

Project Milestone 0 – Problem Statement

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	Project_M0_AnswerSheet_ <i>spourzan</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):	<019-24>
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Your Name	Purdue Career Account Login
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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 6th or 7th 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

Our Client, NaturalCatalysts, needs our team to deliver a 2-page technical brief detailing our analysis on their 100 kinetic-enzyme tests. Our brief will consist of first analysis on the how predictable the behavior of the enzymes is in removing stains with corresponding graphics and conclusions about the data. Next we are tasked of creating "an error analysis that characterizes the accuracy of [our] approach to determining performance characteristics of the system." Lastly we are to determine what NaturalCatalysts can conclude accurately and ethically about their upcoming enzymes to their customers/consumers. It is important for our team to solve this issues as the service industry heavily relies on companies like our client to produce detergents that allow for fabrics to be reusable, particularly hospitals, hotels, and restaurants. If we do not aid NaturalCatalysts in determining the performance of their enzymes, we run the risk of failing to adequately cleanse these fabrics which could lead to serious contamination of patients, hospital personnel, hotel residents and restaurant customers.

Our criteria are to give a relatively accurate recommendation of the enzyme that performed the best in our analysis coupled with our MATLAB algorithm and technical brief. We must address these criteria as our client has specifically requested to be in this format. Some constraints are that the project must be completed by the last class this semester(Spring 2021) as well as presenting our findings in MATLAB and word in easily understandable formats. We must meet these constraints as NaturalCatalysts' manufacturing partners would like to start production soon.

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

References (if used)

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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.