

Capstone Report Rubric						
Evaluator		Shane Slack		Date		12-13-24
Project	Laser Game	Team Members	Alex Wheelock			
Criteria	5	4 - 1	0	Weight	Points Awarded	Score
Title Page	Title page is complete, with proper formatting that matches the rest of the report document	Title page is somewhat complete or formatting may not match the rest of the report document, may contain some errors	Title page is incomplete, improper formatting, contains multiple errors. Or section is not included or addressed	1	4.9	4.9
Table of Contents	Table is complete and accurate, formatting matches the rest of the report document, all of the report sections are listed including page numbers	Table is somewhat complete. Some sections are missing and /or some page numbers have errors	Table is incomplete and inaccurate, formatting does not match the rest of the report document. Many sections are missing and/ or page numbers may have errors. Or section is not included or addressed	1	5	5
Table of figures	Table is complete and accurate, formatting matches the rest of the report document, all of the report figures are listed including page numbers	Table is somewhat complete. Some figures are missing and /or some page numbers have errors	Table is incomplete. many figures are missing and /or page numbers have errors. Or section is not included or addressed	1	3.3	3.3
Abstract	Adequately summarizes the project and the report contents. Contains no spelling or grammatical errors.	Briefly summarizes the project and the report contents, but misses some key details. Contains few spelling or grammatical errors.	Fails to summarize the project and the report contents. Contains many spelling or grammatical errors. Or section is not included or addressed	1	5	5
Background (history)	Adequately characterizes the history of the project. Contains no spelling or grammatical errors.	Briefly characterizes the history of the project, but misses some key details. Contains few spelling or grammatical errors.	Fails to characterizes the history of the project. Contains many spelling or grammatical errors. Or section is not included or addressed	2	5	10
Proposed Problem	Adequately characterizes all aspects of the problem proposed for the project. Contains no spelling or grammatical errors.	Characterizes some aspects of the problem proposed for the project, but misses some key details. Contains few spelling or grammatical errors.	Fails to characterizes the aspects of the problem proposed for the project. Contains many spelling or grammatical errors. Or section is not included or addressed	2	5	10
Environmental & Ethical Considerations	Demonstrates a complete understanding of the positive and negative ethical and environmental impact that the project results could have. Contains no spelling or grammatical errors.	Demonstrates a basic understanding of the positive and negative ethical and environmental impact that the project results could have. Contains few spelling or grammatical errors.	Demonstrates a lack of understanding of the positive and negative ethical and environmental impact that the project results could have. Contains many spelling or grammatical errors. Or section is not included or addressed	0		0
Block Diagrams	All block diagrams easy to follow, clear, properly labeled, and legible. Diagrams are original work, not hand drawn. Contains no spelling or grammatical errors.	Some sections of the block diagrams blurry, jumbled, incorrectly oriented, improperly labeled, or illegible. Diagrams are not original work. Contains few spelling or grammatical errors.	Block diagrams contain multiple issues. Most are blurry, jumbled, incorrectly oriented, improperly labeled, or illegible. Diagrams are not original work. Contains many spelling or grammatical errors.	3	5	15
System Overview (refers to and <b>accompanies</b> block diagram)	Adequately summarizes the overall operation of the circuitry used in the project. Contains no spelling or grammatical errors.	briefly summarizes the overall operation of the circuitry used in the project, but misses some key details. Contains few spelling or grammatical errors.	Fails to summarizes the overall operation of the circuitry used in the project. Contains many spelling or grammatical errors. Or section is not included or addressed	3	4	12
						Diagram is clear. Included in ABSTRACT. Should be in SYSTEM OVERVIEW (see criteria next row).
						Does not include, accompany or reference block diagram.

