



AI Literacy for College Students

Thinking Critically, Ethically,
and Creatively with AI

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Welcome!

This lesson is designed to help you **understand, use, and think critically about artificial intelligence (AI)** in college and beyond. Because AI already shapes how we study, write, research, and make decisions, learning how to use it well (and responsibly) matters.

Take a moment to prepare your mindset:

- **Be curious.** Notice where AI shows up in your academic work and everyday life, from search results to learning tools.
- **Be critical.** Remember that AI can sound confident without being accurate, so pay attention to assumptions, missing information, and possible bias.
- **Be reflective.** Think about when AI supports learning and when it might replace thinking you should do yourself.
- **Be active.** Treat the examples and exercises as practice for real assignments and decisions about AI use.

By the end of this lesson, you will be able to:

- Recognize how AI influences information, creativity, and decision-making
- Evaluate AI responses using practical tools
- Use and acknowledge AI responsibly and ethically in academic work
- Connect AI literacy to future jobs and daily life

Keep these goals in mind as you read; each module builds toward becoming a thoughtful, responsible, and empowered AI-literate student.

Core Truths about AI (Central Reference)

These principles apply throughout the lesson:

- **AI does not think, feel, or understand meaning the way humans do.** It does not know what words, images, or ideas *mean*. Instead, it finds patterns in large amounts of data and guesses what comes next based on those patterns.
- **AI learns from human-made data and human decisions,** which means it can make mistakes or reflect bias.
- **AI outputs may sound confident even when they are inaccurate or incomplete.** Checking accuracy is your responsibility.
- **Humans—not AI tools—are accountable for decisions, conclusions, and academic work.**
- **AI should support learning, not replace it.** Use it to clarify, organize, or generate ideas, but not to replace your thinking or skill-building.

Module 1: What AI Is and Is *Not*

Merriam-Webster (n.d.) defines **artificial intelligence (AI)** as “the capability of computer systems or algorithms to imitate intelligent human behavior.” Does this align with your understanding of AI? What other definitions have you heard?

The key concept to understand is that AI “imitates” human behavior. It is not a thinking being; it does not reason, verify facts, or make judgments. Any accuracy, meaning, or ethical responsibility comes from the person using the tool.

Why AI Literacy Matters

AI literacy is the ability to understand, use, and think critically about AI technologies and their impacts. Since AI already shapes **what information you see, the content you create, and the decisions you make** in academic work and daily life, being AI literate means you can:

- recognize AI’s influence
- make informed choices about when and when not to rely on AI
- evaluate outputs critically
- use AI responsibly and ethically (*see sidebar*)

Categories of AI

AI can be classified by capability (how it can perform) and by functionality (how it operates).

By Capability

The only form of AI that currently exists is **Artificial Narrow Intelligence (ANI)**, also called narrow AI or weak AI. These systems are designed to perform specific tasks within limited domains. It may appear highly capable but cannot generalize knowledge or operate with humanlike understanding across unrelated contexts.

You may encounter concepts such as **Artificial General Intelligence (AGI)**, a hypothetical AI capable of humanlike reasoning and learning across many domains, and **Artificial Superintelligence (ASI)**, a hypothetical AI that would surpass human intellectual capabilities. However, neither currently exists, and all AI systems in use today are forms of ANI.

By Functionality

- **Rule-based AI:** follows a set of rules created by humans to complete tasks or make decisions; does not learn or adapt over time
Examples: tax preparation software; grammar and spellchecker tools
- **Machine learning (ML):** learns from examples in data to identify patterns and make predictions, recommendations, or decisions
Examples: recommendation systems that suggest videos, music, or study content; email spam filters
- **Deep learning:** a type of machine learning that uses large amounts of data to recognize complex patterns in language, images, audio, and other information
Examples: speech-to-text transcription tools; facial or object recognition in photos

What Does “Using AI Ethically” Mean?

Using AI ethically does not always have one clear answer. What is considered ethical can depend on the situation, the goal, and the people it affects. Think of ethical AI use as a spectrum, ranging from clearly responsible to clearly harmful, with many gray areas in between.

Visit [Module 3](#) for more information and clear guidelines on using AI ethically.

- **Generative AI (GenAI):** creates new content based on patterns learned from existing data, such as text, images, audio, video, or code
Examples: chatbots that generate written responses; AI image generators that create images from prompts
- **Predictive AI:** uses existing data to estimate what is likely to happen or help make decisions
Examples: navigation apps that predict travel times; weather forecasting tools

Note: These categories often overlap. For example, many generative AI systems use deep learning, and deep learning is one type of machine learning.

AI Outputs Are Likely, Not Verified

- AI does **not check facts**.
- Outputs may sound confident even when **incomplete, outdated, or wrong**.
- **Verification** (the process of checking whether information, outputs, or claims are accurate, reliable, and supported by evidence before using them in decisions or work) is **your responsibility**.

Bias and Data Limitations

AI learns from data created by people. If that data is missing important info or includes **bias** (a tendency to lean in a certain direction when thinking, deciding, or measuring something), AI can repeat or amplify problems, such as:

- some groups or voices being left out or represented unfairly
- reinforcement of stereotypes
- unequal outcomes for different groups of people

This really matters, especially when AI is used in education, hiring, health care, or public decisions.

Examples:

- **Facial recognition systems:** If an AI system is trained mostly on images of light-skinned faces, it may perform poorly on darker-skinned faces, possibly resulting in higher error rates for certain groups, leading to unequal treatment.
- **Hiring algorithms:** If a hiring tool is trained on résumés from a company that historically hired mostly men, it may learn patterns that favor male candidates, leading to qualified applicants from other groups being ranked lower.

