CS 4660/6460 - Educational Technology: Conceptual Foundations

## Important Information

**Instructor:** Prof. Judith Uchidiuno
**Email:** jiou3@gatech.edu

**Texts:** There is no textbook for this course. All readings will be available for download in PDF.

## Course Description and Objectives

How can educational technologies impact knowledge acquisition, literacy levels, or learning engagement? This course will allow students the opportunity to evaluate different learning technologies considering different learning science theories and socio-cultural factors, and redesign them for better user engagement and learning. It is suitable for undergraduate and graduate students who are interested in designing educational technologies and understanding learning sciences.

Students will learn about different learning science theories, usability evaluation, and design improvement recommendations. This course assumes that students have no prior research or design training. Coursework includes lectures, class activities, class discussions, homework, class presentations, and group projects.

The course will equip you with knowledge about:

- the latest scientific research on human learning
- current and past educational technologies
- an integrated breadth of multidisciplinary knowledge about local educational contexts
- Low, and high-fidelity software prototyping
- specific education topics

By the end of the course, you will be able to:

- Read and apply insights from academic papers and news articles in the design of education technologies.
- Evaluate public education technology solutions for their alignment with learning principles using different usability evaluation methods.
- Design and evaluate education technology solutions prioritizing the needs of a diverse array of students.

It is open to undergrads and graduate students from all majors. No computer programming experience is necessary. You are encouraged to bring your own project ideas to the course.

## Communication Policies

E-mail the TAs and the professor for student issues not appropriate to be shared with the rest of the class. Except for weekends, we will do our best to respond to student e-mails within 24 hours.

## Course Plan and Assessment

This course is about putting into action the insights learned from learning science-related readings into the design of education technologies. As a result, students will be taught how to read papers effectively, basic prototyping, and artifact analysis skills to allow evaluate education technologies effectively.

Laptops, smartphones, or tablets may be allowed in class for note-taking and when the class activity requires it. Please refrain from multi-tasking with non-class related activities. Everyone thinks they can multi-task; the research strongly suggests otherwise.

**ASSIGNMENTS**

Students will be expected to submit reflections summarizing the class lectures (as evidence of your attendance), group assignments, and other individual assessments on canvas assignments.

**Class Reflections:** At the end of each class, submit your notes and a 1 paragraph writeup that summarizes the class materials. It must be more than a summary of the lectures. Analyze the material and think about how it connects with other course materials and your life experiences. Pose questions, try out new ideas, and think creatively. It is not enough to simply say you "like" the lectures or that something was "boring.". *Reflections will receive 3 points for summarizing class notes effectively, and 2 additional points for your personal reflection on the readings*. All reading reflections are at the end of every class. (5 points each). You will be assigned a class reflection at the end of every class.

**Group Project:** Other assignments will include group assignments and an in-class group presentation. Each group will be comprised of 4-5 students, along with a TA for instructional support, with design, education technology development, and research skills. For the group project, teams will be assigned the task of redesigning an existing educational technology product to be in better alignment with different learning science principles and theories. Teams will prototype an improved technology solution using Figma. The final team presentation dates will be announced during the semester – each team will have 10 minutes to present their work and 5 minutes to answer questions from the class.

**Individual Assignments:** During the last few weeks of the semester, students will be assigned an individual prototyping assignment to demonstrate their competence using the prototyping tools they learned during the semester. Students will also be assigned individual readings reflections associated with their assigned projects. More details for the individual assignments will be shared during the semester.

## Attendance

A good portion of the learning in any class comes from intelligent discussion and in-class activities. If you don't attend class, you cannot participate, and your performance in the class will reflect that. On university-announced hybrid learning days, class will transition from in-person to online synchronously via Georgia Tech's Team. I expect your full attention, professionalism, and interactive participation for both in person and online classes. Please see the university guidelines for what students and faculty can expect from one another in the classroom environment.

**Excused absences**: For the Fall and Spring semesters, everyone is allowed to miss **three** classes without penalty (one class for the shorter summer semesters). In-class activities are a significant portion of your final grade. There are other allowable reasons to miss class with **sufficient evidence**. These include:

- Medical and family emergencies,
- Academic conference travel,
- Religious events,
- and a small set of approved collegiate activities e.g. career fair.

Students will also be granted permission for all institute-approved absences. Here are the guidelines to request for institute approved absences. You must submit requests at least two weeks (10 business days) in advance of the scheduled event is the time needed for the Committee to review the request and to take the follow-up action. The Committee typically cannot address the request if it does not arrive within this two-week (10 business days) timeframe.

