



**UNIVERSITY  
OF ALBERTA**

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**Report of the Provost's  
Task Force on Artificial  
Intelligence and the  
Learning Environment**

October 2023



# Executive Summary and Key Recommendations<sup>1</sup>

## Introduction

The Provost's Task Force on Artificial Intelligence and the Learning Environment at the University of Alberta met from February to June 2023 to discuss the impact of generative AI on the educational ecosystem. They engaged with various stakeholders across the university to address topics such as ethical implications, privacy concerns, academic integrity, and the changing nature of assessments.

## Key Recommendations

### Cross-Cutting Recommendations

1. **Ongoing Learning About AI:** Given the rapid evolution of AI technologies, the task force recommends prioritizing ongoing learning opportunities. These can include onboarding programs, speaker series, and professional development initiatives aimed at enhancing AI literacy within the university community.
2. **Inclusion of AI Topics in Syllabi:** To help students understand the role and limitations of AI in academic settings, instructors should include purposeful statements about AI in course syllabi. The Center for Teaching and Learning can offer tools and recommendations for this inclusion.
3. **Course Assessments Aligned to Learning Outcomes:** Traditional assessment methods should be revised to accommodate the challenges posed by generative AI. Options include oral exams, in-class writing assignments, and other forms of authentic assessments that can't be easily replicated by AI.
4. **Policy Revisions:** Existing policies should be systematically reviewed and updated to explicitly mention generative AI. This will help students and staff understand where and how AI can be appropriately used.

### Recommendations for Specific Learning Environments

1. **Undergraduate Teaching:** Given the advanced capabilities of generative AI, existing assessment methods like essays and take-home exams need rethinking. Alternative methods should be explored to continue emphasizing critical thinking skills.
2. **Graduate and Postdoctoral Learning:** Graduate students, especially those involved in teaching, should be provided resources to explore AI in an academic setting. Ethical and privacy implications should also be considered.
3. **Professional and Experiential Learning:** In fields like healthcare, the use of AI should be approached cautiously, with extra training on how generative AI intersects with health information privacy.

<sup>1</sup> Summary generated by ChatGPT.

4. **Online Learning:** The online learning environment needs special consideration due to its reliance on text-based engagement. New types of assessments or changes in assessment weightings may be required to maintain academic integrity.

### Additional Considerations

- **External Communication:** A strategy should be developed to communicate the university's stance on AI to external stakeholders like high schools and employers.
- **AI Detection Software:** The task force does not recommend purchasing or using AI detection software, citing privacy concerns and the rapidly evolving capabilities of AI.

### Conclusion

The University of Alberta is at a critical juncture, facing both challenges and opportunities with the rise of AI. It is crucial that the university community adapt thoughtfully to these emerging technologies, fostering a learning environment that is both innovative and ethical.

## Introduction

This document serves as the report from the [Provost's Task Force on Artificial Intelligence and the Learning Environment](#). The Task Force had two key foci: 1) fostering conversations about generative AI and the learning environment and 2) making recommendations to university communities. This report makes recommendations, one of which will be to encourage ongoing conversations.

The Task Force [[membership](#)] met seven times between February 14, 2023, and June 5, 2023, and had over 40 conversations with different stakeholders across the Institution. The committee also provided feedback and guidance for conversations with the following stakeholders: college deans, faculty deans, department chairs, faculty members, instructors and teaching assistants, as well as undergraduate and graduate students.

Some of the key themes of these conversations included:

- Importance of dialogue between instructors and students about the use of generative AI in course work;
- Need to prepare students, instructors and staff for workplaces with prevalent use of generative AI, including statement suggestions on use of generative AI for course outlines;
- Concern for privacy and intellectual property issues related to use of generative AI;
- Underscoring of ethical implications related to generative AI and the general lack of transparency into the algorithms used to train the large (language) models;
- Encouragement for fostering AI literacies for students, instructors and staff;
- Need to change assessment methods in courses to not solely rely on text;
  - Identified need for support for instructors to make these changes
- Concern about intersections between generative AI and academic integrity; and
- Possible engagement with external communities, like the high school teachers, who are preparing their students for university.

## Recommendations for Generative AI in Learning Environments

Based on the Task Force's conversations with university communities, research on the topic and the expertise of Task Force members, we have grouped our recommendations into two key categories: those that cut across the different learning contexts at the university and those for specific learning environments.

At the heart of these recommendations is ensuring our learning environments reflect the prevalence of generative AI in society. While there are contexts, such as those involving health information where using generative AI is not appropriate, there are many others, such as analyzing certain types of data where its use is very beneficial. Skills such as writing, numeracy and critical thinking will continue to be key outcomes of a university education. Those skills, and many others, need students to demonstrate achievement of learning outcomes absent significant generative AI use. There are other aspects of a university education that can be significantly enhanced by leveraging generative AI. Learners with specific disabilities may be able to learn and communicate in new ways by taking advantage of generative AI.

