

Working Title

Rationale (Problem)

A few sentences to summarize your background research that supports your research problem and the need for a solution.

(Prompts: *Why is this problem worth solving? Is there a global or societal need for this prototype/product?*)

Engineering Goal

What is the prototype or product that you hope to develop and the expected outcome(s) from it?

(Prompt: *What are the design criteria and constraints for your project?*)

Prototype Development

- Review [page 12-14 of the MSEF manual](#) to see if there are specific guidelines, safety, or forms related to the materials you are using or the equipment you are using.
- If you determine that anything you are planning is listed as “**requires pre-approval**”, you will be prompted to complete an electronic version of the form below. *If you have completed this template, most of the required information will be ready for you to copy and paste when you create your project in zFairs!*
 - ◆ [Risk Assessment Form 3](#) (preview-only)

This portion can be subdivided into the sections below:

Safety

These steps will vary according to the types of projects. Identify any potential risks and how they are addressed/minimized in your methods. Refer to all safety equipment used, including, but not limited to, goggles, gloves, closed toe shoes, working conditions (fume hood, fire extinguisher if combustion is possible) and supervision.

Materials & Equipment

Include, in list format specific names and concentrations of chemicals, equipment used, locations, how materials are obtained, etc.

Design & Construction

Sequentially numbered steps that cover the production of the prototype from beginning to end. The steps should be detailed enough for someone else to be able to replicate from your directions.

Prototype Testing

Describe the steps and measurements involved in the testing of the prototype. Include a description of the **design criteria** that will be employed to analyze and discuss the results of the prototype testing.

Clean-up and Disposal

Bibliography

Key sources on your topic, from your literature review and/or background research, that helped you write this plan. *APA format is recommended.*

Summary or Addendum

This section is only necessary if experimentation changed through the course of the research

If additional SRC or IRB approval was needed, you must also provide a letter from the SRC, explaining the changes, which is then signed and dated.