Guidelines for Instructors at the University of Szeged
on the Purposeful Integration of Generative Artificial Intelligence in Teaching

This set of recommendations has been prepared for instructors at the University of Szeged. The document outlines the opportunities associated with the use of generative artificial intelligence (AI) in higher education. This matter is especially important because it is undeniable that students – and instructors as well – already rely on AI. As a result, whenever AI-generated content is incorporated into daily academic work, it is vital to clearly specify which tool was used, to what extent, and how the generated material was integrated into the work produced. Ensuring such transparency is not only a professional and ethical expectation but also reinforces credibility in the teaching process.

We should always approach AI-generated content with a critical and cautious mindset. Automatically generated texts, data, or other information are not always accurate or reliable; it is therefore essential to subject all AI output to thorough verification and evaluation before making use of any AI-generated material.

In addition, self-reflection is essential for instructors. Integrating AI into teaching demands constant learning, which is why it is worth thoughtfully reviewing the experiences gained at the end of each module, topic, or semester. *What worked well? What challenges emerged? How could AI be incorporated more effectively into next year's teaching strategy?* This type of reflection not only supports the purposeful use of the technology but also contributes to the instructor's ongoing professional growth.

What is artificial intelligence and why is it worth using?

Artificial intelligence (AI) refers to a field of science and a set of technological solutions designed to enable computer systems to demonstrate capabilities similar to human intelligence – such as learning, reasoning, problem-solving, and decision-making. AI is interdisciplinary in nature and encompasses areas such as machine learning, natural language processing, and automated decision-making. These applications play an increasingly significant role in scientific research, industry, and education.

Artificial intelligence has a growing impact on teaching and learning processes, as it provides rapid and easily accessible sources of information for both students and instructors. AI can serve as an effective tool in supporting the instructor's work; however, it also brings new challenges. Because it can complete certain student tasks – partially or even entirely – or substantially simplify their completion, it becomes essential to reconsider classroom activities, preparation, and the methods used for assessment and performance evaluation.

The expanding presence of AI is transforming not only the tools of education but also the role of the instructor. In addition to traditional, lecture-based knowledge transfer, mentoring and facilitation are assuming a more and more central role, enabling students to interpret

information critically, apply it effectively, and develop their skills and competencies independently. AI does not replace the instructor; however, it can enrich educational processes as an additional tool – provided it is integrated into pedagogical practice thoughtfully and with a clear educational purpose.

When AI is used in completing student assignments, it is important to be aware of the fact that the extent to which such use can be verified is inherently limited. Because strict regulation and enforcement are not always feasible, a flexible, guidance-oriented approach is more effective. This includes providing clear expectations, applying version checks (establishing which AI system and which version was used), and introducing more nuanced control mechanisms that help students develop responsible and effective AI-use practices. At the same time, instructors are encouraged to remain open, experiment with different applications, and determine where AI adds value – and where it does not – within their specific disciplinary context. It is also important that each instructor has the opportunity to tailor AI applications to their own needs and incorporate them into their personal teaching philosophy, ensuring that these tools genuinely support learning and development.

Integrating AI into teaching creates an opportunity to elevate the expectations placed on students, as the technology enables basic tasks to be completed more quickly and efficiently. This shift allows instructional processes to focus more on applications that require deeper understanding, higher-order thinking, and stronger critical engagement. To realize these benefits, however, it is essential for instructors to remain open to exploring new tools and to incorporate them purposefully into their own teaching practice.

There is no need to be concerned if some students become more proficient with certain AI tools than the instructor. On the contrary, this can be an asset: students' insights and experiences can be valuable, and – where appropriate – their suggestions can be integrated into the teaching process. Actively involving students not only promotes the more conscious and effective use of AI, but also strengthens critical thinking, collaboration, and constructive dialogue between instructors and students.

The following provides a summary of the proposed guidelines for the use of artificial intelligence in teaching at the University of Szeged. By adhering to these principles, AI use can effectively support educational goals while remaining transparent, responsible, and safely managed. The purpose of these guidelines is to assist instructors in the purposeful and effective integration of AI into their work, taking into account ethical, methodological, and pedagogical considerations.

