

FORMULA
STUDENT **EAST**

STATIC EVENT RULES

WHO IS READY?

VERSION 1.0

RELEASE DATE: 3RD OF APRIL 2019

FURTHER DETAILS AT FSEAST.EU

#FSEAST #MAKESOMENOISE

S1. INTRODUCTION

Formula Student East® (hereafter “FS East®”) is a FSAE style Formula Student engineering competition held in Hungary, organised by the Association of Automotive Engineers (formerly Engineers for the Automotive Higher Education Association) from 2016. Formula Student East will allow to participate vehicles with conventional internal combustion engine (gasoline or ethanol fuelled) and electric powertrain. Furthermore Formula Student East welcomes the participation of driverless vehicles (both with internal combustion or electric powertrain).

The three categories will be evaluated separately:

- Internal Combustion Vehicles (hereafter CV)
- Electric Vehicles (hereafter EV)
- Driverless Vehicles (hereafter DV)

This document contains the FS East Static Events rules.

These specific rules are additions to the Formula Student Rules 2019 document (hereafter “Rules 2019”) published by **Formula Student Germany**. In case of a conflict between the Rules 2019 and the 2019 FS East rules, the 2019 FS East rules supersede the Rules 2019.

All the deadlines for each document submission can be found in the FS East Documentation Rules 2019.

S2. STATIC EVENTS

During all static events (both initial and final judging) a team member may participate only in that team’s event, which she/he is registered in. Universities participating with multiple vehicles are considered as separate, individual teams and each participant must be a member of one and only one team. Active participation on other teams’ static event will be penalized. Enforcing this principle, the distinct static events of these teams will be scheduled in parallel, in the same time slot.

S2.1 BUSINESS PLAN PRESENTATION

S2.1.1 EXECUTIVE SUMMARY

Judging will begin with the inspection and analysis of the priorly submitted Executive Summary, which is the principal document of the Business Plan Presentation.

The Executive Summary must be uploaded in Adobe Acrobat® format (*.pdf file) to the FS East website no later than the given deadline. The executive summary must not exceed one (1) page. The team name and car number for exact identification must be written in it.

SPECIFIC FS EAST RULE ADDITION

In the summary one (1) outstanding, innovative business model idea (why is your BP better?) and one (1) outstanding car technical feature have to be listed with the anticipated production costs of the car.

Maximum 5 points can be deducted from your final Business Plan Presentation Score, if:

- Team name and/or Car number is missing: -1 or -2 points
- One innovative business model idea and/or one technical highlights are missing: -1 or -2 points
- Vehicle cost is missing: -1 point

In case the Executive Summary is not compliant with the rules the received penalty points will be deducted from the final BPP score. Penalty points remain valid even if resubmission is asked until the Executive Summary can be accepted.

S2.1.2 BUSINESS PLAN PRESENTATION WRITTEN COPY

SPECIFIC FS EAST RULE ADDITION

All teams must submit their printed out version of their presentation no later than the given deadline. Changes cannot be made to the printed out version, if needed only the color (e.g. from colored to grayscale) can be changed! When preparing the presentation, please think about the quality of the written copy as well as the projected digital version.

S2.1.3 DEEP DIVE TOPIC

All teams will receive the same specific Deep Dive Topic from the organizers prior to the competition, which has to be part of the ten minute presentation.

The topic with further information will be published on the FS East website before July.

S2.1.4 DATA PROJECTION EQUIPMENT

Plasma display/LCD Monitors will be provided by FS East. These displays will have VGA+HDMI Input Connectors. The organizers will not provide any other presentation equipment (e.g. laptop). Teams planning to use other equipments as a part of their presentation, are responsible for bringing, or otherwise arranging for their own equipment. All teams must take care that only Schuko sockets (CEE 7/3) will be provided.

S2.1.5 JUDGING SEQUENCE

At FS East Business Plan Presentation Judging will consist of two parts for each category:

1. Initial judging of all teams
2. Final judging of top teams (the number of top teams will be decided by judges on-site)

The judges have the right to determine the number of teams participating in the final judging zero (0), ergo no teams will participate the final. In this case the results are determined based on initial judging.

Teams participating in the Business Plan Presentation Final will be informed about their participation during the event.

S2.1.6 BUSINESS PLAN PRESENTATION SCORING FORMULA

There is a maximum of seventy-five (75) points from the FS East Business Plan Presentation Judging Score Sheet. The scoring of the event is based on the average of the Judges' score-sheets.

NOTE: If rounding - down or up - the average is needed, it will be decided by Judges in the given Judge Group on spot, before the Static Day ends.

