

Engineering Design – Technical Design Report Scoring Rubric

2021 SeaPerch Season

www.seaperch.org

Scoring Guidelines:
Poor (0 points) Requirements missing.
Fair (1 points) Minimally meets requirements. Below Average.
Good (2 points) Meets basic requirements. Average.
Excellent (3 points) Meets all requirements. Above Average.
Exceptional (4 points) Meets and exceeds requirements. Superior.

TOTAL SCORE _____

TEAM NUMBER (if used)	_____
TEAM	_____
ORG./SCHOOL	_____
CLASS/DIVISION	_____
JUDGE	_____

1. Abstract	0	1	2	3	4	Points
Limited to ½ page	Exceeds page limit.		Within page limit.			
Report summarization	Does not summarize main points of the report.		Includes a clear overview of the report.			
Unique ROV design and/or design process	No discussion of ROV design or process.	Limited discussion of design and/or process.	Basic overview of design and/or process with minimal focus on unique traits.	Good overview of design and/or process with focus on unique traits.	Robust discussion of unique design and/or process.	

TOTAL ABSTRACT SCORE (8 POINTS MAX): _____

2. Task Overview	0	1	2	3	4	Points
Limited to ½ page	Exceeds page limit.		Within page limit.			
Overview of intended task(s)	No overview of intended task(s).	Limited overview of intended task(s).	Basic overview of intended task(s).	Good overview of intended task(s); may lack task detail.	Robust, detailed discussion of intended task(s).	
Design approach justification	No discussion of task influence on design.	Limited overview of how tasks impacted design.	Basic discussion of how tasks impacted design.	Good discussion of how tasks impacted design.	Robust, detailed discussion of design justification.	

TOTAL TASK OVERVIEW SCORE (10 POINTS MAX): _____

3. Design Approach	0	1	2	3	4	Points
Limited to 2 pages	Exceeds page limit.		Within page limit.			
Approach to the Engineering Design Process (EDP)	No overview of team approach to EDP.	Discussion focuses on reiterating published information.	Basic discussion of team's incorporation of EDP.	Good discussion of team's approach to EDP.	Robust discussion of team's strategy to EDP.	
Design iterations	No discussion of design iterations.	Limited discussion of design iterations.	Basic discussion of design iterations.	Good discussion and analysis of design iterations.	Robust discussion and analysis of design iterations.	
Conceptual drawings and/or graphics	No drawings or graphics.	Limited graphics that lack context within report.	Includes graphic(s) with basic context within report.	Good graphic(s) with context within report.	High-quality graphics with labels that enhance text.	
Final design	No discussion of final design.	Limited discussion of final design.	Basic discussion of final design features.	Good discussion of final design features and decisions.	Robust discussion of final design features and decisions.	
Novelty of ROV design or approach	No discussion of design or approach novelty.	Limited discussion of what makes the ROV design or approach unique.	Basic discussion of design or approach novelty.	Good discussion of design or approach novelty.	Robust discussion and analysis of novelty of ROV design and/or approach.	
Scientific and engineering terms	Includes no engineering terms.	Includes less than 5 engineering terms.	Includes 5+ terms; not fully embedded or does not add to context.	Includes 5+ engineering terms embedded in text that enhance the section.		

TOTAL DESIGN APPROACH SCORE (25 POINTS MAX): _____

4. Results	0	1	2	3	4	Points
Limited to 1 page	Exceeds page limit.		Within page limit.			
In-water and/or simulated testing overview	No discussion of testing.	Limited overview of testing.	Basic overview and discussion of testing.	Good discussion and analysis of testing.	Exceptional discussion and analysis of testing models.	
Impact of testing on subsequent designs	No discussion of testing impact on design.	Limited discussion of testing impact on design.	Basic discussion of how multiple designs were or would be impacted by testing.	Good discussion and analysis of testing impact on multiple design iterations.	Robust discussion and analysis of testing impact on multiple design iterations.	
Test results	No test results included.	Limited test results with no graphs or charts.	Basic discussion of results with graphs and/or charts.	Good analysis of results with graphs and/or charts.	Robust analysis of test results with graphs and/or charts.	

TOTAL EXPERIMENTAL RESULTS SCORE (14 POINTS MAX): _____

5. Reflection & Next Steps	0	1	2	3	4	Points
Limited to 1 page	Exceeds page limit.		Within page limit.			
Reflection on the design process	No reflection on the design process.	Limited reflection on the design process.	Basic reflection on the design process.	Good reflection and basic analysis of the design process.	Thoughtful reflection and analysis of the design process.	
Next Steps	No discussion of next steps.	Limited discussion of next steps.	Basic discussion of next steps.	Good overview of future plans for ROV or team.	Robust overview of future plans for ROV and team.	

TOTAL REFLECTION & NEXT STEPS SCORE (10 POINTS MAX): _____

6. Acknowledgements	0	1	2	3	4	Points
Acknowledgement	Not included in report.		Supporters recognized.			

TOTAL ACKNOWLEDGEMENTS SCORE (2 POINTS MAX): _____

7. References	0	1	2	3	4	Points
APA format	Does not follow APA format.		Follows APA format.			
References to support report	No references or citations.	1-3 references but not cited in the report.	1-3 references that are cited in the report text.	4+ references that are cited in the report text.		

TOTAL REFERENCES SCORE (5 POINTS MAX): _____

8. Budget	0	1	2	3	4	Points
Includes itemized budget	Section not included in report.		Section included in report.			

TOTAL BUDGET SCORE (2 POINTS MAX): _____

9. Fact Sheet	0	1	2	3	4	Points
Includes fact sheet	Section not included in report.		Submitted using required template.			
Fact sheet content	Required content not included.	Low-resolution or blurry images and missing content.	Low-resolution or blurry images and all content included.	Hi-resolution images and clear content.	Hi-resolution images and content clearly support report.	

TOTAL FACT SHEET SCORE (6 POINTS MAX): _____

10. Writing Skills	0	1	2	3	4	Points
Organization	Organization severely impacts ability to follow the report.	Minimal organization with section headers.	Good organization within each section.			
Readability	Report is inconsistent and difficult to follow.	Report is somewhat inconsistent and difficult to follow.	Report is mostly consistent but lacks some clarity, focus, and/or cohesion.	Report is well written and easy to follow.	Concise and cohesive report. Easy to understand. Supported by text/graphics.	
Spelling and Grammar	Significant spelling or grammatical errors (5+).	Minimal spelling or grammatical errors (1-4).	No spelling or grammatical errors.			

TOTAL WRITING SKILLS SCORE (8 POINTS MAX): _____

11. Paper Format	0	-	-	-	10	Points
Follows all formatting guidelines: - 5 pages max (excluding sections 6-7 and appendices) - Sections appear in proper order Submitted in pdf format	Does not meet formatting guidelines.				Meets formatting guidelines.	

TOTAL PAPER FORMAT SCORE (10 POINTS MAX): _____