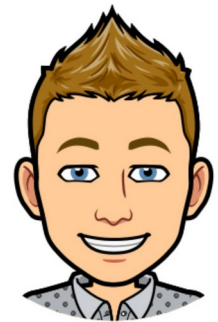


course *syllabus*

LAI #686 SEM | Large Language Models in Education Spring 2024

Instructor Name: Chris Proctor
Class Day and Time: Tuesdays, 4:10-6:50pm
Number of Credits: 3
Email Address: chrisp@buffalo.edu
Office Location: Baldy 510
Office Hours: *By arrangement.*



Course Description:

This is an interdisciplinary, studio-based course focused on designing and implementing theoretically-grounded tools for K12 teaching and learning. Over the semester, teams of students will articulate a learning goal and then design, build, deploy, and analyze an AI application in partnership with a school or community organization.

Students from multiple departments with experience in design, education research, and/or computer science are encouraged to join. Interested students should either enroll in LAI 686, or [contact Dr. Proctor](#) for more information.

There are no hard prerequisites for this class, but you will be working in a group which collectively needs experience in three domains: educational research, design, and software development. You should have a substantial background in at least one of these areas. Specifically, this means:

- For *educational research*, at least one year of doctoral coursework in education. You should have some background in theoretical issues related to teaching and learning and should know how to read and talk about a research paper.
- For *design*, some experience (academic or industry) using iterative design methodologies in any field. (e.g. UI/UX, mechanical engineering, industrial design, software engineering, graphic design, etc.) It helps to have familiarity with tools such as Adobe CS and practices such as user research, developing user stories, wireframing, and critiques.

- For *software development*, the equivalent of CSE 115 and CSE 116. You should know some programming language and have built something with code before.

Mode of Instruction:

In-person, but remote student participation allowed with instructor permission.

Required Text and Materials:

All required materials, including links to assigned readings, and access to Retool, the default platform we will use to build our apps, are provided. Please see the course homepage at <https://computationalliteracies.net/courses/studio/>

Student Learning Outcomes:

Program Goals

Large Language Models in Education is part of the Department of Learning and Instruction's Curriculum, Instruction, and the Science of Learning (CISL) PhD program where it can count as a research methods course or for a number of concentrations depending on the nature of your course project.

This course is fundamentally interdisciplinary and students from other schools and departments are warmly welcome. If you are unsure about how this course might fit into your academic program, please contact Dr. Proctor and/or your academic advisor. We will do everything we can to make it work.

Course learning outcomes

This course brings together three disciplinary domains: educational research, learning-centered design, and computer science/engineering. Successful course projects will require your group to:

- Articulate a theoretically-grounded learning goal and justify its importance for the learning community for and with whom you are designing.
- Conduct ethnographic design research with a learning community of interest.
- Develop and iterate design ideas using AI which are hypothesized to meet the learning goal. Propose a conceptual prototype and justify design decisions with findings from user research.

- Develop a working software prototype of your technology.
- Conduct a small pilot study with the learning community of interest, collecting qualitative and quantitative data.

Within these domains, you will define learning goals for yourself. For example, you might choose this class as an opportunity to learn the basics of programming, to gain experience with learning analytics, or to take a deep dive into a particular area of literature. The class is structured to cultivate interdisciplinary collaboration, so that you can learn from your more-experienced teammates.

Course Requirements:

Please see the course website for up-to-date descriptions of assignments and assessment rubrics.

A. Initial conjectures: (5% of course grade) Due Week 3, February 13.

Frame out your initial ideas about what you are going to build, who it's for, how it might work, and what success might look like.

B. User research: (10% of course grade) Due Week 5, February 28.

Conduct user research in preparation for your own design process.

C. Prototype: (10% of course grade) Due Week 8, March 26.

Prepare an 8-minute presentation of your project with a working prototype to present to an invited panel of outside experts.

D. Field study: (15% of course grade) Due Week 12, April 23

Collect qualitative and quantitative data about initial users to analyze your conjectures.

E. Demo: (30% of course grade) Due Week 14, May 7

Prepare a working prototype of your educational technology to be displayed at the Computational Futures Expo.

