

**FORMULA**  
STUDENT **EAST**

**FOR**  
**FUTURE**  
**JUDGES**

IF YOU ARE INTERESTED  
TO BECOME A JUDGE



**AUG**  
**8<>12**  
**2022**

<INFORMATION PACKAGE>

**#FSEASTAUG8<>12**

RELEASE

**VERSION 1.0**

RELEASE DATE: 28TH OF APRIL 2022

FURTHER DETAILS AT [FSEAST.EU](https://fseast.eu)

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# FORMULA STUDENT EAST



## DEAR FORMER AND FUTURE JUDGES,

WE HAVE CREATED A BASIC INFORMATION PACKAGE  
FOR YOUR ATTENTION, WHICH CAN BE USED AS A GUIDELINE  
WHEN ATTENDING FORMULA STUDENT EAST 2022.

REGISTER!  
[LOGIN.FSEAST.EU/REGISTER](https://login.fseast.eu/register)

## ABOUT FS EAST



From 2016 the Association of Automotive Engineers organizes Formula Student East as a Formula Student style engineering competition representing the Eastern European automotive region. The Association is dedicated to focus on the educational function of the event as its mission is to help today's student generations become the outstanding professionals of tomorrow since it has been established in 2010. The competition also provides the chance for FS teams from the Eastern European region to compete in an international environment by offering half of the slots for them, the other half for teams from all over the world.

**In 2022 we continue our journey by expanding the number of participating teams, which results 84 open slots for the FS teams in three categories:**

- 24 slots in CV category for internal combustion vehicles
- 36 slots in EV category for electric vehicles
- 24 slots in DV category for driverless vehicles

### THE WEBPAGE AND SOCIAL MEDIA PLATFORM OF THE EVENT

- [fseast.eu](https://fseast.eu)
- [facebook.com/formulastudenteast](https://facebook.com/formulastudenteast)
- [linkedin.com/company/formula-student-east](https://linkedin.com/company/formula-student-east)

### THE STORY BEHIND FORMULA STUDENT EAST

<https://youtu.be/IQcNXErkCXo>

## DATE & VENUE

### THE OFFICIAL DATE OF FS EAST 2022 IS 8TH-12TH AUGUST.

Formula Student East 2022 will be organised at the famous **Hungaroring racetrack in Mogyoród**, where we've already held the **FS Easter** preparation event in June. We can't wait to see 80+ FS racecars on the track just one week after the 37th Hungaroring Grand Prix.

You can find further information about the racetrack at [hungaroring.hu](https://hungaroring.hu)

**Most of the judges will be needed on 08.08 Monday and 09.08 Tuesday, when we hold the initial judging of the Static Events. We will look for applicants for the three Static Events:**

- Business Plan Presentation Judge
- Cost and Manufacturing Judge
- Engineering Design Judge
  - \* Combustion Design Judge
  - \* Electric Design Judge
  - \* Driverless Design Judge

Online Judge training will be held before the event (specific day will be fixed later).  
The detailed event map and schedule will be published prior to the event.



## WHAT IS THE ROLE OF THE JUDGES?

A judge is either an experienced Formula Student alumna/alumnus, or a practicing professional, who comes from the higher education or from the industry. This means, that the professional is not necessarily an engineer, but a manager, financial expert etc.

The main task of the judges on the event is to listen to the presentation of the teams or to have a discussion with the team members in their chosen discipline and evaluate their performance based on the itineraries given by the rules of the Formula Student and by the FS East. Naturally, the organizers of the FS East will do their best to help to prepare the judges properly to the corresponding events.

**Since the Static Events are divided into three major events, the participants can apply to become a judge one of the following roles:**

- Engineering Design Event Judge
- Cost and Manufacturing Event Judge
- Business Plan Presentation Event Judge

Note that, in the case of the Engineering Design Event Judges, the topics are split into more roles yet. Detailed description of all the judging duties and functions can be found in the following.

