



Formula Student Spain 2015
27th to 30th August

Electric Rules

1. Important Dates	3
1.1. Competition Dates and Location	3
1.2. Registration	3
1.3. Structural Equivalency Spreadsheet (SES).....	3
1.4. Impact Attenuator Data (IAD)	3
1.5. Electrical System Form (ESF)	4
1.6. Failure Modes and Effects Analysis (FMEA).....	4
1.7. Engineering Design Report and Design Spec Sheet (DR, DSS)	5
1.8. Cost Report (CR).....	5
1.9. Business Plan Executive Summary (BPES).....	6
1.10. Charging Connector and Max. Power	6
1.11. Electrical System Advisor Confirmation (ESAC)	6
1.12. Electrical System Officer(s) Qualification (ESOQ)	7
1.13. Team Member Designation.....	7
1.14. Health Insurance Certificate (HIC)	7
1.15. Driver license (DL).....	8
1.16. Accomodation Booking Form.....	8
2. General.....	9
2.1. Formula Student Spain 2015 Rules.....	9
2.2. Official Language.....	9
2.3. Official time	9
2.4. Society Membership.....	9
2.5. Faculty Advisor	9
2.6. Event Handbook	10
2.7. Scrutineering Quiz.....	10
2.8. Post Endurance Vehicle Inspection Procedure	10
3. Vehicle Requirements and Restrictions	12
3.1. Alternative Frame Rules.....	12
4. Changelog	13

1. Important Dates

1.1. Competition Dates and Location

Formula Student Spain 2015 will take place from Thursday 27th to Sunday 30th of August 2015. The event will take place at the Circuit de Catalunya, in Montmeló (Barcelona).

1.2. Registration

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

1.3. Structural Equivalency Spreadsheet (SES)

April, 30th, 2015 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 model of the frame/monocoque in "IGES" file format. The accumulator container(s) and attachment method must also be included.

The Structural Equivalency Spreadsheet and the 3D model must be submitted no later than April, 30th, 2015 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 2015 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_E01_Team Name.xls)

IGES_CAR#_Team Name.igs (e.g. IGES_E01_Team Name.igs)

1.4. Impact Attenuator Data (IAD)

April, 30th, 2015 at 1200 CEST

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

A blank copy of this form will be supplied to all teams.

Impact Attenuator Data must be submitted no later than April, 30th, 2015 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 2015 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: IAD_CAR#_Team Name.pdf (e.g. IAD_E01_Team Name.pdf)

1.5. Electrical System Form (ESF)

June, 5th, 2015 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 June, 5th, 2015 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 2015 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)

1.6. Failure Modes and Effects Analysis (FMEA)

April, 30th, 2015 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, 30th, 2015 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 2015 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)

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

June, 26th, 2015 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, 26th, 2015 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_E01_Team Name.pdf)

DSS_CAR#_Team Name.xls (e.g. DSS_E01_Team Name.xls)

1.8. Cost Report (CR)

June, 26th, 2015 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. The electronic Cost Report must be submitted as a Microsoft Excel® file. The file must be submitted no later than June, 26th, 2015 at 1200 CEST.

The electronic report has to consist of a full vehicle BOM with cost data derived from the Cost Tables and supporting documentation (e.g. calculations, drawing or photos).

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.

Filename: BOM_CAR#_Team Name.xls (e.g. BOM_E01_Team Name.xls)

1.9. Business Plan Executive Summary (BPES)

June, 26th, 2015 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, 26th, 2015 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_E01_Team Name.pdf)

1.10. Charging Connector and Max. Power

May, 22nd, 2015 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, 22nd, 2015 at 1200 CEST.

1.11. Electrical System Advisor Confirmation (ESAC)

April, 30th, 2015 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 April, 30th, 2015 at 1200 CEST.

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

1.12. Electrical System Officer(s) Qualification (ESOQ)

May, 22nd, 2015 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, 22nd, 2015 at 1200 CEST.

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

1.13. Team Member Designation

June, 19th, 2015 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, 19th, 2015 at 1200 CEST.
The Faculty Advisor must fulfill a form with his/her identifying information.

1.14. Health Insurance Certificate (HIC)

June, 19th, 2015 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, 19th, 2015 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)

1.15. Driver license (DL)

June, 19th, 2015 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, 19th, 2015 at 1200 CEST.

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

1.16. Accomodation Booking Form

June, 19th, 2015 at 1200 CEST

IMPORTANT: ALL TEAMS MUST FILL AN ACCOMODATION BOOKING FORM.

Team Leaders must fill an accommodation booking form no later than June, 19th, 2015 at 1200 CEST.

2. General

2.1. Formula Student Spain 2015 Rules

The Formula Student Spain Competition will comply with the FSAE 2015 general rules, located here:

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

Besides the FSAE 2015 general rules, Formula Student Spain will comply with the Formula Student Germany 2015 specific electric rules:

<https://www.formulastudent.de/fse/2015/rules/>

Whenever applicable, Formula Student Germany Electric 2015 rules take precedence over the FSAE 2015 general rules.

Formula Student Spain also has specific rule changes and additions to the FSAE 2015 and FSE 2015. 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	28.03.2015	CET
29.03.2015	24.10.2015	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.

To access the quiz, please use the following link: <http://goo.gl/forms/Czjeekpy9l>

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) Electric vehicles 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 2015. Teams must submit their Request by March, 30st, 2015 to following Email address: rules@formulastudent.es. Teams must follow the Formula SAE® AF Rules.

4. Changelog

V 1.0.0

Initial release.

V 1.0.1

Added information regarding:

- Deep Dive Topic
- Scrutineering Quiz
- Post Endurance Vehicle Inspection Procedure.

Removed duplicated information in the Attenuator Impact Data and Failure Modes and Effect Analysis sections.