

NHSEE Judging Criteria for Engineering Projects

Project Title & Entry #:	
No Evidence: Does not meet the criteria.	No Evidence = 0
Emerging: Understands basic concepts but cannot elaborate.	Emerging = 1
Proficient: Fully meets requirements of the criterium.	Proficient = 2
Advanced: Exceeds expectations, and can provide high-level detail for that criterium.	Advanced = 3
Instructions: For each numbered criterium, enter a score of 0, 1, 2 or 3 based on definitions above.	
Criteria	Score
I. Research Problem 9 Points	
1. Describes a practical need or problem to be solved.	
2. Defines criteria for proposed solution.	
3. Explains project constraints (material/resources, space, cost, time, manufacturability)	
II. Design & Methodology 15 Points	
4. Demonstrated knowledge of engineering design process.	
5. Clearly identified and explained key engineering concepts relating to the problem.	
6. Performed engineering evaluation for the design (e.g. calculations, sketches, material selection).	
7. Developed a theoretical solution to the problem.	
8. Designed a process to test the solution.	
III. Execution: Construction and Testing 21 Points	
9. Built a prototype per the student's design.	
10. Prototype has been tested in multiple conditions/trials (Scoring: 0 = No Tests; 1 = 1-2 Tests; 2 = 3 Tests; 3 = 4 or more Tests).	
11. Well-documented and complete engineering notebook present that contains dates, times, observations, materials, methods, procedures, data, references and thoughts.	
12. Modified and improved prototype based on test results.	
13. Applied engineering concepts to design modifications	
14. Prototype demonstrates success in solving the problem.	
15. Conclusions reached relate back to problem statement.	
IV. Creativity 12 Points	
16. Original topic or an improvement for an existing design or process.	
17. Design and approach to the project is unique.	
18. Solution selected to answer the problem statement is innovative.	
19. Creative suggestions for changes to the prototype/solution, and/or possibilities for further study.	
Subtotal Page 1:	
Comments/Notes:	

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V. Presentation	39 Points	
Poster	12 Points	
20. Neat, well-organized, visually appealing, and is readable at ~2 feet distance.		
21. Flows logically from problem to design to prototype to testing to conclusion.		
22. Includes key components of the engineering design process.		
23. Pictures, diagrams, charts, and graphs intuitively and effectively convey information about the project.		
Interview	27 Points	
24. Student interview logically followed the engineering design process while presenting.		
25. Student engaged with judges, using the poster as a visual aid.		
26. Student was enthusiastic about their project.		
27. Provided clear, concise, thoughtful responses to questions.		
28. Understood the engineering concepts relevant to the project.		
29. Understood the interpretation and limitations of results and conclusions.		
30. The degree of independence of which the student conducted the project.		
31. Recognition of potential impact to science, society, and/or engineering design.		
32. Quality of ideas for future research.		
Abstract	4 Points	
33. Project abstract contains all required parts (see below). (Scoring: 4 Points if meets criteria, 0 if not).		
	Subtotal Page 2:	
	Subtotal Page 1:	
	Total:	
Comments/Notes:		
Total Score: ____/100		

Parts of an Engineering Project Abstract

Starts with an **introductory statement** about why the student is doing the project.
 What problem is the student trying to solve, or what need are they trying to address? Why their readers should care.
 Then, the student states their **design goal** and describes their **initial design**.
 Next, the student summarizes the key points in their **iterative process of designing, testing, rebuild, and retesting**.
 Then the student gives the highlights of their **data analysis from tests of prototypes**, followed by their **final design**.
 The last part of the abstract should discuss the applications and implications of their project.