

UTORid:

Assessor:

(Initials)

Evaluation:

(0.5 increments)

 / 20.0

Constraint Violations (check those that were violated)

☐ It **should not** exceed (\leq) five (5) pages, including figures but excluding references.

☐ Relevant extracts from any used references **must** be included in an Appendix titled “Source Extracts”.

☐ It **should not** be more than (\leq) 1200 words of text, excluding references.

☐ It **should** be formatted with 11-point font, 1.25 spacing, and one-inch margins on standard letter-sized paper.

☐ It **must** be submitted as a single PDF file through Quercus.

☐ The submission **must** have a file name that describes the topic of the opportunity but **must not** include the final decision.

☐ It **must** include quantitative metrics and should include qualitative (e.g. “rubric style”) metrics

☐ The recommendation report must not be about one of the vetoed items listed in the assignment

No penalty for first constraint violation; -0.5 for second and subsequent violations

Analytic Assessment				
Criteria	Unsatisfactory (many significant issues)	Satisfactory (does the minimum with no significant issues)	Good (does more than expected with few minor issues)	Outstanding (above-and-beyond without issues)
Quality of the Opportunity	<div><input type="checkbox"/></div> <div>Opportunity as presented cannot (or should not) be resolved through a selection-style design activity OR the (sole) solution is so obvious that the reader is left thinking: "why bother?" No apparent connection to personal experience or interests as outlined in the stakeholder section that describes the author.</div>	<div><input type="checkbox"/></div> <div>Opportunity as presented can be resolved through a selection-style design activity, though the opportunity itself is conventional (e.g. anything to do with headphones, sleeping, or note-taking) and/or not clearly connected to your personal experience or interests as explained.</div>	<div><input type="checkbox"/></div> <div>Opportunity as presented can be resolved through a selection-style design activity and shows a supported connection to your personal experience. Document clarifies why that decision is important to your personal experience or interests (probably in a stakeholder section that describes the author) and would benefit from engineering-quality decision making.</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> description of opportunity is rich and provides a clear understanding of your unique personal experience or interests including how that might lead to the opportunity objectives.</div>
Correctness and appropriateness of the requirements that frame the opportunity.	<div><input type="checkbox"/></div> <div>Requirements missing critical components (e.g. objectives) Requirements present but will not allow alternative decisions to be evaluated because metrics are unconnected to objectives, and/or because they are not credible (e.g. constraints made up from random, contrived numbers)</div>	<div><input type="checkbox"/></div> <div>Requirements present and will allow most alternative decisions to be evaluated, though may not be robust enough to evaluate a broad range of alternatives. Requirements founded in some credible basis (standards, guidelines, logic, etc)</div>	<div><input type="checkbox"/></div> <div>Requirements are well supported by evidence, and have clear connections to stakeholders through to metrics/criteria/constraints. Requirements include both personal and engineering considerations. Requirements (especially constraints) are supported by context of the situation (rather than existing design features).</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> metrics from literature are appropriately modified to allow for evaluation of alternatives. Evidence is provided for personal considerations.</div>
Credibility of alternative design decisions	<div><input type="checkbox"/></div> <div>Less than 4 alternatives considered, OR some alternatives clearly do not address the objectives, OR alternatives do not differ from each other in a way meaningful to the opportunity, OR some are not "off the shelf". Alternatives are not clearly described.</div>	<div><input type="checkbox"/></div> <div>All alternatives are credible at first glance and most meet constraints. Alternatives differ from each other in a way meaningful to the opportunity. Obvious alternatives may have been missed. Alternatives are clearly described.</div>	<div><input type="checkbox"/></div> <div>All alternatives meet constraints (supported by evidence). Alternatives demonstrate breadth within the opportunity identified. Alternatives are not just described, but their inclusion supported with a discussion of how they might meet the objectives.</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> breadth of alternatives includes non-obvious but credible solutions. Alternatives differ not just in type, but in approach.</div>
