST.

Late submission or non-submission will be penalized at the discretion of the judges up to -5 (minus five) points. These penalty points will be deducted from the Presentation Judging Score.

After submission of the BPES, the teams will receive a specific Deep Dive Topic from the presentation judges prior the competition. The task will be sent via email. Every team has to present this special Deep Dive Topic as a part of the team's business plan presentation to the judges.

Note: The Business Plan Executive Summary is not a Business Logic Case!

A team should not describe only the Deep Dive Topic in the business plan presentation. It's important that a team presents a good business plan as well.

FILENAME: BPES_CAR#_Team Name.pdf (e.g. BPES_01_Team Name.pdf)

1.8. [Combustion Only] Fuel Type Order

May, 23rd, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST INFORM THE FSS ORGANIZATION OF THE FUEL THEY USE.

Teams must inform the FSS Organization of what fuel they use. Available fuel types are: 98 Octane and E85.

1.9. [Combustion Only] ETC FMEA Upload and Notice of Intent

May, 23rd, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS USING ETC MUST INFORM THE FSS ORGANIZATION.

ETC FMEA Data must be submitted no later than May, 23rd, 2016 at 1200 CEST. The ETC FMEA Data must be submitted in Adobe Acrobat® format (*.pdf file). The FMEA Template is the FSAE 2016 Electronic Throttle Control (ETC).

The Failure Modes and Effect Analysis Template can be found on the FSAEonline.com website. For FSS 2016, the Notice of Intent is part of the FMEA. The Template 2016 Electronic Throttle Control Notice of Intent can also be found on the FSAEonline.com website.

Filenames:

NI_CAR#_Team Name.pdf (e.g. NI_01_Team Name.pdf)

ETC_FMEA_CAR#_Team Name.xls (e.g. ETC_FMEA_01_Team Name.xls)

1.10. [Electric only] Electrical System Form (ESF)

April, 18th, 2016 at 1200 CEST

IMPORTANT: ALL ELECTRIC TEAMS MUST SUBMIT AN ELECTRICAL SYSTEM FORM. TEMPLATES WILL BE PROVIDED AND HAVE TO BE USED.

The Electrical System Form must be submitted no later than April, 18th, 2016 at 1200 CEST.

Late submissions will be penalized with -10 (ten) points per each commenced day, up to a maximum of 70 points, which will be taken off the team's Total Score.

Teams which missed the ESF deadline by more than 7 days will be de-registered from the FSS 2016 competition.

In the event that the FSS Organization requests additional information or calculations, teams have 7 days from the date of the request to submit the requested information.

Late submissions will be penalized with -5 (minus five) points per each commenced day, up to a maximum of 50 points, which will be taken off the team's Total Score.

Filename: ESF_CAR#_Team Name.pdf
(e.g. ESF_Accumulator_Mechanical_E01_Team Name.pdf)

1.11. [Electric only] Failure Modes and Effects Analysis (FMEA)

April, 18th, 2016 at 1200 CEST

IMPORTANT: ALL ELECTRIC TEAMS MUST SUBMIT A FAILURE MODES AND EFFECTS ANALYSIS. A TEMPLATE WILL BE PROVIDED AND HAS TO BE USED.

The Failure Modes and Effects Analysis must be submitted no later than April, 18th, 2016 at 1200 CEST.

Late submissions will be penalized with -10 (ten) points per each commenced day, up to a maximum of 70 points, which will be taken off the team's Total Score.

Teams which missed the FMEA deadline by more than 7 days will be de-registered from the FSS 2016 competition.

In the event that the FSS Organization requests additional information or calculations, teams have 7 days from the date of the request to submit the requested information.

Filename: FMEA_CAR#_Team Name.xls (e.g. ESF_E01_Team Name.xls)

1.12. [Electric only] Charging Connector and Max. Power

May, 23rd, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST INFORM THE FSS ORGANIZATION OF THEIR CHARGING DATA.

Teams must inform the FSS Organization of whether the accumulator is charged inside or outside the car, about the type of electric connector used, and what the maximum used charging power is no later than May, 23rd, 2016 at 1200 CEST.

1.13. [Electric only] Electrical System Advisor Confirmation (ESAC)

May, 23rd, 2016 at 1200 CEST

IMPORTANT: ALL ELECTRIC TEAMS MUST SUBMIT AN ELECTRICAL SYSTEM ADVISOR CONFIRMATION.

The ESAC must contain a signed confirmation of your ESA that the vehicle has in principle been designed using good engineering practice. The ESAC also has to contain a short CV or other form of documentation which proves that your ESA has the necessary experience and education to assess the design of a battery powered electric vehicle with respect to safety.

Team Leaders must submit the Electrical System Officer(s) Qualification no later than May, 23rd, 2016 at 1200 CEST.

Filename: ESAC_CAR#_Team Name.pdf (e.g. ESAC_E01_Team Name.pdf)

1.14. [Electric only] Electrical System Officer(s) Qualification (ESOQ)

May, 23rd, 2016 at 1200 CEST

IMPORTANT: ALL ELECTRIC TEAMS MUST SUBMIT AN ELECTRICAL SYSTEM OFFICER(S) QUALIFICATION.

Team Leaders must submit the Electrical System Officer(s) Qualification no later than May, 23rd, 2016 at 1200 CEST.

