Project Proposal Rubric
Version 4
7/06/2019

Table 1: Proposal Rubric

Criterion	0	1	2	3	4
Presentation					
Presents Proposal in an organized manner	Organization missing more than 2 Company standards	■	Organization compliant with all but 1 or 2 of the Company standards	■	Organization compliant with Company standards (or justifies an alternative organization)
Proposal sections written in a clear manner	Difficult to follow more than three sections	■	One to three sections difficult to follow	■	All sections written clearly, and connections between sections easy to follow
Empathy for users					
Documents understanding of users	Does not include an empathy map or completes only one quadrant	Includes an empathy map with two quadrants completed	Includes an empathy map with three quadrants completed	Includes an empathy map with four quadrants completed	Includes an empathy map with all four quadrants completed with meaningful and specific entries
Develops user needs and empathy map based on user research	Does not list any user needs	Lists user needs that do not have a connection to user research (e.g., based on personal assumptions or experience)	Lists some user needs that have a connection to user research	Lists user needs that *all* have a connection to user research	Lists user needs that *all* have a documented and justified connection to user research
Meets POV statement specifications	Does not include a POV statement	Includes POV statements that do not follow the required format	Includes POV statements that contain at least 2 of the 3 components (user, need, reason)	Includes POV statements that contain all required elements	Includes POV statements that contain all required elements with relevant content (i.e., the need is critical to the user and does not imply a specific solution, the reason is connected to the empathy map)

Appropriate user selection	Does not mention an specific user	Mentions only one user or user group	Mentions multiple users or user groups	Mentions multiple users or user groups. These users/groups must be specific individuals or individual in specific roles (e.g., NASA scientists), contexts (patrons at a restaurant), or circumstances (individuals caught in an earthquake).	Mentions multiple users or user groups that capture the *variety of users* in a topic's real-world context (e.g., in a restaurant context: wait staff, management, patrons, etc.). These users/groups must be specific individuals or individual in specific roles (e.g., NASA scientists), contexts (patrons at a restaurant), or circumstances (individuals caught in an earthquake).

Thoroughness of User Research

Documents sufficient number and variety of sources	Uses no sources for *some* or *all* user types	Uses only one source for each user type	Uses at least one source for each user type and multiple types of sources for *some* user types	Uses at least 2 different types of sources for each user type	Uses at least 3 different types of sources for each user type
Cites sources using IEEE format	Does not cite sources	■	Cites some sources and/or does not consistently or correctly use IEEE format	■	Cites all sources using IEEE format

Collaboration

Documents team member contributions	Does not list team members for activity	Lists team members for activity	■	Lists team members and individual contributions	Lists team members and individual contributions and describes contributions to the team process
Demonstrates team's collaboration	Does not document input that shaped the POV statement	Documents how input from *only one* team member shaped the final POV statement	Documents how input from *some* team members shaped the final POV statement	Documents how input (i.e., help, ideas, and/or knowledge informed by user research) from *all* teams member	Documents how input (i.e., help, ideas, and/or knowledge informed by user research) from *all* teams member shaped the final POV statement through discussing different

				shaped the final POV statement	perspectives and making collective decisions

Appropriate Problem Statement and Narrative

Problem statement contextualization and justification	Does not include an application narrative.	Includes a narrative without a specific problem statement.	Includes a narrative with a specific problem statement.	Includes a narrative with a specific problem statement with a clear, thorough, and concise description of the context.	Includes a narrative with a specific problem statement with a clear, thorough, and concise description of the context. The problem statement must be understood and considered relevant to upper management and the public.
Problem statement content	Does not include a problem statement.	Includes a problem statement that does not mention a specific user (or user group).	Includes a problem statement that mentions a specific user (or user group) and their need, without describing a specific and relevant reason for having that need.	Includes a problem statement that mentions a specific user (or user group), that user's or group's need, and their reason for having that need.	Includes a problem statement that mentions a specific user (or user group), that user's or group's need, and their reason for having that need. Further, the need and reason must be clearly supported by the user research (e.g., user research contains evidence of the need and the need is based on an important problem or gap for the users).