Credibility of the decision-making process	<div><input type="checkbox"/></div> <div>Significant elements of the requirements model were not considered OR tools used are unsuitable for decision making using an engineering framing (e.g. Pros/Cons, ...)</div>	<div><input type="checkbox"/></div> <div>Metrics, criteria, and constraints were applied to assess alternatives. Some justification or requirements may be omitted, but most are credibly discussed.</div>	<div><input type="checkbox"/></div> <div>Decision making discussion clearly and credibly incorporates measurements and criteria while providing appropriate justification/ evidence for key metrics and comparisons. All criteria were considered. Structuring information (such as prioritizing objectives) was used, and credibly justified.</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> methods from research were augmented/modified to suit the specific decision. Supporting evidence is used in a nuanced fashion, sometimes involving multiple steps for evaluation. Prioritization of elements in the requirements model is supported by research and/or unique personal experience or values. Areas of estimation, error, and risk are acknowledged.</div>
The quality and credibility of your engineering arguments	<div><input type="checkbox"/></div> <div>An over-reliance on opinion or "it's obvious" statements. A lack of evidence throughout. Variety of resources used is limited, with over-reliance on sources that are lacking in one or more of currency, relevance, authority, accuracy, or compatible purpose . Recommendation does not follow from the supporting decision process, is not physically-possible or reasonable, OR is based entirely on a “score” without justification</div>	<div><input type="checkbox"/></div> <div>Claims appear credible at first glance, with most supported by evidence. A variety of resources were used (textbooks, handbooks, reviews, direct testing, interviews...). Some evidence may be inappropriate for the claim being made. Recommendation clearly follows from previous analysis and (at first glance) appears credible. Discussion of rationale behind decision (beyond "the tools said so") is provided.</div>	<div><input type="checkbox"/></div> <div>Claims are supported by credible evidence throughout. Interpretive claims are supported by more substantial evidence. Personal considerations are supported with attached evidence. Support for decision comes from structured data and other factors such as prioritization of criteria/objectives. Such factors are supported by either previous discussion or new evidence.</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> resources are used credibly, with qualifiers and triangulation regularly applied. Acknowledgements/analysis of possible {weaknesses, risk, error, omissions} are provided. Possible validation, especially if decision was already made.</div>
The quality of the design of your report, including structure and introduction.	<div><input type="checkbox"/></div> <div>Structure and tone used is not appropriate to genre. Introduction lacks some elements. Arrangement of arguments (or sub-headings) within the report may be illogical or confusing.</div>	<div><input type="checkbox"/></div> <div>Structure and tone is appropriate to genre. Introduction contains all elements. Arguments and headings follow a logical structure. Structural elements such as bullet lists are present, but may be poorly used or over-used.</div>	<div><input type="checkbox"/></div> <div>Introduction is efficient and clear to establish purpose. Headings and sub-headings provide a clear structure for a reader. Structural elements are used appropriately and aid in clarity and understanding.</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> the document guides readers through the report structurally and conceptually. Readers can understand the central claims of the document by skimming the sub-headings or topic sentences.</div>
The coherence and clarity of your English written and visual communication.	<div><input type="checkbox"/></div> <div>No visuals present or are all relegated to the appendix. Visuals lack captions. OR visuals are illegible or irrelevant and thus not useful to enhance the document's message. Language errors significantly detract from the readability and professionalism of the report.</div>	<div><input type="checkbox"/></div> <div>Visuals are present in the document (and captioned), but may not be well used in text. Visuals may be lacking in areas where they would greatly aid in a reader's understanding. Writing is clear, but may be repetitive or show a disruptive preference for flourish over concision.</div>	<div><input type="checkbox"/></div> <div>Visuals referred to and well used in text. Choice of visuals aids understanding and clarity. Writing is clear, concise, and demonstrates professionalism. Coherence is maintained throughout paragraphs and arguments</div>	<div><input type="checkbox"/></div> <div><i>As per Good +</i> visuals include appropriate guidance for the reader. Writing style and structure demonstrates substantial professionalism through appropriate use of qualifiers in arguments, clear and concise expression, and precision in word choices</div>

Additional Holistic Assessment, identifying specific areas of achievement that should be maintained and specific aspects to improve