

Guidelines on responsible and transparent use of AI tools in written reports¹

Lies Bouwman & Sander van Kasteren

Version: June 2026

TABLE OF CONTENTS

1. Introduction: AI and your skills development	2
2. Guidelines on responsible use of AI tools	3
3. Instructions for Appendix: “Declaration of AI use”	7
3.1 Guidelines for Writing a Declaration of AI Use	7
3.2. Example: Declaration of AI Use	8

Important Action!

Discuss these guidelines on responsible and transparent use of AI tools with your daily/responsible supervisor at the start of your research/literature project. Make clear agreements on the use of AI tools, considering confidentiality of research questions and data.

¹ Adapted from the “Regulations for use of generative AI in the Master of Chemical Engineering, academic year 2025-2026” developed by Monique A. van der Veen and from the “Guidelines on responsible and transparent use of AI tools in the bachelor end project” developed by Valeria Garbin and Volkert van Steijn for the final research project of the BSc programme Molecular Science and Technology.

1. Introduction: AI and your skills development

The proficient use of AI tools can be valuable when it helps you use your time efficiently, or when it helps you develop a skill. However, the use of AI should not negatively affect your learning outcomes and prevent you from developing important skills needed for your future career.

Good writing is a skill you will rely on throughout your professional career. In your MSc research-training project, you actively develop this skill by writing a research report in which you apply and consolidate what you have learned earlier.

Apart from the training in academic writing you may have had in your BSc programme, in our MSc programmes Chemistry or Life Science & Technology you are introduced to academic writing in the courses APS-1 and APS-2 (students who started in September 2025 or later) or in the course Academic writing. Like in sports or music, skills improve through practice. You try, make mistakes, feel frustrated, seek feedback, improve, experience satisfaction, ask for further feedback, and improve again. This iterative cycle of reflection and adjustment is a natural and essential part of developing any skill. **Outsourcing your writing fully to AI impedes your own development. It is therefore important to use AI effectively and responsibly.**

The final report of your MSc research-training project or projects must reflect your academic work and skills. To ensure a fair assessment by your supervisor and to avoid blurring the assessment and risking unintentional academic fraud, **it is important to use AI transparently**. You must be aware of and critically evaluate all text and code generated by AI. You take full responsibility for all produced output.

This document includes important guidelines on responsible use of AI tools (Section 2), and instructions for the **mandatory appendix in your report** on transparent use called “**Declaration of AI Use**” (Section 3). To apply these guidelines, **discuss AI use with your daily/ responsible supervisor**, at the start of your project, and regularly during the project.

2. Guidelines on responsible use of AI tools

All students are expected to adhere to responsible and non-fraudulent use of generative AI, in accordance with the guidelines described in this document. In the Rules and Regulations of the MSc programmes Chemistry and Life Science & Technology, **fraud** is described as:

Fraud

Any action (including plagiarism) which entirely or partly prevents the correct assessment of a student's knowledge, understanding and skills is considered to be fraud in the sense of Article 7.12b WHW. This also includes the intention and/or incitement to take such an action or the omission of an action

If you lack the expertise to evaluate the generated output, this might inadvertently lead to fraud.

The guidelines presented in this document will help you discuss and set boundaries for AI use together with your supervisor and help you use AI tools responsibly and transparently.

The following three key principles apply:

1. **Critical Evaluation** - Always apply your own critical thinking when using AI-generated output. Understand the content, assess its relevance and context, and adapt it to reflect your own analysis and interpretation. Mere replication of AI-generated output is not acceptable.
2. **Validation and Academic Referencing** - AI output must always be validated. This will avoid introduction of errors and (accidental) violation of academic integrity. Use reliable academic sources or technical checks (e.g. unit tests) to confirm accuracy. When referencing existing knowledge, cite original academic sources – not the AI tool. Always read the original work to ensure it is from an appropriate source, make sure you understand how the statement was derived, assess its correctness, and adapt it to reflect your own analysis and interpretation.
3. **Acknowledgment and Reflection** - Acknowledgement and reflection are both essential to distinguish your own contributions from those of generative AI and demonstrates your critical evaluation (principle 1) and validation (principle 2). **In your report, an acknowledgement of and reflection on your AI use is therefore mandatory.** Instructions on writing the mandatory appendix “Declaration of AI Use” are provided in Section 3. Habitually keep a journal on your AI use; do not write the Declaration at the end.

While these three principles may appear straightforward, you will encounter specific uses of AI where responsible use is less clear. Always discuss the use of AI with your supervisor. The table on the next page provides a non-exhaustive list of possible uses of AI tools, divided into the following three categories:

Prohibited

The category ‘prohibited’ lists AI use that is considered to negatively affect your learning outcomes, to compromise confidentiality, or to lead to (accidental) violation of academic integrity.

