Framework Rules for the Use of Artificial Intelligence at CTU for Study and Teaching Purposes in Bachelor and Follow-up Master Studies

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Vice-Rector for Bachelor and Master Studies

Overview of changes

Provision	Detailed specification of changes and justification of changes compared to previous version
Article 1	Paragraphs on the use of AI added
Article 3	Order of paragraphs changed
Article 4	Activities for use of AI amended and extended

List of annexes

This Methodological Guideline does not include any annexes.

List of related documents

- Code of Ethics of CTU
- Methodological guideline on Adherence to Ethical Principles in Preparation of Graduation Theses

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Art. 1 Introductory provisions

1.1 CTU as a leading technical university supports the use of all tools and modern technologies in instruction and work of academic workers and students provided it is done responsibly and in compliance with principles given in the CTU Code of Ethics.

1.2 The use of AI tools in compliance with ethical principles can significantly help both teachers and students in the educational process. The ability to use these tools will be of importance also for graduates in their future careers. Attention must be paid to maintaining the independence of CTU students, workers and graduates on AI, i.e. the ability to achieve the same results also without AI.

1.3 The use of AI tools in fulfilling the requirements of study programmes and individual subjects must always be clearly defined and described (see recommendation in [6.1] and [6.2]) and must comply with the rules of the given study programme and the given subjects and the Methodological Guideline on Adherence to Ethical Principles in Preparation of Graduation Theses.

1.4 The author of the work is responsible for its content, including all mistakes that arise due to the use of AI (false statements, non-existing references, etc.).

1.5 This document stipulates framework rules at CTU for the use of generative artificial intelligence (AI) technology by teachers and students in bachelor and master study programmes.

Art. 2 Basic terms

2.1 For the purposes of this document, AI tools refer to generative models (typically neural networks) allowing the creation or modification of text, source code, diagrams, images, sounds, videos, etc. based on the context and prompt. Answers are dynamically generated based on learnt knowledge and context of the query; the answers are not selected from a predefined set.

2.2 In the context of this MG, AI tools refer to applications such as ChatGPT, Microsoft Bing, Google Bard, Github Copilot, Midjourney, Stable Diffusion, Jasper, etc. The individual AI tools can differ in the system, learning algorithm, etc.

Art. 3 Ensuring cybersecurity

3.1 The use of AI can present significant cyber risks.

3.2 The most significant risks include the sharing of:

a. sensitive data from ongoing or completed research
b. personal data (any data that can lead to the identification of a person – full name, date of birth, address email address, telephone number, personal number, bank account number, etc.)
c. data created within the framework of contractual research under an agreement on data concealment
d. etc.

3.3 AI is not able to keep confidentiality of shared information or protect personal data.

3.4 None of the AI tools available for use on the internet (paid or unpaid) is run by CTU. All communication between the user and the AI tool is visible to the provider.

3.5 The use of AI to generate deepfakes, in particular for the purpose of modification of identity, i.e. modification of voice or face in order to mislead another person, for example in an online examination or telephone or conference call is prohibited and considered a disciplinary offence.

3.6 When accessing AI tools from the CTU domain, employees and students must comply with the rules to ensure cybersecurity (see the Rector's Order on Cybersecurity Rules).

Art. 4 Rules for the use of artificial intelligence for CTU students

4.1 The use or artificial intelligence in writing bachelor's and master's theses (hereinafter referred to as GT) must comply with the Methodological Guideline on Adherence to Ethical Principles in Preparation of Graduation Theses. For the use of AI, the guideline is complemented by the following rules that can be used also for the writing of other papers/projects.

Activity	Appropriateness	Note
Checking grammar	Yes	For years, grammar checkers have been part of standard text editors. Using AI for checking grammar does not have to be acknowledged.
Editing, reformulation of text	Yes	AI can also suggest major modifications of the text. Such modifications have to be assessed critically since they can change entirely the originally intended meaning. Different branches of science were not represented equally in the training of AI. AI can suggest a text that seems logical at first sight, but when assessed critically it may lack context or even be incorrect. Further, it mustn't be forgotten that academic writing is a skill that must be practised and learned. Students should be willing to learn and able to formulate their ideas themselves. In this case, the use of AI must be acknowledged in the list of used SW. Recommendations for citation styles are given, for example, in [6.1] and [6.2].
Literature search	Partly	AI is useful for providing a basic insight into the topic. However, it mustn't be the only source. It is necessary to verify and critically assess all obtained information. AI tools can "hallucinate" (meaning they make things up), work with outdated, unreliable or distorted information. Moreover, students must acquire the ability to research sources, be able to analyze them and find essential ideas for further work.
Structure of text	Partly	AI can suggest a structure of the text, including division into chapters, possibly also the content of each chapter. Such suggestions must be treated with caution. The student is the author of the work. Every author is responsible for the content of their work, that is the fact that: • no essential parts are missing, • chapters are logically sequenced, • the intended meaning was preserved. Since the outline is the backbone of any work, using AI to draw up the outline must be acknowledged in the list of used SW. Recommendations for citation styles are given, for example, in [6.1] and [6.2].
Thesis, results	NO	These chapters (based on the context of the prepared work) should include the results of the work. They must not be written by someone or something else. If it is found that a student presents as their own a text that they do not understand, cannot explain or they don't know how they arrived at the results, they may be penalized in accordance with the Disciplinary Code for Students of CTU.
Searching for authors	Yes	AI can be used as inspiration in searching for less known

and institutions dealing with the topic		authors or institutions; however, the results must always be verified or consulted with the thesis supervisor.
Citations	NO	AI often makes up sources; therefore, all generated citations of information sources must be checked. Examples of fake citations can be found in [6.3].

