Conceptual Design Report Assessment Guidelines v.2022.1

NOTE: This rubric has a dual purpose: (1) to give a guideline for EE493-EE494 students about the criteria and overall expectations from the Conceptual Design Reports and (2) to establish a common guideline for us, the design studio coordinators, in evaluating the reports. Note that the rubric, being only a guideline at this point for all of us, should not be perceived as a strict set of requirements for the content of a successful report. However, we hope that the detailed comments below include a large number of clues to serve the preparation of such a report. An attempt was made to reflect the expectations of all design studio coordinators in the rubric. However, each corresponding coordinator will still be evaluating freely based on his/her best judgment.

	Excellent (10-9)	Good (8-7)	Marginally Satisfactory (6-5)	Unsatisfactory (4-0)
Executive Summary	The executive summary is professional and creates curiosity in the reader to go further in the report.	The executive summary is just a correct compounding of the report content.	The executive summary resembles an introduction to the report. It lacks some of the important information about the project (e.g., motivation, problem statement, solution procedure, deliverables).	The executive summary is missing or exists but lacks a lot of relevant information about the project.
Introduction and Conclusion	The introduction contains a clear statement of the project, the current situation about the work on the project, the scope of the report, organization of the report. A conclusion based on the analysis of the main solution and its alternatives is included. It also includes concluding remarks about the content presented in the report.	The introduction contains a statement of the project, the current situation about the work on the project, the scope of the report, and organization of the report. A summary of the main conceptual solution concludes the report without mentioning any alternatives. The conclusion briefly recaps the key points of the report. It includes the final conclusion about the content presented in the report.	The introduction contains a rough statement of the project. A conclusion is included but is only a general summary.	The introduction provides erroneous or ill-posed statements of the problem without any meaningful depth. No conclusion is provided.

Solution: Overall System	Design objectives and system level requirements are refined and supported by justifications. Overall description of the system with a block diagram and system operation with a functional flow diagram are clearly indicated. The main solution is justified with a weighted objective tree. The diagrams include sub-system interactions and interfaces with relevant protocols or standards. Expected weight, dimensions, and total power consumption of the product are clearly provided. A rough 3D drawing is provided. Relevant standards to be complied with for your marketable product are given and discussed.	Design objectives and system level requirements are refined with inadequate justifications. Overall description of the system with a block diagram and system operation with a functional flow diagram are indicated. The diagrams include major sub-system interactions and interfaces, but lack some interactions and interfaces. Relevant protocols or standards are partially provided. Expected weight, dimension, and total power consumption of the product are provided. Some of the relevant standards are given and discussed.	Design objectives and system level requirements are updated with no justifications. Overall description of the system with a block diagram and system operation with a functional flow diagram are partially indicated. The diagrams partially include sub-system interaction and interfaces. Most of the relevant protocols or standards are missing. Expected weight, dimensions, total power consumption of the product are partially provided. A discussion on the standards exists but lacks a lot of relevant standards.	Design objectives and system level requirements are not updated. Overall description of the system with a block diagram and system operation with a functional flow diagram are missing. Relevant protocols or standards are not provided. Expected weight, dimensions, total power consumption, etc. of the product are not provided. There is no discussion on the standards.
Solution: Sub-system	Individual sub-systems are clearly described. Sub-system level requirements and their relation to system level requirements are clearly identified via a table. Solution for each sub system and relevant algorithms are clearly provided. Plan B for critical sub-systems are clearly indicated.	Individual sub-systems are described. Sub-system level requirements and their relation to system level requirements are identified. Solutions for each sub-system and relevant algorithms are provided. Plan B for critical sub-systems are indicated.	Individual sub-systems are partially described. Sub-system level requirements and their relation to system level requirements are partially identified. Solution for each sub-system and relevant algorithms are partially provided. Plan B for critical sub-systems are partially indicated.	Individual sub-systems are not and relevant algorithms are not mentioned. Sub-system level requirements and their relation to system level requirements are missing. Plan B for critical sub-systems are not indicated.
Solution: Test Results	Test procedures and test results for sub-systems (evaluated to date) are clearly presented. Evaluation of the test results with respect to the sub-system level requirements and standards is discussed. Alternative solutions are evaluated and design decisions are made based on comparative analyses of the test and/or simulation results.	Test plans and test results for sub-systems (evaluated to date) are presented. Evaluation of the test results with respect to the sub-system level requirements is partially discussed. Alternative solutions are evaluated but evaluations are partially based on analyses of the test and/or simulation results.	Test plans and test results for sub-systems (evaluated to date) are partially presented. Evaluation of the test results is partially made but the results are not evaluated with respect to the sub-system level requirements. Alternative solutions are partially evaluated.	Test plans and test results for sub-systems (evaluated to date) are missing. Evaluation of the test results and alternative solutions are missing.