The Black Box Problem

The term *black box* refers to a system where you can see what goes in and what comes out, but not exactly how the system arrived at its answer. Many AI systems are so complex that even their creators cannot fully explain how specific results are created. This makes it:

- harder to understand mistakes
- harder to detect or correct bias
- harder to question decisions made using AI

Further Resource

Even when AI sounds correct, it might not be; check out this blog post about why ChatGPT couldn't count how many *r*'s are in the word *strawberry*.

hawkes.biz/Almistakes

Further Resource

Check out this article explaining AI's mysterious black box problem.

hawkes.biz/blackbox

Takeaway: Use AI as a tool, not as a decision-maker, especially when the stakes are high or the outcome is significant.

Environmental Concerns of AI

AI systems require massive amounts of data, computing power, and physical infrastructure to train, maintain, and operate. As AI use expands, concerns have grown about its environmental impact and long-term sustainability. This often includes:

- **Energy and resource demands:** AI systems rely on large data centers that consume substantial electricity for computing and cooling and, in many locations, require significant water resources to manage heat.
- **Land use:** Expanding AI infrastructure requires land for new data centers, which can place pressure on local land use, energy grids, and water supplies and may contribute to the conversion of agricultural or undeveloped land.
- **Hardware production and electronic waste:** AI depends on specialized hardware, such as graphics processing units (GPUs) and servers, whose manufacturing, replacement, and disposal require raw materials, energy, and generate electronic waste.
- **Carbon emissions:** When powered by fossil-fuel based electricity, AI systems indirectly contribute to greenhouse gas emissions and climate change (Liu and Yin 2024).

Example: Training a single large AI model can use as much electricity as streaming thousands of hours of video or powering an average household for several months.

Tips for Environmentally Responsible AI Use

- **Use AI intentionally.** Consider whether AI meaningfully improves the task or whether a simpler tool would work.
- **Choose efficient tools.** Many AI platforms offer “lightweight” or energy-efficient options.
- **Avoid unnecessary processing.** Limit repeated generations of excessive outputs.
- **Be specific with prompts.** Clear instructions can reduce the number of follow-up requests and repeated generations needed to get a useful result. (Visit [Module 4](#) for informed prompting practices.)

Why This Matters

Understanding AI helps you to:

- **Use AI intentionally and effectively** by choosing when and how it adds value to your work.
- **Evaluate AI outputs critically** by recognizing limitations, bias, inaccuracies, and missing context.
- **Make informed and ethical decisions** by considering the academic, social, environmental, and broader impacts of AI use.

Try It

Identify one place AI influences the information you receive or the decisions you make in your own life. (**Hint:** *Have you ever noticed that your social media feed, streaming recommendations, or online ads seem tailored specifically to you?*)

Who benefits, and who might be disadvantaged from this type of influence? What can you do to broaden your awareness of AI and its influences?

Module 2:

AI and Information Literacy Tools

Evaluating AI-generated content is a necessary academic skill.

Information literacy means understanding where information comes from, and in an AI-driven world, how algorithms and AI may influence what you see as well as how to critically evaluate both human- and AI-generated content before accepting or sharing it.

Tools for Evaluating AI-Generated Information

Each tool listed offers a clear way to slow down, check, and verify AI outputs before relying on them in assignments.

1. Fact-Checking and Triangulation

Fact-checking aims to confirm claims using multiple reliable sources. The term *triangulation* comes from navigation, where three reference points are used to determine an accurate location.

How to use it with AI:

- Identify one factual claim from AI output.
- Verify it using at least two separate, reliable sources (textbooks, scholarly articles, reputable websites).

Example: AI claims, “Most college students learn better through visual learning methods.” Check whether this claim is supported, or challenged, by educational research.

Takeaway: Something that sounds believable is not always true.

2. Verifying Citations and References

AI systems can “**hallucinate**” by generating information that appears credible but is actually incorrect, misleading, or made up, including research studies, statistics, citations, or references that sound legitimate but do not exist.

How to verify AI-generated research content:

- **Search for and confirm information using reliable sources.** Use search engines as a starting point to verify AI-generated claims, then confirm information through credible sources such as academic databases, library resources, peer-reviewed articles, or tools like Google Scholar.
- **Trace information back to original sources.** When AI provides citations, references, or summarizes research, confirm that the sources exist, are accurately represented, and support the claims being made.
- **Cross-check for accuracy and context.** Compare information across multiple sources to identify missing context, outdated information, oversimplifications, or potential bias before referencing it in academic work.

3. The SIFT Method

The **SIFT** method, developed by digital literacy expert Mike Caulfield, is a framework for evaluating online information by encouraging users to stop, investigate the source, find better coverage, and trace claims back to their original context before accepting or sharing information (Caulfield 2019).

- **Stop:** Pause before trusting or sharing AI output.
- **Investigate:** Identify the likely source of the information.
- **Find better coverage:** Search for confirmation from reliable sources.
- **Trace:** Follow statistics or quotes to their original context.

Quick Steps

- Search the exact quote or statistic.**
Put it in quotation marks in a search engine and search for the original source.
- Find the first credible publisher.**
Who first published this information? Was it a research study, government report, or reputable news outlet?
- Check the date.**
Is the information current, or is it outdated? Is it being reused in a new context where it may no longer apply?
- Read before and after the quoted section.**
If it's a quote, read a few paragraphs before and after it. Was it taken out of context?
- Examine how the data was gathered.**
Who was studied? How large was the sample?

Example: AI summarizes a controversial health claim; use SIFT to verify details via medical journals.