Machine translation	Partly	It can be used for quick understanding of the text. Authors should not use machine translation to or from a language that they don't know. Machine translation can completely change the meaning or use inappropriate terminology.
Modification of graphic design, in particular visualizations	YES	
Creation of architectural and urban concepts	Partly	AI can be used as the first tool for checking initial points of departure; however, the student is always the creator of the idea.

4.2 Using AI in other stages of learning

Activity	**Appropriateness**	**Note**
Self-study	Yes	AI can be used in many areas, including studying languages.
Consulting a problem	Yes	AI can generate different answers over a period of time. This may help you look at the problem from a different perspective.
Self-testing	Yes	Similar to self-study. AI can teach or test students.
Doing examinations and tests	NO	In examinations, students have to demonstrate the acquired knowledge, not the ability to use modern tools (unless this was clearly stated by the teacher). A breach of the rules may result in penalization in accordance with the Disciplinary Code for Students of CTU.
Homework	NO	Students get homework to have extra practice. It is in their interest to do so independently.
Coding	Partly	When using AI tools, students must follow their teacher's instructions. In coding, AI tools can be used for self-study, consultations or self-testing (see above). Tools like Github Copilot and Code Llama can save programmers a lot of time and often suggest the correct solution. The student is the author of the code and they should know exactly what the generated code actually does and should be able to modify it if necessary. The student must be able to write the same code without these tools as they may not be available to them in an examination (and in life).

4.3 In order to learn about the basic AI elements, students can sign up for an all-university course with the code CTUPRGEAI prepared by MinnaLearn and the University of Helsinki. The course is called Elements of AI – Introduction to AI. The possibility to recognize this course in the study plan must be consulted with the study department of the student's faculty/university institute.

Art. 5 Rules for the use of artificial intelligence for teachers at CTU

5.1 The advent of new AI tools forces us to rethink the future role of an engineer. Teaching and testing of acquired knowledge must change, taking into consideration the fact that engineers shall and will work with auxiliary tools in the present and in the future.

5.2 One of the CTU's advantages is the large diversity of study programmes and teaching methods that are based on thoughts and ideas of individual academic workers. This diversity must be preserved and supported because the tasks of the future engineers and the approach of people they will be collaborating with will be equally diverse.

5.3 If relevant for the given subject, teachers should set and publish on the website of the subject clear rules for the use of AI in their subjects, including the justification of these rules so that students understand why the rules are set the way they are.

5.4 Use of AI in teaching

Activity	Appropriateness	Note
Confrontation with AI during lecture/practical	Yes	When explaining a topic, using AI can provide a different perspective that students may understand better.
Integration of AI in teaching	Yes	Showing AI tools to students (good and bad use), combination with traditional teaching methods.
Preparation of lessons	Yes	AI training data came from a large amount of pedagogy books; AI can help make texts easier to understand for students, generate different instructions for exercises, etc.

5.5 In in-person examinations, the existing procedures can be upheld. Online examinations and homework are a problem. For continuous and final testing of students' knowledge, we recommend the following:

Checking knowledge	Appropriateness	Note
Online multiple choice test	NO	AI can successfully solve 90% of multiple choice tests.
Research work without a clearly defined task	NO	AI can do a general research. It is nearly impossible to prove violation of rules on the part of the student. If no other type of assignment can be given to students, then rules should be in place for the teacher to be able to check that the work was done by the student, such as including a defence or video.
Essays and similar assignments	NO	See above.
Online oral examinations	Yes	One of the best ways to check understanding in smaller subjects.
Examination assignment based on a drawing, graph	Yes	So far, AI has not been able to generate sufficiently specific and exact answers based on provided pictures.
Detection of solutions that use AI tools	NO	AI tools cannot be used to detect solutions that students have created using AI. False positives or false negatives may easily occur.

5.6 Recommendations for assigning papers/projects or GT:

Recommendation	Note
Assigning papers/projects and GT concluded with a concrete outcome	Creative assignments concluded with a drawing, diagram, model etc., cannot be done using AI. If such an assignment cannot be assigned, the project/paper should include a defence, or in case of both project/paper and GT ask the student to provide a short video where they describe how they did it.
Assessment of GT only with selected questions not focused on understanding	Reviewer/supervisor statements should only include questions that focus on specific inconsistencies in the thesis. Leave questions that can prove student's understanding of the topic and independent completion of the thesis to the defence.
Extending the time of the defence of GT	Discussing the graduation thesis is the best opportunity to assess whether the student is really the author.
GT whose assignment is based on a drawing, graph, etc.	See "Examination assignment based on a drawing, graph".

Art. 6 List of references

6.1 https://www.elsevier.com/about/policies/publishing-ethics

6.2 https://knihovna.cvut.cz/seminare-a-vyuka/jak-psat/priklady-citaci#jak-citovat-ai-chatgpt

6.3 Achten H. Chat GPT and PhD research. 2023. https://www.linkedin.com/pulse/chatgpt-phd-research-henri-achten/