

Interdisciplinary Capstone Design Portfolio

Assignment Goal

To maintain a written record of your own product development throughout the duration of your project.

Learning Outcomes

As a result of completing this assignment, you should be able to:

- Organize all of your documentation to capture the evolution and development of your design solution.
- Record all engineering activities related to the project, making it easy to retrace your steps in the development of your solution.

Relevant ABET Learning Outcomes

1. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
2. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Rationale

Engineering design inherently involves development and synthesis of ideas to create a new solution to an problem (or challenge). As a result, engineers need to document all of their work to demonstrate good practices as engineers, but also create a retraceable record of their work, which may help to prove ownership at a later date. The capstone portfolio gives you a framework for capturing all of the team's documentation in a consistent and easily navigated manner.

Task

As an individual, you are assigned to organize and maintain a design portfolio to capture all of the documentation generated by the project.

The required approach for **organizing** your portfolio at the beginning of the project is:

- 1) Select a Format from the options listed below under "Formats".
- 2) Create a folder structure which matches the rubric below under "Assessment": Problem definition, Project Learning, Project Management, Wiki Site, Design Solution, Implementation/Manufacturing, Design Validation, and References.
- 3) Archive all documentation created by the project into these folders respectively.
 - a. Ensure that your filing system is logical and easy to navigate.
 - b. You are welcome to create subfolders as needed to further distinguish document types.
- 4) Email your lead instructor with a link to your electronic Portfolio folder structure upon request.

The required approach for **maintaining** your budget is:

- 1) Always keep the Portfolio up to date. File any new documents created into the appropriate folder.
- 2) Transfer files from personal workspaces to the shared Portfolio to ensure that all of the documentation is centralized in one place.
- 3) Email your lead instructor with a link to your electronic Portfolio folder structure upon request.

Formats

Two primary formats are acceptable for this class:

- 1) Create a Project-specific folder on the **S: drive** (Example: under S: Engineering/SeniorDesign/-Senior Design/2019-2020)
- 2) Create a Project-specific folder in **OneDrive** and share it with your teammates, instructor, graduate student mentor (if applicable) and your client (if applicable).

Assessment

The team Portfolio will be submitted to the lead instructor on multiple occasions through the project. Logbooks will be reviewed the lead instructor and scored on a 1-5 scale based on the following criteria:

Rubric:

Capstone Portfolio Review Form

Team:

Date:

Scoring:	1	2	3	4	5	NA
	Missing/lacking		Satisfactory		Exemplary	not applicable

Problem Definition

(includes problem statement, product requirements, specifications, expected deliverables)

Project Learning

(includes literature review, engineering analysis, experiments, software learning, training)

Project Management

(includes meeting minutes, client communications, schedule, budget)

Wiki Site

(includes latest version with markers for future expansion)

Design Solution

(includes system diagram, component selection & sizing, user interface, description of key features)

Implementation/Manufacturing

(includes Bill of Materials with chosen vendors and costs, engineering drawing package, manufacturing plan, special tooling)

Design Validation

(includes experiment design, data collection, data analysis, and client acceptance)

References

(includes shared drive file management, data sheets, purchasing paperwork, important articles, key websites, manuals)

OVERALL

Reviewer Comments: