

“So, why do we need teachers? Well, if you think that the fundamental job of a teacher is to transmit information from their head to their students, then you’re right, they are obsolete... Luckily, the fundamental job of a teacher is not to deliver information. It is to guide the social process of learning. The job of a teacher is to inspire, to challenge, to excite their students to want to learn. Yes, they also do explain and demonstrate and show things, but fundamentally that is beside the point. The most important thing a teacher does is make every student feel like they are important - to make them feel accountable for doing the work of learning.” - Derek Muller of the YouTube channel Veritasium, from the video “The Most Persistent Myth”

VIP Team Retrofuturistic Hardware: Music, Gaming, and Computing Syllabus

Sections VW9/OW9, Variable Credits

Group Meeting: Tuesday, 6:30-7:20, Van Leer 465

After the first couple of weeks, I will only meet with a few students each week during the Tues, 6:30-7:20 time (I will usually announce this over the weekend), but please try to leave that time slot free. If you have an important event that precludes you from keeping that slot free in a particular week, just let me know. (I also often meet with subteams on an ad-hoc basis at other times). Exception: If you have a standing conflict that prevents you from making the 6:30-7:20 timeslot time slot every week, let me know and we can work around it; if I let you into my VIP, I deemed it worth making an accommodation for you.

Participation in the VIP this semester does not guarantee I will approve you for future semesters. This is an extraordinary popular VIP, and in any given semester I typically have to reject dozens of qualified applicants to keep the team size manageable. You must prove yourself worthy of staying on the team; continued participation is at my discretion.

Instructor Information

Instructor	Email	Office
Aaron Lanterman	lanterma@ece.gatech.edu	Van Leer 431

General Course Information

Description

Modern electronic devices are powerful but uninspiring; they are ubiquitous but ephemeral. We will design and fabricate devices for music production, gaming, and computing sparked by real-world designs from the past as well as fictional formulations of imagined futures. The black-and-white, utilitarian minimalism of modern laptops and cell phones that blight the aisles of Best Buy with boredom will be abandoned in favor of steampunk, dieselpunk, raygun gothic, and other retrofuturistic aesthetics, such as the atompunk of Fallout, the art deco of Bioshock, and the 80s nostalgia of Stranger Things.

Pre- &/or Co-Requisites

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

Course Goals and Learning Outcomes

Through VIP students will:

- Learn and practice professional skills;
- Make substantial contributions to the team projects;
- Experience different roles on a large, multidisciplinary team.

Course Requirements & Grading

VIP teams function like real-world project teams. Members work on different aspects of a shared project, ranging from sophomores to graduate students, and from first-time participants to those with multiple semesters of experience. Students may enroll for variable credit hours, which are considered in grading. **Note:** Zero-credit enrollment is reserved for paid participants and follows the same grading criteria.

We use **Basecamp** for project management and communication. Be on the lookout for a Basecamp invite during the first week of class, and let me know if you do not receive one or have trouble logging in. Basecamp is like a less depressing version of Microsoft Teams (in fact, Basecamp long predates Teams; to some extent Teams is an inferior knockoff of Basecamp).

Grading Overview

Each student is evaluated across three core areas, with three mandatory requirements. Regardless of role or experience, students must demonstrate achievement in all three areas:

1. Documentation and Records (33%)

- Individual VIP Notebooks kept on Basecamp
- Weekly Basecamp check-ins.
- Other Basecamp activity, like posting of Messages, participation in Chat discussions, and uploads to Docs & Files.
- Code (via GitHub) if team is developing software.

2. Personal Contributions (33%)

- Engage actively in the project.
- Pursue knowledge relevant to the project.
- Contribute to technical progress.
- Experienced members may also contribute to project management.

3. Teamwork and Interaction (33%)

- Participate in peer evaluations.
- Attend meetings on time.
- Collaborate toward team goals.
- Coordinate and assist teammates.
- Contribute to team presentations.

Peer evaluations are administered by the VIP Program. [Click Here](#) to access peer-evaluations from off campus. [Click here](#) to access from on campus. You will be prompted to sign in. Users can only log in from on campus or via [VPN](#). Students can only access the peer evaluation portion of the system during active evaluation periods.

Each student is required to maintain a VIP notebook on Basecamp. Each student will have a project that only they and Prof. Lanterman can see called something like “NB: Your Name.” Generally, when you’re sitting down to work on the VIP, you should take notes for yourself and post them as a Message on your VIP notebook. (Scans of well-maintained VIP notebooks are available on the VIP website). But if you have something sufficiently refined that you want to tell your specific project teammates (most often) or the Retrofuturistic Hardware team as whole (rarely), you may post a Message in the appropriate spot; you

don't have to make a duplicate post in your notebook. (At any point, I can use the "See what XYZ has been up to" feature of Basecamp to review *all* your activity.) **Each student must understand that if work is not documented in Basecamp, "then you didn't do it"** (i.e. work that is not documented in the notebook will not count toward your grade). If at some moment the bulk of the work you are documenting is making entry in some sort of wikior GitHub, or posting a file to the Docs and Files tool of a Project, you can simply make a notebook entry (or Message on your Project) pointing to that work; again, you don't have to make duplicates.