Plans: Management	Detailed breakdown of the planned work and other responsibilities among the team members is clearly presented. The updated time schedule is given professionally as a Gantt chart supported by justification of sequential and parallel tasks. Team member allocation is shown. Steps from concept to completion have been scheduled efficiently and in detail including possible vacation days. An extensive risk analysis, including technical, cost, and timeline risks, is incorporated both for the main solution approach and at least one alternative approach is proposed. A detailed cost analysis is provided to indicate the estimated cost of the project. Deliverables are completely listed. All relevant ethical concerns are discussed.	Detailed breakdown of the planned work and other responsibilities among the team members is presented. The time schedule is given as a Gantt chart supported by justification of sequential and parallel tasks. Steps from concept to completion have been scheduled. There is a risk analysis incorporated to some extent. A cost analysis is provided but missing some items. Deliverables are listed. Ethical concerns are partially discussed.	Breakdown of the planned work and other responsibilities among the team members is partially presented. The time schedule is given as a Gantt chart but lacks justification of sequential and parallel tasks. Risk analysis has been conducted vaguely. A cost analysis is provided but missing many items, and/or provides erroneous costs. Deliverables are partially listed. A discussion on ethical concerns does not exist.	Breakdown of the planned work and other responsibilities among the team members is missing. The time schedule is missing. There is no awareness of or concern about risks. A cost analysis is missing. Deliverables are not listed.
Plans: Engineering	Test plans and measures of success for sub-systems (yet to be built) are clearly explained. Integration plans, test procedures, and measure of success for the complete system are clearly described.	Test plans and measures of success for sub-systems (yet to be built) are explained. Integration plans, test procedures, and measure of success for the complete system are described.	Test plans and measure of success for sub-systems (yet to be built) are partially explained. Integration plans, test procedures, and measures of success for the complete system are partially described.	Test plans and measure of success for sub-systems (yet to be built) are not explained. Integration plans, test procedures, and measure of success for the complete system are not described.
English Use, Spelling, Punctuation, Grammar	Good command of English. Rare errors in spelling, punctuation, and grammar are observed in the report.	There are occasional difficulties with the use of language. Some errors in spelling, punctuation, and grammar are observed in the report.	The use of English is problematic, sometimes making it difficult to understand the material. Frequent errors in spelling, punctuation, and grammar.	The use of English is very hard to understand. No attention is given to the proper use of language. Text is full of errors in spelling, punctuation, and grammar.

Organization and Appearance of the Report	The report is bound and has a professional format with a consistent style. All required sections of the report exist and supporting details are included as appendices as necessary. Clear and accurate, neatly captioned diagrams are included and support the understanding of the text. A proper list of references is present with correct citations in the text and figures.	The report is bound and has an acceptable format with minor issues with the style. Most of the required sections of the report exist and supporting details are included as appendices as necessary. Diagrams are included and support the understanding of the text. A list of references is present with correct citations in the text and figures.	The report has many issues with the style. Some of the required sections of the report are missing. Some diagrams are missing. A list of references is present but no citations are provided or reference numbers are incorrect.	The report has many fundamental mistakes related to the style. Many of the required sections of the report are missing. Many diagrams are missing. A list of references is not provided. The quality (resolutions) of the figures is poor.