



Engineering Rubric

CATEGORY	4-3	2-1	0
Understanding	Demonstrates complete understanding of the problem including the elements contributing to the solution process.	Demonstrates a limited understanding of the problem, ignores some elements of the solution.	Does not understand the problem or the solution.
Plan	Identifies and effectively follows the input, process, output, and feedback structure. Investigates the work of others, but develops a detailed original plan. Selects and applies the most feasible plan amongst alternatives. Provides justifications to decisions such as cost, availability, etc. Shows proof of division of labor, and responsibilities of group. Members are clearly defined, and how the team will function is described.	Misses some elements of the input, process, output, and feedback structure. Ignores the work of others or adapts a non-generic plan with minimal details. Does not consider the alternative solutions, but applies a feasible plan. Some elements are mostly guess work rather than the result of extensive research and calculations.	Does not consider elements of input, process, output, and feedback structure. Does not consider the work of others. Does not have a plan.
Design	Uses a variety of tools, equipment, machines, materials, and technology. Considers quality, reliability, safety, and maintenance issues of the design. Uses correct mathematical and/or scientific principles in their designs; all calculations are precise and appropriate and technology is used. Applies the appropriate codes, laws, standards, or regulations, such as Occupational Safety and Health Administration (OSHA), National Electrical Code (NEC), American Society for Testing Materials (ASTM), standard symbols, and line weights.	Uses a limited number of tools, equipment, machines, materials, or technology. Fails to consider one or more of the quality, reliability, safety, and maintenance issues of the design. Uses mathematical and/or scientific principles with some errors including some calculation mistakes.	Does not use tools, equipment, machines, materials, or technology. Does not consider quality, reliability, safety, or maintenance issues of the design. Does not use mathematical or scientific principles.
Evaluation	Uses an assessment strategy to determine the risks and benefits of the activities and outputs. Describes how the design may affect individuals, societies, cultures, economies, and environments. Uses an engineering approach to problem solving to improve the product. Applies critical-thinking strategies to the analysis and evaluation of the solutions.	Describes the risks or the benefits of the activities and outputs without a proper strategy. Uses a non-systematic approach to problem solving to improve the product.	Does not know the risks or the benefits of the activities. Does not have a strategy. Does not problem solve to improve the product.



Presentation	Uses written, verbal, and visual communication techniques consistent with industry standards; prepares a marketing plan for a(n) idea, product, or service. Includes complete, correct, and neat sketches to describe system and/or machine elements or all other presentation materials.	Includes sketches that are not clear. Presentation of the plan or the design has some missing elements, and/or is not clear.	Does not have a presentation.
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