

# Using AI tools in student assignments

## WHAT IS THIS RESOURCE?

This resource provides a brief introduction to AI generators and considerations and examples of how these tools can be incorporated into assignments to advance student learning.

## HOW DO I USE IT?

Review the considerations below when incorporating AI generators into your courses. [CET](https://cet.usc.edu/contact-us/) is available to discuss pedagogical options for integrating these tools into your teaching. For questions regarding academic integrity please contact [USC’s Office of Academic Integrity](https://academicintegrity.usc.edu/).

### What are AI Generators?

Artificial Intelligence (AI) Generators are computer programs that can synthesize information drawn from different sources to produce text, visual or musical products that, on a basic level, are comparable to those created by humans. In general, a user enters a prompt (text, images or music) that the AI generator uses to produce the requested output. A variety of these tools have been developed by a number of companies and this field continues to advance quickly.

### Examples of assignments that can incorporate AI

By modifying existing assignments, instructors can incorporate AI generators to produce examples, content or beginnings of assignments to support further academic work. AI generators can assist with a variety of learning activities including, but not limited to:

**Idea generation and brainstorming:**

* Students can ask an AI to list key ideas commonly associated with a topic, then reiterate or refine the prompt and edit the output to produce a list that informs their intended direction on an assignment.
* Ask an AI to pose hypothetical or open-ended questions on a specific topic.
* AI can suggest techniques for getting started and guide students through processes like free-writing or outlining.

**Inspiration or prompting:**

* Students can ask the AI to produce a piece of music to serve as a prompt for another assignment such as a story, dance, poem or design.
* Students can create a “splash page” of AI generated images relevant to an assignment in your course.

**Outlining or getting started on an assignment:**

* Students can ask the AI to generate three different versions of an outline for an essay, then choose one that aligns best with the assignment and their goals and begin editing.

**Practice or study skills:**

* Students can ask an AI to generate practice questions, or to iterate on existing textbook or homework questions in order to practice course-relevant skills (for example, verb conjugation, applying mathematical formulas, coding tasks).

**Supporting more student-centered inquiry:**

* Students can use an AI with data analysis capabilities to explore relevant statistics from datasets relevant to your course and then share interesting findings in class discussions.
* Have the AI generate a sonnet or limerick about a person or topic relevant to students’ interests and ask them to try to determine the meter of the poem.

**Scaffolding:** If your course goals include students developing the ability to produce complex or highly structured content, they could begin by using AI to produce examples of these artifacts and then modify or evaluate them in order to gain familiarity. For example:

* Ask the AI to write a detailed experimental protocol and identify fail points or alternate approaches.
* Generate a character or environment for a video game and have students critique the realism or biases in the outcome.

**Increasing engagement:**

* An instructor can ask the AI to produce a script or role play scenario to use to spark discussion or prompt further student inquiry.
* Students can ask the AI to generate music samples with specific rhythmic properties or harmonies of interest to them and then compare and contrast different examples or analyze how different musical properties affect the tone of a composition.

**Critical thinking:**

* Have students use AI tools to compare and contrast their own personal writing with what is generated. Have them identify what they, or the AI tool, missed and evaluate the various approaches they could have taken.
* Have students create a rebuttal, an artwork, or a performance piece in response to what was generated by the AI program.
* Have students evaluate AI-generated text, images, music, and code for biases.

**Making learning experiences more efficient:**

* A government report is released on a topic relevant to your course but it is too long to assign as a reading. Students could ask an AI to summarize, create a list of key points, or identify quotes relevant to specific course content and bring these to class for a short discussion.

**Reflection and mindfulness:** As interaction with AI can be more conversational than traditional writing tasks, some students might benefit from this format to motivate reflection as a part of their coursework. For example:

* An instructor can ask students to spend time each week reflecting on reading, study habits or other aspects of a course. Students could identify 2 takeaways from each reflection session and share to a discussion board, or other course feedback forum.