**Recommendation for Instructors at the University of Szeged
on the Use of AI in Teaching**

1. Clarifying the use of AI and integrating it into courses

Before incorporating AI-based tools into a course, or permitting students to use them, the conditions for such use must be clearly defined in advance. The integration of AI into the teaching process requires deliberate planning, which includes establishing rules for student responsibility. These rules must be officially documented on the CooSpace scene for each course; discussing expectations during the first class – and, where necessary, revisiting them during the semester – does not replace this formal requirement.

2. Student responsibility and transparency

As a general requirement, whenever students submit work intended to be completed independently, they must clearly indicate the extent and manner of their use of AI-based tools. This includes:

- identifying the specific tool(s) used (including version numbers where appropriate),
- describing the purpose and method of use (e.g., background research, drafting an outline, checking text),
- clearly marking the boundary between AI-generated content and their own original contribution.

AI systems may typically be used for background research; however, students must explicitly state what role AI played in the creation of their work. Under no circumstances may AI-generated content be presented as the student's own original work, as doing so constitutes plagiarism.

3. Purposeful planning and preparation

The purposeful and effective integration of AI into teaching requires careful advance planning from instructors. When designing a course, it is advisable to reflect on the following:

- how AI can support the achievement of the learning objectives set for the course,
- how the inclusion of AI can contribute to the development of students' skills,
- how authentic, ethical, and transparent use will be ensured,
- how the use of AI will be monitored, verified, and documented.

When applied within well-defined boundaries, artificial intelligence can not only enhance students' learning processes but also open new avenues for instructors to innovate and refine their teaching methodology.

4. The role of course descriptions in regulating AI use

Each course description must provide clear and explicit guidance on how AI may be used within the course and for which purposes such use is permitted. Beyond this, instructors should also review whether the integration of AI necessitates revisions to the substantive components of the course requirements.

Consequently, the course description must address not only administrative details but also specify, in substantive terms:

- **the purposes for which AI may be used in the course and the acceptable modes of use**,
- **which assignments students may complete with the assistance of AI**, including the required form of documentation,
- whether there are assignments or course components in which **the use of AI is explicitly prohibited**.

5. Three possible models for integrating AI into courses

The extent to which AI is incorporated may vary across courses. Instructors may choose among the following approaches:

- **Full prohibition** – AI use is not permitted, for example due to pedagogical or methodological considerations, or because the nature of the subject matter does not allow for it.
- **Partial permission** – AI use is allowed only for designated assignments, and this must be clearly specified both in the course description and in the instructions for those tasks.
- **Full permission** – AI use is permitted throughout all components of the course; however, students must consistently indicate which tool they used, how they used it, and to what extent.

6. Recommendations for the use of AI in relation to theses and degree projects

The principles outlined below are intended to ensure that the use of AI in the preparation of a thesis or degree project upholds academic integrity and genuinely contributes to the deepening of disciplinary knowledge.

Clear indication of sources and forms of assistance

Students must be clearly informed that any form of assistance used during the preparation of a thesis or degree project must be properly documented in the submitted work. This includes, for example, the supervisor's name, which must appear at the beginning of the thesis; all scholarly

sources, which must be cited accurately in the text and listed comprehensively in the bibliography; and any additional tools employed in the research process – such as statistical software, databases, or other methodological aids – which should be described in the methodology section.

Generative artificial intelligence falls under these requirements as well: its use is permitted, but students must clearly indicate which tool they used, for what purpose, and in which part of the thesis or degree project it was applied. This information may be included, for instance, in the introduction or in a footnote, in the interest of ensuring scientific transparency and integrity.

Defending the thesis or degree project: Demonstrating genuine knowledge

During the defense of a thesis or degree project, it is essential that students explain the content of their work in sufficient detail to demonstrate a deep and authentic understanding. The following approaches are recommended:

- Clarifying and connecting concepts: Questions during the defense should explore how the student interprets key statements or claims in the thesis. For example: *What does statement X assert, and how does it relate to statement Y?*
- Explaining relationships and reasoning: The student should be able to show how a particular chain of argument leads to the final conclusion. For instance: *What is the logical connection between premises A and B, and how do they support conclusion C?*
- Demonstrating methodological insight: If AI was used at any stage, the student must be able to explain how the tool contributed to the results obtained and describe how potential errors or inaccuracies were identified and addressed.

