

This is a preliminary syllabus posted April 9, 2026, to give you an idea of how the class will work in advance. A final version will be posted around first class day.

PRELIMINARY

VIP Lightning from the Edge of Space
Fall 2026
Van Leer 465
Wed 12:30–13:20

1 Logistics

- Professor: Morris Cohen
- Email: mcohen@gatech.edu
- Office: 404-894-8415
- Project Manager: TBD

2 Applicable Course Numbers

- VIP2601-VPO (for 1-credit sophomores)
- VIP3601-VPO (for 1-credit juniors)
- VIP3602-VPO (for 2-credit juniors)
- VIP4601-VPO (for 1-credit seniors)
- VIP4602-VPO (for 2-credit seniors)
- VIP6601-VPO (for 1-credit MS students)
- VIP6602-VPO (for 2-credit MS students)
- VIP6603-VPO (for 3-credit MS students)

Please note that all junior and senior team members are expected to make contributions with a time commitment equivalent to the 2-credit level. The 1-credit option for this VIP is offered in case the student only wants 1 credit nonetheless.

MS students should enroll in 6601 or 6602. 6603 is reserved for special circumstances where the student has prior experience on the team and will be taking on a significant leadership role. Discussion and approval from the instructor is needed before any 6603 permit will be issued.

3 Team Goal and Organization

Our goal is to launch balloons that are increasingly sophisticated to collect scientific data around thunderstorms. This requires a mix of engineering skills with scientific interest. We typically launch 1 or 2 times per semester.

We are organized in 3-5 subteams to reach our specific semester goals, each of which has a lead. Our team has a project manager who will take the lead in organizing and coordinating between subteams, including tracking the goals for each sprint and for each subteam. The PM will function as a TA and will be in regular contact with me. Each subteam will also have a designated lead. Within each subteam, the work to reach its milestone during each sprint should be divided up fairly and collaboratively.

The semester is divided up into “sprints” that last two weeks each, with stepping stone goals mapped out for each one, for each subteam. The first two weeks of the semester constitutes the first sprint. In the first sprint, we will formulate a goal or goals for the semester, and then divide into subteams to achieve those goals. Each subteam will set a meeting time and convene weekly.

4 Semester Expectations

For everyone on the team

- Attend weekly full-team meetings. If any need to be missed, notify the PM in advance
- Block off at least a half day for each launch, unless an unavoidable conflict arises which should be communicated to the PM
- Join our Slack, download the app at least one device and allow notifications during regular school/business hours
- Ensure you have access to the team’s document repository. Notify the PM or instructor if you do not
- Ensure you can sign on to and edit the Wiki. Notify the PM or instructor if you cannot
- Complete mid-semester and end-semester peer evaluations by the VIP-set deadline (which is a hard deadline)
- Keep regular entries in your Slack notebook detailing, in particular, the individual work you did
- Document all your work through the semester, ensuring that at the end there are specific contributions you have made that can be identified
- Keep our lab space organized and clean

For subteam members

- Cooperate and coordinate, as needed, with the subteam lead and the project manager
- Communicate regularly with the rest of the subteam as the work progresses
- Attend weekly subteam meetings. If any need to be missed, notify the subteam lead in advance
- Attend weekly full-team meetings. If any need to be missed, notify the PM in advance

For subteam leads

- Set weekly meeting times and coordinate
- Attend and take attendance at subteam meetings
- Ensure that subteam goals are met for each sprint
- Prepare a 1-slide (or more if needed) update on the subteam's activity for each full-team meeting
- Attend weekly meeting of subteam leads with the PM

For the project manager

- Coordinate the subteam goals for the semester, and for each sprint
- Lead the weekly meeting of subteam leads with the PM
- Set the launch dates
- Run logistics for the launch, including setting drivers and rides

As subteam leaders spend significant time organizing and coordinating, it is expected that they will spend less time on individual technical contributions (in other words, subteam leadership is not an “extra” role). The project manager will be mostly focused on organizing and coordinating and will do much less individual technical contribution.