NON-FINALIST

$$\text{BPP SCORE} = (\text{P}_{\text{YOUR}} / \text{P}_{\text{MAX}}) \times (75 - \text{N})$$

Where:

"P_{MAX}" is the highest score awarded to any team in the given category not participating in the finals

"P_{YOUR}" is the score awarded to your team

"n" is the number of finalists in the given category (**NOTE:** n can be 0 as well)

FINALISTS

$$\text{BPP SCORE} = 75 - (\text{N} - 1)$$

Where:

"n" is the place achieved in the Business Plan Presentation Final

It is intended that the scores will range from near zero (0) to seventy-five (75) to provide good separation.

NOTE: All categories as mentioned in Rules 2019 will be evaluated, but the score-sheet structure and the content of it will differ from Rules 2019, as it will be prepared by the FS East organizers prior to the Event.

S2.2 COST AND MANUFACTURING EVENT

S2.2.1 COST REPORT DOCUMENTS

The Cost Report Documents (CRD) consist of the following documents:

- The BOM including DBOM and CBOM created online on the Formula Student Germany website
- The supporting material file uploaded as a pdf file to the competition website
- The cost explanation file uploaded as a pdf file to the competition website

All CRD documents must be printed by the team and brought as a hard copy to the Event Control on the 18th of July. Two hard copies or a splittable folder of the CRD is allowed to use at the discussion.

Without submitted electronic or written copy any of the Cost Report Documents a team will not be allowed to take part in the corresponding events (Discussion and Cost Understanding) and will receive a score of 0 (zero) for the Cost and Manufacturing Event.

S.2.2.2 ELECTRONIC COPY

Prior to the competition, the Cost Report Documents (CRD) must be submitted to the competition website no later than the given deadline.

For the creation of the BOM, the teams are expected to use the CBOM tool available on the www.formulastudent.de website. This tool provides a printable *.pdf version of the BOM.

All the three (3) CRD should be uploaded as separate documents in *.pdf file. For submission all the CRD files must be compressed into **one (1) *.zip** file.

Filename nomenclature:

- CAR#_CRD.zip (e.g. 01_CRD.zip) for the zip archive.
- CAR#_BOM.pdf (e.g. 01_BOM.pdf) for the Bill of Materials.
- CAR#_SUP_MAT.pdf (e.g. 01_SUP_MAT.pdf) for Supporting Material.
- CAR#_COST_EXPL.pdf (e.g. 01_COST_EXPL.pdf) for the Cost Explanation.


NOTE:

- Incomplete submissions (e.g. only the BOM) will be counted as not submitted. Only with all three (3) parts accomplished the submission of the Cost Report is complete. A team can decide not to submit a Supporting Material at the price of losing points, in which case they should upload an empty *.pdf file with the correct nomenclature.
- Failure to meet the nomenclature requirements results in a maximum of minus two (-2) points.

S2.2.3 WRITTEN COPY

The written copies must be identical to the electronic copies (the full report). The written copy must be presented during the discussion part of the Cost and Manufacturing Event. The hard copy must be identical to the uploaded version, otherwise five (5) penalty points will be deducted from the team's Cost and Manufacturing Event score.

All CRD Written Copies must be handed in one or more ring binders, labelled as follows:

	
Cost Report Documents Written Copy	
University name:	xxxxxxx
Team name:	xxxxxxx
FS East Car number:	xxx

Do not send the Written Copy by mail; it must be submitted at the FS East Event Control no later than the given deadline.

S2.2.4 COSTED BILL OF MATERIALS (CBOM)

The chosen system that must be submitted for a CBOM at FS East 2019 is "Engine and Drivetrain".

S2.2.5 DETAILED BILL OF MATERIALS (DBOM)

The chosen systems that must be submitted for a DBOM at FS East 2019 are “Brake System” and “Steering System” .

S2.2.6 JUDGING SEQUENCE

At FS East Cost and Manufacturing Event Judging will consist of two parts for each category:

1. Initial judging of all teams
2. Final judging of top teams (the number of top teams will be decided by judges on-site)

The judges have the right to determine the number of teams participating in the final judging zero (0), ergo no teams will participate the final. In this case the results are determined based on initial judging.

Teams participating in the Cost and Manufacturing Event Final will be informed about their participation during the event.

S2.2.7 COST AND MANUFACTURING SCORING FORMULA

The overall Cost and Manufacturing Event maximum scoring is 100 points.

5	Format and Accuracy of Documents
5	Knowledge of Documents and Vehicle
20	Content and Completeness of the BOM
20	Realism of the CBOM
50	Cost understanding

Each category is evaluated separately.

