FORMULA STUDENT
ONLINE

STATIC EVENTS 2021

_PATRON:

Innovációs és Technológiai Minisztérium

_SPONSOR:

Audi Hungaria

_HOST:

Széchenyi Egyetem
University of Győr

UNI Kft. INNO

_COOPERATIVE PARTNERS:

FORMULA STUDENT EAST

SZEGED

BUSINESS PLAN PRESENTATION EVENT

1. The overall goal of the Business Plan Presentation Event The objective of the BPP is to evaluate the team's ability to develop and deliver a comprehensive business model which demonstrates their product – a prototype race car – could become a rewarding business opportunity that creates a monetary profit.

2. **The Formula Student Online 2021 Business Plan Presentation Event will consist of 3 stages:**
   a. 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.
   b. 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. The 2 best CV and 2 best EV teams will be selected for finals in Stage 3.
   c. 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.

3. **Stage 1 - Description**
   a. The teams are required to create a Pitch video with a maximum length of 90 seconds. The goal of the video is to showcase your business idea to the best of your abilities.
   b. These videos are to be submitted via a link on the website - no submission of video files!
      i. Acceptable links: YouTube hidden video or Vimeo
   c. **Scoring aspects**
      i. Novelty
      ii. Delivery and quality of execution
      iii. Content
      iv. Plausability of the business idea
   d. Stage 1. document must be uploaded to our website in a PDF format after logging in with the team account. The document must contain the following information:
      i. Team name
      ii. Car number
      iii. Category
      iv. A link of the Business Plan Pitch Video

4. **Stage 2 - Description**
   a. Stage 2 is an online video conference version of the conventional Business Plan Presentation event, meaning that the teams need to present their ideas to the judges live.
   b. Timeline for each team during Stage 2 of BPPE
      i. The teams have exactly 10 minutes to present their Business Plan, any presentation that exceeds 10 minutes shall be stopped by the judges.
      ii. Following the presentation, there is a 5 minute window for the judges to ask questions while trying to gain the best possible understanding of the given business idea.
      iii. Last, there will be a 5 minute long feedback session.
      iv. More detailed feedback session can be arranged afterwards with any team if required.
   c. In CV and EV categories, finalists will be decided based on Stage 2. Two 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.

5. **Stage 3 – Description**
   a. Stage 3 will be a livestreamed final video call, where the teams have the chance to present their ideas for one last time within Formula Student Online 2021.
   b. **The schedule for each BPPE final presentation will be the following:**
      i. Login and setup – 5 minutes
      ii. Presentation – 10 minutes
   c. There will be no questions at the end of the presentations.

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DESIGN HIGHLIGHT CHALLENGE

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.

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. **The Design Highlights Event consists of three stages:**
   a. Stage 1.: written Design Highlight Summary document
   b. Stage 2.: engineering discussion with judges in a video call
   c. 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.

4. **Stage 1 - Description**
   a. Stage 1. is a scientific paper-style written submission detailing the chosen subsystem of the vehicle.
   b. **Requirements for CV&EV teams:**
      i. **Choose which of the categories below your subsystem fits into and e-mail it to hello@formulastudentonline.com with your team name and car number:**
         1. Powertrain (CV) / Tractive System (EV)
         2. Low Voltage electronics (CV&EV)
         3. High Voltage Electronics (EV only)
         4. Chassis&Frame (CV&EV)
         5. Suspension & Vehicle Dynamics (CV&EV)
         6. Aerodynamics (CV&EV)
      ii. **Write your Design Highlight Summary document consisting of the following parts:**
         1. Overall concept of the car - max. 1 page
         2. Introduction of the chosen subsystem - max. 5 pages, including figures and diagrams
      iii. **Scoring aspects:**
         1. Design of subsystem
         2. Integrability into overall vehicle concept
         3. System engineering principles used during design
      iv. Teams get detailed feedback on their document only on demand.
   c. **Requirements for DV teams:**
      i. DV Teams must choose a subsystem from their Autonomous System (i.e. machine vision, trajectory planning, etc.).
      ii. Define a category for your subsystem (i.e. perception, actuation, motion planning, etc.) and e-mail it to hello@formulastudentonline.com with your team name and car number. This is done so to avoid restrictions in creativity for the small number of teams participating.
      iii. **Write your Design Highlight Summary document consisting of the following parts**:
         1. Overall concept of the car - max. 1 page
         2. Overall autonomous system concept - max. 1 page
         3. Introduction of the chosen subsystem - max. 5 pages, including figures and diagrams
      iv. **Scoring aspects:**
         1. Design
         2. Integrability
         3. System engineering principles
         4. System quality/safety (DV only)
   d. Stage 1. documents must be uploaded to our website in a PDF format after logging in with the team account. **All documents must contain the following information:**
      i. Team name
      ii. Car number
      iii. Category

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5. In Stage 2. the best 4-4 CV & EV and 3 DV teams will be qualified, according to the results of Stage 1.

6. 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.
   a. The sum time of the event for each team is around 40 min.
   b. **The timeline for each team is the following:**
      i. 3 min prep:team login, sound and video check, presentation run check, etc…
      ii. 10 min presentation: undisturbed DHP, judge's mic off
      iii. 20 min discussion: questioning session by judge
      iv. 5 min feedback: short feedback by judge, areas to improve etc…
      v. team logs out

7. **Stage 3 - Description**
   a. 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.
   b. Stage 3. will be a streamed final video call where finalists will be required to elaborate on a topic distributed to teams at least one week before the final.
   c. **Stage 3. topic will be the following for the categories:**
      i. iCV teams should re-work their presented subsystem and its changes as if they designed a car with a hybrid powertrain according to the ruleset introduced by FS East and other European competitions, specified in this link
         1. Teams should briefly introduce the impact of the hybrid powertrain on their current overall design and concept, and then show the influence of the powertrain change to their chosen subsystem presented in Stages 1 and 2.
         2. Teams should especially highlight the changes introduced due to the powertrain modification.
      ii. **The EV teams should rethink their presented subsystem, as if they can use a smaller, denser and lighter battery, with the following properties:**
         1. Mass: 30 kg
         2. Energy: 10 kWh
         3. Size: 100x340x300 mm
         4. The battery can be installed in any orientation.
         5. Teams should present the impact(s) of the new battery on their current overall design and concept, and then show the influence of the powertrain change to their chosen subsystem presented in Stages 1 and 2.
         6. Teams should especially highlight the changes introduced due to the battery modification.
   d. **The process of the Stage 3 will be the following:**
      i. 20 min presentation, no QnA, no feedback session, just a short intro by the speaker
      ii. More judges will be in the video call, from various area of science
      iii. The scoring aspects will be the same, like in the Stage 1. and 2.:
         1. Design
         2. Integrability
         3. System engineering principles

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