VIP Syllabus • Fall 2026

Vertically Integrated Projects Program • vip.gatech.edu

About VIP

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The Vertically-Integrated Projects (VIP) Program operates in a research and development context. Undergraduate students that join VIP teams earn academic credit for their participation in design/discovery efforts that assist faculty and graduate students with research and development issues in their areas of expertise.

The teams are:

Multidisciplinary - drawing students from all disciplines on campus;

Vertically-integrated - maintaining a mix of sophomores through PhD students each semester;

Long-term - each undergraduate student may participate in a project for up to three years and each graduate student may participate for the duration of their graduate career.

Each team will determine working times, designated as "sub-team meetings." Students are responsible for participating in their team and sub-team meetings. If you miss any meeting, you are responsible for knowing what occurred in that meeting (typically by discussing it with other team members). An excused absence does not relieve you of that responsibility.

The continuity, technical depth, and disciplinary breadth of these teams are intended to:

- Provide the time and context necessary for students to learn and practice many different professional skills, make substantial technical contributions to the project, and experience many different roles on a large, multidisciplinary design/discovery team.
- Support long-term interaction between the graduate and undergraduate students on the team. The graduate students mentor the undergraduates as they work on the design/discovery projects embedded in the graduate students' research.
- Enable the completion of large-scale design/discovery projects that are of significant benefit to faculty members' research programs.

Learning Objectives

Through VIP students will:

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

Semester Overview

Week	Activity/Event
Week 1	**VIP kickoff Meeting (GTMI 114)**
Week2	Joint HAC Lab Seminar (GTMI 114) Lab Orientation
	Project Proposals Due before midnight (email and dropbox)
Week 3	**Sub-Team Meetings with Dr. Young (GTMI 433)**
	Joint HAC Lab Seminar (GTMI 114) Intro to Collecting Human Data
Week 4	Joint HAC Lab Seminar (MRDC 3515) CPR/First Aid training
Week 5	Journal Club (tbd)
Week 6	Joint HAC Lab Seminar (GTMI 114) Motion Capture Processing Tutorial
Week 7	Joint HAC Lab Seminar (GTMI 114) OpenSim Tutorial
Week 8	**Web-based peer-reviews released for students to complete. Online form due at 4PM Friday. Late** submissions **will not be accepted.**
	Midterm grades for 2000-level courses due in OSCAR (S for satisfactory, U for unsatisfactory).
	Midterm Presentations (one team at a time) (GTMI 114)
	Midterm grades for 2000-level courses due in OSCAR (S for satisfactory, U for unsatisfactory).
Week 9	Research Presentation (GTMI 114)
Week 10	Joint HAC Lab Seminar (GTMI 114) Machine Learning & PACE Tutorial

Week 11	Journal Club (GTMI 114)
Week 12	Joint HAC Lab Seminar (GTMI 114) Epically Powerful Basics
Week 13	Research Presentation (GTMI 114)
Week 14	Joint HAC Lab Seminar (GTMI 114) Epically Powerful Implementation
Week 15	**Web-based peer-evaluations released for students to complete. Online form closes on Wednesday.** **Late submissions will not be accepted**
Week 16	Joint HAC Lab Seminar (GTMI 114) Machine Learning Offline vs Real-time accuracy
Week 17	**Final Report due at midnight (email and dropbox)** **Final presentations (GTMI 114)**

*Undergraduates are encouraged to attend the majority of the EPIC lab meetings. Bold events are required. This schedule is subject to change.

Project Proposal

After the first week, each sub team is required to prepare a 1-2 page description of team's semester goal as well as individual contribution towards the team. Detailed requirements for the documents are shown below. The finalized proposal should be submitted to Dr. Young no later than end of week 2. It should be submitted via email to Dr. Young as well as uploaded to Dropbox.

1. Problem Statement: Each team submits a problem statement from the selected project. The problem statement clearly defines the scope and expected content of the project. It addresses the project's overall research goal. This statement can include the specific experimental protocol for the team.

