The purpose of the final oral presentation is to explain verbally and visually the final designs and accomplishments of the team. In the presentation, focus on:

1. How the final designs work
2. If any, what design work still needs to be done
3. The manufacturing plan for next quarter
4. (Briefly) the problem statement, goals, and background of the design.

A presentation will be given by each design team. They should last 15-25 minutes. All members taking either ME499 or ME495 must be present and participate in the presentation to receive credit.

Problem Statement and Background

- State the design problem and its impact on the submarine’s ability to function
- Summarize previous attempts (if any) by other teams to solve this problem
- Identify changes/improvements to previous designs

Goals and Constraints

- What are the goals for this quarter?
- Were the design goals met?
- What are the design constraints; i.e. shape, size, weight, material, cost, time, etc.
- Give example constraint calculations (if applicable)

The Selected Design

- Give a detailed description of the selected design
  - How it works
  - What the components are
  - What the inputs and outputs are (if applicable)
  - What the environment will be (i.e. waterproof vs. exposed, mounting, etc.)
- Explain thoroughly how this design satisfies the design constraints
- Show illustrations (if applicable)
- Demonstrate how the design will integrate into the submarine using models, drawings, etc.
- Demonstrate how the design interacts with other components using models, drawings, etc.

Manufacturing Plan and Quarterly Schedule

- Create a Gantt Chart of the current quarter’s activities. Show the approximate man-hours each task required.
- Create a Gantt Chart of the manufacturing schedule (including time following finals). Show approximate man-hours each task is expected to require.
- Are there components that need to be designed? If so, explain what they are and include their timeline for design and manufacturing in the manufacturing schedule.
- For the manufacturing tasks, briefly explain how they will be accomplished, and give a deadline for each task. This is the timeline the team is expected to follow.
- What interaction will there be with other design teams and for what purpose? How will team leaders make sure their designs don’t interfere?
- State the manufacturing budget on a per-item basis. Include current or potential sponsorships and items necessary for testing.

Total Score: ____/50
The ME499 and ME495 students will collaborate on writing a team report which covers the work of the quarter. This report will account for the entire written report grade of the ME499 students. ME 495 students will, in addition, submit a separate report of their designs. This separate report will account for 75% of their final written grade, and the team report will account for 25%. 499 reports are generally 8-12 pages in length and 495 reports are 12-15 pages in length. The outline provided below is a general form for both reports.

**Abstract**
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**Problem Statement and Background**
- Similar to the oral presentation topic. Be specific and clear about what the design problem is.

**Design Goals and Constraints**
- Similar to the oral presentation topic. Provide numerical values where possible, and be very clear about what the quarterly goals are. Constraints should be explained in terms of what they are and why they exist.
  - There is no difference between this in the final vs. the mid-term.

**Use of Illustrations**
- When describing designs and their function, illustrations are more effective than verbal descriptions. Use visuals when possible.

**Final Design Concept(s)**
- Give a detailed description of the selected design
  - How it works
  - What the components are, their function, and how they interact
  - What the inputs and outputs are (if applicable)
  - What the environment will be (i.e. waterproof vs. exposed, mounting, etc.)
- Explain thoroughly how this design satisfies the design constraints
- ME495: include a numerical/quantitative analysis of your design from input to output (if applicable)
- Demonstrate how the design integrates into the submarine, and interacts with other components

**Manufacturing Plan**
- Create a Gantt Chart of the current quarter’s activities. Show the approximate man-hours each task required.
- Create a Gantt Chart of the manufacturing schedule (including time following finals). Show the approximate man-hours each task is expected to require. Include the acquisition of materials.
- Are there components that need to be designed? If so, explain what they are and include their timeline for design and manufacturing in the manufacturing schedule.
- For the manufacturing tasks, fully explain how they will be accomplished, what materials are required, and give a deadline for each task. This is the timeline the team will be expected to follow.
- What interaction will there be with other design teams and for what purpose?
- State the manufacturing budget on a per-item basis.

**Grammar/Spelling**
- REQUIRED

**Total Score:** __/100