

FORMULA STUDENT
ONLINE

COMPETITION PROCEDURE 2021

_PATRON:



INNOVÁCIÓS ÉS TECHNOLÓGIAI
MINISZTERIUM

_SPONSOR:

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_HOST:



SZÉCHENYI
EGYETEM
UNIVERSITY OF GYŐR



_COOPERATIVE PARTNERS:

FORMULA EAST
STUDENT



UNSPORTSMANLIKE CONDUCT

Be respectful. Harassment and abuse are never tolerated. If you are in a situation that makes you uncomfortable at the event, if the event itself is creating an unsafe or inappropriate environment, or if interacting with an official or event organizer makes you uncomfortable, please report it to one of our board members.

Harassment includes but is not limited to offensive verbal or written comments related to gender, age, sexual orientation, disability, physical appearance, body size, race, religion, social class, economic status, veteran status, sexual images, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical contact and unwelcome sexual attention. If what you're doing is making someone feel uncomfortable, that counts as harassment and is enough reason to stop doing it.

Participants asked to stop any harassing behavior are expected to comply immediately.

If a participant engages in harassing behavior, FSONline may take any action it deems appropriate, including warning the offender or expulsion from the event with no eligibility for refund of any type.

Causing any intended harm in the simulators during the simulation events (Virtual DV Event and Dynamic Event) may result in the exclusion of the team from the event.

1. GENERAL CONDUCT

- 1.1. The official communication channel for any event related questions is hello@formulastudentonline.com.
- 1.2. Not showing up on the online events is considered as DNF.
There is a 5 minute window after the deadline to cover the technical issues.
- 1.3. Any attempt to compromise the IT infrastructure (involving any tools related to the FS Online event, e.g. driverless simulator, or submission system) of the event will result in immediate disqualification.
- 1.4. If a participant engages in harassing behavior, FSONline may take any action it deems appropriate, including warning the offender or expulsion from the event with no eligibility for refund of any type.
- 1.5. Harassment includes but is not limited to offensive verbal or written comments related to gender, age, sexual orientation, disability, physical appearance, body size, race, religion, social class, economic status, veteran status, sexual images, deliberate intimidation, stalking, following, harassing photography or recording, sustained disruption of talks or other events, inappropriate physical contact, and unwelcome sexual attention.

2. COMPETITION OVERVIEW

- 2.1. Formula Student Online 2021 is a virtual Formula Student competition open to CV, EV and DV teams.
- 2.2. **Registration will be open separately to the three classes, with the following number of slots open in the competition itself:**
 - 2.2.1. Combustion category (CV): 8 slots
 - 2.2.2. Electric category (EV): 8 slots
 - 2.2.3. Driverless category (DV): 5 slots
- 2.3. Static and dynamic disciplines will be held for all classes, detailed in Sections 3&4.
- 2.4. A static event preparation period will be followed by live-streamed finals for both static and dynamic disciplines in a one-day live broadcast.

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2.5. Competition timeline:

- 2.5.1. Registration date: 15 October
- 2.5.2. Design highlights event (DHE) stage 1 (Submission deadline): 7 November
- 2.5.3. Business Plan Presentation (BPP) stage 1 (Submission deadline): 7 November
- 2.5.4. BPP Stage 2: 20 November
- 2.5.5. DHE Stage 2: 20 November
- 2.5.6. DV Simulator testing week: approx. 2 weeks before finals day (exact date TBD)
- 2.5.7. CV/EV Simulator livery submission deadline: 27 November
- 2.5.8. CV/EV Simulator test and time attack and fun events: 20 November - 1 December
- 2.5.9. Live broadcast final with EDE, BPP and dynamic finals: 4 December

2.6. Awards:

- 2.6.1. Pre-registered slots to Formula Student East 2022 will be awarded to the following finishers:
 - 2.6.1.1. CV category: Overall 1st, 2nd and 3rd place
 - 2.6.1.2. EV category: Overall 1st and 2nd place
 - 2.6.1.3. DV category: Overall 1st place
- 2.6.2. 1st place finishers in each category will receive a physical trophy that will be shipped to an address specified by the recipients after the competition.

3. STATIC EVENTS

3.1. Design Highlights Event:

- 3.1.1. To make the Engineering Design Event of on-site competitions more relevant for a virtual competition format, it will be replaced by a Design Highlights Event.
- 3.1.2. The overall goal of the Design Highlights event is to allow for the team to showcase their best vehicle subsystem including its integration into the overall vehicle design. This goal should be kept in mind during the preparation of submitted materials to the event, i.e. subsystem integration and holistic vehicle engineering advantages should be included in the competition submissions.
- 3.1.3. **The Design Highlights Event consists of three stages:**
 - 3.1.3.1. Stage 1.: written Design Highlight Summary document
 - 3.1.3.2. Stage 2.: engineering discussion with judges in a video call
 - 3.1.3.3. Stage 3 - Finals: based on performance in Stage 1 and Stage 2, the best 3 CV and 3 EV teams will be selected to participate in a livestreamed final. There will be no DV final.
- 3.1.4. **Stage 1. is a scientific paper-style written submission detailing the chosen subsystem of the vehicle in the following categories:**
 - 3.1.4.1. Powertrain (CV) / Tractive System (EV)
 - 3.1.4.2. Low Voltage electronics (CV&EV)
 - 3.1.4.3. High Voltage Electronics (EV only)
 - 3.1.4.4. Chassis&Frame (CV&EV)
 - 3.1.4.5. Suspension & Vehicle Dynamics (CV&EV)
 - 3.1.4.6. Aerodynamics (CV&EV)

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- 3.1.5. Stage 2. is a video conference engineering discussion based on the submitted material of Stage 1. The discussion will be held with a single judge and a maximum of 5 participating team members on a platform to be determined. First sub-results of the Design Highlights event will be published after Stage 2.
- 3.1.6. In CV and EV categories, finalists will be decided based on Stages 1 and 2. Three finalists from CV and EV categories will be chosen and notified in advance of the final stage. There will be no finals in DV category.
- 3.1.7. Stage 3. will be a closed final video call where finalists will be required to elaborate on a topic distributed to teams at least one week before the final.

