

20  24

REC FOUNDATION
EVENT PARTNER
SUMMIT

Judging Updates

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Updates: Judging Process / Guide to Judging

Like the Game Manuals, the Guide to Judging undergoes periodic scheduled updates each season.

JUNE UPDATE

- Generally includes past-season input, any high level changes identified by the Competition Judging Committee and REC Foundation leadership.
- Also considers and incorporates feedback from volunteers, as appropriate.

FUTURE UPDATES

- August: Provides opportunity to incorporate feedback from EP Summit / general community feedback from the June Update / initial Q&A's.
- December & April - mainly incorporate Q&A's.



June 2024: Guide to Judging Updates

- Past season Q&A's integrated into document
- Updated Award requirements (including requiring Engineering Notebook for some additional awards)
- Excellence Award criteria changes
- New section: "The Engineering Notebook: Purpose and Academic Honesty"
- Refined Engineering Notebook Judging guidance
- Added verbiage to clarify best practices for Judge selection, volunteer responsibilities, and more
- Streamlined Innovate Award submission process
- Team Interview and Engineering Notebook Rubric updates
- Many updates / verbiage changes for clarity

June 2024: Guide to Judging Updates

- Judging is a component of our programs that emphasizes the values espoused in the REC Foundation's Mission, Vision, and Student-Centered / Code of Conduct policies
- Many changes were made with this in mind: how can we better align the Judging process with what values we would like to celebrate?
- One major emphasis for June updates: Encourage and celebrate teams experimenting, exploring, and discovering with the engineering design process, not just building the best iteration of a meta design.



2023-2024 Season Observations

1

Judges Awards

Offering two Judges Awards was an option many appreciated. We anticipate more events utilizing this, particularly larger / Championship level events.

2

Innovate Award

Innovate Award Submission Form worked generally well, however, some teams had contradictory notes on what they were submitting, or attempted to include multiple aspects in their submission, or included a feature no longer on their robot.

2023-2024 Season:

Observations

3

Excellence Award

- Last season's changes to criteria generally received positive feedback, but at some events, the award was difficult or not possible to give out, for a few reasons:
 - Teams who did well in other metrics did not perform well in Autonomous Coding Skills / Engineering Notebook.
 - At smaller events, only a handful of teams would be eligible, creating a narrow field of candidates for judges to select from.
 - Student Centered / Code of Conduct concerns remove teams from consideration.

4

Judge / JA Annual Certification

- Worldwide, 1894 people passed the certification last season.
- Highlights not only important content, but also the judging ethos.
- Important for volunteers to be aware of changes each season

5

Monthly Webinars

- Overview of Judging process for teams and volunteers
 - 603 registered across 6 webinars last season.

Updated Award Requirements

- **Amaze, Build, Create, and Think** now require submission of an Engineering Notebook for the event
 - **Excellence, Design, and Innovate** did so previously
- **Judges, Inspire, Sportsmanship, Energy** do not require notebook
- New criteria added to all awards requiring Engineering Notebook:
- “The Engineering Notebook is consistent with the qualities demonstrated in the team interview and robot design.”
 - Notebook must reflect the robot and programming at event
 - Highlights relationship between Engineering Notebook and Team Interview



Innovate Award Submission Process

- **Innovate Award** now a required award for all events
- Teams are instructed to put the Innovate Award Submission Form in only one place: in their Engineering Notebook behind Table of Contents.
 - This is a universal location irrespective of notebook format.
- Follow Up interviews are needed to check that what teams submitted is in alignment with what they are using at the event.
- Clarified that teams can only submit a single feature, and that feature must actually be in use at the event where they are submitting it.



Engineering Notebook

Guidance for Reviewing Engineering Notebook

- Now specifically recommended that the same judges who interview teams also review those teams' Engineering Notebooks.
 - Judges can form a more cohesive assessment of the team.
 - Judges can use the notebook to generate topics / questions in the interview.
 - Innovate Award submissions can be vetted without additional interview rounds.
- Many events are conducting notebook evaluations digitally ahead of the event, and team interviews in-person. This presents challenges, that can be managed with planning.