5 Time Commitment

The total time commitment is ~6 hours per week on average (or 9 if you are taking for 3 units). Typically this consists of

- 1 hour for the weekly full-team meeting
- 1.5 hours for a weekly subteam meeting
- 1.5 hours of individual work and research
- Full day commitments for each launch

6 Spaces and Labs

Van Leer 465 is generally available as a meeting space when not scheduled for another VIP team (the schedule is usually posted on the door). After the first week or so, your Buzzcard should work to get in. Please be aware that this room has video cameras.

Van Leer 488 is the instructor's lab space that is designated specifically for our team. To get in, the code is [REDACTED IN PUBLIC SYLLABUS], then enter, then open the door. Please keep room 488 clean and organized. The last 10-15 minutes of every subteam meeting should be designated for cleanup and re-organizing 488. There are plenty of storage bins that should be used for any and all materials that the subteam is using.

7 Slack for Team Communication

Slack is the primary communication for the team, both for regular announcements, and for individual messages between team members as much as possible. Please do not use another platform, especially for items of interest to multiple people. Make sure once you are invited to the Slack, that you install the app and enable notifications during business hours on at least one device.

The “general” channel is used for communications with the entire team, and will primarily be used by the instructor and by the project manager, but can be used by anyone as needed. Other channels will be established for each subteam, and for specific needs like launch day logistic and coordination.

8 Notebook/Journal

On Slack, you will also have a private channel, visible to only you, the instructor, and either your subteam lead or the PM, which will serve as your journal/notebook. It will be called `zz_notebook_yourlastname`. You are expected to make regular contributions to the Slack notebook. At least weekly for sure but really it should be as often as you have something worth noting. Each entry should recount the progress made. For individual contributors, the focus of these entries should be on individual work done outside of team and subteam meetings, and should not be a recounting of what was done in those group meetings. This is a place to capture and document all your own independent work you do in between those group meetings. Your notebook channel should, at the end of the semester, be filled with entries from the independent work you did. It should not only document your contribution, but act as a record, so that the instructor can find any relevant information well after you’ve left the team. The notebook channel can have text entries but also external links, graphs, photos.

9 Team Document Repository

[REDACTED IN PUBLIC VERSION]

10 Wiki

There is also a wiki which is intended to be a simpler way to detail what we do that can also act as a getting started guide for new students. To join, Go to <https://osf.io>, click sign up, and sign up using ‘institution’. Select Georgia Tech and then login with GT credentials.

Email/SlackDM Prof Cohen or the PM to be added.

11 Github

We have a GitHub for software and coding. Make sure you are added if you are editing or creating any code.

12 Buying Things

Please coordinate purchases with your subteam first. When ready, there is a Slack channel called 'order_this_please' which should be used to request any parts or items we need. Just paste a link in. Wherever possible, please use links to standard sources like Amazon, Digikey, Sparkfun, etc. We do have funding for the team from National Science Foundation grants, but it is limited. If the cost is two digits I probably won't ask questions, if it's three digits, let's have a conversation to make sure we need it.

13 Peer Evaluations

Must be filled out at mid-semester, and end-semester. This should be filled out for everyone on your subteam, and any others you interact with significantly. If you have not worked with a particular team member, you do not need to complete one for them. The comments box in the peer evaluation is the one most useful to me, so even though the box is small, make your comments here detailed and useful. Also the 'bonus' question is useful, I find.

You will get feedback from me on your peer evaluations along with your grade. A rubric for grading the peer evaluations is in the Appendix. Some of the grading for peer evaluations is tied to the quality of the feedback you provide, and a rubric is also in the Appendix.

14 Notebook Evaluations

At mid-semester and end-semester, along with the peer evaluations, I will be looking at your notebook. Ensure the notebook entries are regular, detailed, and include documentation where appropriate. A rubric for grading the notebook is in the Appendix.