Restricted

The category ‘restricted’ lists AI uses that may interfere with assessment of your work by your daily and responsible supervisor, depending on the way you use AI. When using AI tools in the ‘restricted’ category, **it is imperative to discuss your AI use (input, prompts, output, validation, and acknowledgement)** with your daily/responsible supervisor and ensure that your AI use does not affect your supervisors’ ability to evaluate your performance.

Allowed

The category ‘allowed’ lists AI uses that do not interfere with assessment of your work by your daily and responsible supervisor.

Table 1. Prohibited (red), Restricted (orange), and Allowed (green) uses of AI tools.

Note: List is non-exhaustive. In case of doubt, always consult your supervisor.

Important notice	
(1)	When your supervisor demands “No AI at all”, for example because of confidentiality, then this request overrules the guidelines provided in this document. You then still attach the mandatory “Declaration of AI Use”, explicitly declaring “No AI tools were used”.
(2)	In some research groups, AI tools are not merely auxiliary but serve as a primary means of conducting research. If you carry out your research project within such a group, additional or different agreements may be necessary – for example, maintaining a journal like a lab notebook, in which you record all prompts and related inputs. Also in these cases, it is important to establish clear agreements.

Prohibited	Without explicit approval of your daily/responsible supervisors, you are not allowed to upload the following information to commercially available or publicly accessible AI tools:² your research data, whether as raw datasets or in processed forms such as graphs, tables, figures, or report (sections). Names and structural formulas of patented or patentable chemicals. your research questions, hypotheses and conclusions. <u>Rationale:</u> Do not forget that your research project is part of a broader research line within a research group. The data generated within this line of research may be entirely novel, and the insights derived from them may be new to the scientific community. Similarly, the hypotheses and research questions you develop may be original and should not be shared with the scientific community before your supervisor does (for example, through a conference presentation or publication). In addition, research conducted within your group may be confidential – such as when it involves external partners or has potential for patent applications – and should therefore not be uploaded to AI tools. Note that violating an NDA with an external company can lead to legal consequences.
	Any output (text/data/code/figures etc.) you cannot take full responsibility for.

² This also holds for Microsoft’s copilot installed on university networks. The use of AI tools that are privately owned, institutionally approved, and fully controlled within the research group or organization may only be used with explicit approval of your daily and responsible supervisor.

Restricted	Under restriction, you are allowed to use AI tools for: 1. Revising own written text • <u>at the level of words, sentences, and single paragraphs</u>: you are allowed to ask AI tools to adjust the text for you and use the suggested text after verifying its accuracy. • <u>At the level of multiple paragraphs, sections, and chapters</u>: you are allowed to ask AI tools for feedback on your text, but it is prohibited to ask AI tools to rewrite pieces of text that are larger than a single paragraph! Of course, you do not upload information from the category ‘prohibited’. Not even when you’ve anonymised your data. <u>Rationale</u>: AI tools can provide very useful feedback on your texts – well beyond spelling, grammar, and punctuation. You may ask questions such as: • Is my text logically structured? • Are the paragraphs clear and coherent? • Is the tone appropriate for my intended audience? Analysing your own writing using these questions not only helps improve the current text but, more importantly, supports the development of your academic writing skills. The three questions above are designed to obtain feedback on the text you wrote, rather than asking an AI tool to rewrite it for you. They are intentionally framed in a closed format (yes/no answers) and are relatively simple, because you are the author of your text and should own the structure of it. Based on the initial responses, you can then pose more specific, open-ended questions to refine aspects of your writing and produce a higher-quality report. In this way, you use AI responsibly, as learning aid that supports reflection and skill development, ultimately strengthening your own work. This should be done in open dialogue with your supervisory team.
	2. Exploring scientific literature AI tools can be used to search for literature. Do verify whether the cited sources are correct, whether the assessment of the original content is correct, and whether you are covering all relevant research literature (complement with traditional academic search tools and conscientiously consider which AI tools to use, see ‘Helpful resources...’ on page 7). Make sure that you read all original papers cited in your report and that you write the corresponding sections yourself, clearly reflecting your own understanding of the literature you cite.
	3. Help with coding You can in principle use generative AI tools to help with coding. For example, by functionally describing what the code should do, AI can generate code. Aside from engineering meaningful AI prompts to generate code, the student must, critically evaluate the AI-generated code and output, as well as debug it, all in an iterative cycle.

