

A Guide To  
**Generative AI**  
For Educators

# Introduction

It is a fast-changing world in higher education and generative AI is rustling the herd. The following are some ways that it can help improve how we teach, and how our students learn. The metaphor of a workhorse was chosen because, traditionally, a workhorse performs tasks that a farmer cannot do alone and completes them more efficiently. And yet, a workhorse requires human guidance to do that work, such as plowing a field.

This guide dives into how AI tools can help teachers and students: from making tests and creating study materials to enhancing classroom activities and personalized learning. It covers important advice like appropriate use, keeping data private, transparency, and working with students to make sure AI is used effectively.

There are a couple primary Generative AI chatbot tools used at SAIT:

- Copilot is Microsoft's AI chat bot which uses ChatGPT-4 as its "free" version. This is available on to all SAIT employees in the Edge browser.
- ChatGPT is created by OpenAI, is open sourced, and has a free version which primarily uses GPT-4. GPT-4o is the latest version and is enhanced in its abilities, but is only available with a paid subscription.

There are other similar products available like Gemini, Claude, Perplexity, etc. They all are relatively similar, each with various strengths and weaknesses. There are useful AI tools for many other applications like video, imaging, and app creation, but this guide does not cover the uses of any of those.

Many of the ideas discussed below are intentionally vague because using generative AI is a learning process. "Prompt engineering" is a skill that takes time to develop and is crucial for getting what you want from an AI chatbot. If you want to learn about any of the ideas in this document, open your browser and head to Copilot, ChatGPT, etc. and ask it about how it can help... you will be amazed!

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# The AI Workhorse

## For Instructors



## Testing

- **Create test questions**

Using source material, develop questions based on textbooks, course materials, and industry standards/codes to ensure comprehensive coverage of curriculum.

- **Adjust taxonomy of questions**

Analyze the level of complexity of tests and then shift the levels of questions from basic recall (remembering or understanding) toward advanced skills (applying, analyzing, evaluating, creating) to challenge students appropriately.

- **Review tests**

Ensure tests reflect learning objectives, are fair and unbiased, and cover all key areas of the material taught.

## Assessments

The widespread accessibility and use of AI means assessments need to change. Make assessments more authentic. Increase student rigor. Promote creativity, problem-solving, and critical thinking.

## Assignments

- **Brainstorm projects**

Generate a variety of projects/assignments which fit well with the course content and incorporate different learning modalities including hands-on projects, group work, research assignments, and presentations.

- **Promote problem solving and critical thinking**

Design authentic assignments that encourage innovative solutions and real-world applications of skills and abilities.

## Rubrics

- **Create fair and clear rubrics**

Develop rubrics with specific, measurable criteria aligned with course objectives to clearly define expectations for students.

- **Increase Objectivity**

Use precise, objective language and provide examples of each performance level to ensure consistent grading in a new rubric or analyze existing rubrics to find existing subjectivity.

- **Increase rubric standards**

Set higher performance benchmarks to reduce grade inflation or motivate students toward deeper understanding.

# The AI Workhorse

## For Instructors



## Lesson Planning

- Find attention-grabbing ways to kick off your lessons like cool facts, short videos, fun activities, or intriguing questions.
- Develop clear and measurable learning objectives (or update your current ones) to better reflect what students should achieve during your time together.
- Discover fun ways to check prior knowledge like quizzes, brainstorming sessions, concept maps, or polls.
- Engage students in active learning. Determine which type of lesson (psychomotor, cognitive, or affective) best suits your topic and plan activities to use.
- Get advice on effective methods to evaluate students' understanding of the lesson content.
- Craft clear summaries that highlight key points and main ideas; make it easier for students to prioritize and remember the lesson.

## Resource Creation

- Create practice questions like multiple-choice or short answer to help students reinforce the key concepts and get ready for tests.
- Record your lectures, transcribe them, and ask AI to turn them into clear, easy-to-follow notes that highlight main points for your students.
- Put together detailed study guides that cover topics and skills in the course, giving students a tool for reviewing and prepping for exams.
- Pull out key terms and important numbers from the course material to create glossaries that students can easily refer to.
- Write brief summaries for each unit that hit the essential concepts and key points, helping students review and remember the important topics.

## Brainstorming

- Come up with creative ways to explain key concepts so they're easier for students to understand.
- Develop assignments and classroom strategies to get students thinking more deeply, moving them from basic understanding to higher order thinking.
- Find strategies, tools, and teaching methods to make your classroom more inclusive for neurodivergent students.
- Discover diverse and equitable ways to engage your students through incorporating UDL principles in your course.
- Find effective ways to gather and track student feedback to see how you're doing and make improvements. At the same time, get feedback on your teaching ideas and use it to make them better.

