Best Practices for Students Using AI Tools

Effective uses to scaffold learning and why they help

Jake Benhart

Introduction

This guide describes how to use artificial intelligence (AI) chatbots such as ChatGPT, Claude and Gemini so that they help you learn, not only finish the assignment. Each practice comes with the reason it helps. These best practices are derived from reading real large language model (LLM) interactions from students completing assignments in Industrial and Systems Engineering (ISE) courses and seeing how those students performed on exams (without AI assistance.) They prioritize using AI to scaffold learning, not replace it.

The best practices are in bold, and the reasoning is explained after.

Before you open the AI

1. Read the whole problem, understand what it is asking for, and understand what you are asking the LLM.
The AI answers the question it perceives to be asked, which is not always the question that is being asked. If you do not know what is being asked, you cannot tell whether the AI answered it.

2. Note every constraint, required method, tool and format.
When you leave these out, the AI often uses a different method or tool than the one required. The work will look finished but will not meet the requirements.

3. Use methods and approaches from class that could apply to problems and do not rely on AI for new approaches and methods.
Doing this gives you something to validate what you get from AI – if the AI takes a different approach, you should be able to fix it (or understand it is another correct approach.)

4. Make your own first attempt.
A first attempt shows you exactly what you do not understand, and that is what to ask the AI about. Questions that come from your own attempt are focused, and focused questions get useful answers.

While you use the AI

5. Ask for an explanation before you ask for a solution.
Students who score higher usually ask the AI to explain the problem and the approach first. When you understand the approach, you can catch the AI's mistakes instead of copying them.

6. Be specific.
Give the required method, tool, constraints and format, and point to your course materials. Vague prompts lead to wrong methods and long conversations with no new insight.

7. Ask for small pieces you can check, not a complete solution in one step.
Small pieces are easy to test. An error found in one small piece is easy to fix. An error buried in a complete solution is hard to find.

8. Ask "why" and "how" about the parts you do not understand.
One answer solves one problem. Understanding the method is what lets you solve the next one, including

on an exam without AI.

9. Check what the AI gives you, and tell it when something is wrong.
AI tools make mistakes, and they can sound confident when they are wrong. Students who check and question the AI's output do better on exams taken without AI than students who accept it as given. When something fails or looks wrong, tell the AI exactly what happened.

10. Know when to stop asking and start doing.
Long conversations are not a sign of better work. The longest conversations are often circular. The strongest work comes from focused conversations that keep making progress.

After you get an answer

11. Check that it works and that it answers the right question.
Work can run without errors and still solve the wrong problem or use the wrong assumptions. Compare it with the problem statement, your notes, a hand calculation or a second source.

12. Make sure you can explain each step in your own words.
If you cannot explain a step, you do not own it yet. Exams, interviews and your future job will ask you to explain your work without the AI beside you.

13. Write your summary from your own understanding, not from AI text.
Writing it yourself shows you where your understanding has gaps.

Questions worth asking the AI

- "Can you explain what this line does without giving me the answer?"
- "I don't understand why we use [method or idea]. Can you explain the concept?"
- "Why does this approach work?"
- "What assumptions does this solution make?"
- "How would I solve this without AI?"
- "What are the limitations or edge cases?"
- "Here is my attempt and here is the correct answer. Where did my approach go wrong?" *(for courses that give answers after a first attempt)*

Common mistakes

- **Copying without understanding.** Accepting the first answer without testing it.
- **Letting the AI make the key decisions.** Accepting a method or assumption you cannot explain, or one that contradicts the problem.
- **Vague or repeated prompts.** Asking the same question in different words instead of saying exactly what you need.

Key takeaways

- **Think first.** Read the problem and try it yourself before you ask.
- **Ask to understand.** Ask for explanations, not only answers.
- **Check everything.** Test what the AI gives you and question it.
- **Own your work.** You should be able to explain and justify every part of it without the AI.

AI tools are not something to avoid. Used this way, they help you learn the material, not only finish the assignment.

This guide builds on "Exam 1: Effective Use of AI Tools," given to ISE 361 students in Fall 2025, and on J. E. Benhart IV, M. G. Kay and W. K. Kirschenman, "Strategic Scaffolding, Not Passive Dependency: How AI Use Relates to Academic Success," manuscript submitted to the ASEE Computers in Education Journal.