NON-FINALIST

$$\text{CME SCORE} = (\text{PYOUR}/\text{PMAX}) \times (100 - N)$$

Where:

“P_{MAX}” is the highest score awarded to any team in the given category not participating in the finals

“P_{YOUR}” is the score awarded to your team

“n” is the number of finalists in the given category (**NOTE:** n can be 0 as well)

FINALISTS

$$\text{CME SCORE} = 100 - (N - 1)$$

Where:

“n” is the place achieved in the Cost and Manufacturing Event Final

S2.2.8 RESULT REVISION

After the initial evaluation the judges will review all cost reports and given scores. In case of debatable/questionable situations the final decision falls within the competence of the Cost and Manufacturing Event Leader. The same rule applies in case of complaints.

S2.3 ENGINEERING DESIGN EVENT

S2.3.1 ENGINEERING DESIGN DOCUMENTS

The Engineering Design Documents consist of the following documents:

- Engineering Design Report (EDR)
- [DV only] Autonomous Design Report (ADR)
- Design Spec Sheet (DSS)

These documents must be uploaded to the FS East website no later than the given deadline.

Without the successful submission of all documents (2 for CV and EV, 3 for DV) a team will not be allowed to take part in the Engineering Design Event and will be given a score of zero (0) for the whole event. The submission is considered to be successful if the organizers have checked if the documents fulfill the formatting requirements and they have accepted them. In case of formatting and naming errors in the documents penalty can be applied up to a maximum of -10 (minus ten) points for CV/EV and -20 (minus twenty) points for DV, which will be deducted from the Engineering Design Score after the Engineering Design Final.

Filename nomenclature:

- CAR#_EDR.pdf (e.g. 01_EDR.pdf) for the Engineering Design Report.
- CAR#_ADR.pdf (e.g. 01_ADR.pdf) for the Autonomous Design Report. [DV only]
- CAR#_DSS.pdf (e.g. 01_DSS.pdf) for the Design Spec Sheet.

S2.3.2 ENGINEERING DESIGN REPORT (EDR)

The Engineering Design Report must be submitted in a single Adobe Acrobat® (*.pdf) file. The documents must be prepared according to the Rules 2019 Article S3.2.

The EDR **must not exceed eight pages**, consisting of **not more than five pages of content** (text, which may include pictures and graphs) and **three pages of drawings**. The three EDR drawings (no renderings) must show the vehicle from the front, the top and the side. Each drawing must appear on a separate page. Pay attention to the quality of the drawings. For further formatting directives see Rules 2019 Articles S3.2.2 - S3.2.8.

The size of the document **must not exceed five megabytes (5MB)**. A properly sized document will be much smaller than five megabytes in file size. Please ensure that graphs and photos within the Acrobat file are of an appropriate resolution.

S2.3.3 [DV ONLY] AUTONOMOUS DESIGN REPORT (ADR)

The Autonomous Design Report must be submitted in a single Adobe Acrobat® (*.pdf) file. The documents must be prepared according to the Rules 2019 Article S3.4.

The ADR must be written as a **scientific paper** and **must not exceed five pages**. For further formatting directives see Rules 2019 Articles S3.4.4 - S3.4.6.

The size of the document **must not exceed five megabytes (5MB)**. A properly sized document will be much smaller than five megabytes in file size. Please ensure that graphs and photos within the Acrobat file are of an appropriate resolution.

S2.3.4 ENGINEERING DESIGN SPEC SHEET (DSS)

The Design Spec Sheet must be submitted in a single Adobe Acrobat® (*.pdf) file. The FS East DSS template and further information will be published on the FS East website later. The template must not be altered or reformatted prior the submission. A properly filled out DSS should be **6 pages long for CV and EV categories**, and **7 pages long for DV category**. In the DSS metric units must be used only.

S2.3.5 JUDGING SEQUENCE

At FS East Engineering Design Judging will consist of two parts for CV and EV teams (evaluated separately):

- Initial judging of all teams
- Final judging of top teams (the number of top teams will be decided by judges on-site)

The judges have the right to determine the number of teams participating in the final judging zero (0), ergo no teams will participate the final. In this case the results are determined based on initial judging.

Teams participating in the Engineering Design Final will be informed about their participation during the event.

S2.3.6 ENGINEERING DESIGN SCORING

The overall Engineering Design Event maximum scoring is 150 points for CV/EV and 300 points for DV. Each category is evaluated separately.

NOTE:

All categories as mentioned in Rules 2019 Article S3.8.2 will be evaluated, but the score-sheet structure and the content of it will differ from Rules 2019, as it will be prepared by the FS East organisers prior to the Event.

FORMULA STUDENT EAST



CHANGELOG

Version	Date	Modification	Page
1.0.0	1st April 2019	Initial release	-



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