

Midterm Rubric

Grading Guidelines

The midterm report will provide an opportunity to communicate technical ideas through both written and verbal formats. The terminology used in the report and video should resonate with the terms used in engineering and in your discussion with your mentor(s). Plan for the report to be four-to-eight pages in length (maximum 15 pages) and the video to be five minutes in length (maximum 10 min). Every teammate must take a lead role in at least one significant component (sub-circuit) of the design build.

Treat your audience as a team who wants to pick up your project where you left off. That is, you want to guide them into understanding why your design is the way it is by showing them what works as well as some of the false paths you started down and why they would want to avoid them. Leverage your journal entries so that the report travels through the progression of your own experiences.

Written Report Requirements: ([Link to the Rubric](#))

Due Sunday April 7.

Title, Names, and Date: If the original name no longer fits your actual project, this is your chance to give it a better name!

Proposal Statement: One page version of your proposal, cleaned up but still reflective of your original goals. If your goals have changed significantly, you can expand this section by another ½ to a full page. Also, alterations to those goals should appear in your timeline below.

Timeline: Now, using your journal entries, lay out the true timeline that describes the progression of your project over the past several weeks. In that timeline, be sure to touch upon:

- *Milestones:* From your original proposal what were the milestones you hoped to meet across the semester (don't worry about the timeline of the original plan). Have your milestones changed? What milestones have you met and which do you intend to meet before the semester's end?
- *Verification:* Words and figures (definitely circuit schematics!) that describe how sub-circuits were tested.
- *Operation:* Words, figures, data, and plots that describe proper operation of milestone. Something from the oscilloscope would definitely be expected here. Any video validation can be included in the video portion of the midterm report.
- *Challenges and Successes:* What were the biggest challenges and what were the biggest successes you have met this semester on this project? Include information on what not to do!

Communication: Were you able to communicate technical ideas sometimes in lay terms and sometimes using the proper technical language? Remember, a young team would benefit from both a clear explanation as well as learning the jargon to assist them in researching more deeply.

Conclusions and Future: Conclude your report with a quick summary of where you stand in the process of completing your project and what milestones remain. Do you anticipate more "pivots" in your original proposal?

Table 1: Midterm Report Rubric

Criteria	Rating Scale			weight	Score
	3	2	1 or 0		
Formatting	Report has correct structure, complete sentences, tables, figures, captions, labels as appropriate.	Report has some structure, but some details are lacking.	Structure is very poor. Minimal effort in appearance and form.	× 5=	/15
Communication	The paper communicates the goals, methods, and solutions well. Report makes significant use of learned topics with explicit analysis. Circuit schematics, plots, and tables provide important details to the reader and are properly labeled.	Report provides calculations without significant relevance to the goals of the paper or makes errors in theory or calculations. Visuals are poorly labeled or explained; provide little benefit to the reader.	Only numbers and text are present without evidence that the concepts are understood. Schematics or other visuals are weak or missing entirely.	× 5=	/15
Proposal	The proposal is well summarized in a single page (some overflow allowed). It has been cleaned up as necessary, but still reflects your original plan and goals.	The proposal lacks some clarity and/or conciseness.	Proposal is unclear, brief, meandering, or missing.	× 5=	/15
Milestones	The report clearly outlines the milestones of the project, likely updated since the original proposal. The difficulty of the milestones currently met appears significant for satisfactory completion of the honors project.	The milestones are too few and/or somewhat vague. Perhaps the milestones currently met are short of expectations.	Milestones are weak, unmet, or entirely unsatisfactory.	× 10=	/30
Verification and Operation	One or more circuits (schematics provided) are analyzed (data and oscilloscope measurements) after its construction to validate expectations. Deviations from expectations might lead towards a possible redesign.	Schematics are not clearly explained. Analysis is attempted, but sloppy. Inconsistent data showing how subsystems were tested and the results.	No true analysis of a constructed circuit or clarity in assessment of subsystems.	× 10=	/30

Challenges and Successes	The major challenges encountered are presented to prevent a “future team” from making mistakes or understanding the issue better to reach a viable solution faster.	One or two challenges are mentioned, but the details are unclear as to the reason the challenge exists or the pivot needed to correct it.	Challenges are glossed over making the project seem easier than it really was. A new team would struggle to understand the reality.	× 10	/30
Conclusions and Future Directions	Conclusions are stated and supported by the body of the paper. Future directions consider any shortcomings and list a practical approach to completion of the project in the time allotted.	Conclusions are presented but not well supported by the paper. Future plan or pivot is not clear or has evident faults.	Missing or vague.	× 5=	/15
				Total:	/150

Video Requirements: ([Link to the Rubric](#))

Due at the end of lab on the Week of April 1.

Introduction: Names and “we are in the Honors Project of Spring 2024”

Title of Your Project and Brief Description: If the original name no longer fits, this is your chance to give it a better name!

Milestones: Highlight any milestones you have met and any still planned before the semester’s end.

Verification/Operation: Demonstration using the oscilloscope that verifies *each* sub-circuit functions correctly. Demonstration of proper operation of milestone (perhaps multiple pieces of your project working together).

Table 2: Midterm Video Rubric

Criteria	Rating Scale			Weight	Score
	3	2	1 or 0		
Title and Description	The goals of the project are clearly explained.	The goals are explained, but assume too much is already known about the project.	The description would do little or no good to a new team desiring to pick up where you left off.	× 5	/15
Milestones	Video demonstrates functionality of completed sub-systems, as well as device function that may involve multiple sub-circuits. They also outline the next steps forward.	Video demonstrates functionality of some (not all) of the working sub-systems. Or only demonstrates the combined device functionality. Next steps may be a little vague.	Video does not demonstrate functionality of any of the required sub-systems nor the completed device functionality. Next steps may not be given.	× 5	/15

<p>Verification and Operation</p>	<p>Video uses the oscilloscope to demonstrate individual sub-circuit behavior in a controlled-input environment. Furthermore, measurement devices are used to verify the required functionality of sub-systems when merged.</p>	<p>Video does not use the oscilloscope or multimeter correctly; however, some attempt was made to empirically verify behavior of the subsystems.</p>	<p>Video does not use the oscilloscope or multimeter to verify behavior of the project or its components.</p>	<p>× 5</p>	<p>/15</p>
<p>Teamwork</p>	<p>There is strong evidence of equal contribution and responsibility from the teammates expressed in the video. Each student should be highlighted in a small portion of the video regarding their contribution.</p>	<p>Multiple or all team members show contributions, but the video does not reflect individual contributions from each student.</p>	<p>Collaboration between teammates appears weak and/or individual contributions are not clear.</p>	<p>Up to 5</p>	<p>/5</p>
<p>Total:</p>					<p>/50</p>

Comment: Although “Teamwork” is not being heavily assessed in this particular video, it will be strongly considered at the end of the semester as the team has a Question-and-Answer session with the staff. Each teammate needs to understand multiple aspects of the project. Please spend \time in “peer instruction” so that the entire team is educated on its components as far as is reasonably possible.