- **S:** Write about how you stopped to evaluate the output.
- **I:** Where did the information come from?
- **F:** Where did you go to find reliable sources?
- **T:** What are the links or references tracing to the statistics or quotes?

4. The CRAAP Test

The **CRAAP** test, developed by librarian Sarah Blakeslee and colleagues at California State University, Chico, is a framework for evaluating the credibility of information sources by examining their currency, relevance, authority, accuracy, and purpose before using them in research (Blakeslee 2004).

- **Currency:** Is the information current?
- **Relevance:** Does it fit your topic or assignment?
- **Authority:** Who created it? What credentials, experiences, or achievements make this author an expert?
- **Accuracy:** Is it supported by evidence? Can you find at least two other reliable sources to verify the accuracy of the information?
- **Purpose:** Why was it created?

Example: AI generates a claim that social media improves mental health. Before using it, check when the source was published, whether it fits your topic, who created it, whether evidence supports the claim, and whether the source’s purpose is to inform, persuade, or promote.

5. Bias and Perspective Checking

AI may focus on views from groups with more power or visibility while leaving out others.

How to check AI outputs for bias:

- **Spot which voices are included.**
 - Ask: Whose perspective is presented?
 - Who is missing or underrepresented?
- **Seek alternative perspectives.**
 - Search for sources from different cultures, communities, or scholarly groups.
 - Compare multiple viewpoints on the same topic.
- **Check for differences or omissions.**
 - What does AI include or leave out?
 - Are important perspectives missing, simplified, or misrepresented?

Example: AI summarizes a historical event. Cross-check with academic or international sources and notice what is explained differently or left out.

6. Evaluating AI-Generated Media (Images, Audio, Video)

AI can create increasingly realistic videos, images, and audio. It’s important to verify AI-generated media and evaluate content critically rather than accepting it at face value.

How to evaluate AI-generated media:

- **Search for signs of manipulation or inconsistency.** Examine images, video, or audio for unusual details such as distorted text, inconsistent lighting or shadows, unnatural movement, mismatched reflections, visual artifacts, or audio that appears disconnected from context.
- **Check where the media originally appeared.** Search for the earliest available version of an image, video, or clip and determine whether it has been edited, reposted, cropped, or presented without important context.
- **Confirm authenticity using additional evidence.** Compare the media with trusted news sources, official accounts, reverse image search tools, or other independent sources to determine whether the content is authentic and accurately represented.

Example: You notice an image attached to a news story. Use reverse image search (e.g., Google Images or TinEye) to trace where it originated, compare how it appears across sources, and check whether it has been labeled as AI-generated or edited.

Try It

Practice Evaluating AI Output

- Choose a topic (e.g., sleep, social media, attendance policies).
- Generate an AI output about your topic; choose one of its claims to evaluate.
- Apply at least two evaluation strategies listed.
- Decide whether the claim is trustworthy, uncertain, or misleading, and explain why.

Module 3:

Using AI Ethically

Ethical AI use isn't just about avoiding plagiarism; it's about using AI in ways that are fair, responsible, and thoughtful about how your choices affect yourself and others. Because what's ethical can depend on the situation, purpose, and impact, using AI ethically means exercising good judgment, being transparent about how AI contributes to your work, and handling personal or sensitive information carefully.

AI can support learning and increase access, but it can also raise concerns about misinformation, consent, and creative labor, or the time, effort, and skill that people put into creating original work. Using AI ethically means recognizing both its benefits and potential harms, including respecting the contributions of human creators whose work AI may build on, giving credit where it's due, and being aware of how your use of AI affects others.

At its core, ethical AI use asks a few key questions:

- Who benefits from this use of AI?
- Who might be harmed or disadvantaged?
- What is being replaced, hidden, or avoided by using AI?
- Am I being honest and transparent about how I'm using it?

Ethical vs. Unethical Use: What's the Difference?

AI is often used **unethically** when it:

- replaces learning or thinking that a person is expected to do themselves
- makes it seem like someone did work they didn't actually do
- spreads incorrect, biased, or misleading information without verification
- is used in ways that affect others without their knowledge or consent

Unethical use can harm:

- the user, by weakening skills, understanding, or credibility
- other people, through unfair advantages, misinformation, or exclusion
- institutions and communities, by damaging trust, fairness, and responsibility

Ethical use, on the other hand, involves:

- supporting learning rather than replacing it
- being transparent about AI use when required or expected
- checking accuracy and bias instead of assuming correctness
- considering how AI decisions or outputs affect real people

Why This Matters

Because AI does not understand meaning or consequences, **ethical responsibility always falls on the human using it**. You are accountable for how AI is used in your work, even when the tool makes choices feel automatic or easy.

Developing AI literacy means learning to pause and ask not just, “*Can I use AI here?*” but “*Should I use AI here, and what are the consequences if I do?*”

There may not always be a clear-cut correct answer, but ethical AI use begins with awareness, reflection, and responsibility.

Guidelines

- Follow course and institutional policies.
- Disclose AI use transparently.
- Avoid replacing thinking or skill development.
- Protect personal or sensitive data.
- Consider broader impacts on fairness, inclusion, and creativity.

Example: Appropriate and Inappropriate Uses of AI

Check out the following example that illustrates how to (and how not to) use AI for a writing assignment.

The Assignment:

- ✓ Write a 4–5 page argumentative essay on a current issue.
- ✓ You must take a clear position, use credible sources, and write in your own words.