Large Functional Requirements

Meets basic required functionality	Does not list functional requirements.	Functional requirements capture 0-1 of the required functions.	Functional requirements capture 2-3 of the required functions.	Functional requirements capture all but one required functions.	Functional requirements capture all required functions (or adds sufficient functionality to make up for limitations).
Functional requirements thoroughly capture the problem statement	Does not list functional requirements.	Provides questionable evidence that the functional requirements address the defined problem.	Provides convincing evidence that functional requirements address some of the defined problem.	Provides convincing evidence that functional requirements address most of the defined problem.	Provides convincing evidence that functional requirements thoroughly address the defined problem.

	0	2	4	6	8
Shows development of functional requirements	Does not document how functional requirements were developed.		Includes **Lotus Blossom** diagram for identifying functional requirements.		Includes **Lotus Blossom** diagram for identifying functional requirements and a sufficient narrative of how functional requirements were identified.

Mapping Large Functional Requirements to the Platform Capabilities

	0	2	4	6	8
Functions realistically captured by platform capabilities and test field objects	Does not map large functional requirements to specific platform capabilities.	Documents that some large functional requirements map to specific platform capabilities.	Documents that all large functional requirements map to specific platform capabilities.	Documents that all large functional requirements map to specific platform capabilities and how those platform functions resemble desired functionality in the real world.	Documents that all large functional requirements map to specific platform capabilities and how those platform functions resemble desired functionality in the real world with clear and realistic justifications.
Demonstrates coverage of platform capabilities	Does not cover any basic platform capabilities.	Covers 0-1 of the basic platform capabilities.	Covers 2-3 of the basic platform capabilities.	Covers all but one of the basic platform capabilities.	Covers all basic platform capabilities. (or adds sufficient capabilities to make up for limitations).

Testing	0	2	4	6	8
Documents how test field items correspond to Application Narrative	Does not indicate how any test field items map to App. Narrative.	Covers how one test field item maps to App. Narrative (e.g. Table).		Covers how all but one test field item maps to the App. Narrative (e.g. Table).	Covers how all Test Field items map to the App. Narrative (e.g. Table).
Prototypes how test field items correspond to Application Narrative	Doesn't prototype how any test field items map to the App. Narrative.	Prototypes how one test field item maps to the App. Narrative (e.g. Sketch).		Prototypes how all but one test field item maps to the App. Narrative (e.g. Sketch).	Prototypes how all Test Field items map to the App. Narrative (e.g. Sketch).
Provides a Demonstration (Demo) Narrative	Does not provide a Demo Narrative.	Demo Narrative has few details.		Demo narrative missing two or more details for how the Embedded platform will operate in the test field.	Provides a detailed narrative for how the Embedded platform will operate in the test field.

Table 2: Base Functionality

Base Functionality	Mapping to Application Narrative (In form of needs statements)
Cybot Communication	
Cybot Movement	
Object Detection	
Object Avoidance	
Boundary Adherence	
Arrival at Destination (Completion of goal)	
User Interface	
Application Specific Functionality (opportunities for bonus)	

Table 3: Cybot Capabilities

Base Capabilities Types*	Default Usage	Project Usage (can use defaults) (opportunities for bonus)
Open Interface	Robot Movement	
Interrupts	Ping Sensor	
WiFi-UART	Cybot Communications	
Analog to Digital Conversion	Infrared Sensor	
Input Capture	Ping Sensor	
Pulse Wave Generation (PWM)	Servo Motor	
Microcontroller Capabilities not Covered by Labs (opportunities for bonus)		

*Note: Blind test course (i.e. you cannot view the test course during your demo), and no camera sensors allowed

Table 4: Mapping Test Field Elements to Application Narrative

Basic Test Field Objects and other Elements	Description of how Test Field Elements Map to Application Narrative
Tall wide objects	
Short objects	
Pillars (tall thin objects)	
Holes	
Out of bounds	
Destination zone	
Other Application-Specific Test Field Elements (opportunities for bonus: consult with TAs and Professor)	