Electrical Circuits

Sample Rubric for Engineering Design Challenge

	Expert	Proficient	Developing	Beginning
Identify criteria and constraints	All design criteria and constraints are fully developed to evaluate product ideas. 4	Some design criteria and constraints are developed to evaluate product ideas. 3	Few criteria or constraints are developed to evaluate product ideas. 2	Very limited criteria or constraints are developed to evaluate product ideas. 1
Develop design solution	Design development ideas are clear and detailed. 4	Design development ideas are present. 3	Design development ideas are undeveloped. 2	Limited evidence of design ideas. 1
Prototype design	The prototype design choice is shown clearly and with great detail. It incorporates previous ideas and design criteria/constraints. 4	The prototype design choice is graphically shown. Some previous ideas and design criteria/constraints are incorporated. 3	The prototype design choice lacks detail. It is unclear if previous ideas and design criteria/constraints are incorporated. 2	The prototype design is incomplete. 1
Work plan	A detailed, realistic work plan to build a successful prototype. It includes all needed materials and steps, including team member roles. 4	A realistic work plan to build a successful prototype. Some additional detail needed on materials, steps, and team member roles. 3	A basic work plan to build a successful prototype. Little evidence of needed materials and team member roles. 2	Limited evidence of a useful work plan. 1
Building the prototype	Prototype is accurately built according to work plans and all key features of the design are ready for testing. 4	Prototype is built according to work plans and some features of the design can be tested. 3	Prototype has been built by approximating the original design. Prototype is not fully testable. 2	Prototype was built showing no regard to work plans, quality and performance testing. 1

Prototype testing	Tests developed were appropriate and helpful in evaluating the characteristics of the prototype. 4	Tests developed were somewhat helpful in evaluating the characteristics of the prototype. 3	Tests developed were limited in their usefulness in evaluating the characteristics of the prototype. 2	Prototype not tested. 1
Test results	Test results were reported accurately and a complete description is written of identified improvements based on testing. 4	Test results were reported and there is some evidence of improvements planned for the design solution. 3	Test results were reported with limited accuracy. Description for improvement includes few features to be modified. 2	Very limited test results were reported. Description includes very little evidence that any improvements would be made to the original prototype. 1
Final design	Improvements to the design are complete and supported by test results. Design meets criteria and constraints. 4	Improvements to the design are made based on test results. Final design shows criteria and constraints were considered. 3	Some improvements based on test results were made from prototype stage. 2	No improvement made from the prototype stage. 1

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