Appropriate Use of AI

Students use AI to help with parts of the essay, like:

- **Brainstorming topics**
A student asks AI for ideas about current issues, like “possible essay topics on inflation, rising prices, or the economy,” and gets a list to consider.
- **Narrowing down a research question**
A student has a broad topic like “economic prices” and uses AI to suggest a more focused question, such as, “How does rising inflation affect college students’ daily spending?”
- **Creating an outline**
A student uses AI to make an outline: Introduction → Claim → Evidence → Counterarguments → Conclusion, then adds their own points under each section.
- **Getting feedback on clarity or grammar**
A student pastes a paragraph into AI to check for confusing sentences or typos, then revises it themselves.

Why it’s okay: Students still choose their own topic and position, do their own research, write the essay, and only use AI to help organize ideas or fix unclear sentences. This way, the essay shows what the students actually know and learned, and the students are prepared for future assignments or exams.

Inappropriate Use of AI

A student asks AI to generate the entire essay, including finding sources, making arguments, and writing paragraphs, and then turns it in as their own work. They might make small changes, like tweaking a few words, but they don’t add their own ideas or thinking.

Why this is not okay: AI is doing the main work, so the student misses out on learning how to research, think critically, and write. The essay doesn't show what the student understands, and it does break school rules about honesty in work. It also means the student won't be ready for exams, class discussions, or future assignments that require their own thinking.

Is My AI Use Okay? (Quick Check)

Ask yourself:

- Did **I** adhere to my instructor's guidelines/course policies?
- Did **I** choose the topic, thesis, and evidence?
- Did **I** write the words myself?
- Can **I** explain and defend my ideas without AI?
- Did AI **help me** improve my work, rather than create it?

If you answer **yes** to all of these, your AI use is likely okay.

If not, it's time to rethink how you're using AI.

Try It

Identify one appropriate and one inappropriate way you could use AI for a recent or upcoming assignment. Explain why the uses are appropriate and inappropriate.

Module 4:

Prompting and Interacting with AI

The quality of AI output depends not only on how clearly you communicate your goals, but also on how you understand the tool you are interacting with. Learning to prompt effectively is a transferable skill, similar to asking strong research questions or giving clear instructions, that helps you guide AI responses in more useful, appropriate, and intentional ways.

Understanding the Psychology of Interacting with AI

AI tools are designed to communicate in ways that feel natural, friendly, and supportive. They often use conversational language, encouragement, and polite feedback because they are trained on large amounts of human-written text. This design helps make AI easier to use, but **it can also make interactions feel more personal than they actually are.**

It is important to remember that AI is **not a person**. AI does not have emotions, intentions, awareness, or relationships. When it sounds empathetic or supportive, it is not responding with genuine understanding or care. It is generating language patterns that *simulate* how humans often communicate.

Because of this, users should be mindful of how easily humanlike responses can trigger emotional reactions. Feeling reassured, validated, or understood by AI is normal because of its response style, but it does not mean the system has feelings or concern for you. AI is nonhuman technology designed to keep users engaged in conversation, not a living being capable of connection or judgment.

Maintaining a clear boundary between yourself and the technology helps prevent over-reliance or emotional attachment. Viewing AI as a functional tool (rather than a companion, authority, or audience) supports healthier and more effective use, especially in academic settings.

Prompting Strategies

Prompting is the process of clearly communicating what you want an AI system to do. The clearer and more specific your prompt, the more useful and relevant the AI's response will be. Think of it like giving clear directions to a teammate: the more context and detail you give, the better the results will be.

Reflection Question

Have you ever found yourself reacting emotionally to an AI response? How might recognizing its nonhuman design change the way you interact with it?

These strategies can help you craft prompts that get the answers you need:

Strategy	Example Prompt	Why It Matters
<p>Be clear and specific.</p> <p>Give precise instructions so the AI tool knows exactly what you want.</p>	<p>“Summarize the main causes of rising inflation in the U.S. in 3–4 sentences.”</p>	<p>Specific directions help AI give focused, relevant answers.</p>
<p>Provide context.</p> <p>Include details like assignment, topic, audience, or style.</p>	<p>“I am writing a 4-page argumentative essay for my economics class about how to rectify inflation. Show me five key points I could consider using.”</p>	<p>Context improves relevance and usefulness of responses.</p>
<p>Request credible sources.</p> <p>Ask for information from trustworthy, authoritative sources.</p>	<p>“Provide three recent, peer-reviewed studies or reputable news articles about how inflation affects college students’ budgets.”</p>	<p>Specifying credibility expectations ensures your essay is based on accurate, reliable evidence.</p>
<p>Request multiple perspectives.</p> <p>Ask the AI tool to show different viewpoints on an issue.</p>	<p>“Summarize at least three arguments each for and against government price controls during high inflation.”</p>	<p>Multiple perspectives require your judgment. Evaluate which perspectives are credible, relevant, and fair to include.</p>
<p>Refine through follow-up prompts.</p> <p>Ask additional questions to clarify or expand responses.</p>	<p>“Explain the pros of price controls in simpler language for my introduction.”</p>	<p>Thoughtful refining helps you get more precise or detailed information.</p>
<p>Set boundaries.</p> <p>Specify limits like tone, length, or what parts of your work can be changed.</p>	<p>“Check only the spelling and grammar in my paragraph. Do not rewrite sentences or change tone.”</p>	<p>Boundaries help maintain your own voice while still getting AI assistance.</p>

Example: Strong and Weak Prompting

Before writing your own prompts, review the following example.

Step 1: Start with a general prompt.

General prompt:

“Is remote work good or bad?”

Sample AI response:

Remote work has both benefits and drawbacks.

