PSU ECE Capstone Project
Written Report Evaluation

Project _____

Sponsor _____

Evaluator _____

Rating Scheme: 1 - unacceptable; 2 – below expectations; 3 – meets expectations, 4 – exceeds expectations.

Assignment statement: At the end of a Capstone Design project students are expected to deliver two items: a) oral presentation explaining their work and results, and b) written report describing their work in more detail. This form helps instructors and Capstone team leaders to evaluate students' work but can also be used by students to guide their preparation and writing of the report. A separate file explains how oral presentations are evaluated.

General comments:

- Overall organization: the report should have the customary outline with: abstract, introduction and motivation (a brief historical note may be included if appropriate), description of various parts of the project including the project management, conclusions etc. as given in the table below. There should be a references section at the end. Note that technical content part will depend on the specifics of the project and students should consult with their faculty advisor to find out if all items should be covered and/or if there are additional components that make sense for their project.
- Report must have specific and detailed technical and quantitative information that is relevant to the project.
- The report must include some quantitative data and present it in an organized fashion, for example by using tables and graphs.
- Proper prior work must be cited and a list of references given at the end.
- Spell-checking can be done easily so there should be no tolerance for such errors. However, be aware of other mistakes that spell checker cannot pick up.
- The intended audience for the report has a level of expertise at students' (or somewhat higher) technical level. For example, the report should be written with fellow students and industrial capstone team leaders as intended audience.
- However, note that Executive Summary is meant to be readable by someone in managerial position who may not have the same level of technical expertise as engineers (i.e. students) writing the report.
- Each rubric has several metrics associated with it which explain how this rubric is supposed to be measured. Evaluators can use checkmarks next to metrics that they think is appropriate for the given report, or they can make additional notes in the space provided.
- Evaluators should enter a final score in the last column for each rubric – the score should reflect the performance indicated in the evaluation of the rubrics (i.e. if all the metrics are evaluated to be in "unacceptable" column then the score should be "1" and cannot be "4").

Rubrics: this is what is used to judge the quality of the report

Overall Organization & mechanics	1	2	3	4	score
Organization	☐ Inappropriate content of several sections of report ☐ "Story" told is incomplete	☐ Some content placed incorrectly in report ☐ a few aspects of story missing	☐ content appropriate to all sections of report ☐ story told is complete	☐ excellent organization enhances readability and/or understandability of report ☐ added material enhances quality of story told	
Aesthetics / formatting / use of software to prepare report	☐ style unclear ☐ poor appearance: ☐ tables and figures cannot be read or understood, ☐ fonts difficult to read; ☐ so many text format errors as to make report ineffective ☐ poor format for most graphs and figures	☐ style needs improvement ☐ some portions are sloppy and difficult to read; ☐ a few text formatting errors ☐ some graphs and figures have formatting errors	☐ style is acceptable ☐ text, tables, figures readable and understandable; ☐ good text formatting applied everywhere ☐ all graphs and figures formatted well	☐ style enhances readability ☐ text, tables, figures so clear and understandable as to enhance report impact; ☐ unique text format aspects that enhance report impact ☐ superior graph and figure clarity and formatting; good enough for publication	
Grammar, spelling and punctuation	☐ So many errors that they distract from the content	☐ a few significant errors that should have been caught	☐ minor, hardly noticeable errors	☐ no grammar or punctuation errors	
References	☐ No or very few citations and references provided ☐ Inconsistent formatting	☐ Incomplete reference list, not all references cited (and vice versa), ☐ Inconsistent formatting	☐ Comprehensive list, all cited, in correct format		