Contact the TAs and professor in **advance** to get an attendance exception. For medical exemptions, please submit a letter from health services or the office of the dean of students for attendance exceptions. Note that absences not covered by institute-approved categories will be considered unexcused..

## Grading Policies

The course involves many different types of assessments to accommodate different learning styles. Your course grade will be a weighted aggregate of your performance on these activities as detailed below. Progress in all areas will be recorded at regular intervals during the semester and always be available via the Canvas gradebook.

The course will not be graded on a curve. Each student will be graded on the extent to which his or her deliverables meet the expectations of good quality work for an undergraduate/graduate course. Lectures, homework, and quizzes will be posted to Canvas. The due date is posted as well. Please monitor your grades on Canvas to ensure that you meet the desired grade you have for yourself. If you find yourself struggling excessively, please reach out to the instructor or TAs for additional support.

Students caught cheating or plagiarizing will receive no credit for the assignment. Please note that Canvas has automated plagiarism detection built-in now, so please do not cheat or turn in uncited work. Additional actions - including assigning the student a failing grade in the class or referring the case for disciplinary action - may be taken at the discretion of the professor. Please review Georgia Tech's Honor Code for ideals that you should abide by as a member of our community.

Your final grade in this course will be based on these percentages:

| Assignment | % |
|---|---|
| Attendance | 30% |
| Class Reflections | 30% |
| Individual Assignments | 10% |
| Group Project and presentations | 30% |

For guidelines on receiving an incomplete grade, please review the GaTech Incomplete Grades guideline. Several assignments have in-class components, so you will need to have each one finished on time. There is no option to take this class as pass/fail.

This class uses a standard percentage scale to assign final grades: 90-100% (A), 80-89% (B), 70-79% (C), 60-69% (D), 0-59% (F). Students who plan to audit or pass/fail the class must achieve a passing threshold of 70% or higher for a satisfactory grade. Here is the university's official policy on auditing a class.

An incomplete (I) grade will only be considered when a student can demonstrate a significant non-academic circumstance that impacts their work in the class and ONLY when they have already completed a substantial part of the course and have satisfactory academic performance.

**LATE WORK**

Assignments are due at the beginning of class or as indicated. Late assignments will be accepted but students will lose 5% per day late off their total points – lowest grade possible on each valid submission is 50%

## Inclusivity

To design human-centered systems, we must understand people and their lived experiences. A diversity of backgrounds and opinions is thus paramount to identifying the best ideas, iterating on them with deep insight, and crafting a final artifact that improves usability and utility for everyone. It is my intention that students from all backgrounds and perspectives be well served by this course and feel comfortable sharing their views and experiences to enrich class discussions. I am always open to suggestions, so please let me know ways to improve the effectiveness of the course for you personally or for other students.

**STUDENT SUPPORT SERVICES**

Georgia Tech is committed to eliminating discriminatory obstacles that disadvantage students based on disability and protecting students' wellbeing at all costs.

The Office of Disability Services collaborates with students, faculty, and staff to create a campus environment that is usable, equitable, sustainable, and inclusive of all members of the Georgia Tech community. Disability is an aspect of diversity integral to society and Georgia Tech. If students encounter academic, physical, technological, or other barriers on campus, the Disability Services team collaborates with the student to find creative solutions and reasonable accommodation. Please see guidelines for the services that the Office of Disability Services can provide.

If you have a disability and want to request accommodations, please review documentation provided by the Office of Disability Resources. Students can also schedule an intake meeting by contacting the office at 404-894-2563.

Here are some other important resources available to all students.

- For immediate life safety issues, contact University Police (404) 894-2500
- For health-related issues, contact University Health Services (404) 894-1420
- Students experiencing a crisis that requires immediate attention may speak with a counselor at any time 24 hours a day, 7 days a week. During regular business hours, students who are not actively in counseling may call 404.894.2575 or walk-in to the office located on the first floor, Suite 238 Smithgall Student Services Building, 353 Ferst DR NW Atlanta GA 30313. After business hours, please call 404.894.2575 and select the option to speak to the after-hours counselor.
- Students who are experiencing an immediate life-threatening emergency on campus, call the Georgia Tech Campus Police at 404.894.2500. If off campus, please immediately call 911.
- To report any sexual misconduct or harassment against you or your colleagues, review the Office of Title IX Policies
- Visit students support and services for a full list of student support resources.