Educational Importance

Statement explaining the educational value of creating and maintaining an Engineering Notebook

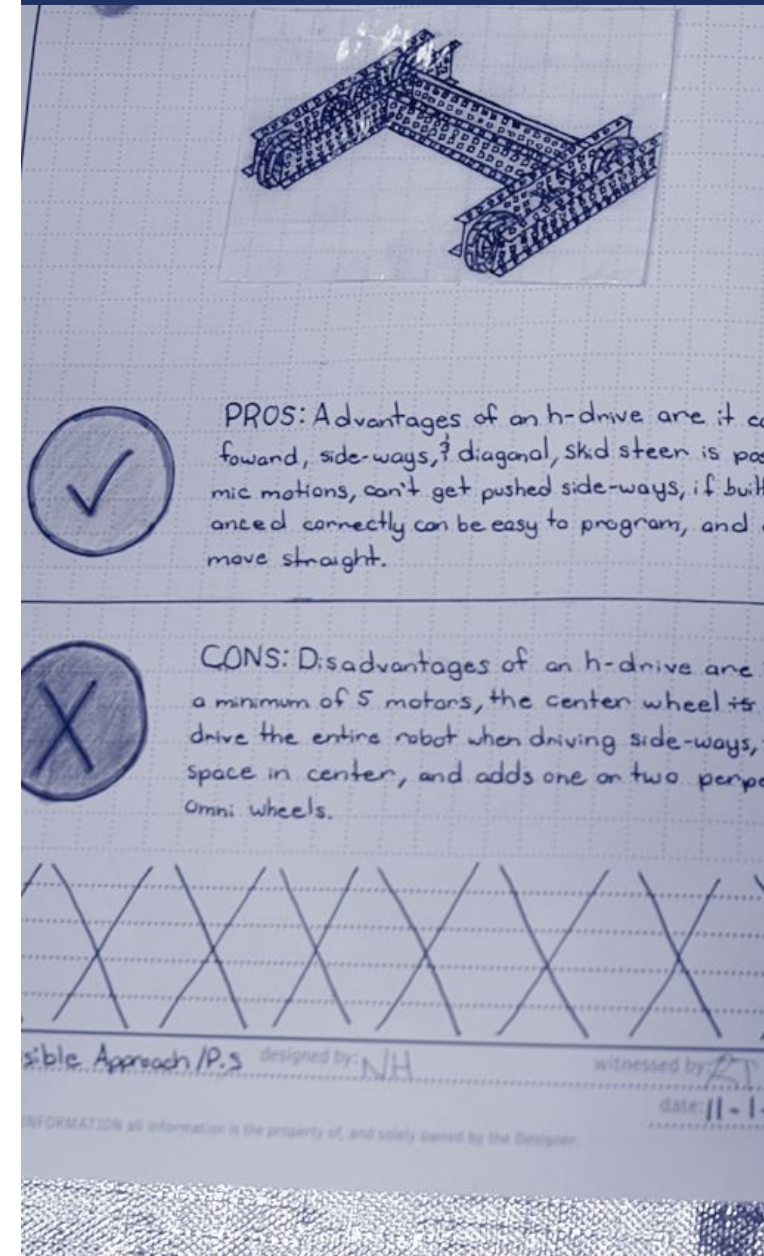


Policy for use of AI tools

The use of generative AI in creating and/or organizing Engineering Notebook content is explicitly prohibited


Engineering Notebook Purpose and Academic Honesty

- Explains why the Engineering Notebook must be Student Centered.
- Explains Academic Honesty and why it is important to abide by it in the notebook:
 - Instructs teams to cite sources and properly credit work that is not their own.
- Informs teams that by using common notebook content, they are at risk for misrepresenting work.





Engineering Notebook Rubric Update

- “Independent Inquiry” - teams must show evidence of their own original design process, as well as citing / crediting ideas originating from outside the team.
 - Inquiry includes research and investigation. We want to emphasize this aspect of the Design Process.
- Partial credit can be awarded for the Notebook Format criteria.

