

SCOPE OF DESIGN EXPERIENCE: (150 POINTS)

Given the unique challenges that COVID-19 is imposing on both industry and academia, this year's Design Experience will try to capture the essence of the in-person judging experience while playing to the strengths of the virtual component. The goal is to provide the best possible educational experience for students, using virtual tools and to improve alignment between documentation and the design evaluation. Students will be judged on the creation of design requirements and the ability to meet those requirements, computer aided drafting, analysis, testing and development, manufacturability, serviceability, system integration and how the vehicle works together as a whole.

The format of the event will have teams being evaluated by one integrated panel of design judges. Student teams will be assigned a one-hour time slot. Compared to the 2020 Virtual Design Event, additional time and focus will be put on the overall vehicle design and engineering as well as system integration.

The one-hour judging experience will consist of:

Example Time	Time/section	Design Event Details			
2:00 PM	0:05:00	Students Enter Virtual Rooms			
2:05 PM	0:10:00	Overall Vehicle Presentation			
2:15 PM	0:10:00	System Integration Breakout Presentation	SSB Breakout Presentation	Drivetrain Breakout Presentation	C / E Breakout Presentation
2:25 PM	0:10:00	System Integration Breakout Questions	SSB Breakout Questions	Drivetrain Breakout Questions	C / E Breakout Questions
2:35 PM	0:10:00	Scoring			
2:45 PM	0:10:00	Feedback			
2:55 PM	0:05:00	Students Leave Virtual Rooms			
3:00 PM	-----	Design Session Ends			

Teams will use a standard format (template) for the design review which provides an overview of the car, either as-built or as-designed, as well as an opportunity for the students to address the scoring requirements.

The goal for the first 10 minutes is for the students to cover the team introduction and vehicle overview. Teams will submit a PDF of the PPT slides ahead of time, in lieu of the traditional design report and specification sheet. Judges will review and become familiar with content. The student team does not need to cover all slides, just highlight particular content they think is worthy of highlighting to the judges.

The goal for the following 20 minutes will be a breakout session where the students will provide additional subsystem details and the judges will ask follow up questions to individual team

members about their relative areas of experience and deep dive the student’s technical knowledge and its application to the product offering.

After the breakout session, judges will then leave the meeting shortly to complete scoring and organize comments for immediate feedback which will take place for the remainder of the assigned hour.

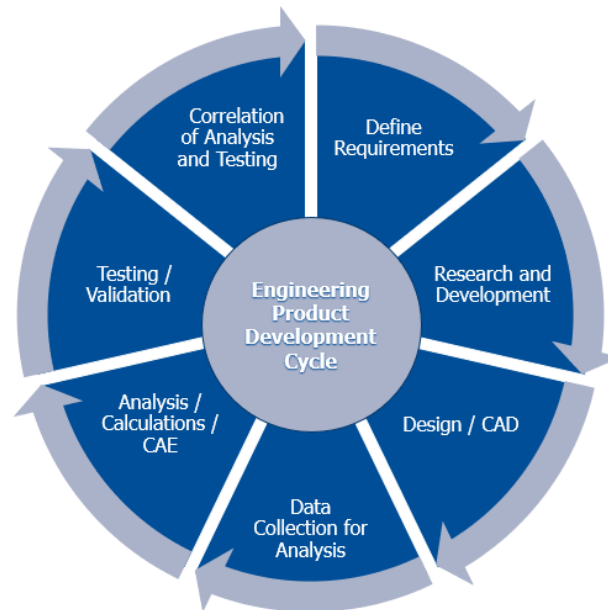
Remember: The purpose of Baja SAE is not to identify the best off-road vehicle. The purpose is to build educational learning experiences for talented students. The car design and build (where relevant) reflect the skills of the students but are an aspect of the judging.

Student Deliverables:

Student competitors must submit a Design Review Briefing (DRB) which will incorporate three CAD drawings and parts of the design spec sheet. The Design Review Briefing will provide judges with a ‘sneak peek’ at the designs. Teams that do not submit all documents will be disqualified from the Design event and receive zero points.

