

# ECEN 4856: Final Exam Team Project

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## Introduction

The purpose of the Final Project is for the student to demonstrate the knowledge they gained throughout the course by designing, coding and documenting an advanced topic in embedded systems. Each team must use at least one of the devices previously used in the labs: De2-115, Micrologix 1000 PLC or the TI Launchpad in their design. The design should include additional functionality or advanced use of the devices beyond which was covered in the course.

Some examples include:

- Having two or more of the devices perform a function while communicating to another.
- Utilizing functionality, I/O or control previously unexplored in the course.
- Develop a “lab” that future students can use to learn more about the functionality of one or more of the devices.

To achieve the final goal, each team should develop, program and document the process of their design such that the other students in the course are able to gain the knowledge and understanding of the project.

## Grade Breakdown

- Final Paper (50 Points)
- Oral Presentation (40 Points)
- Team Participation / CATME survey (10 Points)

## Final Paper Details

The final team paper should be a well-developed and thought out paper utilizing proper grammar and formatting. Items that should be included are as follows:

### *Title Page:*

- Title of your project
- Full Names of all Group Members

### *Introduction:*

- Describe the project / goals / objectives (big picture)
- Design Process (in general terms the process leading up to the final design)

### *Results / Discussion:*

- Describe your team’s design include its features and specifications.
- Include properly formatted figures, where necessary. Figures should conform to requirements: (Numbered, Titled, Labeled BELOW, Lead in Sentence Prior)
  - Wiring diagram(s)
  - Photo of your design, output, functions

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- Detail your code; include referenced figures where necessary. Explain how it works.

*Discussion / Conclusions:*

- Reflect on the overall design and detail what was learned
- Discuss the project overall in terms of meeting the design objectives
- Discuss any design changes that you would implement if you were to continue development of the exhibit idea or to do it over again.
- Provide feedback on what could be done in future sections of the course

*Appendix:* (This section should start on a new page)

- Any code written – each separately title (even if some I referenced in the text)
- Any other support documentation or references

### Final Paper Grading Rubric (50 Points) – Due Tuesday, December 9<sup>th</sup> 2014

Name(s): \_\_\_\_\_

Final Written Report Requirement	Notes / Comments
<b>Title Page – 1 pts</b>	_____/1
<b>Introduction</b> Describe the project / goals / objectives (big picture) Design Process	_____/2
<b>Results (60 Points)</b> Describe your team’s design – 10pts Figures. – 10pts Wiring Diagram Photo of the project Detailed code description. – 10pts	_____/30
<b>Discussion / Conclusions – 8 pts</b> Overall design & detail what was learned – 4pts Discuss the project overall in terms of meeting the design objectives – 2pts Discuss any design changes that you would implement – 2pts Provide feedback on what could be done in future sections – 2pts	_____/10
<b>Other:</b> Appendix (code, etc.) – 2pts Organization, format, clarity, proofreading & spelling – 5 pts	_____/7
<b>Total:</b>	_____/50

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### Oral Presentation Grading Rubric (40 Points) – due Thursday, December 4<sup>th</sup> 2014

Name(s): \_\_\_\_\_

Requirement	Comments	Score
<b>Attire: Business Casual (5 points)</b>		_____/5
<b>Submission: (3 points)</b> Print / fill out a hard copy of the grading rubric & screen captures of the presentation (6 slides per page/ in color) – 3 points		_____/3
<b>Title Slide: ( 2points) – Introduce your team members</b> Title of your project Full Names of all Group Members		_____/2
<b>Project Description: (25 points total)</b> Describe the design and how it evolved Show wiring diagrams / figures to describe the project Discuss your code, highlight new things your learned How can this can be improved or other advances to be made to the design Overall what new concepts were gained throughout the course		_____/25
<b>Presentation Quality: (5 points)</b> Font sizes >20 point, Color variation Bullets vs. paragraph Within time constraints Practiced, faced audience, no reading		_____/5
<b>Total:</b>		_____/40

**Note: CATME survey will be available from December 5<sup>th</sup> to December 9<sup>th</sup> for peer evaluation.**