# AI, Teaching, and Learning: Questions to Consider

Digital resources and tools have been part of the learning landscape in higher education for years (e.g., Google Translator, Grammarly, Chegg, Course Hero). [AI authoring tools](#) have become a significant part of this rapidly changing landscape. Here are some questions to guide instructors as they consider the implications of these tools for their pedagogy.

## When planning a course

What should students be able to know and do at the end of your course?

Why should they be able to know and do these things?

## When planning an assignment

### What is the purpose of the assignment?

Think about a key assignment for your course. What specific skill(s) will students practice while doing this assignment?

What is the relevance of these skills beyond the course, the major(s), college?

### What tasks do students need to perform for this assignment?

What specific mental actions do students need to take to complete a given assignment? What specific verbs best describe those mental actions? (Suggested resources: [Bloom's](#) and [Krathwohl's](#) taxonomy). For example, who is the audience for the assignment? What do students already know about communicating with this kind of audience?

What kinds of tasks or thinking do students typically struggle with in this assignment?

In what ways could this assignment be broken into smaller sections in which students would practice a single skill/skill set?

What steps might an AI tool help students practice? Examples: instructor uses AI tools to generate examples to practice identifying missing or biased information; students use AI tools to develop a question/prompt that will elicit an AI response that meets certain specifications.

What tasks are implicated for your assignment but not the focus of it? In other words, are there non-essential tasks AI can do so students can focus on the main emphasis of the assignment? For example, if the main skill focus of a given assignment is to connect specific evidence to an assertion, but a specific format is not the focus, could AI tools be used to generate possible formats?

## When identifying implications for equity and accessibility

In what ways might using AI tools for this assignment make learning more equitable for your students?

How might AI tools empower students (e.g., make them more active learners) in your course?

Is the AI tool(s) on Penn State's [approved courseware list](#)? Note that as of February 2023, there is a pending request for university-wide use was submitted for ChatGPT, but it may take months to be approved. All digital applications and software used in coursework—including AI tools—must be approved. See Penn State's [courseware website](#) for processes and forms.

Can students access the technology? Is it available and accessible on different operating systems (if applicable)?

Will students incur additional costs to use new technology? If so, is it reasonable to expect them to pay for it?

What kind of time investment is required to learn, test, and effectively use the technology (on the part of the instructor and/or the students)?

## When identifying implications for academic integrity

*What discussions are happening in your field about AI tools and scholarship?*
In what ways might students need to know how to use AI tools in future employment in their field?

Are there field/discipline-specific examples available for how to use it successfully?

For what kinds of tasks is it unethical to ask AI tools in your field? What are the ethical "gray areas"?

Penn State has developed [sample syllabus language.](#) What language might you use to communicate with students about (un)ethical uses of AI tools in your course/ field?

*How can you discuss the (mis)use of AI tools with your students?*
How do your students currently use AI tools?

For the purposes of your course, how should they use them?

What opportunities might your course provide students to explore AI tools in safe ways, such as fact-checking or critical assessment?

*Where are students most likely to cheat in your course?*

How long does it take students to do the work for a given assignment? For the entire course? You can use a course workload estimator such as [this one](#) from Wake Forest University.

Where in the assignment/course might students be tempted to take shortcuts?

## Sources

Anselmo, L., Kendon, T. & Moya, B., Taylor Insitute for Teaching and Learning at the University of Calgary. "Working with Your Students" section of the webpage "A first Response to Assessment and ChatGPT in your Courses" [https://taylorinstitute.ucalgary.ca/first-response-assessment-and-chatgpt](https://taylorinstitute.ucalgary.ca/first-response-assessment-and-chatgpt) Accessed March 17, 2023.

Artificial Intelligence and Academic Integrity Working Group, The Pennsylvania State University. AI, Pedagogy, and Academic Integrity. Website [https://aiai.psu.edu/](https://aiai.psu.edu/). Accessed March 3, 2023.

Bean, J. (2011). Chapter 6: Formal Writing Assignments. In *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. Jossey-Bass: San Francisco.

Middendorf, J. & Shopkow, L. (2018). Exercise 5.5: Designing Disruptive Courses, pp. 135-136. In *Overcoming Student Learning Bottlenecks: Decode the Critical Thinking of Your Discipline.* Stylus: Sterling, Virgina.

Watkins, R. (2022). Update Your Course Syllabus for ChatGPT. Website [https://medium.com/@rwatkins_7167/updating-your-course-syllabus-for-chatgpt-965f4b57b003](https://medium.com/@rwatkins_7167/updating-your-course-syllabus-for-chatgpt-965f4b57b003) Accessed March 3, 2023.