Filename: ESOQ_CAR#_Team Name.pdf (e.g. ESOQ_E01_Team Name.pdf)

1.15. Team Member Designation

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST DESIGNATE THEIR TEAM MEMBERS.

Participating team members must be designated prior to the event. All team members must fulfill a form containing their personal information. This form will be provided to all teams.

Participants may be added until June, 13th, 2016 at 1200 CEST.
The Faculty Advisor must fulfill a form with his/her identifying information.

1.16. Health Insurance Certificate (HIC)

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT THE HEALTH INSURANCE CERTIFICATE.

Team Leaders must collect and scan all health insurance certificates of the event participants and submit them as a multiple page Adobe Acrobat® file (*.pdf) no later than June, 13th, 2016 at 1200 CEST.

In case the health insurance data of one or more team members is missing or incorrect, FSS will decline the designation of the team member(s) in question. Only designation of team members with complete and correct health insurance information will be accepted. Team members that were declined can be registered again after their health insurance data has been corrected.

The original certificates must be brought to the competition.

Filename: HIC_CAR#_Team Name.pdf (e.g. HIC_01_Team Name.pdf)

1.17. Driver license (DL)

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST SUBMIT THEIR DRIVER'S LICENCE.

Team Leaders must collect and scan all driving licenses of the drivers participating in the event and submit them as a multiple page Adobe Acrobat® file (*.pdf) no later than June, 13th, 2016 at 1200 CEST.

Filename:

DL_CAR#_TeamName.pdf (e.g. DL_01_Team Name.pdf)

1.18. Accommodation Booking Form

June, 13th, 2016 at 1200 CEST

IMPORTANT: ALL TEAMS MUST FILL AN ACCOMMODATION BOOKING FORM.

Team Leaders must fill an accommodation booking form no later than June, 13th, 2016 at 1200 CEST.

2. General

2.1. Formula Student Spain 2016 Rules

The Formula Student Spain Competition will comply with the FSAE 2016 general rules, located here:

<http://www.fsaeonline.com/>

Besides the FSAE 2016 general rules, Formula Student Spain will comply with the Formula Student Germany 2016 specific rules:

<http://www.formulastudent.de/>

Whenever applicable, Formula Student Germany 2016 rules take precedence over the FSAE 2016 general rules.

Formula Student Spain also has specific rule changes and additions to the FSAE 2016 and FSG 2016. Those changes and additions are located within this document, which supersedes all other rules. For a list of changes, please refer to the

Changelog.

2.2. Official Language

The official language in Formula Student Spain is English.

2.3. Official time

Formula Student Spain Official Time:

From	Till	Time
26.10.2014	28.03.2016	CET
29.03.2016	24.10.2016	CEST

To convert CET or CEST to your local time you may use following website:

<http://www.timeanddate.com/worldclock/converter.html>

2.4. Society Membership

Every participating team member must be a member of one of the FISITA (<http://www.fisita.org>) engineering societies.

2.5. Faculty Advisor

All participating teams are recommended to have a Faculty Advisor present with them at all times, during the competition. In the case of having no Faculty Advisor present during competition, the Team Captain will take over all responsibilities as the acting Faculty Advisor.

2.6. Event Handbook

The Event Handbook may contain special event procedures and restrictions for example regarding working on the car etc. It has to be read and understood by all event participants. It will be published on the website before the competition.

2.7. Scrutineering Quiz

Formula Student Spain will once more use an online Rules quiz to sort the queue order for the Scrutineering. This quiz will be available online on Wednesday, 8th of July, at 12h00 CEST. It will close exactly 24 hours later.

The criteria for assessment is the number of correct answers, followed by the submission time, in this order.

All teams will be required to select their type of car, and to write both the Team Name and University. There will be 10 questions to answer, mainly considering the general

FSAE rules, as well as the specific rule changes of Formula Student Germany. There will be questions regarding both combustion and electric cars.

The quiz results will be used to sort the Scrutineering order of all teams, but Formula Student Spain organization reserves the right to relocate teams in the queue order to assure a swift inspection procedure. Collected information from the Formula Student Germany event may be used for this purpose.

2.8. Post Endurance Vehicle Inspection Procedure

Competition officials will impound and inspect a limited number of the vehicles that finish the Endurance event, to confirm their compliance with the FSAE, FSG and FSS Rules.

Vehicles that complete Endurance may not be disqualified from those events for non-compliance unless it can be shown that the rule violation could have affected the vehicle's performance to the extent that the finish order may have been changed.

Vehicles to be inspected – Vehicles in the following categories will be impounded and inspected:

- (a) Top Finishers - The fastest four (4) Combustion vehicles and the fastest four (4) Electric to complete Endurance will be impounded for post-event inspection. Top finishers to be impounded for post-Endurance inspection will be identified only on the basis of raw track time, penalties will not be considered.
- (b) Random Selection – Up to four (4) additional finishing vehicles selected at random will be inspected
- (c) Protested Vehicles - Any vehicle may be inspected based on a protest filed by another team under the terms of FSAE Article 9 "Protests".
- (d) "Show Cause" Inspections – Any official can request the post-event inspection of a vehicle.

3. Vehicle Requirements and Restrictions

3.1. Alternative Frame Rules

Alternative Frame Rules are allowed for FSS 2016. Teams must submit their Request by April, 4th, 2016 to following Email address: rules@formulastudent.es. Teams must follow the Formula SAE® AF Rules.

4. Changelog

V 1.0.0

Initial release.