

IOT in HEALTH Syllabus

202602, Variable Credits

Tuesday(s), 2:00 to 2:50 pm, Centergy One Building Suite 420

Instructor Information

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General Course Information

Description

This interdisciplinary, project-based course challenges students to design and deploy an Internet of Things (IoT) system within healthcare Industry to enhance multiplexed point of care testing, diagnostics, the care and treatment of patient, and homecare. Students will work in teams to integrate sensors, embedded systems, mobile/web applications, and wireless networks, while also exploring data analytics, AND commercialization. The goal of this course is to engage students with different background to explore the next generation IOT and lab on chip that can be integrated to the next generation autonomous car, hospital, offices and homes.

Pre- &/or Co-Requisites

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

Course Goals and Learning Outcomes

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

1. **Design and implement an IoT system** that enhances patient experience and safety in the healthcare environment.
2. **Integrate diverse technologies** including sensors, embedded systems, mobile/web applications, and wireless networks to collect and utilize real-time data.
3. **Apply data-driven approaches** such as machine learning and analytics to improve user engagement and operational efficiency.
4. **Understand and engage in the commercialization process**, including business planning, marketing, and stakeholder communication.

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.

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%)**

- Maintain individual documentation (required).
- Contribute to team documentation: VIP Wiki, blog

2. Personal Contributions (33%)

- Complete assigned quizzes, modules, essays, or reports.
- 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. Failure to submit results in a full letter grade deduction.
- Attend meetings on time.
- Collaborate toward team goals.
- Coordinate and assist teammates.
- Contribute to team presentations.

Rubric

Student meets or does not meet specified expectations.

A = meets expectations on 2 standards and meets all * expectations

B = meets expectations on 2 standards

C = meets expectations on 1 standards, etc.

Each section should be 1/3 of the assessment. Add/removed rows to fit your needs.

Standard

Met	Area	Expectations
Documentation (1/3 of grade)		
___	Consistent to-do lists	Leaves each meeting with work to do; checks items off list as tasks/work are completed; progress/work can be tracked over time.
___*	Explanation of what was done (in individual notebook/documentation)	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 in weekly reflections, an organic part of documentation
___	Team-level documentation	Expectations for team-level documentation
Contributions (1/3 of grade)		
___	Proactive	Identifies or asks for tasks to do; does not stop working and searches for solutions when obstacles arise – checks team documentation, searches online, reaches out to teammates, etc.
___	Learning	Acquires knowledge or skills needed for the project.
___	Quality of effort	Work is timely, thorough, and accurate; Student comes to meetings prepared.
___x2*	Appropriate level of contribution	Considering the course level and number of credit hours , contributions to the project were appropriate. Early-stage contributions may include obtaining skills needed to do the work.

Teamwork (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; acknowledges the value of others' contributions.
___ *	Engages with others' 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	Facilitates communication within the team; exchanges relevant information with teammates; clear and timely communication.
___	Adaptable	Able to pivot when plans change or problems arise; willing to accept help; solicits and listens to suggestions and feedback; uses suggestions and feedback to improve.
___ **	Peer evaluations	Completed peer evaluations by the deadline. Provided thoughtful feedback.

* Required in order to earn an A. Instructors can choose which items this applies to.

** Required in order to earn an A. Not completing peer evaluations is associated with a letter grade reduction.

Grading Scale

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%

Course Materials

Materials/Resources

Course Website and Other Classroom Management Tools

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.

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.

Attendance and/or Participation

Success in this course is closely tied to your presence and active engagement. Attendance is mandatory, but "being present" involves more than just sitting in a seat; it requires active contribution to the learning environment.

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

Late submissions are subject to grade penalties unless an extension has been pre-approved. Penalties may include:

- **For the first day late:** A reduction of 10% of the total possible score.
- **For each subsequent day late:** An additional deduction of 5% per day, up to a maximum of seven days.

- Assignments submitted more than seven days after the deadline may not be accepted, resulting in a grade of zero, unless otherwise approved.

Inclement Weather and Digital Learning Days

In the event of hazardous weather, the Superintendent may declare a Digital Learning Day. These days count as official instructional days and do not need to be made up at the end of the year.

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))

Course Schedule

Week	Date	Activity/Event
Week 1	September 25, 2026	Introductions Overview of team's work Discussion of semester goals ...
Week 2	September 1, 2026	Sub-team selections finalized Sub-team meeting times finalized
Week 3	September 8, 2026	Verification of Student Participation in Class Due by Friday at 4pm Discussion on Articles
Week 3	September 15, 2026	Lecture

Week 4	September 22, 2026	Lecture
Week 5	September 29, 2026	Team Update
Week 6	October 6, 2026	Fall break.
Week 7	October 13, 2026	Scrum: Update on research led by sub-teams Web-based peer-evaluations released for students to complete. Online form due by end of the day Friday. Late submissions will not be accepted. Submit individual VIP documentation for mid-term grading.
Week 7	October 13, 2026	Midterm presentations
Week 8	October 13, 2026	Midterm grades for 2000-level courses due in OSCAR (S for satisfactory, U for unsatisfactory).
Week 9	October 20, 2026	Lecture
Week 10	October 27, 2026	Lecture
	October 31, 2026	Withdrawal Deadline
Week 11	November 3, 2026	Lecture
Week 12	November 10, 2026	Lecture
Week 13	November 17, 2026	Research Update
Week 14	November 24, 2026	Final Lecture
Week 15	December 1, 2026	Final Presentation
Week 16	December 8, 2026	Final Presentation
Week preceding finals	Nov 30 - Dec 8 Open Close	Web-based peer-evaluations released for students to complete. Online form closes at 11:59PM on Tuesday. Late submissions will not be accepted.
Last week of class	Nov 30 - Dec 8	Final presentations Turn in individual VIP documentation for final grading.
Finals Week	Dec 10 - Dec 17	No final. No assignments.