Sandia National Laboratories

Sandia Engineering Design Award Rubric

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How to use this rubric: Judges will evaluate the 5-page report (not including appendix/references) and assign raw scores to each category. The teams with the highest Report Score will advance to an oral presentation round. After the oral presentation, judges will assign an oral communication score (based on each category) to the project and the Overall Score will be calculated. The project with the highest Overall Score wins!

Category (Weighing Factor)	Exceeds Expectations (3)	Meets Expectations (2)	Needs Improvement (1)	Does Not Meet Expectations (0)
Demonstrate Competency with the Engineering Design Process (35%)	Clearly defines the problem statement, incorporating all relevant contextual factors. Identifies multiple feasible approaches to solving the problem. Selects the optimal solution based on well-defined criteria and justifies reasoning. Evaluates the solution rigorously through modeling, prototyping, and/or testing. Verifies that the final design meets all specified requirements. Identifies potential areas for improvement and suggests next steps.	Addresses all elements but lacks clarity in articulation. Missing one major element but thoroughly discusses other aspects.	Missing multiple key elements and lacks depth in analysis.	Fails to demonstrate understanding of the engineering design process, with multiple missing or unclear elements.

Illustrate Connection to or Impact on a Sandia Mission Area and NAE Grand Challenge with a broader perspective (20%)	Clearly articulates the project's relevance to an engineering challenge or real-world application. Demonstrates design considerations made to align with industry or research standards. Provides evidence of the potential impact of the project as a viable solution. Frames the problem from broader worldviews and considers diverse perspectives in the solution. Clearly articulates connection to Sandia Mission area.	Shows a connection and/or articulates multiple perspectives to an engineering challenge and Sandia Mission but lacks depth in its significance.	Mentions an engineering challenge and/or Sandia Mission but does not fully explore its relevance and/or responds primarily from a singular perspective.	No mention or consideration of a relevant engineering challenge or Sandia Mission. Demonstrates minimal awareness of other perspectives.
Demonstrate Creativity and Innovation (25%)	Proposes a novel and effective solution with clear differentiation from existing solutions. Provides sufficient detail to compare the innovation to known solutions, using metrics such as quality, speed, cost, or complexity.	Presents an incremental improvement with clear comparative analysis and metrics.	Shows different methods to solve the problem but lacks substantial innovation.	Solutions lack creativity, innovation, or clear differentiation from existing solutions.
Written Communication (20%)	Writing style is clear, concise, and logical. Includes meaningful figures to support key points. Properly cites all sources when necessary. Report is well-organized, flows logically, and is free of grammatical errors.	Writing is clear and logical, with meaningful figures and minimal grammatical errors.	Readable but contains multiple grammatical errors and minor organizational issues.	Writing is unclear, contains many grammatical errors, lacks citations, and is poorly structured.

Scoring:

	Raw Score	Weighing Factor	Total
Demonstrate Competency with the Engineering Design Process		35%	
Illustrate Connection to or Impact on a Sandia Mission Area and NAE Grand Challenge		20%	
Demonstrate Creativity and Innovation		25%	
Written Communication		20%	
Overall Total			

Sandia Engineering Design Award – Oral Rubric

Category (Weighing Factor)	Exceeds Expectations (3)	Meets Expectations (2)	Needs Improvement (1)	Does Not Meet Expectations (0)
Collaboration & Teamwork (30%)	All team members actively contribute to the presentation and Q&A. Seamless transitions between speakers.	Most team members contribute effectively. Transitions are mostly smooth.	Uneven participation; some members are less engaged. Transitions are awkward.	One or more team members do not participate in the presentation or Q&A.
Response to Questions (20%)	Answers are clear, concise, and demonstrate deep understanding of the project and engineering concepts.	Answers are generally clear and relevant, demonstrating good understanding.	Some answers lack depth or clarity; minor misunderstandings present.	Answers are incomplete, unclear, or demonstrate a lack of understanding.
Technical Content & Design Justification (15%)	Clearly presents engineering concepts, design choices, and rationale. Strong connection to real-world applications.	Presents engineering concepts and design choices with adequate reasoning.	Some aspects of the design and rationale are unclear or underdeveloped.	Design choices are poorly justified or not explained. Content lacks depth.
Clarity & Organization (15%)	Presentation is well-structured, with logical flow and smooth transitions. Ideas are communicated effectively.	Presentation follows a logical structure but may have minor issues with clarity or transitions.	Organization is inconsistent; some parts are difficult to follow.	Presentation is disorganized and difficult to understand.
Visual Aids & Supporting Materials (10%)	Slides/visuals are clear, professional, and effectively enhance the presentation.	Slides/visuals support the presentation but may lack clarity or consistency.	Slides/visuals are cluttered, hard to read, or lack relevance.	Poor or missing visual aids; they do not support the presentation.

Delivery (Eye Contact, Voice, and Body Language) (10%)	Excellent eye contact, clear voice, steady pace, confident posture, and professional demeanor.	Generally good delivery, but may have minor issues with voice projection, eye contact, or pacing.	Noticeable issues with delivery that impact audience engagement.	Poor delivery, making it difficult to follow or engage with the presentation.

Scoring:

	Raw Score	Weighing Factor	Total
Collaboration & Teamwork		30%	
Response to Questions		20%	
Technical Content & Design Justification		15%	
Clarity & Organization		15%	
Visual Aids & Supporting Materials		10%	
Delivery (Eye Contact, Voice, and Body Language)		10%	
Overall Total			

Overall Score

	Raw Score	Weighing Factor	Total
Written scoring		50%	
Oral scoring		50%	
Overall Total			