Project Team Charter

MIME 497: Capstone I

Signature Cover Page

Each team member will copy the following statement in their own handwriting (LEGIBLY) in one of the designated areas below:

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

Print Name: Matthew Tam **Signature:**

Handwritten Statement:

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

Print Name: Oliver Braitsch **Signature:**

Handwritten Statement:

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

Print Name: EVAN HOCKERT **Signature:**

Handwritten Statement:

I agree to do an equal amount of work in the team. I understand that my grade will reflect my effort in the team.

Print Name: Wyatt Muenchow **Signature:**

Handwritten Statement:

I agree to do equal amount of work in the team. I understand that my grade will reflect my effort in the team

1. Team Purpose:

Our team has been formed to design, analyze, prototype, and validate an active aerodynamic roll control system for the AIAA Oregon State Student Competition Rocket Team (SCRT). Specifically, our focus is on the development of a servo-actuated trim tab system integrated into the rocket fins to provide roll stabilization during ascent.

The stakeholder in this project is the AIAA Student Rocketry Competition Team, including its leadership, subteams, and the broader membership who rely on our outputs for the team's overall success. SCRT's expectations are that we deliver engineering work that is accurate, well documented, and compatible with the team's existing design standards and timelines. Additional stakeholders may include ENGR 415 instructors, and faculty advisors who expect that our team operates professionally and produces a capstone quality process and deliverables.

Ultimately our team's purpose is to develop a functional roll control system starting from an initial state with no prior prototype or trade studies. We aim to deliver a validated design and working prototype that meets competition constraints, integrates with the existing rocket architecture, and demonstrates strong engineering analysis, testing, and documentation.

2. Team Goals:

The primary goal of our project is to successfully design and implement a roll control system capable of stabilizing a sub-scale solid-fuel rocket during ascent. To achieve this, we will follow a structured engineering design process that includes trade studies, modeling, analysis, prototyping, and testing. A key objective is to evaluate multiple attitude control concepts and select the most viable solution based on criteria such as control authority, mass, complexity, and reliability.

In addition to technical goals, our team is committed to maintaining a high-quality engineering process. This includes producing accurate and well-documented work, maintaining organized CAD models and design files, and ensuring effective communication between team members and stakeholders. We aim to develop a system that is not only functional but also manufacturable, testable, and compatible with the existing rocket design.

As a team, we are committed to a high level of performance and accountability. We expect all members to contribute consistently and meet deadlines to ensure steady project progress. Our collective goal is to achieve a final course grade of an "A" while producing a system that we are proud to present as a professional-level capstone project.

3. Team Member Personalities, Roles, and Responsibilities:

(Subject to change)

Name	High5	Role	Responsibility
Oliver Braitsch	Believer, Philomath, Catalyst, Self-Believer, Coach	Test Engineer	Oversees the planning and execution of the testing processes for the team.
Wyatt Muenchow	Thinker, Time Keeper, Catalyst, Coach, Empathizer	Logistics Manager, Manufacturing Engineer	Managing group work/meetings, Working on manufacturing
Matthew Tam	Believer, Chameleon,Focus expert, Coach, Thinker	Hardware Engineer	Creation & Design of physical components & systems
Evan Hockert	Focus Expert, Believer	Electronics Engineer	Design, documentation, testing of electronics systems.

4. Ground Rules:

Weekly team meeting: Monday, 4pm- 6pm, Kidder 350

Project Advisor Meeting: Tuesday, 4pm - 6pm, 1st floor library

Modes of communication:

- Primary: Discord (Team and SCRT sponsors)
- Secondary: Group text message (Team specific)

The team will agree to norms of being on time for team and sponsor meetings, while also coming prepared to work on the project at hand. We will use our meeting times to work on whatever collaborative work is required, and assist each other with individual work as necessary and possible. When making decisions on our project, we will include everyone during the discussion and only move forward with plans when everyone is in agreement.

If any problems occur in the future regarding disagreements among team members, we will work as a team to resolve the issue and find a solution that everyone will be able to compromise on. During any sort of team disagreements we will be sure not to take sides so as to not isolate any one side of the argument and that person. We will hold each other accountable throughout the terms by having weekly check ups during our meetings to ensure that everyone is on track with their assignments and our project is progressing smoothly.

We all expect to put in the same level of effort and participation, completing tasks to the best of our ability and participating to the fullest extent. As the term progresses, we will try to redistribute and decide personal tasks fairly based on time and effort required for their completion, while paying attention to the skill sets required to successfully complete these tasks. To ensure that every team member's time is

being well used we will make sure to provide assistance with tasks and ensure that people are not stuck working on something they absolutely do not want to do.

5. Potential Barriers and Coping Strategies

5.1 Team Barriers

Potential barriers that could affect effective teamwork could be, not agreeing on times to meet out of class, individuals not doing their assignments on time, individuals showing up late or not showing up for meetings without valid reasoning, and individuals feeling as though their ideas are not being heard in a large group setting. Another potential barrier to collaboration that could occur is that design files are not properly documented and shared with the team. In order to address this we will ensure proper documentation is created for each design and test, and that all design files and documents are located in a place that is accessible to everyone (Github, Google Drive, etc). As a team, we will work to prevent barriers from happening before they can occur. We will do this by having clear expectations of everyone in the group and clearly communicating times and dates, as well as sending out reminders. With that said, barriers are bound to happen when these occur. We plan on correcting the individual and giving them warnings and grace. If this becomes a repeated offense, we will involve the teacher.

5.2 Sponsor Barriers

One potential barrier we could have with our sponsor are, how the budget is divided in certain subdivisions. A way we could avoid this is to have cost estimations ready before other subdivisions make major purchases. Another barrier is that our sponsor has duties within the SCRT club; they might have their time stretched particularly thin. To eliminate this sponsor barrier, we can report to other subdivision leads and hold good communication as a high priority here. Lastly, having a sponsor means that we may not agree with some of the roll control constraints or decisions that come through the club, but we will be open-minded to change. With a large team project, sponsor barriers can not be eliminated but we as a team will do our best to avoid them.

6. (A) Prototyping Strategies (DESIGN-based Team)

Our team will determine that a design is mature enough for prototyping once it has been validated through trade studies, meets key performance requirements from our House of Quality, and has been reviewed and approved by both the team and our sponsor. At this stage, CAD models and engineering drawings will be sufficiently detailed to ensure manufacturability and proper integration.

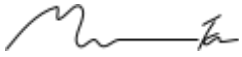
Once a prototype is developed, we will test it using a structured testing plan that evaluates performance metrics such as range of motion, actuation reliability, and structural integrity. Data will be collected and compared to the performance targets defined in our House of Quality to assess whether the system meets design requirements.

To account for potential delays in component availability, we will plan ahead by identifying critical components early and considering alternative options where possible. If the prototype fails, we will determine whether the issue is due to design flaws or implementation errors by analyzing test data and conducting troubleshooting. Iterative improvements will be made as needed, with multiple prototype revisions expected.

To ensure rapid response to underperforming prototypes, we will incorporate design-for-test principles and maintain flexibility in our design approach. All findings, including both quantitative data and qualitative observations, will be documented to capture knowledge gained throughout the process. Our sponsor will be actively involved in reviewing designs, test results, and iterations to ensure alignment with project goals and expectations.

Signatures for agreement of the Project Team Charter: (along with date signed)

Name:  **Date: 4/3/2026**

Name:  **Date: 4/3/2026**

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