The answers provided during the defense allow examiners to determine clearly whether the thesis genuinely reflects the student's knowledge and the competencies required for successful completion.

Data Protection and Data Management Considerations

When using AI, there are several fundamental data protection and data management issues you need to keep in mind. Understanding these considerations will help you use AI responsibly and with greater awareness.

o The origin of the data used to train AI systems is not always transparent.
AI systems are trained on extremely large datasets, yet it is often not clear exactly which sources were used in the process. This uncertainty raises the question of whether some models may include material incorporated without permission. Current information indicates that developers have drawn on a broad range of publicly accessible web content, typically collected without explicit consent.

o It is not always clear what AI has not been trained on.
From the perspective of how AI functions, what matters is not only the data on which a system was trained, but also the topics and areas in which it lacks sufficient information. These gaps can affect the accuracy and reliability of the responses it generates.

o The storage and reuse of input data is not always transparent.
AI systems frequently store the questions, comments, and other information entered by users. Developers may then use this data for their own purposes – such as additional model training or service improvement – which makes it particularly important to avoid entering any sensitive, personal, or institutionally confidential information into such systems.

o Fine-tuning procedures are not always transparent.
AI developers employ a range of fine-tuning techniques to improve the accuracy and usefulness of AI models. However, the specifics of these procedures – especially the methods used for content filtering and bias elimination – are often not known to users.

o As a consequence of the above, AI systems may exhibit biases.
Because AI models learn solely from the data they process, that data may be one-sided or biased in certain ways. As a result, the AI system's responses may also reflect these biases, which is an especially important consideration when using AI in education and research.

AI offers significant opportunities, but it can only serve as a truly useful and safe tool if we remain aware of its limitations and the data management issues that influence how it functions. For this reason, it is advisable to use AI in teaching experimentally, with continuous reflection and a critical mindset.

Artificial intelligence can support the everyday work of instructors and researchers in a variety of ways. The following possibilities illustrate how AI can be effectively integrated into teaching processes, as well as into curriculum development and research activities:

➜ *Generating lesson outlines and lesson plans*

AI can produce lesson outlines and full lesson plans tailored to a specific level of study, topic, or set of pedagogical considerations, providing a useful starting point for instructional work.

➜ *Supporting idea generation and background research*

AI can assist in developing new ideas, structuring topics, and conducting background research – particularly by helping review large volumes of scholarly literature quickly or by recommending relevant articles.

➜ *Developing educational materials*

AI can support the creation of electronic learning materials, instructional videos, and other digital content – for example, by generating outlines, overview materials, or illustrative examples.

➜ *Task generation and error analysis*

AI can create alternative versions of a given task type, helping provide diverse practice opportunities for students. It can also assist in the development of solution models, as well as the analysis and evaluation of common errors.

Considerations for the responsible use of AI

- Before using any AI application, always check what the system actually produces, in order to avoid potential inaccuracies or relying on misleading information.
- Formulate questions and instructions (i.e., prompts) addressed to the AI carefully, so that the outputs are as accurate and relevant as possible.
- Always review AI-generated content thoroughly, paying particular attention to disciplinary accuracy, logical coherence, and the appropriateness of the terminology used.

When used appropriately, artificial intelligence can not only increase the efficiency of instructors' work but also open up new opportunities for personalizing education and further developing teaching methods.

Additional Recommendations

Before using AI, it is advisable to articulate learning objectives clearly and design student activities in alignment with those objectives. The expanding presence of AI calls for particular awareness, as new tools can influence what we regard as valuable knowledge, skill, or competence. Consequently, assessment methods also need to be reconsidered – not only in terms of content, but also in relation to the criteria used to evaluate student performance.

The integration of AI in teaching requires deliberate planning. Generative language models can be useful for certain tasks, yet it is essential to consider where their application adds value and where their limitations may become apparent. AI can, for example, effectively support the *flipped classroom* model: by preparing in advance with the help of AI, students come to class ready for discussion, deeper engagement, and practical application.

a) Assignments and assessment in the age of AI

As AI becomes more widely used, student assignments for every course must be reconsidered. The question is not only what content-related adjustments are needed, but also how assessment practices should evolve when students make use of AI. To redesign assignments appropriately, it is crucial to understand how generative AI operates, as well as its strengths and limitations.