2. Project Plan: Each team submits a semester long work plan for the completion of the project. Identify individual members responsible for activities related to group management, design partition, and deliverables. Include a timeline with critical dates. A Gantt chart should be used.

3. Task Assignments: Each team assigns detailed responsibilities for each member as stated in the Project Plan. Each team member details the specific tasks in supporting the project and team. The individual task assignments are integrated into a single group plan (not just cut and pasted together). Each person must understand their own responsibilities and the responsibilities of the other team members.

Presentations

Two group presentations are required from each sub-team during the semester. One is a mid-term presentation given during Week 8, and the other is a final presentation given during Week 17. These presentations are intended as a way for each sub-team to communicate its goals, progress, and accomplishments. These presentations should be structured as a group for each sub-team, not as individual student presentations given in series. The presentations should be structured with introduction, methodology, results, conclusion and how-to sections and slides should be uploaded to dropbox. Each sub-team's midterm presentation will only be presented to their team lead(s) and Dr. Young. The final presentation will be presented to the entire lab.

1. Introduction: The Introduction should clearly explain the motivation behind the experiment. It should also include the goals set to be accomplished by the project. If the project is a continuation of previous semesters, a brief explanation of previous work could be useful in the Introduction. The Introduction should contain the goals included in the Project Proposal.

2. Methodology: The Methodology section should explain the methods used to accomplish the goals explained in the Introduction. If a formal experiment was part of the project, explain the methods of data collection that were used. This section should also include how the data was processed.

3. Results: The Results section should explain the findings of the project and why they are meaningful. This is the section to use for including figures and tables to explain your findings.

4. Conclusion: The Conclusion section should summarize your accomplishments of the semester. It should also include what you found challenging and what future work could be continued from the project.

5. How-To: The How-To section should explain how other students in the lab can access your data and what software they might need to use your data. Additionally, if your team developed pipelines or workflows, they may be explained in this section or the Methodology section.

Final Report

During week 17, each sub team is required to submit a final report containing the methods, results, and discussion of the work accomplished by the team. This is submitted via email to Dr. Young and uploaded to dropbox as well. The report should follow the IEEE Template for Transactions format and should be no longer than 6 pages including figures, tables, and references; however, appendices may be included in addition to the 6 pages for information that is supplemental to the report. This report should also be used to explain to other sub-teams how to access and use any data that is discussed. The report should contain eight sections: Abstract, Introduction, Methods, Results, Discussion, Conclusion, References and Appendices.

1. Abstract: The abstract should be a single paragraph of 150-250 words briefly explaining the entirety of the final report. It should be completed self-contained meaning that it should not rely on any external information outside of the Abstract to understand.

2. Introduction: The introduction should explain the justification of the project along with any previous literature that strengthens the paper. This is a good time to reference previous work and why this report expands upon it. **The introduction should clearly explain the intent/goals of the project.**

3. Methods: The Methods section should include the tools (sensors, robots, etc.) used for the report, the procedure followed for data collection if any, how data was processed, and how others can access and use this data. Be as descriptive as possible. Try to ensure that a reader would be able to recreate your results using the methods section.

4. Results: The Results section should include all quantitative and qualitative results of the project. This is the place to include meaningful figures and tables containing the results of your work. Each result should be referenced in the text of the Results section. Do not just place results in your project without explaining what they are in text. The Results section can also be used to point out interesting trends in the data that can be discussed in the Discussion section.

5. Discussion: The Discussion section is the key component in explaining the meaningful results of your project. This section should reference the results displayed in the Results section and should explain to the reader what these results prove or imply. The Discussion section is your opportunity to explain the importance of your work!

6. Conclusion: The Conclusion should be used to wrap up the Final Report. This should include a brief summary of what was discussed along with the key findings. Additionally, the Conclusion section is a good place to identify potential places of continuation of the project.