As per this event description which serves as an addendum to the Baja SAE rules, the DRB must utilize the PowerPoint template (to be published on bajasae.net).

The template will have details about content and how many slides may be used to cover each topic. The DRB will not be judged based on length. Content of the DRB should cover the all aspects of the engineering product development cycle (show below) The intended audience is that of experienced engineers and while concise, the content should be technical and cover all major vehicle systems highlighting notable features.



The DRB will be reviewed ahead of time by the design judges, and the student team may choose to present a portion of the content during their allocated time during the virtual judging.

The Design Review Presentation:

All teams will be assigned a time on the specified date, to be supplied closer to the event.

Design judging will consist of approximately 20 groups (queues) of judges, each having four judges. This means 20 teams are being judged simultaneously. The judges in each queue will evaluate the following areas:

- Overall Package and System Integration
- Suspension, Steering and Brakes
- Drivetrain/Powertrain
- Chassis and Ergonomics

Teams should make a point of reviewing the Design Judging Score Sheet on the official Baja SAE website. The score sheet gives the competitors insight into how they will be judged, as well as giving them a detailed breakdown of each judging category. Each judge has a different area of niche expertise and will seek out the student team member responsible for that particular area of the car.

Expanded definitions of each area have been provided on the Design Score Sheet, along with space for comments. Since the score sheet is used as a tool by the judges, the values written on the form will likely not add up to the team's Official Score. The judges are strongly encouraged to make lots of notes and provide written feedback to the student competitors.

During first round judging, each student team should have at least one representative who is prepared to discuss each major system individually. This means four or more students should be prepared to speak independently. This will be handled through breakout sessions within the virtual judging platform. If the judges must split their time between a single student (i.e. if one team member holds ALL the answers), lower scores could result based on total amount of information received. Students should have all information they feel is relevant (charts, graphs, parts, photos, video, etc.) available and ready to support their design efforts.

Design Finals:

At the conclusion of First Round Design Judging, the Bay Leaders will select the team to participate in the Design Finals. Design Finals will take place at a later date **TBD**.

The Design Finals procedure will be similar to the 2020 Design Finals. Each team will be evaluated in a **15-minute** period. Details of that period are listed below.

- **10 minutes** for Overall Package / System Integration presentations.
- **5 minutes** for questions from judges.
- Scoring will take place after all design finals presentations have been given.
- There will not be additional design finals feedback.

The panel of finals judges will examine each finalist team from an overall perspective and determine the ranking of the finalists and bonus points.

The overall Design Event Winner will be announced after the design judges have met to review the results.

4wd / Awd Design Evaluations

2021 Bonus points: Each team that presents a 4wd/Awd vehicle in the design competition will be awarded 20 bonus points.

Notice of Intent - Teams planning to design/build a car with 4wd or Awd for entry into a North American competition must notify the Rules Committee of their intent by the date specified in the action deadlines for the competition. Submit the 4wd / Awd Notice of Intent as instructed on the event website.

The Virtual 4wd / Awd Design Evaluation procedure will follow a similar format to 2021 Virtual Initial Design. Details of the 4wd / Awd Design Evaluation format will be communicated at a later date.

Important Note: The bonus points will be applied to your Overall Knowledge Event score, not the design event score.

Submission Requirements:

Design Review Briefing (DRB) using PowerPoint Template submitted as PDF file format (Maximum file size = 25MB)

4wd / Awd Notice of Intent (if designing a car with 4wd or Awd)

Submission Deadlines:

DRB will be due on March 31, 2021 before 11:59 PM EDT

Notice of intent will be due on February 15, 2021 before 11:59 PM EDT

Design Round 1 Judging Date:

Teams will be assigned a specific time to present during April 10 - 18, 2021.

A team's static schedule will be supplied later.

Design Finals Judging Date:

Design Finals Teams will be assigned a specific time to present during April 15 - 18, 2021.

A team's design finals static schedule will be supplied later.