CRITERIA	PROFICIENCY LEVEL		
	ENGINEERING DESIGN PROCESS	EXPERT (4-5 POINTS)	PROFICIENT (2-3 POINTS)
IDENTIFY THE PROBLEM	<u>Identifies</u> the game and robot design challenges <u>in detail at the start of each design</u> process cycle with words and pictures. States the goals for accomplishing the challenge.	Identifies the challenge at the start of each design cycle. <u>Lacking details in words, pictures, or goals.</u>	<u>Does not identify the challenge</u> at the start of each design cycle.
BRAINSTORM, DIAGRAM, OR PROTOTYPE SOLUTIONS	Lists <u>three or more possible solutions</u> to the challenge with labeled diagrams. Citations provided for ideas that came from outside sources such as online videos or other teams.	Lists <u>one or two possible solutions</u> to the challenge. Citations provided for ideas that came from outside sources.	<u>Does not list any solutions</u> to the challenge.
SELECT BEST SOLUTION AND PLAN	Explains why the solution was selected through testing and/or a decision matrix. <u>Fully describes the plan</u> to implement the solution.	Explains why the solution was selected. <u>Mentions the plan.</u>	<u>Does not explain any plan</u> or why the solution or plan was selected.
BUILD AND PROGRAM THE SOLUTION	Records the steps to build and program the solution. Includes <u>enough detail that the reader can follow the logic</u> used by the team to develop their robot design, as well as recreate the robot design from the documentation.	Records the key steps to build and program the solution. <u>Lacks sufficient detail for the reader to follow the design process.</u>	<u>Does not record the key steps</u> to build and program the solution.
TEST SOLUTION	<u>Records all the steps</u> to test the solution, including test results.	<u>Records the key steps</u> to test the solution.	<u>Does not record steps</u> to test the solution.
REPEAT DESIGN PROCESS	Shows that the <u>design process is repeated multiple times</u> to improve performance on a design goal, or robot/game performance.	<u>Design process is not often repeated</u> for design goals or robot/game performance.	<u>Does not show that the design process is repeated.</u>
INDEPENDENT INQUIRY	Team shows evidence of independent inquiry <u>from the beginning stages</u> of their design process. Notebook documents whether the implemented ideas have their origin with students on the team, or if students found inspiration elsewhere.	Team shows evidence of independent inquiry for <u>some elements</u> of their design process.	Team <u>shows little to no evidence</u> of independent inquiry in their design process.
USEABILITY AND COMPLETENESS	<u>Records the entire design and development process</u> in such clarity and detail that the reader could recreate the project's history.	Records the design and development process completely but <u>lacks sufficient detail.</u>	<u>Lacks sufficient detail</u> to understand the design process.
RECORD OF TEAM AND PROJECT MANAGEMENT	Provides a <u>complete record of team and project assignments</u> ; team meeting notes including goals, decisions, and building/programming accomplishments; design cycles are easily identified. Resource constraints including time and materials are noted throughout.	Records <u>most of the information listed</u> at the left. Level of detail is inconsistent, or some aspects are missing.	<u>Does not record most of the information</u> listed at the left. Not organized.
NOTEBOOK FORMAT	Five (5) points if the notebook has evidence that documentation was done in sequence with the design process. This can take the form of dated entries with the names of contributing students included and an overall system of organization. For example, numbered pages and a table of contents with entries organized for future reference. Partial points may be awarded if this is inconsistent or incomplete.		ZERO POINTS (DOES NOT MEET CRITERIA) If awarding zero points, please include details in the "NOTES" area below
NOTES: 			

Team Interview Rubric Update

- Added “Creativity / Originality” criteria
 - Correlates directly to the Create and Innovate Awards.
 - Emphasizes students coming up with creative solutions to the engineering challenges presented by the game.
- The Team Interview Rubric is for Initial Interviews to establish some sort of “apples to apples” baseline for comparison.
 - Follow-up interviews and award deliberations are qualitative and take into account a number of factors as teams are compared against one another.