F. Conference paper: (30% of course grade) Due Week 14, May 7

Prepare a short paper suitable for submission to an academic conference.

Grading:

All assignments will be graded using rubrics made up of one or more equally-weighted criteria. All rubrics use the same performance levels:

- *Exceeds expectations*
- *Meets expectations*
- *Approaches expectations*
- *Needs additional support*

For each rubric, start by reading the indicators for ***Meets expectation***. If student work meets these indicators, then the next question is whether it also meets the indicators for ***Exceeds expectations***. If not, then the next question is whether it at least meets the indicators for Approaches expectations. If not, then the work ***Needs additional support***.

Performance levels are on an interval scale. That is, the difference between each pair of performance levels is equal. At the end of the course, a sum of weighted assignment grades will be rounded to the closest performance level, and grades will be assigned as follows:

- *Exceeds expectations: A*
- *Meets expectations: A-*
- *Approaches expectations: B*
- *Needs additional support: C*
- *Below needs additional support (e.g. unsubmitted assignments): Not passing*

Groupwork and grades

Working in groups can be stressful, particularly when your grade depends on your teammates coming through on their commitments. Interdisciplinary collaboration is a core goal of this class, and your experience working with teammates from different backgrounds will likely constitute your most impactful learning in the course. We will explicitly discuss strategies for collaboration and I will be available to support your group as necessary.

That said, conflict within groups is not uncommon. By far the most important strategy for effective groupwork is open, nonviolent communication. I will support you in setting communication norms with your group—how you like to be contacted, when you expect to be available to one another, etc. Then treat communication with your group as you would other responsibilities at school or at work. If something is not working for you, or if you are not going to be able to meet a group commitment, communicate early. Problems do not go away; they just grow. On the other hand, each group member is responsible for listening and creating an environment where teammates feel comfortable speaking up.

If you contact me with concerns about your teammates or group dynamics, I will keep our conversation private (within the bounds of UB's mandated reporter requirements). However, if I mediate conflict within your group, know that you will need to tell your teammates what is not working for you. Resolving conflict, or at least a working relationship which allows your group to complete the course together, is the preferred outcome in most situations. However in past project-based classes, I have sometimes made changes in group composition or assigned different grades for different group members. Such arrangements will be resolved on a case-by-case basis.

Attendance Policy:

Attendance and participation are essential to success but are not graded. If you need to miss class, you must communicate with Dr. Proctor and your group ahead of time. These are uncertain times and many of us have responsibilities outside of our studies. If your group knows you will miss a deadline, communicate with me well ahead of time. If we can make a plan for getting you back on track, extensions on deadlines are possible.

Standard LAI Policies

Accessibility Services and Student Resources:

If you have a disability and may require some type of instructional and/or examination accommodation, please inform me early in the semester so that we can coordinate the accommodations you may need. If you have not already done so, please contact the Office of Accessibility Services (formerly the Office of Disability Services) University at Buffalo, 60 Capen Hall, Buffalo, NY 14260-1632; email: stu-accessibility@buffalo.edu Phone: 716-645-2608 (voice); 716-645-2616 (TTY); Fax: 716-645-3116; and on the web at <http://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html>. All information and documentation is confidential.

The University at Buffalo and the Graduate School of Education are committed to ensuring equal opportunity for persons with special needs to participate in and benefit from all of its programs, services and activities.

Academic Integrity:

Academic integrity is critical to the learning process. It is your responsibility as a student to complete your work in an honest fashion, upholding the expectations your individual instructors have for you in this regard. The ultimate goal is to ensure that you learn the content in your courses in accordance with UB's academic integrity principles, regardless of whether instruction is in-person or remote. Thank you for upholding your own personal integrity and ensuring UB's tradition of academic excellence.

It is expected that you will behave in an honorable and respectful way as you learn and share ideas. Therefore, *recycled papers, work submitted to other courses, and major assistance in preparation of assignments without identifying and acknowledging such assistance* are not acceptable. All work for this class must be original for this class. Please be familiar with the University and the School policies regarding plagiarism. Read the [Academic Integrity Policy and Procedure](#) for more information. Visit The Graduate School Policies & Procedures page (<http://grad.buffalo.edu/succeed/current-students/policy-library.html>) for the latest information.

