

VIP – Chemical Equity Syllabus

VIP Sections VXX and OXX, variable credits.

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Instructor Information

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General Course Information

Description

The Vertically Integrated Projects (VIP) Program is a research-focused and development-based course in which undergraduate students earn academic credit by contributing to ongoing faculty-led research and design efforts. VIP teams support faculty and graduate student research while providing undergraduates with sustained, hands-on experience in collaborative, project-based work.

VIP teams are:

- Multidisciplinary, drawing students from across campus;
- Vertically integrated, including students from the sophomore level through graduate students;
- Long-term, allowing undergraduates to participate for up to three years and graduate students for the duration of their graduate programs.

This structure provides the continuity, technical depth, and disciplinary breadth needed to:

- Enable students to develop and practice professional and research skills, assume multiple roles, and make substantial contributions to large-scale projects;
- Foster sustained mentoring relationships, with faculty or graduate students guiding undergraduates on research embedded within their own work;
- Support the completion of ambitious, long-term projects that significantly benefit faculty research programs.

Course Learning Outcomes

The **Chemical Equity Initiative** is a transdisciplinary Vertically Integrated Project (VIP) team situated at the intersection of chemistry, public health, policy, and advocacy. The team investigates how chemical exposures intersect with economic, social, and professional contexts, with the goal of developing evidence-based and equity-informed risk management strategies.

Students analyze state and federal datasets, integrating molecular-level understanding of chemical reactivity, physical properties, and toxicity profiles with context-sensitive and disaggregated data analysis. This approach enables a more accurate understanding of exposure disparities and supports calibrated, actionable solutions.

Team research results are disseminated through original, peer-reviewed research publications, with students serving as co-authors. Through participation in the Chemical Equity VIP team, students will:

- Learn and practice sustainability competencies and transferable professional skills;
- Make substantive contributions to original, societally relevant research;
- Engage in multiple roles within a collaborative, multidisciplinary research team;
- Disseminate research findings to academic peers and broader public audiences.
- Partner with the community to understand context and identify viable support approaches.

Consistent with the VIP model, students work collaboratively on a shared research project, with individuals contributing to different aspects of the overall effort. Team members span academic levels from sophomore through senior, and students may enroll for one or two academic credits depending on their level of commitment.

Students are strongly encouraged to present their work in poster sessions and/or conferences. Both instructors will provide guidance on research communication and presentation development. All materials intended for public dissemination (posters, manuscripts, presentations) must receive written approval via email from both instructors and all co-authors prior to submission or presentation. With instructor pre-approval, a poster or manuscript may serve as the final course report.

Required Course Materials

No material is required.

Grading Policy:

An adapted version of specification grading will be used in this course. Each assignment will include a rubric (posted on Canvas) that specifies the criteria required to earn a satisfactory grade. Assignments that do not meet these criteria will be marked unsatisfactory and returned with actionable feedback. Students may be given the opportunity to revise and resubmit work to address areas of concern.

Only two assignments (excluding the final assignment) may be revised and still count toward meeting the course passing requirements.

A	Engage & contribute to research project (intellectual, analytical, operational contributions)
	Attend and actively participate in research meetings
	Collaborate and support teammates in the project and course
	Complete all assignments with at least 80 %
B	Engage & contribute to research project (intellectual, analytical, operational contributions)
	Attend regularly research meetings
	Complete all assignments with at least 80 % or did not complete one assignment.
C	Completed all assignments
	Earn at least 70 % on each assignment. Did not complete more than one assignment.
D	Miss meetings more than three times with no pre-arranged or make up plan. Substandard contributions to research project.
	Earn lower than 60% on one of the assignments
F	Failed to meet the requirement in D

Assignments	Submission	Mode	Grade
Semester agreement, goals & timeline	Canvas upload	Team	100
Notebook (peers)	Canvas upload	Individual	100
Notebook (instructor)	MSTeams	Individual	100
Reflections (3 x 50)	Canvas upload	Individual	150
Notebook (instructor)	MSTeams	Individual	100
Complex Problem definition	Canvas upload		50
Team Presentation (slides deck must be uploaded)	Canvas upload	Team	100
Authentic assessment (public event-outreach) & Reflections	Canvas upload	Individual	100
Total			800

Description of Graded Components

Semester agreement, goals & timeline: At the beginning of the semester, your team will develop a shared plan for the project, including collaboration expectations and project objectives. As a group, you will submit a team agreement, a brief project overview, a list of project goals, and a proposed timeline outlining major milestones and responsibilities. This assignment establishes a foundation for effective teamwork and project success throughout the semester. More details on canvas.