**Development of AI skills themselves:** Incorporating AI into the curriculum can provide training and practice for students entering professional environments where the use of AI is quickly becoming a desirable skill. For example:

* Text prompting is important for effective use of nearly all AI generator tools. To support development of so-called “prompt engineering” skills, an instructor might ask them to make at least three revisions during any assignment that incorporates AI, and then reflect or share at certain points during the semester on prompting approaches that are effective for specific goals or with certain AI tools.

### Sample process for incorporating AI into assignments

The following is a list of steps, considerations and examples to support effective incorporation of AI generators into course assignments. Implementation of different steps will depend on the course, instructor, student population, disciplinary, school or department context. [CET is available to discuss](https://cet.usc.edu/services/course-consultations/) pedagogical considerations for specific assignments.

#### Identify an assignment or learning objective for your course that could benefit from incorporation of an AI tool.

With some modifications to how learning activities are designed, implemented or assessed, AI Generators can be leveraged to allow students to achieve lower order objectives faster and allow for more time to focus on and practice higher-order skills earlier in a course. Consider your existing learning objectives and determine if some could be accomplished more quickly by students using AI. For example, here are two learning objectives that reflect different levels of skill or understanding:

* **Sample Objective 1:** *Students will be able to write compelling news stories, including headlines, with appropriate article structure and language for various audiences.*
* **Sample Objective 2:** *Students will be able to recognize different types of biases in news reporting, describe the challenges posed by misinformation and disinformation, and identify approaches to verify and fact-check information before sharing or consuming it.*

Use of AI to more efficiently produce examples of effective news writing (i.e. objective 1) and then edit, review and analyze these examples rather than composing them from scratch could free up more course time and student cognitive load to engage with the skills described in objective 2.

#### Identify an appropriate AI tool and gain familiarity with its use.

The capabilities of and access to a variety of generative AI tools have expanded rapidly since they first became widely available to the public. Different tools will have different styles, tones to their output and modes of user interaction. They can generate text, image and musical outputs in a variety of formats. Some AIs can generate and analyze data or provide citations with varying success. Some tools are free and some require paid subscription.

The [Future Tools](https://www.futuretools.io/) website curates current AI software tools and is a great place to start exploring.

For questions about the accessibility of a given tool, consult with the [USC Office of Student Accessibility Services](https://osas.usc.edu/).

#### Determine whether you will produce AI-generated content for students to use, or if you will ask students to engage with AI tools.

If the AI content will be instructor-generated, consider referring to the CET resource on [AI tools for course design](https://cet.usc.edu/teaching-resources/ai-tools-for-course-design/) for an introduction to AI use for faculty, or [request a consult with CET](https://cet.usc.edu/services/course-consultations/) to discuss your specific needs and pedagogical goals.

If students will be asked to engage with AI, consider what training or support skills will be important to cover with students, or what additional resources, examples or modeling you could provide to support students’ effective use of the chosen tool.

#### Establish and share with students your course guidelines and expectations for appropriate student use of AI in your course.

The current [USC syllabus template](https://cet.usc.edu/teaching-resources/syllabus-template/) (pages 4-5) includes sample language on appropriate AI use in courses. You might also include all or parts of this policy on any [assignment description](https://cet.usc.edu/teaching-resources/assignment-description-template/) documents you share with students. To develop a policy for your course you might consider:

* + - Does your USC department, program or school have an existing policy?
		- Are there current best practices common in your discipline? What are the ethical considerations for AI use, in general or in your discipline? Questions about academic integrity can be referred to the [USC Office of Academic Integrity](https://academicintegrity.usc.edu/).
		- How can AI be used as a tool to learn, and not just to produce content for the course assignments?
		- Under what circumstances will AI use be permitted in your course in general, or for specific assignments or parts of assignments?
		- How should students cite or credit AI generated material? You may wish to refer to the USC Libraries [guide for using and citing generative AI in research](https://libguides.usc.edu/generative-AI).
		- How should students document their use of AI? For example, you might ask students to:
			* submit all the prompts and AI outputs used on the assignment,
			* provide all original AI-generated content with revisions tracked, or with a reflection or rationale for the changes they made or their criticisms of the AI content.
			* use AI on only one part or draft of an assignment and not others.
		- Consider whether you will assess or provide feedback on AI use itself and communicate this to students, for example in an [assignment description](https://cet.usc.edu/teaching-resources/assignment-description-template/) or [rubric](https://cet.usc.edu/teaching-resources/introduction-to-rubrics/).
		- How will students be held accountable for AI generators’ tendency to generate false information (sometimes called “hallucination”)?
	+ Consider addressing or discussing the potential for bias, gaps, or errors in AI generated content and how students can effectively identify these (see next section).