15 Documentation and Deliverables

The last entry of your Slack notebook at the end of the semester should a list of what documentation you have produced and where it can be found. Some will already be on the Slack journal. But please point out anything else, including on the Google Drive (give a specific location), on GitHub (give a specific code section or module), on the Wiki (refer to specific page or section), or anything else relevant to documentation. This will also be graded.

16 Post-Syllabus Quiz

There will be a quiz on Canvas that is due at 5 PM on Friday of week two of the semester. It should be done when you have completed several early-semester items, and read this syllabus. The quiz will consist of the following:

- Questions 1-4 will simply recall information that is in this syllabus
- Question 6: What subteam are you on this semester, and who is the subteam leader?
- Question 7: Did you fill out your whenisgood poll for when you are available?
- Question 8: Are this semester's launch dates available and blocked off on your calendar?

- Question 9: Have you accessed the Google Drive and signed up for the team Slack?
- Question 10: Have you accessed the Wiki and verified that you can make an edit or contribution?

The quiz will count 10% toward your semester grade

17 Grading

The grading of the class is distributed as follows:

- 10% Post-syllabus quiz
- 10% Mid-semester peer evaluations by others
- 5% Mid-semester peer evaluations you submit
- 15% Mid-semester notebook evaluation
- 10% Mid-semester attendance
- 10% End-semester peer evaluations by others
- 5% End-semester peer evaluations you submit
- 15% End-semester notebook evaluation
- 10% End-semester attendance
- 10% End-semester documentation and deliverables (based on final notebook message)

The grade scale is as follows:

- >90% A
- >80% B
- >70% C
- >60% D

Scores will not be rounded.

18 Prerequisites

There are no pre-requisites or co-requisites for this course.

19 Course Goals and Learning Outcomes

By the end of this course, students will be able to:

- Work as a team to develop a high altitude balloon sensing platform for atmospheric electricity
- Investigate and research individual technical needs for a high altitude balloon sensing platform for atmospheric electricity
- Document results and effort for a high altitude balloon sensing platform for atmospheric electricity

20 Absence and Re-Examination Policy

In case students miss a deadline or an exam, the instructor will abide by the institute policy on student absences (<http://www.catalog.gatech.edu/rules/4/>). If arrangements are needed due to a religious observance, please contact me.

21 Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404)894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me in order to set up a time to discuss your learning needs. Please be aware that my office is on the 5th floor of the Van Leer building to which there is no elevator. As such, if you are unable to access the 5th floor, I will be able to accommodate any meetings by booking a room on another floor.

22 Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. For information on Georgia Tech's Academic Honor Code, please visit <http://www.catalog.gatech.edu/policies/honor-code/> or <http://www.catalog.gatech.edu/rules/18/>. Any student suspected of cheating or plagiarizing on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

23 Course Schedule

The next page shows a detailed schedule for the entire semestere.

PRELIMINARY

Semester Schedule

Week	Date	Team Event	VIP or GT Deadline
1	Wed 19-Aug	Introductory Team Meeting	
2	Wed 26-Aug	Goal setting and on-boarding	
2	Fri 28-Aug	Post-Syllabus Quiz due 5 PM	
3	Wed 2-Sep	Sprint 1	
4	Wed 9-Sep	Sprint 1	
5	Wed 16-Sep	Sprint 2	
6	Wed 23-Sep	Sprint 2	
7	Wed 30-Sep	Sprint 3	
8	Wed 7-Oct	Sprint 3	
8	Fri 9-Oct	Mid-semester notebook check	Mid-semester peer evaluation due 4 PM
9	Wed 14-Oct	Sprint 4	
10	Wed 21-Oct	Sprint 4	
11	Wed 28-Oct	Sprint 5	
12	Wed 4-Nov	Sprint 5	
13	Wed 11-Nov	Sprint 6	
14	Wed 18-Nov	Sprint 6	
	Wed 25-Nov	No Meeting - Thanksgiving	
15	Wed 2-Dec	Final Full-team Meeting: Wrap-up and Cleanup	
16	Tue 8-Dec	End semester notebook and documentation check	End semester peer evaluations due 4 PM
Finals	Mon 14-Dec	Final notebook message with documentation and deliverables	