**The schedule of the Judging is roughly the following:**

- Prior the event, the judges will receive continuously all the necessary information and documents from the organizers, which aids their preparation to the event.
- Training about the responsibilities will be held online on evening(s) on the work week before the event, the exact date will be published later.
- Monday and Tuesday are the main working days for the judges. Before the judging event there is always a short briefing with their responsibilities. Then they will visit and score all the participating teams, usually one judge group is evaluating the performance of 6-10 teams, depending on the event. The day ends the same way as it started, a briefing is held, where all the upcoming questions can be discussed with the other judges and their responsibilities.
- Most of the judges' tasks end on Tuesday evening, but we welcome them on the following days as well, where the Event Finals will be held, where the best performing teams from Monday and Tuesday will compete against each other. At the dynamic events held from Monday to Wednesday judges have the opportunity to see, how those cars and the teams perform on the track that they judged in the beginning of the event.

If you have further questions about being a judge at the FS East 2022, please feel free to contact us via the [hello@fseast.eu](mailto:hello@fseast.eu) e-mail address.

## BUSINESS PLAN PRESENTATION EVENT

The objective of the event is to evaluate the team's ability to develop and deliver a comprehensive business model which demonstrates their product - that is based on their prototype race car – could become a rewarding business opportunity. The judges should be treated as if they were potential investors or partners for the presented business model.

The judges are organized into judging groups. A group judges 8-10 teams and vehicles (depending on the vehicle category) during the event. One judge group consists of 2-3 judges:

1. Preferably one judge should be a business/marketing professional.
2. The second judge in an optimal case is a Formula Student alumnus/alumna.
3. The optional third person raises the standard even further. Ideally he/she is an engineer (any specialization).

## COST AND MANUFACTURING EVENT

As the experienced Cost and Manufacturing Event judges could get used to it, the rules of this discipline is dynamically evolving every year. Luckily, this year the format and the regulations were not changed dramatically.

The objective of the event is to evaluate the team's understanding of the manufacturing processes and costs associated with the construction of a prototype race car. This includes trade off decisions between content and cost, make or buy decisions and understanding the differences between prototype and mass production. The judges are organized into judging groups. A group judges 6-7 teams and vehicles during the event. One judge group consists at least 2 judges.

Preferably the judge is an engineer with experience in manufacturing technologies (or controlling), through own involvement with a company, or on the other hand, he/she personally likes to manufacture all kind of things. Due to the versatility of the event, engineers working on design side are welcomed also to participate as Cost and Manufacturing Judge.

During the judge training the judges will receive a comprehensive instruction package about what they should ask, and for which items they should pay special attention to, when checking the Cost tables next to the cars.

## ENGINEERING DESIGN EVENT

The concept of the Engineering Design Event is to evaluate the engineering effort that went into the design of the car and how the engineering meets the intent of the competition. The car that illustrates the best use of engineering to meet the design goals and the best understanding of the design by the team members will win the Engineering Design Event.

### COMBUSTION AND ELECTRIC VEHICLE CATEGORY JUDGES

The judges are organized into judging groups. A group judges 6-7 teams and vehicles during the event.

#### The roles within a judging group:

- **Overall Vehicle Concept & Management** - Judging the main goals of the development of the vehicle, check if the team has reached the goals, evaluates the design theory, documentation, knowledge transfer and project management techniques, etc.
- **Chassis and Ergonomics** - Judging the design, manufacturing and validation of the chassis of the vehicle (mostly CFRP monocoque or tubular spaceframe), the ergonomics of the cockpit.
- **Vehicle Dynamics and Suspension** - Judging the design (including the vehicle dynamics), manufacturing and validation of the suspension and the steering system.
- **Powertrain** (electric or internal combustion depending on the vehicle category) - Evaluates the design, component selection, manufacturing and validation of the powertrain.
  - **CV - covered topics:** engine, drivetrain, lubrication, cooling, mild-hybrid electric subsystem
  - **EV - covered topics:** HV accumulator, power electronics, motors, drivetrain, cooling
- **Electronics and Control System** - Judging the design, component selection, manufacturing or implementation and validation of the electronic system, EE-architecture, ECUs, wire harness, low-level control systems.
- **Aerodynamics** - Judging the design, manufacturing and validation of the aero pack and body cover of the vehicle and the cooling system.