AI systems can produce grammatically flawless, persuasive texts and can generate summaries or syntheses with ease. However, they currently remain less reliable in several areas – including critical thinking, the accuracy of references, maintaining coherence, varying writing style or register, and incorporating personal reflection. Despite – or alongside – these limitations, it is advisable to complement written submissions with oral components, such as student presentations, oral reports, or interactive defenses.

b) Rethinking essay-based assignments in the age of AI

Essay-type written assignments are widely used in higher education and play a central role both in coursework and in assessment. These tasks give students the opportunity to demonstrate their knowledge, articulate their views, and showcase competencies such as source exploration, reading comprehension, critical thinking, identifying key ideas, structuring arguments, problem-solving, and written communication.

As generative AI becomes increasingly accessible, students are more frequently relying on these tools when completing essay-based assignments. This, however, does not mean that text-based tasks should be abandoned. Rather, AI creates an opportunity to rethink and further develop these forms of assessment. AI does not replace essay writing as a skill; instead, it can be integrated into the learning process in ways that foster deeper engagement, structured reasoning, and critical analysis.

The following examples illustrate how essay assignments can be redesigned so that AI does not complete the work in place of students, but instead supports and enhances the learning process:

➜ Students generate an essay on a given topic using an AI system, then subject it to critical analysis, highlighting content that goes beyond what they have learned as well as any inaccuracies. They then create a mind map from the essay to produce an overview of the topic.

➜ Students first articulate their own position on a given question, then use an AI system to generate a counterargument. Based on this counterargument, they reconsider and further develop their original line of reasoning.

➜ After reading a professional text in a specific domain, students instruct an AI system to create a test, and then they complete and assess the tests created by their peers.

These are only a few examples of an almost limitless range of possibilities. Instructors may also provide a text themselves for students to analyze; students may compare human-written and AI-generated texts; they may critically evaluate a professional text produced by AI and then teach the system how to formulate it correctly; or they may extend and refine AI-generated texts that are incomplete. The scope of possible applications is shaped by the instructor and, in many cases, by the contributions students bring. The overarching goal is the meaningful and pedagogically sound integration of AI into coursework.

When rethinking assignments, the intended learning outcomes and the competencies to be developed must remain at the forefront. The inclusion of AI must not shorten the learning process or diminish the role of independent thinking. On the contrary, when used appropriately, AI can deepen students' reasoning abilities, strengthen their critical thinking, and enhance their capacity for independent analysis. Such tasks encourage students not merely to accept AI-generated responses, but to analyze them, develop them further, and enrich them with their own interpretations.

c) AI as a teaching assistant

AI can support not only students' work but also the work of instructors. It can assist, for example, in generating feedback and comments on student assignments; partially automating certain aspects of assessment, including the analysis of open-ended responses; responding to student questions or emails; summarizing student feedback; and helping instructors stay informed about topics related to supporting students' mental well-being.

d) Teaching students to use AI purposefully

For AI to be used effectively and transparently, students must also be prepared for its responsible application. The following elements can be taught to them even without in-depth technical knowledge of AI:

– Understanding the teaching–learning contexts in which AI can be appropriately used
– Using AI in an ethical manner
– Formulating effective prompts
– Critically evaluating AI-generated responses
– Knowing where and how to access course-specific rules on AI use

It is crucial to emphasize to students that AI systems do not always provide an adequate answer on the first attempt; the quality of the output depends both on the time invested and on how clearly the prompts or questions are formulated. Effective use of AI is a skill that must be learned and practiced continuously.

