

**ME403: Assignment 6**  
**“Project Validation and Final Report”**  
**Guide to Responding**

**1. The first part of this assignment is established to structure the course and allow you the time to work on your design project. You should plan to spend 45 hours on this assessment. However, students often find it necessary to devote 100 to 150 hours for its completion. In this time, you should develop a functional prototype or intricate testable simulation which allows you to validate your design choice. Depending on the complexity of your design, you may have the opportunity to make alterations to your design and iterate on your prototyping and validation. At the end of the project, you should be able to prescribe a path forward for implementing your design into circulation. This will include cost structure, materials and processing decisions, and suggestions as to further growth of the design.**

Depending on your resources and the scope of your project, you may not be able to move forward with a full development. However, you should ensure that you've considered the manufacturability and ability to implement your design and taken steps to work toward making sure you can, if not develop a functioning prototype, deliver a fully implementable design which can be scaled to operation.

Like in the previous assignment, this part will entail a great deal of open-ended flexibility and application of a variety of engineering skillsets. You should be prepared for unexpected difficulties and ensure that you build tolerances in your timing to adjust for unexpected results and/or failures. However, if you've approached the design project to this point with due diligence, you shouldn't run into problems which are insurmountable.

Ensure that you thoroughly validate and test your prototype at this stage, since the results from this testing will serve as the entire basis of your next step forward. You want to attempt and determine any flaws in your approach at this stage rather than after full-scale implementation.

**2. The second part of the assignment is creating a final report. This will include everything from your midstream report, while also detailing your prototype development and the results of your validation testing. It will also include the final design conclusions and path forward suggestions to commercialization or final implementation.**

The initial sections of the final report should be able to be directly taken from the previous midstream report. Additional sections will be needed, which document your prototype development and validation testing results. From this work, you will come to final conclusions about your project and how to move forward with the project if it was not for a single deliverable production such as a design competition.

Examples of final reports:

- Florida International University: EML4905 Senior Design Project: “[Senior Design Final Reports—Spring 2011](#).” Select any of the PDF links in the section “Senior Design Final Reports—Spring 2011” on this page to see various design teams’ final design reports.
- Drexel University: Mechanical Engineering and Mechanics Senior Design: “[Sample of Written Final Project Report 2009–2010](#).” Select any of the PDF links in the section titled “Sample of Written Final Project Report 2009–2010” on this page to see various design teams’ final design reports.

### **3. The third part of the assignment is creating a design presentation which allows you to present your design project to an audience orally.**

In the presentation, you want to ensure that you concisely address the topics listed in your final report. You need to state what you’re working on and why, who your customers are, and what their requirements and needs are. Then you will need to address the product design specifications you established. Following this, you will need to demonstrate that you explored a wide range of potential solutions and came to the best solution with your selected concept. This will lead to your presenting the prototype development and validation testing results, followed by your concluding remarks and thoughts as to the direction of the project past the design stage.

Examples of final presentations:

- Drexel University: Mechanical Engineering and Mechanics Senior Design: “[Sample of Final Project Presentation](#).” Select any of the PDF links in the section titled “Sample of Final Project Presentation” on this page to see various design teams’ final design presentations.
- Indiana University-Purdue University Indianapolis: ME 46200 Capstone Design: “[Presentation Archive—Spring 2010](#).” Select any of the PDF links in the section titled “Spring 2010” on this page to see various design teams’ final design presentations.

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