**Did you know?** In 2022 FS East introduces cars with hybrid powertrain to compete in the CV category!

### DRIVERLESS CATEGORY JUDGES

In case of the driverless vehicles the Engineering Design Event involves the judging of both the "base" vehicle and its autonomous system.

#### The roles within the judging group is modified according to this:

- **Overall Driverless Vehicle Concept** - Judging the main goals of the development of the vehicle and the driverless system, check if the team has reached the goals, evaluates the design theory, documentation, knowledge transfer and project management techniques, etc.

- **Chassis & Sensor Mounting** - Judging the design, manufacturing and validation of the chassis of the vehicle (mostly CFRP monocoque or tubular spaceframe), the aerodynamic package, the location and the proper mountings of the sensors of the driverless system (cameras, LIDAR, etc.).
- **Suspension & Actuators** - Judging the design, manufacturing and validation of the suspension and the steering system, actuators of the driverless system for steering and pedal adjustment.
- **Powertrain** - Identical with the same role in a non-DV judging group. Within DV category there are vehicles equipped both with electric and internal combustion powertrain.
- **Electronics & Signal Processing** - Judging the design, component selection, manufacturing or implementation and validation of the electronic system, EE-architecture, ECUs, wire harness, low-level control systems, signal processing.
- **Machine Vision** - Judging the design of the machine vision subsystem, the selection of the sensors (cameras, LIDAR, etc.), the implementation of the video processing, test and validation of the subsystem.
- **Mapping and Motion Planning** - Judging the design of the motion planning subsystem, the implementation of the mapping and localization (SLAM), the trajectory planning.
- **Trajectory Tracking** - Judging the design of the trajectory tracking subsystem, the method how the vehicle drive itself along the planned trajectory, implementation of vehicle dynamics in the subsystem, test and validation of the subsystem.
- **Safety** - Judging the overall safety concept, the set of safety goals, the implementation and test of the safety features.

## HOW CAN YOU BECOME A JUDGE?

If you are interested in being a judge, please apply on the webpage's registration section ([login.fseast.eu/register](http://login.fseast.eu/register)), or contact the Static Team ([hello@fseast.eu](mailto:hello@fseast.eu)), and our colleagues will get in touch with you for further information.

As FS East continued growing, we'd like to involve new judges. Feel free to spread this document among your colleagues, friends or former team members!

Besides judges we need volunteer in several other roles too. If you are interested in any of these roles, we are more than happy to involve you in these areas too!

### IN WHICH KEY AREAS ARE WE LOOKING FOR VOLUNTEERS IN PARTICULAR?

- Track marshal
- Engineering scrutineer
- Electric scrutineer
- Event control assistant
- Charging tent supervisor

## WHAT DO WE PROVIDE?

The training of the judges, their accommodation, T-shirts, and daily meals and drinks will be provided by us, the organizers. Judge groups, timing, etc. will be created based on the applications and shared in advance.

The judges will be accommodated in hotels and hostels at Budapest for the night(s) prior to the participation day(s). The judges who are willing to stay at the venue without certain role/as volunteers are welcomed to join in the camping.

Furthermore it should be highlighted, that FS East is a professional meeting point, with hard work during the day, but relaxing and networking in the evenings. So that's why we would like to invite all judges to an informal networking, where they can relax with some snack and beer at the campsite!

There will be more than 140 professionals from several countries joining us as judges, aiding our work to provide a quality event, be part of this team!

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**SEE YOU AT FS  
EAST 2022,  
WE WILL BE  
THERE!**

**#FSEASTAUG8<>12**

#### CHANGELOG

Version	Date	Modification	Page
1.0.0	28th of April 2022	Initial release	-