Project Definition Document (PDD)

Document Scope

This document provides guidance for developing the Project Definition Document (PDD) for ASEN 4018, as well as an annotated template for the assignment.

Purpose

The Project Definition Document (PDD) forms the technical foundation for a design project. Its purpose is to clearly define the design problem that will be solved, and to ensure the design team has the requisite resources and capabilities. The design problem definition consists of an articulation of the need being served, specific objectives and levels of success for the design to satisfy this need in the context of the design course, and specific functional requirements the design must provide to satisfy those objectives. Team capabilities and resources are assessed relative to an initial analysis of the critical project elements ("tall poles") that must be addressed for a successful design solution. This assignment should be approached in the order given, i.e. define the problem and research related work before the specific objectives are identified.

The PDD is developed in cooperation with the project customer, and represents a common understanding of the project focus, functional requirements, scope, and deliverables. Customer approval is due at the time of PDD submission. Deviations from the set of objectives provided here will not be permitted without customer and advisor approval in the form of a revised PDD.

The Projects Advisory Board (PAB) will review the PDD for clarity of purpose and credibility of the critical project elements, together with the corresponding team capabilities and resources. The PAB will issue a judgment of "acceptable" or "not acceptable" for readiness to begin the conceptual design phase, along with specific feedback on weak PDD components. Only teams with an "acceptable" PDD will be permitted to continue with the design process leading toward the Preliminary Design Review (PDR). Others must revise the PDD until an "acceptable" project definition is obtained.

Format

The following pages provide a template for your Project Definition Document. Details about what should be included for each section are provided in the template. The PDD (Sections 1 through 7) shall not exceed 5 pages including figures, so you must be concise. About ½ page is suggested for each section, except for Section 4 that contains diagrams that typically make it longer. Students are encouraged to view past project's work at http://www.colorado.edu/aerospace/senior-design. for examples of PDD components. Keep in mind that specific requirements for the PDD have changed over the years, and past work may not fully address the items in this assignment.

Due Date

Your PDD will be submitted to D2L by 6:00 pm, Monday, 9/15. Customers must sign off on your document before submission.

University of Colorado
Department of Aerospace Engineering Sciences
ASEN 4018

Project Definition Document (PDD)

PROJECT NAME HERE

Approvals

	Name	Affiliation	Approved	Date
Customer				
Course Coordinator	Dale Lawrence	CU/AES		

Project Customers

NAME ADDRESS Phone: Email:	NAME ADDRESS Phone: Email:

Team Members

NAME Contact info (email, phone, etc.)	NAME Contact info (email, phone, etc.)
NAME Contact info (email, phone, etc.)	NAME Contact info (email, phone, etc.)
NAME Contact info (email, phone, etc.)	NAME Contact info (email, phone, etc.)
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1.0 Problem or Need

Describe the field of application, the problem addressed, and the predicted benefits of a successful project. Pictures or diagrams are encouraged, provided they are annotated or explained clearly.

2.0 Previous Work

Place the problem in context with other work. If this is a continuation of a previous project, clearly identify what is novel about your project. Cite references to the engineering literature, popular press, or web sites as appropriate. Do not cite any proprietary documents or personal communication that is not available in the public domain.

3.0 Specific Objectives

Describe specifically what the project must accomplish to satisfy the design problem or need. Define what "success" means for *your* project, using levels ranging from the absolute minimum that must be accomplished for the project to be considered a success (Level 1) up to the most that the project will *plan* to accomplish (Level N). Generally, three to four levels are adequate. Do not use "stretch goals" that will be attempted if time permits. Provide an explicit description of the project deliverables to the course and to the customer, including how the system will be tested.

4.0 Functional Requirements

Provide a functional block diagram (FBD) here, along with its explanation. It should include the major functional elements of the system, and how they must interact to solve the problem. It should also show which elements or aspects will be designed by the team and which elements will be acquired. In many cases, the senior project will address only a portion of a larger system or problem; the FBD should clearly distinguish the project elements from others in a larger system.

Provide a Concept of Operations (CONOPS) diagram, showing how the system would be eventually operated in the intended application. Provide a CONOPS specific to *your* project, showing how it will be tested and operated in this course. (Often, a project addresses only a portion of a larger problem or mission, in which case these two CONOPS will be different).

5.0 Critical Project Elements

Identify those aspects of the project that are critical to the success defined above, and briefly explain your reasoning. Include technical, logistic, and financial aspects.

6.0 Team Skills and Interests

Describe the areas of expertise and/or interests of the team members on your project, and relate them to the critical project elements identified above.

Critical Project Elements	Team member(s) and associated skills/interests

7.0 Resources

Describe resources beyond team interest/skills needed to address the critical project elements defined above, and identify the source for each. These include specialized equipment, software, facilities, or outside expertise, and any additional financial support needed beyond the $5,000 project funds.

Critical Project Elements	Resource/Source

8.0 References

Include at least five references.