The University of Alberta is well positioned to prepare the members of its academic community to work in ways that critically and thoughtfully engage with generative AI within the university and beyond.

## Cross-Cutting Recommendations

### Ongoing learning and engagement opportunities about AI

A key theme in the conversations across university communities and stakeholders is the pace of change of generative AI and the need to keep abreast of the evolution of the ability to produce text and images that seem to be the work of humans. A key recommendation is, therefore, to **prioritize the creation of ongoing learning opportunities to develop AI literacies**. The other recommendations in this report are enhanced significantly by growing AI literacies across university communities. These opportunities can range from on-boarding activities for new members of our communities to speakers series and from professional development opportunities in Faculty or Departmental Councils to participation in conferences and workshops. Prioritizing resources and leveraging university expertise to support these learning opportunities will be important to our growing AI literacy.

AI literacy can be conceptualized as knowledge, competencies and skills to critically examine, evaluate, and use AI tools and their potential sources of biases and inaccuracies such as the underlying training data, machine learning models, algorithms, as well as people who design, develop, and use AI models and tools.

Key aspects of AI literacies include

1. Understanding how generative AI and large (language) models work
  - a. How are models trained?
  - b. What data sources are used to build models?
2. Exploring the ethical, social and privacy implications
  - a. What are data ethics?
  - b. What is implicit bias and how can it impact the outputs of generative AI?
  - c. Who and by what process are the models trained?
3. What are the implications for post secondary learning?
  - a. What skills do you need to acquire?
  - b. What skills/knowledge can you leverage generative AI?
  - c. What are the intersections between academic citizenship and generative AI?

In what ways is generative AI being used outside of the university and how can you use your degree to gain skills to make a contribution?



## Purposeful inclusion About Generative AI in Syllabi

Syllabi are one venue to foster learning and engagement about AI. The primary reason for inclusion in syllabi is to deepen AI literacies for students. Secondly, inclusion also makes clear expectations about AI usage in the different aspects of course work. As noted in the section below on course assessments, simply stating that generative AI is not to be used is likely insufficient. The ability of tools like ChatGPT or DALL-E to produce text and images that are similar to those produced by humans means that detecting whether or not those tools are in use is challenging. A recommendation for instructors is to provide *purposeful statements about AI for each course that should explicitly make links between the course learning outcomes, course assessments and other course activities*. The Centre for Teaching and Learning is a university resource that continues to develop tools and [recommendations](#) for a diversity of statements for inclusion in syllabi.

## Course Assessments Linked to Learning Outcomes

Course assessments will need to be adjusted to allow students to demonstrate achievement of course learning outcomes that do not solely rely on the production of text or images that can easily be produced by generative AI. It is anticipated that these adjustments will include a variety of authentic assessments. The assessments may include scaffolded assignments, oral exams and in-class writing assignments and exams. Making these adjustments is also an opportunity to explore universal instructional design to enhance the accessibility of courses and assessments.

## Policies Revised with Explicit Reference to Generative AI

A systematic review of policies—including the Codes of Student and Applicant Behaviour, Use of Copyright Material Policy—should be conducted and updated with explicit reference to generative AI. Our policy environment should clarify where the use of generative AI is permitted and what consequences follow violation of policies. In general, the existing policy frameworks can be applied to, for example, course work that does not appropriately indicate if and how generative AI has been used. Explicit reference throughout our policy environment will also contribute to developing AI literacies.

The intersections between academic integrity and generative AI have also been a constant thread through the Task Force’s conversations. Thankfully, the current [Code of Student Behaviour](#) defines Cheating

(30.3.2(2)c) as

No Student shall represent another’s substantial editorial or compositional assistance on an assignment as the Student’s own work.

And 30.3.2(2)e as

No Student shall submit in any course or program of study any academic writing, essay, thesis, report, project, assignment, presentation or poster containing a statement of fact known by the Student to be false or a reference to a source the Student knows to contain fabricated claims (unless acknowledged by the Student), or a fabricated reference to a source.

Based on these two sections of the Code of Student Behaviour, there is clarity about what to do in cases of inappropriate use of Generative AI. As the statements on our syllabi and assignments evolve, it will become clearer how we define appropriate generative AI use in different learning contexts. ***We recommend clear communication of appropriate and inappropriate use of generative AI in our diverse learning environments.***

Related to the intersections with academic integrity, a question that has been part of many conversations was whether or not the university should subscribe to AI detection software or applications. It is the view of the Task Force that detection and enforcement of AI will be challenging given both the significant privacy concerns related to submitting students' work to this software and the rapid evolution of the AI itself which may negate the effectiveness of the detection.. ***The Task Force does not recommend purchasing or using AI detection applications.***

While beyond the Learning Environment scope of the Task Force, ***it is recommended that many different aspects of the work and life of the university be examined in light of generative AI.*** What changes may be necessary to research methods because of generative AI? What of those changes may result in policy updates? Are there aspects of university operations in Human Resources or Finance, for example, that could leverage or be harmed by generative AI?

