FAMU/FSU College of Engineering

Department of Mechanical, Electrical, and Computer Engineering

<u>Code of Conduct</u>

Team # 315 Low-cost AI-based Flight Simulator

Names:
Jimmy Lu
Cameron Sayers
Morgan Skinner
Jackie Ou
Colby Hackett
Jonathan Tooby

Date: 9 /17/24

Mission Statement

Team 315 is dedicated to fostering a positive, collaborative, and inclusive work environment that upholds the highest standards of professionalism, integrity, respect, and trust. We believe that a strong team culture is essential for both personal and collective success, and we are committed to creating a space where every individual feels valued, supported, and empowered to contribute their best efforts.

Our purpose is to leverage our collective talents and diverse perspectives to innovate and deliver exceptional solutions in [your project's field]. We aim to advance not only our technical objectives but also to create lasting impact through creativity, excellence, and ethical collaboration.

Each member of Team 315 will take personal responsibility for cultivating an atmosphere that encourages open communication, mutual respect, and a shared sense of purpose. We recognize that the success of our project relies not only on our technical skills but also on our ability to work cohesively, appreciate diverse perspectives, and resolve challenges through collaboration.

By committing to these principles, we aim to elevate the performance of each team member and ensure that the project is completed with excellence, creativity, and integrity. Our dedication to maintaining a positive work environment will not only drive the success of this endeavor but also strengthen the relationships and professional growth of everyone involved. Together, we will bring out the best in each other and achieve remarkable outcomes.

Roles:

Mechanical Engineers: Colby Hackett, Jonathan Tooby

- Responsible for the mechanical design aspects of the project.
- Keeps line of communication with the other team members to coordinate the project.
- Responsible for knowing details of the design and presenting the options for each aspect to the team for the decision process.
- Keeps all design documentation for record and is responsible for gathering all reports.
- Creates CAD designs and manufactures prototypes that will be used to help deliver the final product.

Personal Goals:

Colby Hackett: The personal goals I have for this project are, developing team cooperation skills, and furthering my knowledge in the engineering design process.

Jonathan Tooby: I would like to expand my knowledge in the aeronautical field and understand how flight works. Furthermore, not only build a user interface for the simulation but also learn about the coding aspect.

Computer Engineers: Jackie Ou, Morgan Skinner

- System Integration: Develop software that integrates all hardware components, ensuring proper communication and synchronization between subsystems.
- Control Systems: Design algorithms for real-time control, such as automation of motors, sensors, or feedback loops to maintain system stability.
- Data Processing: Handle data collection from sensors and other inputs, ensuring data is processed, stored, and interpreted effectively for decision-making or monitoring.
- User Interfaces: Develop user-friendly interfaces that allow operators to control, monitor, and interact with the system through graphical or command-based interfaces.

Personal Goals:

Morgan Skinner: My personal goal is to learn more about the code behind simulations and the integration of AI within it.

Jackie Ou: My personal goal will be to improve my coding skills and learn how to develop a flight simulation with AI. I would also like to improve my collaboration skills with other engineers.

Electrical Engineers: Jimmy Lu, Cameron Sayers

- Power Management: Ensure efficient power distribution throughout the system, managing voltage, current, and overall energy consumption.
- Safety Systems: Design electrical safeguards, like grounding, circuit breakers, and fault detection, to prevent electrical failures.

- Signal Integrity: Work on maintaining high-quality signals in communication between various electrical components and reducing noise or interference in sensitive circuits.
- Prototyping & Testing: Build and test circuit prototypes to validate the design before full-scale production or integration.

Personal goals:

<u>Jimmy Lu</u>: My goal for this project is to learn how to use AI in the simulation and how to use the control system for a drone simulator. I would also like to expand my knowledge of how a product comes together from scratch and what it takes for a successful project.

<u>Cameron Sayers:</u> As an engineer, my goal is to enhance my coding skills, explore AI applications in aviation, and drive innovative solutions within our project. I also aim to collaborate closely with my team to ensure effective communication and collective success.

All Team Members:

- Buys into the project goals and success
- Delivers on commitments
- Adopt team spirit
- Listen and contribute constructively (feedback)
- Be effective in trying to get the message across
- Be open-minded to others' ideas
- Respect other roles and ideas
- Be an ambassador to the outside world in own tasks
- Financial transparency and well-documented budget records

Communication

The main form of communication will be over the phone and text messaging among the group, preferably by phone as well as through regular meetings of the whole team. Email will be a secondary form of communication for issues not being time-sensitive. For the passing of information, i.e. files and presentations, email will be the main form of file transfer and proliferation.

Each group member must have a working email for communication and file transference. Members must check the group chat at least once a day to check for important information and updates from the group. Although members will be initially informed via a text message, meeting dates and pertinent information from the sponsor will additionally be sent over email so it is very important that each group member checks their email once a day. Communication with sponsors and advisors will be done through emails and meetings. Emails between sponsors and advisors will include every team member.