#### Reflect on the implementation of your AI assignment

As with any new teaching approach, revision and iteration will likely be important to best align with your course objectives and teaching style. Consider reflecting, debriefing with colleagues or mentors, designing an evaluation tool for AI use in your course, or soliciting student feedback on how incorporation of AI impacted their learning experience.

### Limitations of AI Generators

While AI generators are quickly being incorporated in educational and professional settings, there are a number of limitations to this technology that are important for both faculty and students to consider before incorporating into assignments.

* **Fabrication:** As AI generators were designed primarily to mimic human creations and are not search engines or encyclopedias, there is no guarantee that the material produced will be accurate or consistent. The tendency of AI tools to generate fabricated information is commonly referred to as “hallucination”.
* **Variety:** Depending on the data that was used to “train” an AI, some tools will be better suited to certain types of content than others. For example, text AI generators may be effective at producing English prose, but less so for writing in other languages or styles.
* **Guardrails:** The ethical considerations surrounding AI use have led to frequent changes to these programs’ capabilities. For example, many tools will refuse to respond to prompts soliciting a response intended to mislead others or that includes hate speech, discrimination, or violence. Some will not provide financial or investment advice.

### Considerations for use of AI generators to foster critical thinking and learning

#### Connect your assignment prompt questions to specific course materials

Definitions and common comparisons can be easily completed by an AI text-generating tool. Consider more nuanced questions related to the course text, articles, media, or activities. At this time, AI does not conduct in-depth analysis or critically evaluate arguments.

Examples of customizable assignment prompts and ideas:

* Compare the three definitions of sustainable business discussed in the readings this week and explain which one most closely aligns with the ethical perspective you discussed in Week 1.
* Evaluate the methods used in *Johannesen et al* to identify relevant genetic variants. What biases or assumptions are inherent in the authors’ chosen technique? What additional or alternate approaches might be appropriate? What technical limitations or ethical considerations exist in implementing these assays in a clinical setting?
* Compare motifs of nature in Melville to the Hudson Valley School of painting with the aesthetics of Romanticism. Employ the methodological approaches that scholar Peter Gay used in the book chapters read in this course.

#### Use in-class time for students to complete assignments and assessments

* Have students complete assignments and assessments in class. This can be done individually or in groups. Note: if you are requiring handwritten responses, keep in mind that some students may have accommodations in place that allow them the use of a computer or assistive technology.
* Ask students to connect course material to experiences they have had at work or in their personal lives.
* Encourage students to provide original insights and perspectives. Reflection assignments require students to describe their own learning, how it changed, and how it might relate to future learning experiences. These assignments can also encourage students to relate the course materials to their own lived experiences.

#### Incorporate drafts before the final project submission

Provide students specific feedback to incorporate into a second draft of an assignment or project. Create ways for students to engage with the feedback and reflect on how to improve their work, for example providing a rationale for their changes in a written or video format. Consider incorporating both instructor and peer-to-peer feedback and critiques.

#### Incorporate multiple requirements for an assignment

Depending on the course discipline, a heavy emphasis on a summative final product such as an essay, research paper, design or composition may be the norm. Consider augmenting these assignments with oral presentations, concept mapping, group work, or reflection for students to demonstrate mastery of the course objectives.

### Further Reading

* CET has [curated a page of articles and videos](https://cet.usc.edu/ai-text-and-image-generators-in-the-news/) concerning AI text, images, and music-generating programs.
	+ - USC Libraries [guide for using and citing generative AI in research](https://libguides.usc.edu/generative-AI).

Resource created: August 2023.