24 Appendix A: Peer evaluations by others - grading rubric

- 100%: Student has been identified an exemplary contributor by their peers. Student is proactively solving problems and committing time. Student is active in cross-subteam communications. Student has made excellent and useful comments on their peers during peer evaluations.
- 90% Student has been identified as an excellent contributor by their peers. Student is mostly proactive when solving problems. Student helps some with cross-subteam communications. Student has made many useful comments on their peers during peer evaluations.
- 80% Student is a solid, but unspectacular contributor to their subteam. Student making effort to solves problems but generally needs to be told what to do next. Student generally does not participate in cross-subteam communications. Student has made a limited number of useful comments on their peers during peer evaluations.
- 70%: Student is a below-par contributor to their subteam. Student not making sufficient effort to solve problems, and/or failing to communicate status to subteam leader and/or project manager. Student has made few useful comments on their peers during peer evaluations.
- 60%: Student is making little effort toward contributions to the subteam. Student has made no useful comments on their peers during peer evaluations.
- 50%: Student is making no effort toward contributions to the subteam. Student has not participated in peer evaluations.

25 Appendix B: Peer evaluations by you - grading rubric

- 100%: Student provided excellent comments, always personalized for each evaluation, that showed the “glows and grows” in a positive yet constructive fashion. Comments included anecdotes, examples, and actionable feedback for the future.
- 90%: Student provided very good comments, often personalized for each evaluation. They often showed the “glows and grows” in a positive yet constructive fashion. Comments often included anecdotes, examples, and actionable feedback for the future.
- 80%: Student provided some useful comments, sometimes personalized for each evaluation. They sometimes showed the “glows and grows” in a positive yet constructive fashion. Comments occasionally included anecdotes, examples, and actionable feedback for the future.
- 70%: Student provided comments but they were mostly generic or the same for all peer evaluations completed
- 60%: Student provided only minimal comments that do not shed much insight into how the team is working
- <50%: Student did not complete peer evaluations

26 Appendix C: Notebook evaluation grading rubric

- 100%: Weekly progress entries in Slack notebook are consistent and timely. Includes clear description of individual work performed and milestones achieved during the week. Always includes references toward the overall semester goal, and progress toward it. Includes a smaller goal for the upcoming 1-2 weeks. Includes things like to-do lists where appropriate
- 90%: Weekly progress entries in Slack notebook are mostly on time. Usually includes clear description of individual work performed and milestones achieved during the week. Usually includes references toward the overall semester goal, and progress toward it. Usually includes a smaller goal for the upcoming 1-2 weeks. Often things like to-do lists where appropriate
- 80%: Weekly progress entries in Slack notebook are sometimes late. Sometimes, a clear description of individual work performed and milestones achieved during the week is missing. Sometimes includes references toward the overall semester goal, and progress toward it. Sometimes includes a smaller goal for the upcoming 1-2 weeks. Things like to-do lists where appropriate are often absent.
- 70%: Weekly progress entries in Slack are sometimes missed. Clear descriptions of individual work performed and milestones achieved during the week are often missing. References to overall semester goal and progress are often missed.
- 60%: Weekly progress entries in Slack are mostly missed. Clear descriptions of individual work performed and milestones achieved during the week are usually missing. References to overall semester goal and progress are usually missed.
- 50%: Weekly progress entries in Slack are nonexistent. No descriptions of individual work performed and milestones achieved during the week. References to overall semester goal and progress are nonexistent