On the positive side, remote work can offer flexibility, reduce commuting time, and improve work-life balance. However, it may also lead to isolation, communication challenges, and reduced collaboration.

Whether remote work is good or bad depends on individual preferences and workplace needs.

Step 2: Compare it to a more effective prompt.

More effective prompt:

“I’m developing a 4-page assignment for a communications class about whether remote work is beneficial or harmful. Present two contrasting perspectives and identify at least four key points I could consider about impacts on both employees and employers. Include at least three recent, credible sources (such as peer-reviewed studies, government reports, or reputable news organizations) that I can review myself. Summarize the strongest evidence and note areas where researchers disagree. Do not take a position, write my essay, or create a thesis. End by suggesting two follow-up questions to help me explore the topic further.”

Sample AI response:

Remote work remains a debated topic in communication and organizational research, with evidence suggesting benefits and drawbacks for both employees and employers depending on job type, management practices, and workplace culture.

Perspective 1: Remote work is beneficial.

Supporters argue that remote work can improve flexibility, satisfaction, and productivity while reducing costs.

- *Employee flexibility and work-life balance: Remote work may reduce commuting time and allow employees greater control over schedules.*
- *Productivity and autonomy: Some studies report equal or higher productivity in remote environments, particularly for focused, independent work.*
- *Employer cost savings: Organizations may reduce spending on office space and facilities.*
- *Access to broader talent pools: Employers can recruit from wider geographic areas rather than limiting hiring to local candidates.*

Research frequently finds that employee satisfaction and perceived flexibility increase under remote work arrangements, although results vary across industries and roles.

Perspective 2: Remote work is harmful.

Critics argue that remote work can weaken communication, collaboration, and organizational culture.

- *Communication challenges: Reduced face-to-face interaction may increase misunderstandings and limit informal knowledge sharing.*
- *Collaboration and innovation concerns: Some researchers suggest remote work can make brainstorming and relationship building more difficult.*
- *Employee isolation and burnout: Flexible work can blur boundaries between personal and professional life.*
- *Management and organizational challenges: Employers may face difficulties maintaining engagement, onboarding employees, and building workplace culture.*

Studies often show that communication quality, mentorship, and organizational connection can become more difficult in fully remote environments.

Areas where researchers disagree

Researchers continue to debate:

- *whether productivity gains persist over time*
- *how remote work affects creativity and collaboration*
- *whether hybrid models produce better outcomes than fully remote or fully in-person work*
- *how experiences differ by industry, job type, career stage, and employee demographics*

Sources to review

- *Pew Research Center — research on worker experiences and attitudes toward remote and hybrid work*
- *Gallup — workplace engagement and remote work findings*
- *U.S. Bureau of Labor Statistics — labor and work arrangement data*
- *Harvard Business Review — analysis of organizational communication and remote work trends*

Follow-up questions

1. *How do communication practices differ between fully remote, hybrid, and in-person workplaces?*
2. *Which groups of employees benefit most—or least—from remote work, and why?*

What Changed, and Why It Matters

The stronger prompt:

- adds context (college assignment)
- requests multiple perspectives
- sets boundaries (no opinion, no essay)
- produces a more structured and useful response

Try It

Think of a prompt related to one of your assignments. Enter a general prompt first, then a more specific one using one or more of the example strategies. Compare the responses. What improved? What stayed the same?

Module 5:

AI for Learning and Academic Work

Used thoughtfully, AI can support learning and academic success, but it should complement, not replace, the critical thinking, practice, and understanding that education is designed to develop. Responsible use means verifying outputs, applying your own reasoning, and reflecting on how AI fits into the learning process.

Responsible Use Examples across Disciplines

- **Humanities:** identify themes in a text, synthesize ideas from multiple sources, brainstorm essay topics, outline arguments
- **STEM (science, technology, engineering, mathematics):** work through a math or coding problem step by step, check formulas, explore alternative approaches, analyze data sets
- **Social Sciences:** map arguments or findings in readings, summarize and combine research studies, organize experimental or survey results
- **Creative Arts and Design:** draft storyboards or sketches, test different design options or versions of a project, generate ideas for creative projects, media, or experiments
- **General Academic Support:** create study guides, generate practice questions, organize notes, or locate credible sources for a research project

Why Appropriate Use Matters for Your Future

AI can feel like a tempting shortcut, but asking AI to do your work for you means **you miss the learning you're paying for**. College is designed to help you build knowledge, judgment, and skills you'll need in your field. Relying on AI to replace that work can leave you unprepared and lead to harmful outcomes in real life.

Real-World Examples:

- **Medical:** A person followed AI medical advice, replacing table salt with sodium bromide, and was hospitalized. (hawkes.biz/medicalAI)
- **Legal:** A lawyer was fined for citing fabricated case information from an AI tool in court pleadings. (hawkes.biz/legalAI)
- **Misinformation:** AI-generated images, videos, and voice recordings (deepfakes) have been used to spread false information during elections and news events, leading to public confusion, voter misinformation, and reduced trust in media. (hawkes.biz/misinformationAI)

These examples show that AI output may sound convincing but can be inaccurate, incomplete, or misleading. Learning how to use AI responsibly in college helps you develop the knowledge and judgment needed to evaluate AI-generated information and make informed decisions in academic, professional, and everyday contexts.