Grading Scale

Each student will be assigned a numeric score out of 100 points in the middle of the semester, and another numeric score out of 100 points at the end, based on the above criteria. Your final letter grade shall be assigned according to the following criteria applied to the average of the two scores. Your final grade will be assigned as a letter grade according to the following scale:

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

Note that you cannot expect to do little work for the first several months and then make up for it by doing a ton of work at the end; we want to see **steady, documented** progress.

Course Policies, Expectations, & Guidelines

VIP is a collaborative, multidisciplinary, project-based learning and research experience. Your success in this course depends not only on your technical contributions but also on your active engagement with your team and the broader learning process.

Your Role in the Learning Process

As a VIP student, you are expected to:

- Take initiative in exploring and applying knowledge relevant to your project.
- Collaborate effectively with team members across disciplines and experience levels.
- Document your work thoroughly.
- Reflect on your learning and contributions throughout the semester.

This course is a real-world team environment, where learning is dynamic, self-directed, and collaborative. Your growth depends on your willingness to engage, contribute, and learn from others.

Team Meetings and Participation

Attendance and active participation in **team meetings** and **sub-team meetings** are required. These meetings are essential for:

- Coordinating project tasks and timelines.
- Sharing progress and receiving feedback.
- Learning from peers and mentors.
- Contributing to team decisions and direction.

Failure to attend meetings without valid reason may negatively impact your grade and your team's progress. If you anticipate missing a meeting, communicate with your team and advisor in advance.

Use of External Resources

You are encouraged to consult external sources to support your learning and project work. However:

- **Do not present someone else's work as your own.**

- Always **cite and reference** external materials used in your notebook, code, presentations, or other deliverables.
- Proper attribution is essential to maintain transparency and integrity in a collaborative research environment.

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. [Review Georgia Tech's Honor Code](#) and the [student Code of Conduct](#).

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.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Additional Course Policies

VIP Room and Equipment Use Policy

VIP rooms and equipment are shared resources used by multiple teams. To ensure a productive and respectful working environment, the following rules apply:

1. Room Usage Priorities

Room use is prioritized as follows:

1. Scheduled team meetings, lectures, and learning modules
2. Weekly sub-team meetings (multiple groups may share the space)
3. Video conferences or special meetings with VIP stakeholders
4. Other project-related work (multiple groups may share the space)

Room schedules are available on the VIP website.

Note: A “good neighbor” policy applies—students may use rooms during other activities as long as they do not cause disruption. Quiet individual work or studying is allowed when it does not interfere with scheduled uses. Similarly, multiple groups may use a VIP room at the same time.

2. Cleanliness and Conduct

- Everyone is responsible for keeping rooms clean.
- Food is allowed, but spills must be cleaned immediately.
- **Gum must be disposed of properly—do not stick it under desks or on carpets.**
- Rooms are monitored by cameras; violations may be reviewed via video.

3. Equipment Use

- Equipment may be designated for general use or assigned to specific teams.
 - General use examples: Projector in Klaus 1440, monitors in VL 465 and VL 463B.
 - Equipment assignments may change each semester.
- If unsure about equipment access, contact: vip-request@ece.gatech.edu

- Use equipment only for its intended purpose. Misuse may pose safety risks.

Important Equipment Rules:

- Equipment may not be removed from VIP rooms without a signed loan agreement approved by a VIP Director.
- You are financially responsible for any equipment not returned in good condition.
- You must know how to operate equipment safely. Approval to use equipment does not imply safety training has been provided.

4. Computer Accounts

- Accounts are for individual use only—do not share with others.
- All usage must comply with Georgia Tech, USG Board of Regents, and State of Georgia policies.
- Respect privacy and data integrity. Having access to a file does not mean you are authorized to read or modify it.

5. BuzzCard Access

- Access is a privilege and is logged.
- Rooms are under video surveillance. In cases of theft, vandalism, or messes, logs and footage will be reviewed.
- Do not allow unauthorized individuals into VIP spaces.
- Always secure the room (close the door) when leaving.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

A list of resources for undergraduate students' academic success and information about advising can be found at [Success at Tech](#).

- 1:1 Tutoring: Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. Georgia Institute of Technology has partnered with Knack to provide students with access to verified peer tutors who have previously aced this course. To view available tutors, visit gatech.joinknack.com and sign in with your student account.

Graduate Student Academic and Professional Success Resources:

A list of resources for graduate students is given on the [Office of Graduate and Postdoctoral Education](#) website. Specific information for [current graduate students](#) includes

- [Academic Resources](#) such as the Communications Center, Language Institute, Library, Catalog, Registrar, resources for conducting research, Advocacy and Conflict Resolution resources, and how to manage unexpected situations that may impact your academic performance;
- [Student Resources](#) such as Campus Services, Child Care/Family programs, Health & Wellness, Career Services, and the Student Resource Guide; and
- [Professional Development](#) such as the programming from the Career Center and other professional development resources and events”]

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](http://student-resource-guide.gatech.edu))