Robotics 204: Introduction to Human-Robot Systems
Winter 2025

Lab Title: Defining Problem Statements, Needs Statements, and Requirements

Submission Type: Individual Submission. _Each individual in your group should copy this document and record their answers._ Check the rubric to make sure you have submitted all that is required.

Part 1: Thematic organization of needs and requirements

Deliverable: Emergent themes from the nurse interviews, with descriptions. Identify at least 3 themes that align with needs and 3 themes that align with requirements

Themes that align with needs

Theme	Description

Themes that align with requirements

Theme	Description

Part 2: Team Formation

Deliverable: Provide the names of your teammates

Part 3: Define needs statements

Deliverable: Response to the following questions.

1. **Individually** define 3 - 5 needs statements. Write your needs statements using the "How might we…" phrasing to start your statements.

2. What is your operational design domain that you are scoping for your needs statements?

3. With your group, peer review the needs statements drafted. Summarize the peer review discussion for your needs statements when considering the following:
    a. Are they solution-neutral?
    b. Do they balance breadth and specificity?
    c. Do they describe measurable outcome metrics?

4. Individually revise your needs statements to meet the desired criteria.

Part 4: Define requirements

Deliverable: Provide functional and non-functional requirements for two of the needs statements. You should include 2 for each need for each category (functional and non-functional).

Functional Requirements

Need Statement:	<INSERT YOUR FIRST NEED STATEMENT HERE>

Need Statement:	<INSERT YOUR SECOND NEED STATEMENT HERE>

Non-Functional Requirements

Need Statement:	<INSERT YOUR FIRST NEED STATEMENT HERE>

Need Statement:	<INSERT YOUR SECOND NEED STATEMENT HERE>

Part 5: Write a problem statement

Deliverable: Provide your team's collaborative problem statement

Problem Statement:

Grading Rubric

The following rubric will be used to grade your submission.

Required Deliverables	Points
Part 1: A table is provided that includes the emergent themes, a description of what those themes were, and whether the theme is a need or a requirement.	12 pts total - 2 pts for each theme (1 pts for description that is clearly articulated, 1 pt for correct alignment as need or requirement)
Part 2: Names of teammates provided	2 pt for providing team names
Part 3: The operational design domain is described. The original needs statements are provided, with edits aligned with the group discussion. The needs align with the design domain.	3 pts for original needs statements (Must be written with the "How might we" phrasing) 3 pts operational design domain described and appropriate 3 pts for summarizing peer review discussion for own questions 3 pts for edits that align with the three stated goals (solution neutral, balance breadth/specificity, describes measurable outcomes)
Part 4: Behavioral and non-behavioural requirements are presented that are solution neutral and align with the needs.	16 pts total - 2 pts for each requirement (1 pt for requirement, 1 pt for correct category)

Justification provided for selection.	
Part 5: A problem statement is provided that contains context, needs, and requirements. The problem statement is solution-neutral and the operational design domain is clear and appropriate.	8 pts for problem statement (2 pts for problem statement context, 2 pts for problem statement needs, 2 pts for problem statement requirements, 2 pts for clear operational design domain)
Total Points Available	50 pts