Engineering Scoring Rubric for Senior Design Oral Presentations and Posters, Version 5.2

Outcome	N/A	Score	4 Exemplary	3 Proficient	2 Apprentice	1 Deficient
3.c.i. Identified project objectives based on general project/client requirements			All important project objectives are identified.	Important objectives are identified but one or two minor ones are missing.	Most objectives are identified but at least one or two important ones are missing	Most or all important objectives are not identified.
3.c.ii. Gathered and used relevant customer information			All relevant information is obtained and used to support design recommendations.	Sufficient information is obtained and used to support design recommendations.	Some information is obtained but more is needed to support design recommendations.	No significant background information is gathered.
3.c.iii. Applied concepts learned **Industrial Engineering Example**			**Did use** ☐ **Prob & Stats** ○ Prob distributions ○ Estimation ○ Simple hypothesis test ○ ANOVA/DOE ○ Regression ○ SQC ☐ **OR** ○ Modeling ○ Linear programming ○ Markov chains ○ Queuing ○ Decision analysis ○ Simulation ☐ **EMngt** ○ Project Management ○ Organizations/teams ○ Motivation and ○ Leadership ○ Labor relations ○ Time value of money ○ Cash flow analysis ○ Cost concepts ○ Accounting ○ Altern analysis. ○ Quality philosophies ○ Kaizen ○ Globalization ☐**Info Systems** ○ Databases ○ Programming ☐ **Methods/Productivity & Human Factors** ○ Process flow analysis ○ Charting ○ Work meas/MOST ○ Productivity measure ○ JIT ○ Lean ○ Task Analysis ○ Cognitive HFE ○ Erogonmics ○ Safety/Work environmt ☐**Manfg & Facilities** ○ Engineering drawings ○ Surface & solid models ○ CAD software ○ Group technology ○ Automation ○ Robots ○ ADC ○ Machines ☐ **Production Ops** ○ Process planning ○ Pull manufacturing ○ Leveling and balancing ○ Material handing ○ REL charts/Flow ○ Forecasting ○ Invent Control Model ○ MRP		**Could/should have used** ☐ **Prob & Stats** ○ Prob distributions ○ Estimation ○ Simple hypothesis test ○ ANOVA/DOE ○ Regression ○ SQC ☐ **OR** ○ Modeling ○ Linear programming ○ Markov chains ○ Queuing ○ Decision analysis ○ Simulation ☐ **EMngt** ○ Project Management ○ Organizations/teams ○ Motivation and ○ Leadership ○ Labor relations ○ Time value of money ○ Cash flow analysis ○ Cost concepts ○ Accounting ○ Altern analysis. ○ Quality philosophies ○ Kaizen ○ Globalization ☐**Info Systems** ○ Databases ○ Programming ☐ **Methods/Productivity & Human Factors** ○ Process flow analysis ○ Charting ○ Work meas/MOST ○ Productivity measure ○ JIT ○ Lean ○ Task Analysis ○ Cognitive HFE ○ Erogonmics ○ Safety/Work environmt ☐**Manfg & Facilities** ○ Engineering drawings ○ Surface & solid models ○ CAD software ○ Group technology ○ Automation ○ Robots ○ ADC ○ Machines ☐ **Production Ops** ○ Process planning ○ Pull manufacturing ○ Leveling and balancing ○ Material handing ○ REL charts/Flow ○ Forecasting ○ Invent Control Model ○ MRP	
3.c.iv. Considered relevant apsects			**4 Exemplary**	**3 Proficient**	**2 Apprentice**	**1 Deficient**
Economic			Have economic implications of proposed solution or process changes been considered?			
Manufacturability			What is the impact of the solution on manufacturing? If so, what is entailed in doing that? This may also involved production system design: layout, inventory, scheduling, logistics, etc.			
Ethical/health and safety			Are there ethical considerations built into the proposed solution? Does the proposed solution have safety benefits or raise safety concerns?			
Social/political			Are there social and/or political impacts of the proposed solution; and have they been addressed? (e.g. vehicle routing for meals on wheels, etc.)			
Environmental/sustainability			Does the proposed solution have any positive or negative environmental impacts? Does the proposed solution long term use and maintainability (i.e. reuse, reverse logistics)?			
3.b.i. Conducted necessary experimentation			Experiment well-designed to obtain needed information; conducted and documented in a professional manner.	Well designed experiment with minor exceptions; conducted and documented professionally	Design adequate, but not outstanding; lacked some control; information reliable, but not definitive.	Poor design; information obtained of little value.
3.b.ii. Conducted necessary data analysis			Appropriate statistical/analytical analysis performed; proper assumptions made; results correctly interpreted.	Appropriate analysis and interpretation with a few minor exceptions.	Analysis and/or interpretation contain a few serious flaws.	Analysis and resultant interpretation seriously flawed or non-existent.
3.c.v. Chose the best solution based on technical and economic criteria and considering relevant constraints			Best solution is recommended based on stated criteria and constraints.	Reasonable solution is recommended; other alternatives should have been developed and analyzed.	Satisfactory solution is recommended; better solutions were available and should have been considered.	Only one solution considered; better solutions were available; most constraints ignored.
3.g.i. Written communications (based on executive summary and poster)			Written report error-free, logically presents recommendations and analysis, well organized, easy to read, and contains high quality graphics.	Written report contains a few, minor grammatical and/or rhetorical errors; logically presents recommendations and analysis, well organized, easy to read and contains high quality graphics.	Written report generally well written but contains some grammatical, rhetorical and/or organizational errors; recommendations and analysis are mentioned but not fully discussed	Written report does not present recommendations or analysis clearly, is poorly organized, and/or contains major grammatical and/or rhetorical errors.
3.g.ii. Oral presentation			Exceptional presentation; logically organized; group members well prepared and professional; high quality graphics	Very good presentation; well organized; all aspects were meaningful and added to the presentation; high quality graphics	Adequate but not outstanding presentation; lacked some professionalism in quality and organization.	Unacceptable, disorganized presentation; not all members participated; professionalism was lacking.