7. References: Make sure to follow the IEEE citation style for referencing any work in your report.

8. Appendices: Appendices may be used to include information that is supplemental to the final report. One good example would be to include how to access and process the data used in the report.

An example template provided by IEEE can be found here:
https://journals.ieeeauthorcenter.ieee.org/create-your-ieee-article/authoring-tools-and-templates/ieee-article-templates/templates-for-transactions/

Grading

The premise of VIP is teams working on projects. Much like a real-world engineering team, individual members work on different aspects of the project. Team members range from sophomores through graduate students, from first-time participants to students who have been involved for four or more semesters. Some students take the course for one credit, and others take it for two or more credits.

Your grade is based on three areas, along with three requirements. Although each student may work on different areas and contribute differently, you must show achievements in all three areas below.

1. Documentation and records (33%)
    a. VIP Notebook (not optional);
    b. VIP Wiki/blog documentation;
    c. Code (via GT GitHub) if team is developing software.

2. Personal accomplishments and contributions to your team's goals (33%)
    a. Quizzes, learning modules, essays, reports required by your adviser(s);
    b. Engagement in project;
    c. Pursuit of knowledge necessary for project;
    d. Contributions to the technical progress of the team;
    e. For more experienced members of the team, contributions to the management of the project may be expected.

3. Teamwork and interaction (33%)
    a. Peer Evaluations;
    b. On-time attendance in meetings;
    c. Actively contributes to overall team goals;
    d. Coordinates activities with other team members;
    e. Assists other team members;
    f. Team presentation(s).

4. As part of the assessment of the above, each student is required to:
    a. Maintain a VIP notebook. Scans of well-maintained VIP notebooks are available at: http://www.vip.gatech.edu/vip-notebooks
    b. Complete the mid-term peer evaluation. This is a web-based form, and links are available at http://vip.gatech.edu. **Failure to complete the peer evaluation will result in a full letter grade deduction. Late submissions are not accepted.**
    c. Complete the final peer evaluation, which will be available for one week during Dead Week. **Failure to complete the peer evaluation will result in a full letter grade deduction. Late submissions are not accepted.**

A detailed rubric of these areas is provided below:

Student meets or does not meet specified expectations.

A = meets expectations on 90% of standards and meets all * expectations

B = meets expectations on 75% of standards

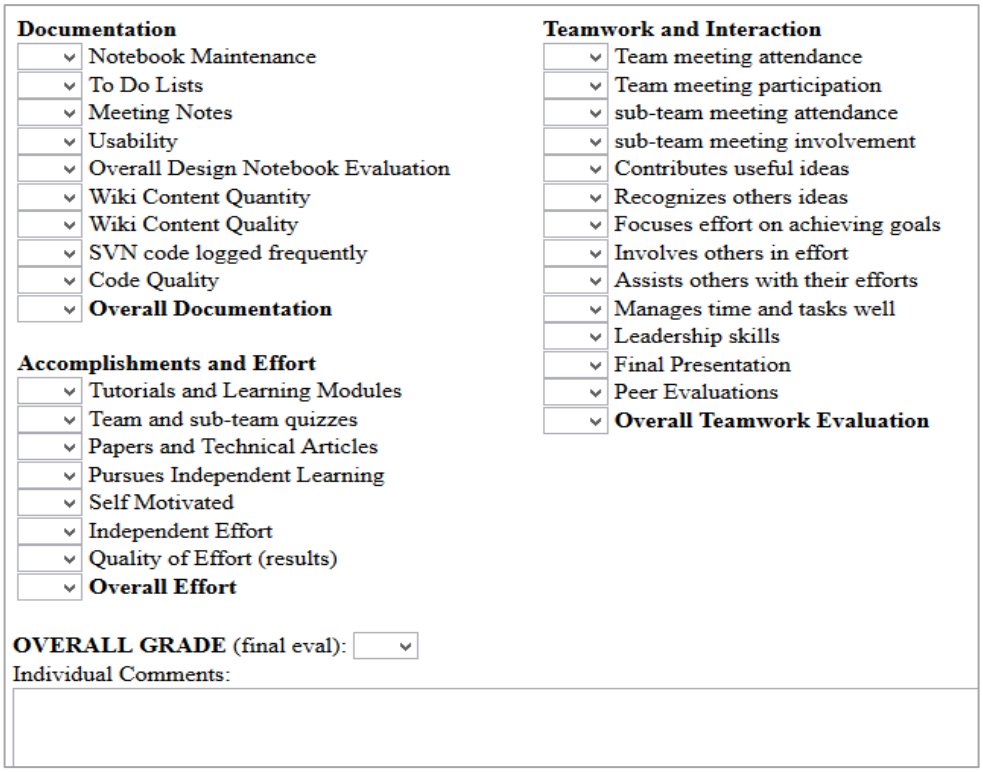
C = meets expectations on half of all standards.