# AI as a Learning Tool

## In the Classroom

### Interactive Case Studies

Instead of a written response, add dynamic interaction to case studies. Input a case study, assign the chatbot a role and the required parameters and have your students interact with it.

### Problem-Solving Perspective

Provide a problem for the AI to solve and ask for it to walk through the process. Watch the AI solve a problem step-by-step for a different perspective on how to approach similar problems.

### Debate

Have students debate with an AI chatbot to help sharpen arguments, develop critical thinking skills, and deepen knowledge.

### Q&A

Pick a topic and have students ask all kinds of questions. This is a fun way to explore a subject or clear up confusion. Alternatively, the purpose could be to arrive at a specific answer or conclusion.

Generative AI can be a powerful learning tool. Interacting with it in a meaningful way causes users to think critically and creatively.

Engage with generative AI tools with your students in person, when possible. Otherwise, share AI generated responses to questions during class time and ask students to consider them or have students experiment with the technology at home, document their experiences, and share them with the class. ([Moss, 2023](#))

### Break Down Processes

Often there is more than one way to do a task. Ask for alternative step-by-step tutorials on how to perform processes. You can request multiple ways to do something to provide an alternative process.

### Response Analysis

Sometimes AI is spot-on, other times it is correct but not applicable to your situation, or it can be completely wrong. Have students experience these nuances together to better understand AI as a tool.

Experiencing and identifying incorrect responses could be an alternate way to solidify student understanding.

### Guided Formative Assessment

AI can help guide students through assessments by identifying areas of weakness in an assessment and guiding them to resources and tests to strengthen areas to meet course learning outcomes through personalized learning.



# The AI Workhorse

## For Students

Artificial Intelligence is here. Students are currently using AI and will be expected to use it in their careers. **Use of generative AI should not automatically translate to academic misconduct.** Here are some possible ways that students can incorporate AI into their learning process.



### Alternative explanations

If you're stuck, you can get explanations in different ways until the idea clicks. Perfect for tricky concepts that don't make sense.

### Get help starting

When starting a project is tough, ask for possible outlines to get the ball rolling and organize your thoughts.

### Challenge your ideas

Give a chatbot an opinion in opposition to yours to spot weaknesses and make your argument stronger.

### New ideas and perspectives

Brainstorming is a great way to start any assignment. Generate fresh ideas or see things from a different angle. Great for papers, projects, or creative tasks.

### Improve what you hand in

Get suggestions on how to enhance your work or tips on how to score better according to an assessment's rubric.

### Find extra resources

Ask for additional materials or resources to review and deepen your understanding of a subject.

### Math practice

Get new versions of math problems to practice. Complete the same type of question from different starting points with different numbers.

### Translate technical lingo

Have technical terms explained in your preferred or first language, making it easier to understand and keep up.

### Explore literature with AI

Use AI to dive into literary analysis, get summaries, discuss themes, and even get help developing interpretations of texts.

# Appropriate Use

## Educating Students

Students won't learn appropriate AI use if we don't guide them. We can't guide them if we don't learn to use it appropriately ourselves.

**Hallucinations:** Sometimes AI makes stuff up or gives incorrect information. It's important to validate everything.

**Good prompts, good answers:** The quality of AI's responses depends on how you ask. Be clear and specific and be ready to ask follow-up questions to get what you're looking for.

**Context is Important:** Giving AI a role (like instructor or industry expert) helps it give more relevant answers. Location helps it to know where to pull information from (eg. building codes).

**Define usage for individual assignments:** Use a clear scale to define how AI should be used in assignments and assessments, making sure students understand its role. The [AI Assessment Scale](#) is a tool which uses a 1-5 scale to indicate the ways in which students are permitted to use AI in an assessment.