CRITERIA	PROFICIENCY LEVEL		
	EXPERT (4-5 POINTS)	PROFICIENT (2-3 POINTS)	EMERGING (0-1 POINTS)
ENGINEERING DESIGN PROCESS <i>All Awards</i>	Team shows evidence of independent inquiry <u>from the beginning stages</u> of their design process. This includes brainstorming, testing, and exploring alternative solutions.	Team shows evidence of independent inquiry for <u>some elements</u> of their design process.	Team <u>shows little to no evidence</u> of independent inquiry in their design process.
GAME STRATEGIES <i>Design, Innovate, Create, Amaze</i>	Team can fully explain their <u>entire</u> game strategy including game analysis.	Team can explain their current strategy with <u>limited evidence of game analysis</u> .	Team <u>did not explain</u> game strategy/strategy is not student-directed.
ROBOT DESIGN <i>Design, Innovate, Build Create, Amaze</i>	Team can <u>fully explain</u> the evolution of their robot design to the current design.	Team can provide a <u>limited description</u> of why the current robot design was chosen, but shows limited evolution.	Team <u>did not explain</u> robot design, or design is not student-directed.
ROBOT BUILD <i>Innovate, Build, Create, Amaze</i>	Team can <u>fully explain</u> their robot construction. Ownership of the robot build is evident.	Team can describe why the current robot design was chosen, but with <u>limited explanation</u> .	Team <u>did not explain</u> robot build, or build is not student-directed.
ROBOT PROGRAMMING <i>Design, Innovate, Think, Amaze</i>	Team can <u>fully explain</u> the evolution of their programming.	Team can describe how the current programs work, but with <u>limited evolution</u> .	Team <u>did not explain</u> programming, or programming is not student-directed.
CREATIVITY / ORIGINALITY <i>Innovate, Create</i>	Team can describe creative aspect(s) of their robot with clarity and detail.	Team can describe a creative solution but the answer lacks detail.	Team has difficulty describing a creative solution or gives minimal response.
TEAM AND PROJECT MANAGEMENT <i>All Awards</i>	Team can explain <u>how team progress was tracked against an overall project timeline</u> . Team can explain management of material and personnel resources.	Team can explain <u>how team progress was monitored</u> , and some degree of management of material and personnel resources.	Team <u>cannot explain how team progress was monitored</u> or how resources were managed.
TEAMWORK, COMMUNICATION, PROFESSIONALISM <i>All Awards</i>	<u>Most or all team members contribute to explanations</u> of the design process, game strategy, and other work done by the team.	<u>Some team members contribute to explanations</u> of the design process, game strategy, and other work done by the team	<u>Few team members contribute to explanations</u> of the design process, game strategy, and other work done by the team.
RESPECT, COURTESY, POSITIVITY <i>All Awards</i>	Team consistently interacts respectfully, courteously, and positively in their interview.	Team interactions show signs of respect and courtesy, but there is room for improvement.	Team interactions lack respectful and courteous behavior.
SPECIAL ATTRIBUTES AND OVERALL IMPRESSIONS <i>Judges, Inspire</i>	Does the team have any special attributes, accomplishments, or exemplary effort in overcoming challenges at this event? Did anything stand out about this team in their interview? Please describe: 		
NOTES: 			