Course Evaluations:

You will have two opportunities to provide anonymous feedback about the course. In the middle of the semester, I will send you a brief questionnaire asking about what activities are contributing to your learning and what might be done to improve your learning. At the conclusion of the semester you will receive an email reminder requesting your participation in the Course Evaluation process. Please provide your honest feedback; it is important to the improvement and development of this course. Feedback received is anonymous and I do not receive copies of the Evaluations until after grades have been submitted for the semester.

Counseling Services:

As a student you may experience a range of issues that can cause barriers to learning or reduce your ability to participate in daily activities. These might include strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, health concerns, or unwanted sexual experiences. Counseling, Health Services and Health Promotion are here to help with these or other issues you may experience. You can learn more about these program and services by contacting:

Counseling Services

120 Richmond Quad (North Campus), 716-645-2720

202 Michael Hall (South Campus), 716-829-5900

<https://www.buffalo.edu/studentlife/who-we-are/departments/counseling.html>

Health Services

Michael Hall (South Campus), 716-829-3316

<https://www.buffalo.edu/studentlife/who-we-are/departments/health.html>

Office of Health Promotion

114 Student Union (North Campus), 716-645-2837

<https://www.buffalo.edu/studentlife/who-we-are/departments/health-promotion.html>

Sexual Harassment/Violence:

UB is committed to providing a safe learning environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence and stalking. If you have experienced gender-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), UB has resources to help. This includes academic accommodations, health and counseling services, housing accommodations, helping with legal protective orders, and assistance with reporting the incident to police or other UB officials if you so choose. Please contact UB's Title IX Coordinator at 716-645-2266 for more information. For confidential assistance, you may also contact a Crisis Service Campus Advocate at 716-796-4399.

Please be aware UB faculty are mandated to report violence or harassment on the basis of sex or gender. This means that if you tell me about a situation, I will need to report it to the Office of Equity, Diversity and Inclusion. You will still have options about how the situation will be handled, including whether or not you wish to pursue a formal complaint. Please know that if you not wish to have UB proceed with an investigation, your request will be honored unless UB's failure to act does not adequately mitigate the risk of harm to you or other members of the university community. You also have the option of speaking with trained counselors who can maintain confidentiality. [UB's](#)

[Options for Confidentiality Disclosing Sexual Violence](#) provides a full explanation of the resources available, as well as contact information. You may call UB's Office of Equity, Diversity and Inclusion at 716-645-2266 for more information, and you have the option of calling that office anonymously if you would prefer not to disclose your identity.

Technology Recommendations

To effectively participate in this course, regardless of mode of instruction, the university recommends you have access to a Windows or Mac computer with webcam and broadband. Your best opportunity for success in the blended UB course delivery environment (in-person, hybrid and remote) will require [these minimum capabilities](#).

Additional Optional Text: For this class, you should have access to (insert specific requirement here). Access is available (insert where on campus/how) or (recommended) students can purchase the (repeat specific requirement here) (insert where to purchase).

Public Health Compliance in Classroom setting

As indicated in the [Student Compliance Policy for COVID-19 Public Health Behavior Expectations](#), in our classroom you are required to:

1. Obtain and wear masks/face coverings in campus public spaces, including campus outdoor spaces.
2. Maintain proper physical distancing in public spaces and must stay six feet apart from one another.
3. Stay home if you are sick.
4. Abide by New York State, federal and Center for Disease Control and Prevention (CDC) travel restrictions and precautionary quarantines.
5. Follow campus and public health directives for isolation or quarantine.
6. Should you need to miss class due to illness, isolation or quarantine, you are required to notify the course instructor and make arrangements to complete missed work.
7. You are responsible for following any additional directives in settings such as labs, clinical environments etc.

Students who are not complying with the public health behavior expectations will be asked to comply. Should the non-compliant behavior continue, course instructors are authorized to ask the student to leave the classroom. Non-compliant students may also be referred to the Office of Health Promotion to participate in an online public health class to better educate them on the importance of these public health directives for the entire community.

Tentative Class Schedule: (See Schedule Document)