Technical Content	1	2	3	4	score
Executive Summary presented	☐ No abstract or summary given ☐ not written for appropriate audience	☐ Abstract given but no significant results included; ☐ some material not appropriate for intended audience	☐ Abstract clearly written and key results stated; ☐ easily understood by intended audience	☐ so clear and complete as to enhance impact of report	
Introduction & motivation	☐ Purpose of the work not stated/explained ☐ No motivation given ☐ no discussion of constrains and assumptions	☐ Purpose explained poorly; ☐ Motivation explained poorly. ☐ No discussion of constraints and assumptions.	☐ Purpose clearly stated and motivation provided. ☐ Constraints and assumptions clearly listed.	☐ so clear and complete as to enhance impact of report	
Problem identification & working criteria	☐ Completely misidentified the problem ☐ no attempt at defining a "solution space" (alternative solutions) ☐ no requirements identified	☐ Problem identified but very narrowly ☐ Solution space small and unrealistic ☐ Some requirements identified and documented	☐ Problem identified and expanded to a more general case ☐ Realistic solution space considered ☐ Most requirements identified and documented	☐ Recognition of underlying root problem ☐ Realistic solution space considered ☐ All requirements identified, validated and documented	
Appropriate analytical methods, tools & theory	☐ No discussion of methods and approximations used ☐ inappropriate methods used ☐ Many tools used are inappropriate ☐ No tools mentioned or described ☐ No theoretical explanation provided	☐ Methods and approximations mentioned in passing, without sufficient detail ☐ no alternative methods investigated or mentioned ☐ Most tools used are appropriate and are listed ☐ Theoretical explanations poorly written or wrong	☐ Methods and approximations described in sufficient detail ☐ Some alternative methods discussed ☐ Using appropriate tools and describing them where needed ☐ Relevant theoretical topics explained well	☐ Very clear, concise and accurate explanation of methods, tools and theory	
Conclusions	☐ Confusing or not given at all ☐ include more than two ideas not discussed in report ☐ rambles on; no focus ☐ no recommendations ☐ no extensions to other applications or future work	☐ unclear ☐ Includes ideas not already discussed, ☐ missing some key parts; ☐ not concise ☐ incomplete recommendations ☐ too few or unrealistic extensions to other applications or future work	☐ Clear, ☐ follows report discussion, ☐ all important parts covered ☐ have meaningful recommendations ☐ several realistic extensions to other applications or future work	☐ so clear and complete as to enhance impact of report	

Project management	☐ There is no discernable plan ☐ Roles not divided ☐ No schedule ☐ Team members' tasks not identified and divided appropriately	☐ Plan developed but poorly described ☐ Some roles overlap or are not clearly stated ☐ Project schedule missing some parts ☐ team members' tasks identified but not balanced and not taking individual strength into account	☐ Plan developed and mostly followed ☐ Roles clearly stated and distinct ☐ Schedule well laid out and realistic ☐ Team members' tasks identified and distributed in a balanced way and take into account members' strengths	☐ Everything implemented as planned ☐ Roles clearly stated and distinct ☐ superior schedule ☐ superior tasks distribution	
Design of experiments or testing procedure	☐ No discernable plan, Ad-hoc ☐ Testing for wrong things ☐ Unnecessarily complex or so bare-bones to be useless ☐ Implementation completely different from plan	☐ Plan description poor ☐ Testing for correct parameters but missing one or two ☐ Some part of it too complex or too simple ☐ Implementation significantly different from plan	☐ Plan description good ☐ Good testing procedures and good choice of parameters ☐ Complexity just right ☐ Implementation and plan line up	☐ Expands experiments and testing into non-obvious directions and does a great job of describing them ☐ Implementation completely in line with plan	
Ethical, professional or social issues	☐ Did not notice or did not describe an obvious ethical, professional or social issue/problem	☐ Cursory mention of potential ethical, professional or social problem ☐ No attempt at resolution	☐ Potential problem described well ☐ Proposed good solution	☐ Potential problem described and solved exceptionally well.	
Discussion of project's weaknesses and strengths	☐ No attempt at analysis ☐ No lessons-learned ☐ No recommendations	☐ Superficial analysis ☐ Lessons-learned do not correspond to other parts of report ☐ Recommendations not realistic	☐ Good analysis ☐ Lessons-learned supported by report ☐ Useful and realistic recommendations	☐ In-depth analysis ☐ Lessons-learned are clear, supported by report ☐ Useful, realistic and non-obvious recommendations	