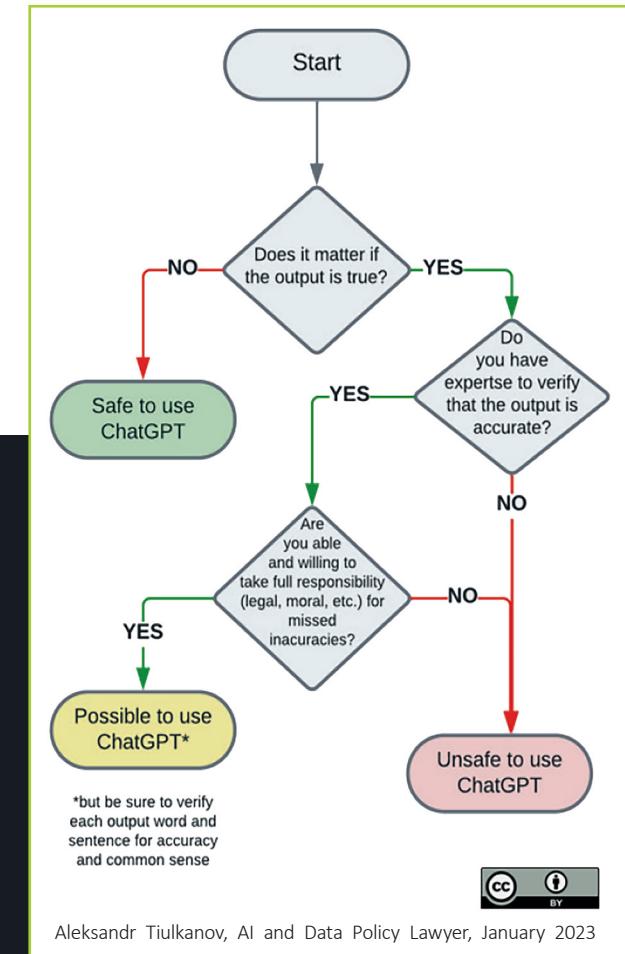
**AI is biased:** AI has biases based on its training data and information density on any topic. Be critical of its suggestions and aware of potential biases.

**Keep it private:** Never share personal or sensitive information with AI.

**Don't just copy:** Using AI to simply copy answers skips the learning process. Use it to support and enhance your understanding. AI generated content should never be the end product.

**Document AI use:** If you use AI for an assignment, make sure to document it. Transparency is key.

**Guide and correct:** Teachers should help guide AI usage and give feedback. Help students find the line between AI as a tool and cheating. If students misuse it, provide guidance to get them back on track.



Aleksandr Tiulkanov, AI and Data Policy Lawyer, January 2023



It is important to note that ChatGPT is not governed by ethical principles and cannot distinguish between right and wrong. This tool only collects information from the internet, so it also learns any cognitive bias found in that information. It is therefore essential to critically analyse the results it provides and compare them with other sources. (Sabzalieva & Valentini, 2023)

# Appropriate Use

## Educating Students

“Appropriate use” refers to relating context to the application of AI.

## Resources

[AI Assessment Scale](#): A non-binary scale for communicating with students on acceptable AI usage for assessments.

[AI in a Minute](#): Video series from Microsoft.

[Enhance Teaching and Learning with Microsoft Copilot](#): A short learning module on using Copilot for educators.

[Generative AI for Educators](#): Google Course.

[How to Use AI to Create Role-Play Scenarios for Your Students](#): A guide and sample prompt for creating dynamic interactions for students.

[Kwantlen Polytechnic University Teaching and Learning Commons](#): Multiple pathways for AI implementation in classrooms.

[Teaching Naked](#): Various resources on Teaching with AI.

[The Curious Educators Guide to AI](#): Strategies and exercises for meaningful use in higher education.

[WEF Defining Education 4.0](#): When students have access to limitless information what should educators prioritize?



## About the Author

[Ryan Mann](#), an educator of 11 years and technology enthusiast, currently serves as a Faculty Development Facilitator at SAIT. He is entering his second year of the Teaching Innovator Program at SAIT, where he has researched how educators can use AI to enhance the student experience.

The motivation for writing this guide stems from a desire to address common challenges faced by students and instructors: students seek more resources, while instructors struggle to find the time to create them. Ryan’s vision is to see educators leverage AI and other technologies to create incredible learning experiences for students.

## References

Furze, L. (2023, December 18). *The assessment scale: Version 2*. <https://leonfurze.com/2023/12/18/the-ai-assessment-scale-version-2/>

Ross, E.M. (2023, July 20). *Embracing Artificial Intelligence in the Classroom: Generative AI tools can reflect our failure of imagination and that is when the real learning starts*. <https://www.gse.harvard.edu/ideas/usable-knowledge/23/07/embracing-artificial-intelligence-classroom>

Sabzalieva, E., & Valentini, A. (2023) *ChatGPT and Artificial Intelligence in Higher Education: Quick Start Guide*. UNESCO International Institute for Higher Education in Latin America and the Caribbean. <https://unesdoc.unesco.org/ark:/48223/pf0000385146>