P1.2.5 Mechanical Winch System Scoring Rubric

Score: _____ / 90 Points Total

Team Documentation [35 points]				
Topics	**5 points**	**4 points**	**2 points**	**1 point**
Professional Appearance/ Neatness	Includes all required sections; includes page numbers on each page and appropriate section headings. Font and spacing choices are appropriate and consistent throughout document. If references were used, they are cited on the last page with appropriate APA citations & annotations.	Includes most required sections; includes page numbers and appropriate section headings. Font and spacing choices are appropriate.	Does not include all required sections; includes page numbers; section headings could have been better organized. Font and spacing choices not appropriate.	Missing many sections; does not have page numbers or section headings. Lack of care put into layout and organization.
Title Page	Includes all components required for a complete title page: ***(Project #, title, team photo with final prototype. Designers, class name & period, date range of project with year.)***	Includes 80% or more of the necessary components for a complete title page.	Includes 60% or more of the necessary components for a complete title page.	Includes 50% or more of the necessary components for a complete title page.
Table of Contents	Includes all major and sub headings and the corresponding page numbers.	Is missing some major & sub headings and the corresponding page numbers.	Is missing many major & sub headings and the corresponding page numbers.	Is missing most major & sub headings and the corresponding page numbers.
Design Brief	Includes all parts of a design brief organized into one page. Clearly details the Design problem, constraints, and Deliverables.	Includes almost all parts of a design brief organized into one page.	Includes half of a design brief organized into one page.	Includes a few parts of a design brief organized into one page.
NetLogo Simulation Screenshots	Screenshots of NetLogo Simulation GUI and code clearly displayed. Program is well-organized with proper annotation that precisely describes the flow of the program.	Screenshots of NetLogo Simulation GUI and code provided. Program is organized with proper annotation that describes the flow of the program.	Screenshots of NetLogo Simulation GUI and code provided. Program contains annotation that describes the flow of the program.	Screenshots of NetLogo Simulation GUI and code provided, but missing some parts. Program is not organized or missing annotation that describes the flow of the program.
Final Design Solution x 2	**There is a **paragraph description** of the final design solution that clearly explains the functionality of the prototype. Included in this paragraph is a summary of the measurements taken & the calculations done. **There are **photos** of the device taken from multiple views, so that all physical aspects of the machine are clearly shown. Each photo is labeled and includes a description of what is in the photo. Each photo is properly detailed for effective communication of the final design solution. In other words, someone should be able to reproduce your exact machine from these photos, details, and descriptions. The solution is organized on page(s) neatly.	**There is a paragraph description of the final design solution that explains the functionality of the prototype. Either measurements taken or calculations done are included. **There are photos of the device taken from multiple views, so that some physical aspects of the machine are clearly shown. Some labeling, description, and detailing is included. The solution is organized on page(s) neatly.	**There is a paragraph description of the final design solution that explains the functionality of the prototype. Neither measurements taken nor calculations done are included. **There are photos of the device taken from multiple views, so that a few physical aspects of the machine are clearly shown. No labeling, description, and detailing is included.	**Paragraph description does not explain functionality of device. **A single view is used to highlight physical aspects of the machine and no labeling, description, and detailing is included.

Teamwork [10 points]				
Group Interaction x 2	All members are on task at all times and contribute in a positive manner.	Most members are on task at all times and contribute in a positive manner.	Most members are on task sometimes & contribute in a mostly positive manner.	Some members are off task at times and do not contribute in a positive manner.
Solution Performance [25 points]				
Prototype Design Requirements	Fully meets design requirements.	Meets most design requirements and supports the design function.	Meets some requirements but not enough to support the design function.	Does not meet any requirements.
Prototype Quality	Mechanisms are well built, and the chosen parts are appropriate.	Mechanism functions most of the time, and the chosen parts are appropriate.	Mechanism sometimes functions, and some parts are not appropriate.	Mechanism rarely functions, and the parts are not chosen appropriately.
Prototype Functionality	Functions correctly and in a consistent manner.	Functions correctly and in a mostly consistent manner.	Malfunctions at times	Works correctly rarely.
NetLogo Simulation Code	Uses appropriate code, is complete, correct, neatly done, and meets the simulation requirements.	Uses mostly appropriate code, is complete, neatly done, and meets the simulation requirements.	Uses some inappropriate code, but is complete; lacks neatness, but meets the simulation requirements.	Uses only some correct code, is incomplete, and/or only meets some of the simulation requirements.
NetLogo Simulation Code Comments	Code is properly detailed with comments for effective communication. Text clearly describes the code's flow.	Is marginally detailed for effective communication. Text describes the code's flow.	Lacks many details for effective communication. Text describes the code's flow, but not accurately.	Lacks annotations that describe the code's flow. Most text is incorrect.
Individual Deliverables [20 points]				
Project Log	Provides a neat and accurate description of tasks completed each day with specific **details** about **personal contributions** to the project. Complete sentences used.	Provides an accurate description of tasks completed each day with specific details about personal contributions to the project.	Provides a description of tasks completed each day.	Provides a description of tasks completed in the project.
Project Setup & Table of Measurements	Short design brief, team norms, and consequences recorded neatly in notebook. All **five** measurements (F, d, t, V, I) are recorded precisely, neatly, and in an organized & easy to read manner. All measurements have correct metric units.	All measurements are recorded and have correct units.	Over half of the measurements are recorded and have correct units.	Less than half of the measurements are recorded.
Calculations	The **four** calculations of Work, Mechanical Output Power, Electrical Input Power, and Efficiency are accurately calculated. Each calculation clearly & neatly shows the equation used, the work done, and the answer boxed. Evidence that calculations were done individually for comparison and not taken from other team members or documentation.	Calculations are accurately completed. Not all work is shown and/or the work in not neatly written.	At least 2 of the calculations are accurately completed. Not all work is shown and/or the work in not neatly written. Calculation copied from another team member or documentation.	Only 1 calculation is completed, work is missing, and/or difficult to read.
Conclusion Questions	All conclusion questions answered thoroughly and correctly with full explanation demonstrating mastery of concepts learned.	All questions answered correctly with explanation demonstrating concepts learned.	All questions answered but incorrectly and/or lacking explanation demonstrating concepts learned.	Not all questions answered.