Stage Analysis (refers to specific and accompanies schematic sections)	Adequately describes the operation of individual stages of circuitry used in the project. Refers to specific schematic test points and waveforms. Contains no spelling or grammatical errors.	briefly describes the operation of individual stages of circuitry used in the project. <b>Some references</b> to specific schematic test points and waveforms. Contains few spelling or grammatical errors.	Fails to describe the operation of individual stages of circuitry used in the project. Does not refer to specific schematic test points and waveforms. Contains many spelling or grammatical errors. Or section is not included or addressed	3	4	12	Explanation is good, but not integrated with the schematic sections. Break out schematic sections and show here while you are discussing them. References are made to switches (SW1, SW2, & SW3) They are not indicated on the adjacent breadboard layout, or referred to on a specific schematic section. Transistors are described as being used, no reference designators given, or figure locations to provided.
Schematics	All Schematic diagrams are clear, properly labeled, and legible. Schematic arrangement is logical and aids in stage analysis. All components are grouped by function and labeled. Schematics are original work, not hand drawn. Contains no spelling or grammatical errors.	Some sections of the Schematic diagrams are blurry, jumbled, incorrectly oriented, improperly labeled, or illegible. Schematic arrangement is somewhat logical. Some components are grouped by function and labeled. Contains few spelling or grammatical errors.	Schematic diagrams contain multiple issues. Most are blurry, jumbled, incorrectly oriented, improperly labeled, or illegible. Schematic arrangement is not logical. Some components are grouped by function and labeled. Diagrams are not original work. Contains many spelling or grammatical errors. Or section is not included or addressed	2	5	10	Schematics provided in appendix are clear. change background to white, flip orientation 180, and enlarge.
Component & PCB layout	All layout diagrams are clear, properly labeled, and legible. All used layers and component layers are provided. Component arrangement is logical and aids in stage analysis. All components are grouped by function and labeled. Board layers are original work, not hand drawn. Contains no spelling or grammatical errors.	Some layout diagrams are clear, properly labeled, and legible. Some used layers and component layers are provided. Some component arrangement is logical and aids in stage analysis. Some components are grouped by function and labeled. Contains few spelling or grammatical errors.	Most layout diagrams are unclear, improperly labeled, or illegible. Most used layers and component layers are Missing. Component arrangement follows no logical pattern. Components are not grouped by function or labeled. Contains many spelling or grammatical errors. Or section is not included or addressed	2	5	10	Layout provided for breadboard orientation
Calibration Procedure	Specifies a specific step by step process for calibrating the project. References specific schematic test points with desired voltages and waveforms. Contains no spelling or grammatical errors.	Specifies a basic step by step process for calibrating the project. References some specific schematic test points with desired voltages and waveforms, but misses some key details. Contains few spelling or grammatical errors.	Fails to specify a specific step by step process for calibrating the project. Does not reference specific schematic test points, desired voltages, or waveforms. Contains many spelling or grammatical errors. Or section is not included or addressed	3	0	0	Not addressed. If a section is not used, give a sentence explaining why
Troubleshooting Procedure	Specifies a specific step by step process for troubleshooting the project. References specific schematic test points with desired voltages and waveforms. Contains no spelling or grammatical errors.	Specifies a basic step by step process for troubleshooting the project. References some specific schematic test points with desired voltages and waveforms, but misses some key details. Contains few spelling or grammatical errors.	Fails to specify a specific step by step process for troubleshooting the project. Does not reference specific schematic test points, desired voltages, or waveforms. Contains many spelling or grammatical errors. Or section is not included or addressed	3	5	15	Great except how would a user at tech expo be able to test errors in code?
Software Description	Adequately describes the operation of software and/or firmware associated with the project. Includes simplified flowcharts for each major section of code. Contains no spelling or grammatical errors.	Briefly describes the operation of software and/or firmware associated with the project, but misses some key details. Includes overly-complex or unreadable flowcharts for section of code. Contains few spelling or grammatical errors.	Fails to describes the operation of software and/or firmware associated with the project. Missing or completely unreadable flowcharts. Contains many spelling or grammatical errors. Or section is not included or addressed	3	5	15	Should be integrated into stage analysis

Mechanical Drawings	Mechanical drawings are included for all relevant materials and case structures. Drawings have no errors, are properly labeled, and legible. Drawings are original work, not hand drawn. Contains no spelling or grammatical errors.	Mechanical drawings are included for some relevant materials and case structures. Drawings have few errors , are mostly properly labeled and legible. Contains few spelling or grammatical errors.	Mechanical drawings are missing for most of the relevant materials and case structures. Drawings have many errors , are improperly labeled, or illegible. Contains many spelling or grammatical errors. Or section is not included or addressed	2	0	0	Not addressed. If a section is not used, give a sentence explaining why
Engineering Log	A complete account of the time spent by all project team members during the project period. Logs are included for all team members, with formatting that matches the rest of the report document. Contains no spelling or grammatical errors.	A Brief account of the time spent by all or some project team members during the project period. Logs for some of team members are missing information or are formatted differently than the rest of the report document. Contains few spelling or grammatical errors.	Many log entries are missing or most or all team members, with formatting that matches the rest of the report document. Contains no spelling or grammatical errors. Or section is not included or addressed	1	4	4	Only documented 11 days of actual experimentation for a 5 week period. Where is November 19-22?
Cost Analysis	Complete bill of materials for the project including component sources with part number and accurate pricing information. Pricing based on 100 quantity purchases for components. Includes a Labor line item for all team member's billable hours, at \$50 per hour.	A bill of materials for the project including component sources with part number and accurate pricing information, with some sections missing or incomplete. Contains few errors.	An incomplete or mostly incorrect bill of materials for the project. Instructions were not followed for this step or section is not included or addressed	2	5	10	
Conclusion / Recommendations	A complete summary of recommendations for any continuation of the project, and justifications for these recommendations. Contains no spelling or grammatical errors.	A brief summary of recommendations for any continuation of the project. Justifications for these recommendations are inadequate. Contains few spelling or grammatical errors.	Failure to summarize recommendations for any continuation of the project. Justifications for these recommendations are missing. Contains many spelling or grammatical errors. Or section is not included or addressed	2	5	10	
General Comments:				185	Points	151.2	81.73%