3.2. Business Plan Presentation Event:

- 3.2.1. The Formula Student Online 2021 Business Plan Presentation Event will consist of 3 stages:
 - 3.2.1.1. Stage 1: introduction of business idea in short, maximum 90 s pitch videos submitted to the competition. The best 4 teams from CV, 4 teams from EV and 2 teams from DV categories are selected based on the pitch video to proceed to Stage 2.
 - 3.2.1.2. Stage 2: Teams selected in Stage 1 will present a 10 minute Business Plan Presentation with 5 minutes of live feedback from judges in a video call on a platform to be determined. Stage 2 presentations will not be broadcast. 2 best CV and 2 best EV teams will be selected for finals in Stage 3.
 - 3.2.1.3. Stage 3: Live Broadcast finals for top 2 CV and EV teams. 10 minute Business Plan Presentations in a live broadcast session with no feedback given. Winners will be decided based on performance in Stage 3.

4. DYNAMIC EVENTS

- 4.1. Dynamic events will be held in dedicated virtual simulators for CV, EV and DV categories. As in on-site competitions, events for CV&EV classes will be more similar while DV will use a different platform and format altogether, as discussed below.
 - 4.1.1. CV & EV category:
 - 4.1.1.1. Dynamic events will use a commercially available simulator software with modifications specifically developed for FS Online 2021, i.e. mods from FSO 2020 will not be compatible with this year's competition.
 - 4.1.1.2. Four event types will be offered: fun events, Time Attack, Autocross and FSO Super Special.
 - 4.1.1.3. Time Attack will determine the starting order of Autocross and driver pairings for FSO Super Special and will be a timed event where the aim is to reach the single fastest lap time.
 - 4.1.1.4. Autocross event will be livestreamed where one driver will get one chance to perform the best lap time.
 - 4.1.1.5. FSO Super Special will take place on a Race of Champions-style racetrack with two drivers competing side-by-side on alternate routes. Best drivers will advance through a knockout ladder to the top, to be the ultimate simulator champions of FSO 2021!
 - 4.1.2. DV category:
 - 4.1.2.1. DV teams will compete in a special dynamic driverless simulator developed for FSO 2021. Remote computing power will be used to test the submitted algorithms.
 - 4.1.2.2. 2 weeks of testing time will be available before the livestreamed finals for teams to finetune their algorithms.
 - 4.1.2.3. The simulator itself will provide the necessary inputs to teams' driverless algorithms in order to test their ability of processing data and adapting to environmental factors, similar to industrial development processes.
 - 4.1.2.4. A detailed competition procedure for DV events will follow in the coming weeks.

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5. REGISTRATION PROCEDURE

- 5.1. Registration to Formula Student Online 2021 will take the form of a quiz with engineering- and Formula Student related questions (5-10 questions).
- 5.2. The registration will take place on the 15th of October, 12:00 noon CEST.
- 5.3. Questions in the registration quiz will be based upon the latest version of the Formula Student Rules.
- 5.4. Registration platform will be Socrative, where a single quiz will be opened by all teams.
 - 5.4.1. Link to the quiz will be available on formulastudentonline.com
 - 5.4.2. As soon as free slots are filled, successfully registered teams will be notified in an e-mail, including payment details.
 - 5.4.3. Payment must be completed within 72 hours from receiving the e-mail (credit card payment will be available).
 - 5.4.4. Registration to FS Online 2021 will only be completed once the registration fee is credited to the account of FS Online.
 - 5.4.5. If a team fails to complete the payment in time, they will be disqualified from the competition, and the first team from the waiting list will be notified and required to pay within 72 hours from notification.
 - 5.4.6. Registration quiz will be opened for 2 hours on the 15th of October.
 - 5.4.7. A list of registered and waitlisted teams will be available on our website soon after the registration closes.
 - 5.4.8. Each team must register one user per team with the following name format in the "Your Name" field of Socrative: Car_Number#Team_Name.
- 5.5. Teams with more than one registration under their name will be disregarded with all accounts from the registration!
- 5.6. Timestamps of registration answers will be recorded. Teams with the most correct answers will advance to the official registration list. In case of point equality, the team with the quicker time will be ranked higher.
- 5.7. Teams move from the registration list to the participant list once their registration fee has been credited to the account of the organizing body.
- 5.8. Registration fee for the event is 275 EUR +VAT.

6. ADDITIONAL INFORMATION

- 6.1. The final competition day with broadcast live finals will take place on 4th of December, 2021.
- 6.2. Broadcast will start at 14:00 CET and finish at 18:30 CET.
- 6.3. Official broadcast channel will be the FS Online YouTube channel.

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