	4. Generating artistic expressions (e.g. the cover page) In principle, if properly acknowledged, this is a valid use of AI. However, any AI generated artistic expression might constitute plagiarism or copyright infringement, as it can be too similar to the work that it is based on. Always check for such potential similarities. For example, through image search engines. Do not use AI tools to generate figures or schemes based on your research data, as this a) requires uploading the data into the AI tool's training database (see prohibited use above), and b) often leads to scientifically incorrect images.
Allowed	You are allowed to use AI tools for: 1. Correcting spelling, grammar, and punctuation of own written text This can be done at word, sentence and paragraph level, without having to inform your supervisor, provided this text does not constitute anything from the prohibited or restricted categories. Crosscheck the output with other AI tools to check the results.

Useful resources on use of generative AI in literature review

The TU Delft Library and ITAV have developed a guide on the use of generative AI in literature review: <https://ai-for-literature-review.github.io/Guide/about.html>. It is highly **recommended that you use this guide as a resource to use AI tools more effectively and responsibly** (e.g. prompt engineering, strengths/weaknesses of different tools). The Allowed, Restricted and Prohibited Use of AI in this document are aligned with this guide. Consult your supervisor on the most suitable AI tool for a given task (coding, literature review, ...).

Writing checks after AI implementation

For general writing tips, consult your lecture notes for APS or Academic Writing and the Brightspace skills platform. Additionally, the following self-evaluation strategies may help you improve your own draft report or text suggested by AI.

- **Reverse outlining:** for each paragraph, identify the main point you intended to convey, and then assess whether the paragraph communicates that point clearly and effectively.
- **Report mapping:** Identify your main research questions and the key findings or arguments that support the answering of your research questions. Structure your report—chapters and sections—to reflect this logical progression. Use introductory and concluding paragraphs within each section to make the overall reasoning and structure explicit.
- **Individual argument check:** For each claim: is it clearly stated? Is it supported by evidence? Do I properly refer to the evidence? Is the reasoning sound?
- **Section summarising:** try to summarize each section in one or two sentences. If you struggle to do so, the section likely lacks focus or clarity. To structure your thinking, it helps to map things out on paper before writing.

3. Instructions for mandatory Appendix: “Declaration of AI use”

Your **MSc thesis or essay must include an appendix: *Declaration of AI Use***. Guidelines and examples are provided below, but do not hesitate to ask your daily/responsible supervisor if you have questions. Of course, you document your AI use *throughout* your project and not just once your report is almost ready. The declaration comprises two parts.

Part 1: Reflection.

With a maximum length of 2 pages, reflect on the discussions with your daily/responsible supervisor, and provide the following information:

1. State the purpose

Clearly explain why AI tools were used and what task they assisted with, in reference to tasks and prohibited, restricted and allowed uses in Table 1 of this document.

2. Detail specific tasks

Identify specific tasks in your project for which AI tools were used, such as:

- Help with writing code.
- Structuring an argument.
- Refining language or grammar at word, sentence, or paragraph level.
- Factchecking or summarizing sources on a certain topic.

3. Acknowledge limitations

Demonstrate that you critically evaluated and validated the output (e.g. text, code, figures). Mention any limitations or inaccuracies of the AI tool and how you ensured the final work is accurate and reflects your understanding.

4. Describe responsible use

Explain how you ensured that the tool was used ethically and how you maintained academic integrity, such as:

- Avoiding verbatim copying from AI outputs without factchecking, understanding or rephrasing.
- Testing code against known analytical solutions (if available), checking units in the code, reality check of numerical output.

Part 2. Overview

Provide an overview of the tools that you used for your research and for your report, and for what purpose. The making of this declaration is an exercise that will be put to future use when continuing with writing any type of research, as more journals and research initiatives require these types of declarations.

4. Example: Declaration of AI Use

Reflection

In preparing this report, I used OpenAI's ChatGPT to assist me in brainstorming ideas, structuring my arguments, and refining the language for clarity and flow. Specifically:

- **Brainstorming:** I used AI to generate a list of potential topics for my research and questions to guide my analysis.
- **Language Refinement:** After drafting my report, I used the tool to provide me with feedback on the structure of chapters and paragraphs, coherence of writing style throughout the report, including tone and target audience. Additionally, I asked AI to correct spelling and grammar errors. I reviewed the feedback carefully and integrated only those comments that enhanced the clarity of my writing.

Overview

Tool	Section	Use
E.g., Claude (Anthropic), Perplexity, Scite, ChatGPT	Introduction	Feedback on tone, structure, and register; language refinement
E.g., Claude (Anthropic), Perplexity, Scite, ChatGPT	Abstract	Feedback on completeness and consistency
E.g., Claude (Anthropic), Perplexity, Scite, ChatGPT	General methods	Grammar and spelling corrections; flagging informal language
E.g., Claude (Anthropic), Perplexity, Scite, ChatGPT	References	Literature search assistance; source suggestions
E.g., Grammarly, DeepL	All	To improve spelling and formulating sentences
E.g. Pixlr, Firefly, DALL-E, Gemini	Cover	Used to create the cover image