Standard Met	Area	Details
	Documentation and records (1/3 of grade)	
___	Consistent to-do lists	Leaves each team meeting with tasks/work to be done; checks items off list as tasks/work are completed; progress and work completed can be tracked over time.
___*	Explanation of what was done	Sufficient explanation of work, progress, and next steps. Someone knowledgeable/skilled in the field would be able to understand decisions made, repeat what was done, and obtain the same result.
___*	Reflects on what did/did not go well	Discusses what did and did not go well. Attends all weekly meetings with exceptions for missed meetings with previously discussed or documented reasonings.
	Personal Accomplishments and Contributions to your Team's Goals(1/3 of grade)	
___	Proactive	Identifies or asks for tasks to do; does not leave weekly meetings without work to do, suggests next steps; does not stop working and searches for solutions when obstacles arise – checks team documentation, searches online, reaches out to teammates, etc.
___	Quality of contributions	Work is timely, thorough, and accurate; comes to meetings prepared.
___ *	Appropriate level of contribution	Contributions to the project were appropriate. Contributions may include obtaining skills needed to do the work.
	Teamwork and Interaction (1/3 of grade)	
___*	Attitude and participation	Demonstrates interest in the project; treats teammates with respect; pays attention to the people speaking during meetings; avoids distractions during meetings; participates in discussions around others' work; asks thoughtful, relevant questions; acknowledges the value of others' contributions.
___*	Engages with teammates' work	Knows what others on the team/subteam are doing; checks in/stays abreast of their progress; gives teammates constructive feedback and suggestions; helps or provides guidance to teammates; helps keep the team/subteam moving forward.
___	Communicates well	Communicates clearly and in a timely manner; exchanges relevant information with teammates; facilitates communication within the team.
___	Adaptable	Able to pivot when plans change or problems arise.
___	Receptive to feedback, suggestions and help	Solicits and listens to suggestions and feedback; willing to accept help; uses suggestions and feedback to improve.

* Must meet expectation in order to earn an A.

Performance Assessments

Performance assessments will be done once at mid-terms and again at the completion of the semester. The mid-term assessment is advisory.



Documentation

- Notebook Maintenance
- To Do Lists
- Meeting Notes
- Usability
- Overall Design Notebook Evaluation
- Wiki Content Quantity
- Wiki Content Quality
- SVN code logged frequently
- Code Quality
- **Overall Documentation**

Accomplishments and Effort

- Tutorials and Learning Modules
- Team and sub-team quizzes
- Papers and Technical Articles
- Pursues Independent Learning
- Self Motivated
- Independent Effort
- Quality of Effort (results)
- **Overall Effort**

Teamwork and Interaction

- Team meeting attendance
- Team meeting participation
- sub-team meeting attendance
- sub-team meeting involvement
- Contributes useful ideas
- Recognizes others ideas
- Focuses effort on achieving goals
- Involves others in effort
- Assists others with their efforts
- Manages time and tasks well
- Leadership skills
- Final Presentation
- Peer Evaluations
- **Overall Teamwork Evaluation**

