Assessing student projects

Topic (Weight)	Unacceptable (0)	Marginal (1)	Acceptable (2)	Exceptional (3)	Pts
Design Problem and Boundaries (1)	Little or no grasp of problem. Incapable of producing a successful solution.	Some understanding of problem. Major deficiencies that will impact the quality of solution.	Overall sound understanding of the problem and constraints. Does not significantly impair solution.	Clear and complete understanding of design goal and constraints.	
Alternative Designs (2)	Only one design presented or clearly infeasible alternative given.	Serious deficiencies in exploring and identifying alternative designs.	Alternative approaches identified to some degree.	Final design achieved after review of reasonable alternatives.	
Use of Computer–Aided Tools (2)	Serious deficiencies in understanding the correct selection and/or use of tools.	Minimal application and use of appropriate tools.	Computer–aided tools used with moderate effectiveness to develop designs.	Computer–aided tools are used effectively to develop and analyze designs.	
Application of Engineering Principles (2)	No or erroneous application of engineering principles yielding unreasonable solution.	Serious deficiencies in proper selection and use of engineering principles.	Effective application of engineering principles resulting in reasonable solution.	Critical selection and application of engineering principles ensuring reasonable results.	
Final Design (3)	• Not capable of achieving desired objectives. • No implementation of resource conservation and recycle strategies.	• Barely capable of achieving desired objectives. • Minimal utilization of resource conservation and recycle potentials.	• Design meets desired objectives. • Moderately effective utilization of resource conservation and recycle potentials.	• Design meets or exceeds desired objectives. • Effective implementation of resource conservation and recycle strategies.	
Process Economics (1)	No or totally erroneous cost estimates presented.	Reasonable cost estimates presented, but no profitability analysis included.	Reasonable profitability analysis presented, but no interpretation of the results.	Effective use of profitability analysis leading to improvement recommendations.	
Interpretation of Results (2)	No or erroneous conclusions based on achieved results.	Serious deficiencies in support for stated conclusions.	Sound conclusions reached based on achieved results.	Insightful, supported conclusions and recommendations.	
OVERALL PERFORMANCE	**Unacceptable (0–9)**	**Marginal (10–19)**	**Acceptable (20–29)**	**Exceptional (30–39)**	

*Rubric shared by Connie M. Schroeder, University of Wisconsin-Milwaukee on the POD listserv, April 14, 2008.