Judging Resources

Judge Training Module

This training is designed to help judges become familiar with their role in judging Engineering Machine Design Contests. The information in this training will take approximately 30-60 minutes to review.

If you are new to judging the Engineering Machine Design Contest, you will want to review all of the sections. Returning judges, you will want to at least review the Scoring System section as a refresher!

Visit the Judge Training Site

Tasks to Complete Prior to Contest Day

Prior to the contest day, judges should complete the following list of tasks. Information related to each of these tasks is found on this website. Judges should contact the contest organizer with any questions.

1. Review Contest Handbook

2. Closely read all rules pertaining to your assigned judging role.

3. Review and become familiar with the score sheets.

4. Review and become familiar with the Judging Forms (provided by your contest organizer).

Judging Process Overview

The following is a general overview of the judging process. Judges should take time to read the Handbook to fully understand the contest rules.

Team Journal

Every team will submit a team journal to the contest organizer prior to the contest. The purpose of this journal is to capture the design process and development of their machines over time. Some contest organizers will ask judges to review and score the journals prior to contest day, while others will allow time on the contest day to score them.

Team Presentation

Prior to running their machine, teams will give a presentation to the judges that communicate the machine storyline, integration of STEM and technical components, and the team's use of the Engineering Design Process. Judges are able to ask the team questions about their machine and design process.

Machine Runs

After the team presentations, the team will get to run their machine for the judges two times. The first time will be immediately following the team presentation. The second time will be after all other teams in the judging cluster have presented and run their machines the first time.

Rounds

There will be two rounds of competition: the Preliminary Round and the Finals Round. During the Preliminary Round, all teams will compete in clusters of approximately 4 to 8 teams. Each cluster of teams will be scored by a separate group of judges. The top-scoring teams from each cluster will advance to the Finals Round in accordance with the contest rules. In the Finals Round, all teams will be judged by the same group of judges and will not be split into clusters.

If there is a fewer number of teams registered for the contest, a contest organizer may choose to have the Preliminary Rounds be a Showcase Round where teams present and run their machines for the other teams in the competition. In this case, the Preliminary Round or Showcase Round would not be judged and all teams would compete in the Finals Round.

Divisions

There are two divisions based on the grade level of students: Junior Division | 5th-8th Grade and Senior Division | 9th-12th Grade. Each division is scored separately.

Judging Roles

The Judging Committee will be evenly split into Judging Groups and assigned to specific clusters of teams in the Preliminary Round. Each Judging Group will include a Lead Judge, Technical Judge, and Design Judge. The contest organizer will communicate to judges their specific roles.

Lead Judge

The Lead Judge is responsible for keeping the Judging Group organized, moving in a timely manner, addressing questions other judges in the group may have, and facilitating any needed discussion.

Technical Judge

The Technical Judge is responsible for completing Machine Specifications and Run Penalties and while the other judges score teams on Machine Design and Operation. In most situations, the technical judge will NOT score Team Journals or Team Presentations. Their primary responsibility is to focus on ensuring machines meet specifications as outlined in the handbook and assess penalties that occur during machine runs. In some cases, the Technical Judge will also fill the role of Design Judge.

Design Judge

The Design Judge is responsible for measuring teams' machines prior to the start of judging or immediately following the team's first run and reporting those measurements to the Technical Judge. In some cases, the Technical Judge will fill the role of Design Judge.

The Design Judge should consider bringing their favorite measuring tape or laser from home.

General Judge

All other judges, not assigned to the roles above, will be responsible for judging the Team Journals, Team Presentations, and Machine Design and Operation.

Official Contest Handbook

The official handbook for the Engineering Machine Design Contest can be view or downloaded here!

View Handbook

Score Sheets

Score Sheets

Team Journal Score Sheet

Team Presentation Score Sheet

Machine Design and Operation Score Sheet

Multiple Team Scoring Sheet

Technical Judge Only

Machine Specification and Penalties Sheet

Hand Tabulation Only

Score Summary Tabulation Sheet