OVERALL GRADE (final eval):

Individual Comments:

Notes on Documentation

Notebook Maintenance	- The notebook is virtual for this semester. - Your name, your project's name, your contact info and your team members' contact info are recorded on the title page. - Each page is numbered, dated and signed.
To-Do List Maintenance	- Maintain check-boxes for items to be done. - Check-off and dated items when done.
Meeting Notes	- Detailed meeting notes that include check-boxes for items for which you are responsible and deadlines for your sub team and the overall team.
Usability	- Will your VIP notebook be of use to people who join the team later and need to refer to it? This includes legibility, intelligible technical and meeting notes, and overall organization.
Overall	- An overall rating of your notebook. (Detailed design notes, design decisions, copies of or pointers to code that you wrote, records of important websites, etc.)
Wiki content	- Wiki content refers to documentation produced online, either through the VIP wiki site, T-square, or other team-approved site.
GT GitHub	- GitHub code refers to code produced and checked into the GT GitHub. The frequency, quantity and quality of contributions are evaluated.

Academic Honesty

The main principle in VIP academic honesty is that you will not present someone else's work as your own. Tests and specific assignments (homework, lab assignments, etc.) must be your own work. For other work you are encourage to consult whatever sources are helpful in learning and understanding the issues associated with the material, but you should always provide appropriate references and citations where such material is included in your VIP notebook, programming code, presentations, etc.

Additionally, to provide a good working environment for all students, you're expected to adhere to rules given here, posted, or disseminated in class. Academic Honesty is taken seriously and failure to follow these principles will result in disciplinary actions as given in the Student/Faculty Handbook.

Accommodations for Students with Disabilities

Georgia Tech offers accommodations to students with disabilities. If you need a classroom accommodation, please make an appointment with the Office of Disability Services (www.disabilityservices.gatech.edu). If you have an accommodation letter from the Office of Disability Services and require accommodations, please see me in my office during office hours or by setting up an appointment with me.

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.

Labs and Facilities

VIP has rooms and equipment that are shared by many VIP teams. In order to provide a good working environment, the following rules apply to anyone with access to these rooms and equipment:

1) The room priorities are:
    a. Scheduled team meetings, lectures and learning modules
    http://vip.gatech.edu/new/classroom-schedules
    b. Video conferences or special meetings with stakeholders
    http://vip.gatech.edu/new/classroom-schedules
    c. Weekly sub-team meetings (multiple groups can use rooms at same time)
    d. Other project-related work (multiple groups can use rooms at same time)

    While these priorities indicate which events take precedence, a good neighbor policy on using the rooms applies. If you need to access computers, equipment, or work on project work in the room while other activities are going on (sub-team meetings, etc.), you are welcome to do so as long as it does not disrupt a scheduled activity. Similarly, multiple groups may use a VIP room at the same time. Also, where it does not disrupt one of the above uses, VIP participants may

use the rooms for other activities such as studying.

2) Everyone is expected to pitch in to keep the rooms clean. Faculty/team advisors do not appreciate having to clean up after students. Food is allowed in the rooms provided any spills or messes created are cleaned up. Gum is a particular problem especially in carpeted rooms. Do not place used gum anyplace other than wrapped in a trash can!

3) The rooms have equipment both for general use and for specific teams. General use equipment includes the projector in Klaus 1440, and the display in VL 465. Other equipment may be for general use or dedicated to a team specific purpose (some equipment may be general use one semester and assigned to a team another semester). You should not use team-specific equipment except for the designated purpose. If you are uncertain whether the equipment is available for general use then you need to determine that it is available and appropriate for you to use before using the equipment. Some equipment may pose hazards if used inappropriately!
    a. Equipment may not be removed from a VIP room without filling out a written record approved by the appropriate team advisor.
    b. You will be responsible for the replacement cost of any equipment not returned in good condition.
    c. You must be sure you know how to operate the equipment safely. Written approval to use the equipment does not indicate that the team advisor has reviewed equipment use and safety. You are responsible for knowing the hazards and safe operation of any equipment you use.