If a meeting must be canceled, a text message must be sent to the group at least 24 hours in advance.

Team members must respond to team communications within 24 hours of the message being sent.

Scheduling of events other than weekly team meetings will be sent through an Outlook calendar invite. Members who accept the calendar invite must attend. If ineligible to make the event, team members must notify the team within 24 hours.

Attendance

To ensure the success of our project and maintain effective collaboration, all team members are expected to adhere to the following attendance guidelines:

1. **Weekly Meetings**: Team 315 will hold a mandatory meeting once a week. The meeting schedule will be agreed upon by all members at the start of the project. Attendance is required for each weekly meeting to ensure consistent progress and communication.
2. **Punctuality**: All members are expected to arrive on time for scheduled meetings. If members are expected to arrive late it is expected to notify the team.
3. **Absence Notification**: If a team member is unable to attend a meeting, they must notify the group at least 24 hours in advance, providing a valid reason for their absence. The member should also review any updates or assignments missed during the meeting.
4. **Make-up for Missed Meetings**: Contact the team to catch up on project progress.
5. **Repeated Absences**: Consistent failure to attend meetings will result in a discussion amongst other team members. If the problem persists, the instructors Dr. Chuy and Dr. McConomy. Detailed records of absences and lack of communication with preferred disciplinary action laid out will be sent out.

Team Dynamics

The students will work as a team while allowing one another to feel free to make any suggestions or constructive criticisms without fear of being ridiculed and/or embarrassed. If any member of this team finds a task to be too difficult it is expected that the member should ask for help from the other teammates. If any team member feels they are not being respected or taken seriously, they must bring it to the team's attention for the issue to be resolved. We shall NOT let emotions dictate our actions. Everything is done for the benefit of the project and together everyone achieves more.

Due to the multidisciplinary nature of the project, the team should strive to meet the expectations of all disciplines within the project.

Ethics

Team members must be familiar with the NSPE Engineering Code of Ethics and IEEE Code of Ethics as they are responsible for their obligations to the public, client, employer, and profession. There will be stringent following of the NSPE Engineering Code of Ethics.

Dress Code

Team meetings will be held in casual attire. Sponsor meetings and group presentations will be business casual to formal as decided by the team per the event.

Weekly Task

Team members will participate, if possible, in all meetings with the sponsor, adviser, and instructor. Ideas, project progress, budget, conflicts, timelines, and due dates will be discussed during said times. In addition, tasks will be delegated to team members during these meetings. Repeated absences will not be tolerated.

Decision Making

It is conducted by consensus and the majority of the team members. Should ethical/moral reasons be cited for dissenting reasons, then the ethics/morals shall be evaluated as a group and the majority will decide on the plan of action. Individuals with conflicts of interest should not participate in decision-making processes but do not need to announce said conflict. It is up to each individual to act ethically and for the interests of the group and the goals of the project. Achieving the goal of the project will be the top priority for each group member. Below are the steps to be followed for each decision-making process:

- Problem Definition – Define the problem and understand it. Discuss among the group.
- Tentative Solutions – Brainstorm possible solutions. Discuss among groups most plausible.
- Data/History Gathering and Analyses – Gather the necessary data required for implementing the Tentative Solution. Re-evaluate the Tentative Solution for plausibility and effectiveness.
- Design – Design the Tentative Solution product and construct it. Re-evaluate for plausibility and effectiveness.
- Test and Simulation/Observation – Test design for Tentative Solution and gather data. Re-evaluate for plausibility and effectiveness.
- Final Evaluation – Evaluate the testing phase and determine its level of success. Decide if the design can be improved and if time/budget allows for it.
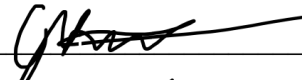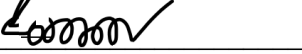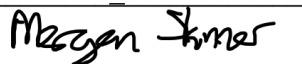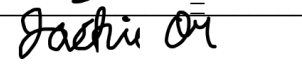
Conflict Resolution

In the event of discord amongst team members, the following steps shall be respectfully employed:

- Communication of points of interest from both parties which may include demonstration of active listening by both parties through paraphrasing and other tools acknowledging clear understanding.
- Administration of a vote, if needed, favoring majority rule.
- All discipline instructors will facilitate the resolution of conflicts.

Statement of Understanding

By signing this document, the members of Team 315 agree to all the above and will abide by the code of conduct set forth by the group.

Name	Signature	Date
Colby Hackett		09/17/2024
Cameron Sayers		09/17/2024
Jimmy Lu		09/17/2024
Jonathan Tooby		09/17/2024
Morgan Skinner		09/17/2024
Jackie Ou		09/17/2024