Students must also recognize that AI-generated responses should never be accepted automatically – they must always be verified. In addition, AI is a tool the use and outputs of which must always be documented appropriately. Closely connected to this is the ability to judge when an AI tool is genuinely helpful – and when it is not advisable to rely on it.

e) Regulating the use of AI in teaching

One of the most important tasks is to ensure that students clearly understand the conditions under which they may use AI within the framework of a given course. This should be addressed during the first class and revisited later as needed. Instructors should also communicate transparently about how they use AI in their own preparation and how they intend to integrate it into their teaching. AI is not an end in itself but a tool – and its purposeful, critical use will be essential for both instructors and students in the years ahead.

f) AI detectors: Reliability and practical use cases

AI content detectors are now widely available, in both free and paid forms. However, none of the existing tools can determine with certainty whether a given text was written by a human or generated by AI. All detectors inevitably produce false positives and false negatives. A false positive means that a human-written text is incorrectly flagged as AI-generated; a false negative means that an AI-generated text is not identified as such. These limitations pose a significant challenge in educational settings: a false positive can result in the unjust rejection of a student's legitimate work, while a false negative can lead to the unintentional acceptance of an AI-generated submission.

It is particularly difficult to determine the originality of a text when it contains a mixture of human-written and AI-generated content. Moreover, if a student minimally alters AI-generated text – for example, by introducing small spelling errors or rephrasing certain sentences – detectors become easier to mislead. In addition, tools and techniques designed specifically to circumvent AI detectors already exist.

The rapid development of generative AI language models creates an additional challenge. The more advanced an AI model becomes, the more convincingly it can produce text in a human-like style and natural language, making detection increasingly difficult. In the future, AI-generated texts will become even more realistic, and it will be progressively harder to determine the extent to which artificial intelligence contributed to a given piece of content.

This raises the key question: *How can AI-generated material be identified?*

Because the results of AI detectors are not fully reliable, it is advisable to employ multiple methods when attempting to identify AI-generated content. It is important to emphasize that detector outputs should never be used in isolation; they must always be supplemented with additional analysis. Such supplementary analysis may involve recognizing common characteristics of AI-generated texts – for example, the absence of a personal voice,

inaccurate or nonexistent references, reliance on clichés or overly general statements, disciplinary styles that do not match the field, or superficial treatment of empirical research.

Because AI detectors can never provide 100% certainty when determining the origin of a text, it is not advisable to impose strict sanctions solely on the basis of their results. Instead, it is more appropriate to develop a balanced approach to sanctions – one that takes into account both the limitations of AI detectors and the responsibility expected from students.

One suitable method for addressing suspected AI use is a clarifying conversation. If a submitted assignment appears to have been generated by AI, it is advisable to discuss the writing process with the student in a personal meeting. During this conversation, the results indicated by the detector – along with the instructor's own analyses – can be presented, and the student must be given the opportunity to respond to the questions raised.

Prevention can also play an important role. When assigning the task, it is advisable to indicate clearly that submitted work may be subject to random checks and that students may, in certain cases, be asked to explain the content of their submissions in person. This measure alone can discourage those who might otherwise rely exclusively on AI.

As a measure of last resort, similar to the procedures applied to theses and degree projects, students may be asked to submit a written declaration stating that they prepared the submitted text themselves and specifying which tools they used during its preparation. This not only increases transparency but also makes students more aware of the boundaries and responsibilities associated with the use of AI.

Although AI detectors can be useful tools in educational settings, they should not be relied upon exclusively when attempting to identify AI-generated content. The most effective approach is to combine the results produced by technological tools with the instructor's professional judgment and direct communication with students. As AI systems continue to evolve, content-verification strategies must also adapt to this changing environment, while ensuring that student evaluation remains fair and transparent.

For additional information, the following Hungarian-language resources may be consulted:

SZTE Klebelsberg Library and Archives
https://www.ek.szte.hu/kezdooldal/mit-keres/online-forrasok/mi-szolgaltatasok/

IKIKK Cluster of Education Modernization and Innovation
https://u-szeged.hu/ikikk/digitalizacios/digitalis-kompetencia

SZTE Digital Future
https://digitalisjovo.szte.hu/szte-digitalis-jovo/kepzesek/oktatoknak

Directorate for Academic Affairs

The Directorate for Academic Affairs offers Coursera training sessions for instructors, where participants can learn how to use the AI-supported course development tools available on the Coursera platform. In addition, staff members are available to provide personalized support for individual course-development needs.

Individual assistance is also available for selecting and customizing Coursera learning materials related to artificial intelligence and its applications.
Contact: coursera@szte.hu

The Directorate for Academic Affairs may also be consulted for support with the analysis of student data and labor-market data.
Contact: oktig@szte.hu