Using AI for Learning: “AI Can Help You Must Do This Yourself”

Discipline / Assignment	Steps AI Can Help With	Steps You Must Do Yourself
Math / STEM	Break complex problem into smaller steps, check calculations, explain formulas, request more sample problems to solve	Solve the problem, interpret results, replicate the problem without help from AI
English / Humanities	Summarize sources, brainstorm essay topics, outline drafts	Develop the thesis, analyze the evidence, write the final essay
Social Sciences	Organize survey results, map arguments, synthesize literature	Draw conclusions, apply theory, write an analysis

Example: Using AI Responsibly for Learning

Scenario: You have a challenging math problem: *Solve for x in $3x^2 + 5x - 2 = 0$.*

Correct use of AI:

- Ask AI to help you work through the problem one step at a time. It’s about the process, not just getting the answer.
- You follow along, check your work, and make decisions yourself.

Example prompt: “Help me factor this quadratic equation step by step, and explain each step so I can understand it.”

Why it works:

- You learn and understand the method.
- You can solve similar problems independently on homework, quizzes, or exams.

Incorrect use of AI:

- Ask AI to **solve the entire problem and give the answer** without showing steps.

Example prompt: “Solve $3x^2 + 5x - 2 = 0$ and give me the answer.”

Consequences:

- You don’t understand the process.
- You won’t be able to solve similar problems on your own.
- You risk failing quizzes or assignments that test the same skills.

Try It

1. Pick a recent or upcoming assignment in any discipline.
2. Identify **one step AI could help with** (like checking a step, summarizing a source, or outlining a paragraph).
3. Identify **one step you must do yourself** (like solving the problem, analyzing evidence, or writing the final essay).
4. Reflect: What would happen if you skipped the “must do yourself” step? How does responsible AI use help you actually learn?

Module 6:

Citing and Acknowledging AI

Citing AI is about transparency and protecting your credibility. Just as you cite a website, book, article, tutor, dataset, or software tool when it meaningfully contributes to your work, acknowledge AI when it plays a substantive role in creating or shaping your final product.

Always follow your instructor's, department's, or institution's AI-use policy; requirements vary across courses and disciplines.

When to Cite AI

Cite AI when it:

- generated ideas, research questions, or project directions that influenced your work
- created outlines, drafts, examples, or content that you used, adapted, paraphrased, or quoted
- produced explanations, summaries, interpretations, or analyses that informed your conclusions
- helped generate data, code, images, tables, or other materials included in your submission
- contributed language or structure beyond routine editing

When You May Not Need to Cite AI

Citation is often unnecessary when AI is used only for limited editorial support, such as:

- correcting spelling, grammar, punctuation, or formatting
- suggesting clearer wording without changing your ideas or arguments
- helping reorganize sentences when you independently decide what to keep
- performing functions similar to spell-check, autocomplete, or standard writing tools

General Guidelines

If removing the AI's contribution would materially change your final work, disclose or cite it. If the AI only polished work you already created, citation may not be necessary.

Acknowledging AI without Formal Citation

In some cases, instructors may prefer a brief acknowledgment instead of a formal citation. If AI provided limited support—such as brainstorming, organization, or grammar and style suggestions—you may acknowledge its use without treating it as a cited source.

Example: *“Portions of the brainstorming and revision process for this paper were supported by ChatGPT.”*

Important Note

Tools like Grammarly can sometimes rewrite entire sentences or passages. If you allow the program to do this automatically, you could end up with large portions of text flagged as AI-generated, which should be cited. Always set boundaries.

Example boundary:

“Check only for spelling and grammar; do not rewrite sentences or change my tone.”

How to Cite AI in Common Academic Research Styles

Because guidance on citing AI continues to develop, check course and institutional policies in addition to the Modern Language Association (MLA), American Psychological Association (APA), or other style requirements.

MLA (9th ed.)

- Do not list AI as the author.
- Use MLA's standard citation elements to describe the AI-generated content.
- Include a description of the prompt or generated content (when needed) and the AI tool name, model/version, organization, date generated, and URL (preferably a shareable conversation link).

Works Cited Entry Example

“Describe the Theme of Nature in Jane Austen’s *Mansfield Park*” prompt. *ChatGPT*,

model GPT-4o, OpenAI, 23 Sept. 2024, chatgpt.com/share/66f1b0a0

d704-8000-be9a-85f53c850607.

In-Text Citation Example

(“Describe the Theme”)

APA (7th ed.)

- Cite AI-generated output when it contributes content to your work.
- Include organization, date, AI tool name and model/version, description of the prompt or output, and URL.

Reference List Entry Example

OpenAI. (2025, September 12). *ChatGPT* (GPT-4) [Large language model]. Response to

the prompt “Explain photosynthesis in simple terms.” <https://chat.openai.com>

In-Text Citation Example

(OpenAI, 2025)

Chicago Manual of Style (CMS) (17th ed.)

CMS offers two citation systems. Follow the system required for your course.

Notes-Bibliography (NB)

- common in the humanities
- citation in footnotes or endnotes
- identification details: AI tool, model/version (if relevant), prompt or interaction description, organization, date, URL
- bibliography entry only if required by instructor or course policy

Example in Text

The Industrial Revolution transformed economies by increasing industrial production and changing patterns of labor.¹

Footnote Example

1. Response to “Describe the economic effects of the Industrial Revolution,” ChatGPT (GPT-4), OpenAI, September 12, 2025, edited for style and accuracy.

Important Note

On transparency: Whenever possible, include a shareable link to your AI conversation. This helps show how you used AI and provides a record of your work.

Bibliography Example (if required)

OpenAI. Response to “Describe the economic effects of the Industrial Revolution.” ChatGPT

(GTP-4), <https://chat.openai.com>.

