ENGAGING INDUSTRY. ENHANCING EDUCATION. INSPIRING STUDENTS.

ENGINEERING MACHINE DESIGN CONTEST

JUDGE RECRUITMENT

No previous judging experience is needed! Training is provided.

WHO:
STEM-related Professionals, Educators, and College/University Students

WHAT:
Using judging rubrics, evaluate teams of middle and high school students' chain reaction machine, team presentation, and team journal. Training is provided.

WHY:
Judges serve as role models and inspire the next generation of STEM professionals.

CONTEST DIVISIONS:
Junior Division - 5th-8th Grade
Senior Division - 9th-12th Grade

CHAIN REACTION MACHINE: Teams design and build a chain reaction machine using everyday objects. The completed machine will use multiple steps to complete a simple task. Each year a competition theme is chosen to guide the machine build and allow for whimsical creativity to flourish.

ADVANCED COMPONENTS: Senior Division teams must have at least one of each advanced component including a chemical reaction, electrical, fluid power, and mechanical components. Junior Division teams are encouraged to incorporate Advanced Components, but not required.

SCORING:
Teams are scored on a Team Journal, Team Presentation, and Machine Design and Operation.

A product of:

MINNESOTA STATE
Engineering Center of Excellence

January, 2022

JUDGE TESTIMONIALS

This program is well organized. Through proper coaching, this program allows students the opportunity to **function as part of a team to solve problems** using a clear process. It can help teach both engineering principles and soft/interpersonal skills. The students I saw in the competition were all **positive, passionate, professional, and mature**. They looked like they were enjoying themselves and their projects were well done. It was a great experience.

Carl
Championship Judge
Industry Professional

This program is an amazing way to create group **hands-on experiences that is learning-focused**. Students of all ages and levels can compete, and are guaranteed to walk away with **increased self-efficacy, understanding of the engineering process, and a sense of accomplishment**. The rubrics for students and judges' are extremely easy to follow with enough instruction to standardize submissions but enough variability to allow for great differentiation in process and thought.

Michael
Regional Judge
Science Education College Professor

Addressing the needs of STUDENTS, EDUCATORS, and FUTURE EMPLOYERS...

- Aligned to **Next Generation Science Standards** and National Academy of Engineering **Grand Engineering Challenges**.
- Connects the dots of **engineering and engineering technology** learning and **real-world** application.
- Contributes to students achieving their **career goals**.
- Equips students with **skills** that will help prepare them for **future careers**.
- Increases student **knowledge** and equips them with new and/or **advanced skills**.
- Students gain knowledge upon which to base their **decisions** related to engineering design.
- 100% of coaches would **recommend this program** to others!

ENGINEERING.MNSU.EDU/ENGINEERING-MACHINE-DESIGN-CONTEST

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