

## Project Milestone 0 – Problem Statement

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### Instructions

1. Read this document carefully. You are responsible for following all instructions in this document.
2. Read the Learning Objectives at the end of the document to understand how your work will be graded.
3. Use professional language in all written responses. See EPS01 for guidelines.
4. Submit deliverables to Gradescope for grading. Name your files to match the format in the table below, where *login* is your Purdue Career account login (e.g., how you sign into Brightspace)

Item	Type	Deliverables
M0 Answer Sheet	Individual	M0_AnswerSheet_ <i>login</i> .pdf

See submission requirements on the last page of this answer sheet.

5. Complete the Assignment Header before starting the answer sheet.

### Assignment Header

Section and Team ID (SSS_TT):	002_02
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Your Name	Purdue Career Account Login
Connor Damato	0033498677

### M0 Context

The purpose of M0 is for you to get familiar with the context of the project as well as start problem scoping. For M0,

1. Read M0 – Client Memo
2. Read M0 – Project Background and Schedule

Use that content to complete the problem statement. The blue box provides information regarding what makes a good problem statement.

**Note:** When external sources are used, each must be properly cited with (1) an in-text citation where referenced in the body of the text and (2) a full citation in the appropriate *References* section for each part of this milestone document. Use APA 6<sup>th</sup> or 7<sup>th</sup> style.

A problem statement is **your interpretation** of the clients' needs or wants.

**A good problem statement (PS01 & PS02):**

1. Clearly refers to a **client**
2. Clearly states the **need, problem, or the focus** of the project
3. Explains **why** this need/problem/focus is **important** to solve

**followed by a list of specifications (PS03)**

1. **Criteria** and **reason(s)** for each criterion (needs/wants)
2. **Constraints** and **reason(s)** for each constraint (required/must-haves)

### Individual Problem Statement

The client, NaturalCatalysts Inc., requires us to characterize the performance characteristics of different enzymes and determine the pricing assessments of the new generation enzymes so that they can roll out the next wave of enzymes. They need this data so they can begin full-scale production of the enzymes. Figuring out the best enzyme will allow them to maintain their reputation of creating and reliable enzymes at affordable prices (Lion 2022).

Their criteria are:

We need to construct an algorithm in MATLAB to analyze the kinetic enzyme test data we are given. We must then create a detailed description of our analysis of the dataset provided, including graphics and plots to summarize the data.

We must provide an error analysis that characterizes the accuracy of our approach to determining performance characteristics of our data.

We need to draft a recommendation about what NaturalCatalysts Inc. can honestly and ethically claim to its customers about the performance of the new enzymes (Lion 2022).

Their constraints are:

We must complete this project by the end of the semester and complete each milestone before the assigned deadline (Lion 2022).

Cite any references that helped you formulate your problem statement. Use APA 6<sup>th</sup> format. Remember to use in-text citations as well if you need references.

### References (if used)

Lion, Avery D. (March 21, 2022) Data Analysis for NaturalCatalysts Inc. M0 Client Memo.



## How to Submit

1. Save the answer sheet as one PDF named **M0\_AnswerSheet\_login.pdf** where *login* is your Purdue account login.
2. Submit the PDF to Gradescope.
  - a. Log into Gradescope.
  - b. Submit **M0\_AnswerSheet\_login.pdf** to the **M0** assignment.

## Learning Objectives

### Problem Scoping

Develop a problem statement from the perspective of stakeholders. Refine the problem statement as additional information is found through the process of design and/or modeling.

- PS01. Explain the problem based on synthesis of client, user, and other stakeholder needs.
- PS02. Justify why problem is important to solve by making reference to relevant global, societal, economic, or environmental issues.
- PS03. Explain key specifications (in terms of criteria and constraints) that address what the client wants and what the user needs.