Author-Date

- common in the sciences and social sciences
- in-text author-date citation
- matching reference list entry
- identification details: organization, AI tool, model/version (if relevant), prompt or interaction description, date, URL

Reference List Entry Example (if required)

OpenAI. 2025. Response to “Describe the economic effects of the Industrial Revolution.”

ChatGPT (GPT-4). <https://chat.openai.com>.

In-Text Citation Example

(OpenAI 2025)

Try It

Practice Transparent AI Use

Choose a scholarly article related to your field of study (or use one provided by your instructor).

Directions

1. Read the article yourself before using AI. Identify the article’s main argument, key evidence, and conclusions.
2. Use an AI tool to support one part of your process (for example: generating a summary, clarifying terminology, brainstorming questions, organizing notes, or revising wording).
3. Write a 100–200 word summary of the article in your own words. Your summary should accurately reflect the article, not the AI output.
4. Decide how your AI use should be documented. Based on your course policy and citation style, determine whether your AI use requires:
 - a formal citation,
 - an acknowledgment/disclosure statement, or
 - no documentation.
5. Document your AI use appropriately. Include the correct citation or acknowledgment using MLA, APA, CMS, or your assigned style.
6. Write a brief reflection (2–3 sentences):
 - What did the AI help you do?
 - What decisions did you make independently?
 - Why did you choose to cite, acknowledge, or not cite the AI?

Optional: Include a shareable link or transcript of your AI conversation if permitted by course policy.

Module 7:

AI in Careers and Society

AI literacy is becoming an essential academic and career skill. As AI tools become more common in workplaces, employers increasingly value people who can use AI effectively, evaluate its outputs carefully, and use their own judgment to check and improve AI-generated work.

Applications across Fields

- ✉ **Business:** AI can analyze sales trends, provide customer insights, and automate routine tasks.
- 🏥 **Health care:** AI can flag abnormal test results, analyze patient data, and streamline scheduling.
- 🍎 **Education:** AI can create personalized study plans, help with grading, and generate practice questions.
- 💻 **Design and creative fields:** AI can make prototypes, suggest design variations, and assist with media production.
- 📊 **Data science and technology:** AI can clean and analyze data, find patterns, and make predictions.
- 🗣️ **Communications:** AI can draft content, monitor trends, and summarize audience feedback.

AI as a Collaborator, Not a Replacement

AI can enhance idea generation, problem solving, and productivity, but human judgment, ethics, creativity, and communication remain critical. Recognizing AI's limits and integrating human insight ensures responsible use.

Human Skills That Matter Most

- **Judgment:** Make thoughtful decisions based on evidence and critical thinking.
Example: evaluating and determining which sources or ideas are trustworthy when solving a problem
- **Ethics:** Act responsibly, considering fairness, impact, and consequences of your choices.
Example: deciding *how* to use information or resources in a way that respects others
- **Creativity:** Generate, adapt, and improve ideas to solve problems or create something new.
Example: brainstorming multiple solutions to a challenge and refining the best one
- **Communication:** Clearly share ideas, reasoning, or findings with others.
Example: explaining a plan, argument, or discovery so others can understand and act on it

Lifelong AI Literacy

AI tools and workplace expectations continue to change. Building AI literacy means developing the ability to learn new tools, evaluate outputs, and adapt your skills over time. These abilities can help you stay competitive, make informed decisions, and use AI responsibly throughout your career.

Try It

Explore AI in Your Future Career

1. Choose a career, major, or industry you are interested in.
2. Find two examples of how AI is currently used in that field.
3. For each example, identify one benefit and one limitation or concern.
4. Write a short reflection (100–150 words):
 - What is one step you could take now to build AI literacy for this career?
 - What human skills will still matter in this field?

Optional: Compare responses with classmates and discuss similarities and differences across fields.

Lesson Wrap-Up

AI literacy combines curiosity, critical thinking, creativity, and conscientiousness.

The Four C's (Curious, Critical, Creative, Conscientious)

- **Be Curious:** Seek to understand how AI works and what it can do.
- **Be Critical:** Question outputs before using them.
- **Be Creative:** Use AI to spark and develop ideas while maintaining your own creative voice.
- **Be Conscientious:** Act ethically and transparently.

Try It

Practice the Four C's

Choose one current assignment, project, or study task from this semester. For each of the Four C's, write one specific action you could take when using AI:

- **Curious:** Ask AI a question that helps you understand a concept more deeply.
- **Critical:** Identify one way you would check or verify an AI response.
- **Creative:** Describe how you would use AI to expand or improve your ideas, not generate the final answer.
- **Conscientious:** Explain how you would use or disclose AI responsibly for that assignment.

Then, write one sentence explaining which C will be most challenging for you and why.

Glossary: AI Literacy

Academic integrity: acting honestly and responsibly in your academic work, including proper citation and avoiding plagiarism or misrepresentation

AI literacy: the ability to understand, use, and think critically about AI technologies and their impacts

Artificial general intelligence (AGI): a hypothetical form of AI that would be able to learn, reason, and apply knowledge across many domains at a level similar to human intelligence; AGI does not currently exist

Artificial intelligence (AI): computer systems or algorithms that perform tasks associated with human intelligence by learning patterns from data to generate outputs—such as text, images, or predictions—without actually understanding meaning in the way humans do

Artificial narrow intelligence (ANI): (also, *narrow AI* or *weak AI*) AI systems designed to perform specific tasks within limited domains without humanlike understanding or the ability to apply knowledge broadly across unrelated situations

Artificial superintelligence (ASI): a hypothetical form of AI that would surpass human intellectual abilities across a wide range of tasks; ASI does not currently exist

Bias: a tendency to favor certain viewpoints, assumptions, or outcomes in ways that can affect judgment and lead to unfair or inaccurate results

Black box problem: the challenge of determining how an AI system generated an output, which can make it difficult to evaluate accuracy, identify errors, or explain decisions

Want some practice with the vocabulary? Check out this Hawkes Verified Quizlet set!



