Centrifugal Pump Project

Task 1. Motivations and Goals.

Deliverables. What Ed expect you to submit:
- A list of motivations (2 to 5) for team member #1. (repeat for each team member #2, #3, and #4)
- SMART goals for this project.

Quality. What Ed is looking for:
- Insightful self-knowledge of motivations by each team member.
- Self-concordant goals
- Challenging goals
- Specific (i.e. measurable) goals.

Task 2. KC on Centrifugal Pumps.

Deliverables. What Ed expect you to submit:
Handwritten documentation (perhaps 2 to 5 pages) of KC on relevant topics such as centrifugal pumps, pump curves, and pump head. Use whatever format of notetaking works best for you.

Quality. What great engineering looks like:
- Foundational concepts are documented.
- Explanation of these concepts in simple, clear ways.
- Sketches, diagrams, visuals are used to communicate knowledge.
- Personalized (own way) of explaining things
- Informal citations in your documentation so knowledge sources came be found again.

Task 3. Experiment Design.

Deliverables. What Ed expect you to submit:
Handwritten documentation (1 to 2 pages) organized into sections: situation, goal, ideas, plan, review.

Quality. What great engineering looks like:
- Completeness. Documentation provides details so that you or another class member could replicate the experiment three years from now by following the documentation.
- Technical depth. Details and application of engineering principles in useful ways.
- Plan is presented "step-by-step" in a clear and specific way.
- Experiment is simple (all equipment and instruments can be obtained in short time (e.g. 1 hr or less) and with a low budget (less than $12)).
- Experiment is simple so that it can be completed in short time (e.g. 1 hr or less).
- Statistical principles are applied.
- Pump head and flow rate will be measured in valid ways.

Task 4. Experiment Execution

Deliverables:
Handwritten documentation organized into the following sections
- Situation. sketch (or photo) of your experiment. shows instruments, measurement locations, describes pump under test.
- Goals. Describes the results you are going to get (can cite previous doc).
- Action.
  - Data. presents all data recorded during your experiment.
  - Data processing. show how you processed your data to produce your final results.
  - Results. present your final results in a very clear way. Ed doesn't want to search to find the results.

Quality
- Experimental apparatus is described clearly and completely
- Data is presently clearly and completely
- How data is processed to produce goals is clear and complete
- Results are clear, easy to understand, valid

Task 5. Reflective Thinking.

Deliverables:
- You assessment of your performance on tasks 1, 2, 3, 4 plus your rationale.
- An SII done by the team with 3 strengths, 3 improvements, and 2 insights.

Quality. What Ed is looking for:
- Assessment is presented using data and evidence (not emotions and opinion).
- Assessment provides an accurate picture of where you are at.