VIP Research Notebook: Maintaining a VIP research notebook is central to this course. The notebook must provide an accurate, complete, and well-organized record of your work, including ideas, research activities (including data), class notes, and references/sources. Entries should contain sufficient detail for a third party to understand, verify, and reproduce your work, and to support publication efforts. Students should not rely on memory for facts, data, or evidence; all relevant details must be documented contemporaneously.

To support the development and refinement of effective record-keeping skills, the following formative assessments are required:

- 1) Notebook Peer Review: Each student will review a classmate's notebook using the same rubric used by the instructor. Guidelines are provided on canvas.
- 2) Instructor Notebook Reviews: The instructor will conduct two notebook reviews. (i) One at midsemester (after the peer review) and (ii) one toward the end of the

semester. Actionable written feedback will be provided. Rubrics are available on Canvas.

Team Presentation: At the end of the semester, each team will present its project goals, methods, and results to the class. Presentations will be evaluated by both peers and instructors. You must be uploading the slides. More details provided in class and canvas.

Reflections: The course includes three assignments (personal reflections) each worth 50 points. They will aligned with the semester class activities and guest speakers. Description is provided on canvas.

Complex Problem definition: You team will work to define the complex problem you are working on by identifying the scientific, technical, societal and human factors. This is a team submission. Details provided on canvas.

Authentic Assessment: A public demonstration of competence is required and may include: Poster presentations, Oral presentations, Participation in public-facing events (e.g., conferences, outreach, advocacy activities). This requirement is mandatory for passing the course. *Failure to complete the public demonstration requirement will result in a full letter-grade deduction.* You will need to submit a summary of the experience at the end of semester along with semester reflections.

All student posters, presentations, and public participation must be **pre-approved** by faculty. Students are expected to work with faculty during the first month of the semester to identify appropriate venues. Preparation for public dissemination is integrated into the course structure.

Course Policies

Attendance and/or Participation

Attendance to class and intellectual participation is required.

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 plagiarism 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.

Pre- &/or Co-Requisites

No pre-req or co-req.

Collaboration, Group Work, and Use of Generative AI

AI may be used as a collaborative tool to brainstorm ideas, to gather background research, and information, to support data mining or to improve language. However, the final and submitted work must be your work and cannot be generated, copied and pasted from an AI model without review, editing and intellectual input from you.

Intellectual engagement is central to this course. The more actively and thoughtfully you engage, the more you will gain from the experience. The course has been intentionally designed to minimize busy work while providing a scaffolded learning experience through in-class activities and a limited number of meaningful out-of-class assignments.

While I support the appropriate use of AI as a learning tool, your submitted work must ultimately reflect your own voice, thinking, and experiences. AI-generated content cannot substitute for your personal reflections or professional development. As a result, work that is solely AI-generated is not acceptable for credit. To promote transparency and equity, every assignment submitted in this course must include the AI Usage Statement (template available on canvas), along with evidence of AI use when applicable. Even if you did not use AI, you must still complete and submit the statement, indicating “No AI Use.”

Extensions, Late Assignments, & Re-Scheduled/Missed Exams

Extensions may be granted in limited circumstances. Students must contact Dr. P. as soon as possible and before the deadline to discuss equitable options and potential extensions. A course grade of F will be assigned if a student fails to submit the final report, complete the required authentic assignment, or adequately maintain the VIP research notebook.

Inclement Weather and Digital Learning Days

If a weather or other unexpected event affects campus operations, an announcement will be made on canvas to provide a contingency plan following Institute guideline.

Student Use of Mobile Devices in the Classroom

Mobile devices can only be used to support learning or class activities.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

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 \(gatech.edu\)](#))