### **Consideration of External Audiences of the University of Alberta Messages on AI**

The recommendations in this report are primarily for internal audiences. However, there are external audiences, for example high schools and employers, who have a significant stake in understanding the university's approach to generative AI in the learning environment. ***A communications and engagement strategy for these external audiences would be of significant benefit.***

### **Exploring Linkages to Research**

The learning environment at a research intensive institution such as the University of Alberta is grounded in the research of its members. While the focus of the Task Force and this report is on the learning environment, the interrelatedness of research and learning means that comment on the research environment is also important. That is, the Task Force recommends ***thoughtful engagement with AI and the research environment important for reputational and other issues.*** This engagement is also an opportunity to leverage the expertise at the university in AI generally as well as in the ethical and societal impacts of AI as evidenced by past initiatives such as [AI4Society](#). There are also specific research areas such as medical research where the intersection with privacy legislation requires thoughtful attention.

## Specific Learning Environments

Across all of the different learning environments, how we have students demonstrate their learning varies significantly. Owing to disciplinary conventions and accreditation requirements, different programs frame their learning outcomes in different ways. There is a broader shift to skills or competency-based learning. For programs that are further along in this shift, it is easier to have the conversation about what skills or competencies are ones a student needs to be able to perform on their own and which competencies are ones where leveraging generative AI is possible or even desirable. Thinking about our diverse learning environments, the Task Force recommends that ***programs think about which skills and competencies a student must perform independently and which ones can or should leverage generative AI.*** This thinking may also result in reframing programs and their learning outcomes to be more skills or competency-based.

## Undergraduate Teaching, Research and Learning

The arrival of generative AI capable of producing text and images that are hard to distinguish from the work of humans, creates significant opportunities and challenges in the undergraduate teaching and learning environment. Many assessments, such as an essay or a take home final exam, require significant rethinking. We want our graduates to be skilled writers who are able to synthesize and analyze. We are confident that critical thinking skills will continue to be the hallmark of undergraduate education, regardless of discipline. However, rethinking how curricula, courses and assessments are restructured will be required. ***There needs to be a recognition of the work required to be successful in transitioning our curricula and assignments.*** On the one hand, assessments, like oral exams and in class writing assignments, are not new. On the other hand, they have increasingly fallen out of use, in some cases hastened by the pandemic. Reimagining undergraduate education is both exciting and daunting. We are confident that with sufficient emphasis, we can make the necessary shifts.

## Graduate and Postdoctoral Teaching, Research and Learning

In the graduate teaching, research and learning realm, there are distinct AI literacies required. Graduate students and postdoctoral fellows may be drawn to projects and research that explore the intersections of AI with another field of study. This interdisciplinary work is exciting to imagine and also requires attention to ethical and privacy implications that may be beyond the expertise of a graduate supervisor or even a supervisory committee. ***Raising awareness and accessibility of graduate-level courses on AI for students from diverse disciplinary backgrounds is recommended.*** Purposeful engagement between supervisors and graduate students on the topic of AI and its implications for thesis research process, writing, scholarly publication is also important whether or not AI is a topic directly taken up in a student's graduate work.

Graduate students also play an instructional role whether as TAs or as primary instructors. Graduate students are an amazing asset to reimagining the undergraduate learning environment and should be provided with opportunities to teach about and with generative AI tools and positioned to lead in this space. ***Training opportunities and materials for (undergraduate) education should be developed with the graduate student's role also in mind.*** There may be ways to leverage the College structure at the university to develop promising practices related to graduate teaching, research and learning.



## Professional and Experiential Learning

Learners in professional or experiential learning courses or programs bear special attention. For example, learners training in a health-care profession should receive additional training on how generative AI intersects with health information privacy. Additionally, generative AI may support learners in making diagnoses—however, understanding the limitations and potential inaccuracies is crucial to avoid mistakes with patients. These cautions extend to other experiential settings such as off-campus learning that often involves a partnering organization. Supporting learners and partnering organizations to think about if, when and how to use AI tools will be crucial in these learning environments.

## Online Learning

The online learning environment requires some different adjustments to address the arrival of generative AI. The particular challenge of the online environment is the predominance of text-based forms of engagement. The posting of questions and conversations between classmates is a common way to foster engagement with the course material. When tools such as ChatGPT can readily replicate those responses, new assignments or adjusted assessment weightings are likely required. ***Authentic assessments will continue to be an important way to address the challenges in the online, particularly asynchronous, context.*** Privacy and security concerns will also be important to navigate as we enhance the proctoring of online exams and other assessments.