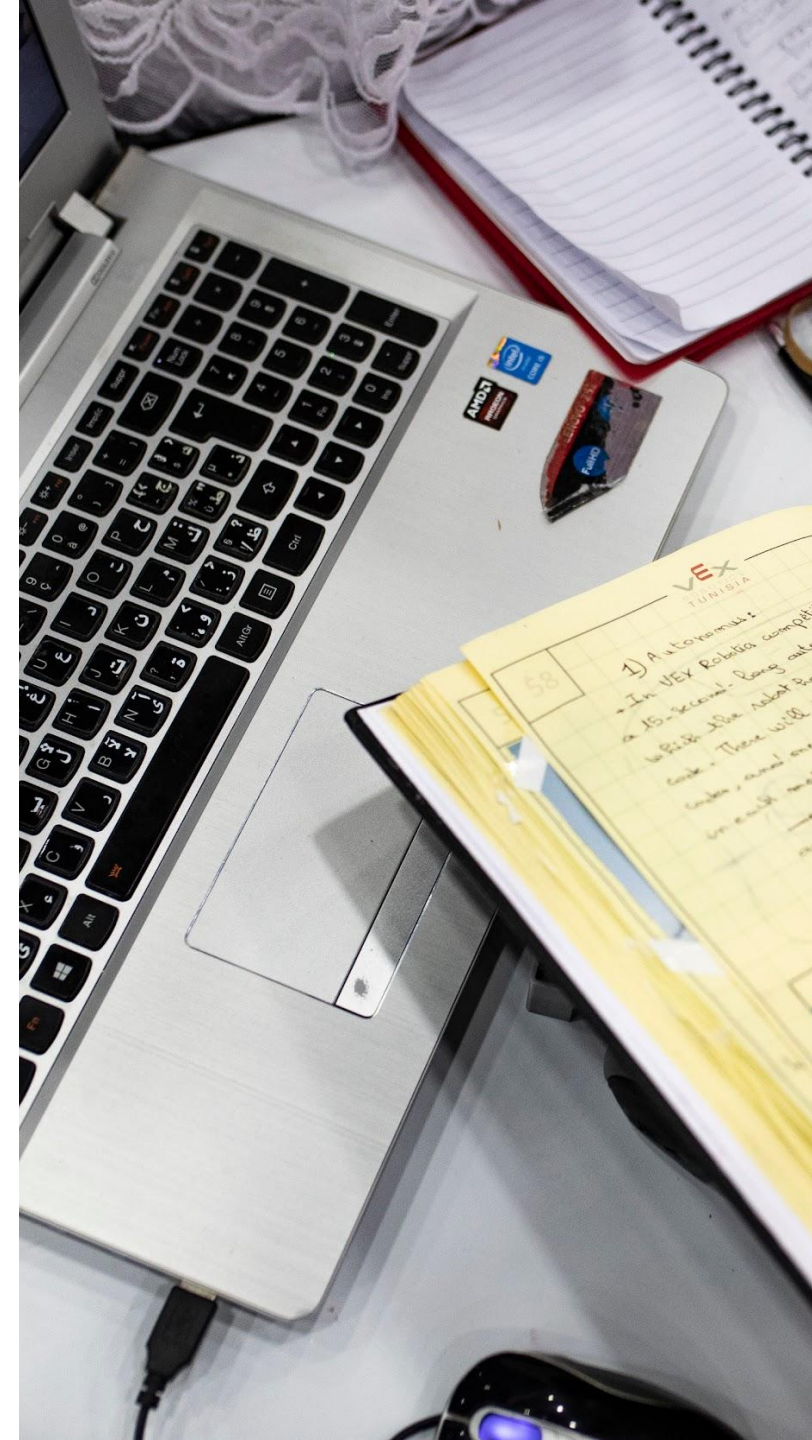
Excellence Award Criteria

- Threshold for overall Skills, Autonomous Coding Skills, and Qualification Match rankings increased from 30% to 40%.
 - This opens up more potential candidates for the Excellence Award while still factoring on-field performance into the award.
- More options for judges to exercise their human judgement when selecting Excellence Award finalists.
- It was found last year that in certain conditions, finding appropriate Excellence Award candidates was difficult - the increase in percentages, particularly for Autonomous Coding Skills, should open up more candidates for eligibility.

Judging Feedback

- Judging@recf.org
 - Long form, philosophical discussion, or non-specific questions / concerns
 - Concerns with specific circumstances
- [Judging Q&A](#)
 - Specific questions
 - References to Guide to Judging verbiage

We appreciate receiving questions, ideas, observations, and feedback!



Thank You

for your attention

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