CRAAP test: a framework for evaluating the quality and credibility of sources by examining their currency, relevance, authority, accuracy, and purpose

Deep learning: a type of machine learning that uses layered computational models and large amounts of data to identify complex patterns in information such as language, images, and audio

Fact-checking / triangulation: confirming claims by comparing at least two independent and reliable sources to verify accuracy

Four C's of AI literacy: curiosity, critical thinking, creativity, and conscientiousness; the guiding mindset for responsible AI use

Generative AI: a type of AI that generates new content—such as text, images, audio, video, or code—based on patterns learned from existing data

Hallucination (AI): an AI-generated response that appears credible but contains false, fabricated, or misleading information

Information literacy: the ability to evaluate sources, verify facts, and assess the trustworthiness of information, including AI-generated content

Machine learning: a type of AI that enables computer systems to learn patterns from data and improve their performance on tasks without being explicitly programmed for every situation

Predictive AI: a type of AI that analyzes existing data to estimate likely outcomes, identify trends, or support decision-making

Prompting: the process of communicating with an AI system by providing instructions and context that influence the quality, relevance, and usefulness of its outputs

Responsible AI use: using AI to support your own thinking and learning, while completing the work and analysis yourself

Rule-based AI: AI systems that follow predefined rules created by humans to complete tasks or make decisions without learning or adapting from data

SIFT method: a digital literacy framework for evaluating online information by stopping to assess content, investigating the source, finding better coverage, and tracing claims to their original context

Verification: the process of checking whether information, outputs, or claims are accurate, reliable, and supported by evidence before using them in decisions or work

Activity:

AI through Different Lenses

Why This Matters

AI affects people differently depending on their age, job, and life experience. This activity helps you understand AI not just as a tool you use in school, but as something that affects real people and is influenced by them. Listening to others will help you become a more thoughtful and ethical user of AI.

Part 1: Talk to Three People

Instructions

You will talk with **three people** about artificial intelligence. These people should come from different parts of your life. For example:

- an older family member
- a younger sibling or cousin
- a neighbor or community member
- a coworker or supervisor
- a professor, advisor, or mentor

Conversations can be in person, by phone, or online and should last about **15 minutes each**. Your goal is to listen and learn, not to debate or teach.

Questions to Ask

You don't need to ask every question, but try to ask several of them with each person.

1. What do you think of when you hear the term *artificial intelligence*?
2. Do you use AI in your daily life? In what ways?
3. How do you feel about AI overall? Excited, worried, unsure? Why?
4. Do you think AI is mostly helpful, mostly harmful, or a mix of both?
5. Are there situations where AI should *not* be used?
6. How has AI affected your work, school, or everyday life?

Take brief notes on what each person says.

Part 2: What Did You Notice?

After all your conversations, review your notes and answer the following in a short paragraph or bulleted list:

- What ideas or concerns came up more than once?
- How did people's opinions differ based on age, job, or experience?
- What surprised you?

Part 3: Reflect on Your Role as an AI User

Written Reflection (200–300 words)

Respond to the following prompts in a written response:

1. New Perspectives
 - a. How did these conversations change or deepen your understanding of AI?
 - b. Which person's perspective stood out to you the most, and why?
2. Ethics and Responsibility
 - a. What concerns about AI came up (such as fairness, privacy, accuracy, or job impact)?
 - b. Which of these concerns matter most for how you use AI as a student?
3. Personal Guidelines
 - a. Write **3–5 rules or principles** you will follow when using AI.
 - b. Explain how at least one of these principles connects to something someone told you during your conversations.

Big-Picture Takeaway/Rubric

AI literacy isn't just knowing how AI works, it's about understanding how it affects people differently and using it thoughtfully. By listening to others, you can make more informed, ethical choices about how you use AI now and in the future.

Category	Criteria (Check all that apply)	Points
Conversations completed	<input type="checkbox"/> Spoke with 3 people	10
	<input type="checkbox"/> Participants represent different ages, roles, or backgrounds	10
	<input type="checkbox"/> Evidence of thoughtful questions and listening	10
Pattern & observation summary	<input type="checkbox"/> Identified at least one common theme across conversations	10
	<input type="checkbox"/> Identified at least one meaningful difference in perspectives	10
Reflective writing: understanding & ethics	<input type="checkbox"/> Reflection explains how conversations affected understanding of AI	10
	<input type="checkbox"/> Discusses at least one ethical concern about AI (e.g., privacy, fairness, accuracy)	10
	<input type="checkbox"/> Connects ethical concerns to personal use of AI as a student	10
Personal AI guidelines	<input type="checkbox"/> Includes 3–5 personal guidelines for AI use	10
	<input type="checkbox"/> At least one guideline is clearly connected to a conversation	10
Clarity & completion	<input type="checkbox"/> Assignment is complete and easy to understand	10

References

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- Liu, Vivian, and Yiqiao Yin. 2024. "Green AI: Exploring Carbon Footprints, Mitigation Strategies, and Trade Offs in Large Language Model Training." *Discover Artificial Intelligence* 4 (49). <https://doi.org/10.1007/s44163-024-00149-w>.
- Merriam-Webster. n.d. "Artificial Intelligence." *Merriam-Webster.com Dictionary*. Accessed June 4, 2026. <https://www.merriam-webster.com/dictionary/artificial%20intelligence>.