4) Computer accounts are issued for your use only. You may not share computer accounts with anyone else, even another team member. All computer usage is subject to rules and policies of Georgia Tech, the University System of Georgia Board of Regents, and the State of Georgia. Additionally, you are expected to be considerate of other users. Computer permissions are not authoritative. For example, just because you have file access to something does not indicate that it is appropriate for you to read or modify that file.

5) Buzz-card access to VIP facilities is a privilege contingent on abiding by the above rules. **Buzz-card access is logged, and rooms are video recorded.** Be aware that if there is a problem (theft, vandalism, or simply a mess left in a room), the logs and video records will be consulted. Do not allow unknown people to access VIP facilities. Be sure to secure the facilities (i.e., close the door) when you leave.

In-lab Experiment Expectations

A fundamental part of the lab is testing on human subject data, and many sub-teams will have weekly data collection protocols ongoing throughout the semester. In order to participate in human subject data collections, **all students must complete the online CITI training** including the 1) the Group 1: Biomedical Research Investigators and Key Personnel module and 2) the Good Clinical Practice (GCP) module. This ensures that you are aware of the ethical obligations of human subject research. Step-by-step instructions for completing these modules can be found at

http://researchintegrity.gatech.edu/irb-required-training. Additionally, it is extremely important to maintain a clean workplace in our lab to ensure student and subject safety.

CARE Center, Counseling Center, Stamps Health Services, and the Student Center

These uncertain times can be difficult, and many students may need help in dealing with stress and mental health. The **CARE Center** and the **Counseling Center**, and **Stamps Health Services** will offer both in-person and virtual appointments. Face-to-face appointments will require wearing a face covering and social distancing, with exceptions for medical examinations. Student Center services and operations are available on the **Student Center** website. For more information on these and other student services, contact the Vice President and Dean of Students or the **Division of Student Life**.

Student Name _____ VIP Team _____ Semester _____

VIP Notebook Grading Rubric		Poor	Intermediate	Exemplary
Notebook Maintenance (25)	Virtual notebook has pages numbered and VIP team name included	0 1	2 3	4 5
	Name and contact info easy to find	0 1	2 3	4 5
	Teammate names and contact info easy to find	0 1	2 3	4 5
	Neatness	0 1	2 3	4 5
	Signatures	0 1	2 3	4 5
Meeting notes (15)	Meeting notes	Non-existent, disorganized 0 1 2 3 4 5	Present and clear, but short 6 7 8 9 10	Detailed notes, includes sub-group meetings and mid-week exchanges 11 12 13 14 15
To-do lists (25)	To-do items easy to find	0 1	2 3	4 5
	To-do list consistency, weekly or more	0 1 2 3	4 5 6 7	8 9 10
	To-do item clarity	0 1	2 3	4 5
	To-do items checked and dated, cancellations dated	0 1	2 3	4 5
Usability (35)	Organization	0 1	2 3	4 5
	Personal work and accomplishments well recorded	Poorly documented: Someone familiar with the field would not be able follow the decisions made or work completed. 0 1 2 3 4 5	Well documented: Includes ideas, resources and results. A person familiar with the field would understand the process followed and work completed. 6 7 8 9 10	Exemplary: In addition to being well documented, includes explanations, justifications and reflections. 11 12 13 14 15
	Useful resource	Poor resource or reference for the team. 0 1 2 3 4 5	Useful resource: Someone familiar with the project would find sufficient answers. 6 7 8 9 10	Excellent resource: Useful to future group members; someone familiar with the field could follow the work. 11 12 13 14 15
Comments:	Column totals:			
			Total out of 100:	