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Guidance on AI in Civil Engineering Education at Universities of Applied Sciences: "Academic Standards in the Age of Artificial Intelligence""

Version of 10th November, 2026

At its plenary meeting on 23 October 2026 at Bremen University of Applied Sciences, the German Association of Departments of Civil and Environmental Engineering adopted this guidance on "Academic Standards in the Age of Artificial Intelligence" (AI).

It is based on an internal survey of the current use of artificial intelligence in teaching and bachelor's theses; introductory presentations by KI-Lotsen ("AI Pilotes", a project of the German Rectors' Conference, HRK) and Hochschulforum Digitalisierung (CHE); the findings of three working groups; and a plenary discussion.

OVERARCHING GUIDELINES

Integrate AI purposefully into teaching, strengthen discipline-specific professional judgement, and assess individual learning outcomes in a verifiable manner.

Within the applicable legal framework, teaching staff generally decide for themselves whether and how to use AI in their teaching.

Blanket bans on AI in unsupervised assessments are virtually impossible to enforce, as infringements cannot be reliably established in a **legally defensible manner** using "AI detectors".

Comparable conditions must be ensured for all students when AI is used in coursework and assessments. Where AI use is required, equivalent access to suitable AI tools must be provided.

Personal data, confidential information and copyright-protected content must not be transmitted to external AI systems without the necessary authorisation. Universities should provide data-protection-compliant solutions and clear rules for their use.

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Three key findings

01

Integrate AI into teaching as a forward-looking working method.

AI licences, practical exercises and project modules provide opportunities for reflective AI use. Clear rules and competence-based teaching and assessment formats provide guidance.

02

Discipline-specific fundamentals are becoming more important

Productive use of AI requires independent problem-solving skills and critical analytical ability. Obtaining and evaluating good AI-generated results is itself a new competence to be taught.

03

Further develop assessments and written assignments

Coursework, project reports and final theses remain important. Understanding of the subject matter must always be demonstrated; the work process may additionally be assessed.

Suggested first step towards implementation

Each module could describe its learning outcomes from two perspectives: What must students be able to do independently? What should they be able to accomplish through reflective use of AI? Appropriate teaching and assessment formats can then be developed.

Learning outcomes should reflect the relevant ways of working with AI, and the corresponding methods must be taught..

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DOCUMENTATION OF THE DISCUSSION

Findings of the three working groups

1 Integrating AI into university education

ENCOURAGE

- Provide access to AI licences
- Offer project modules using AI
- Develop practical exercises on the appropriate use of AI in civil engineering
- Teach methodological AI skills, partiularly for academic work
- Involve both teachers and students

REGULATE

- Develop guidelines for the use of AI
- Provide AI-free spaces
- Define learning outcomes with and without AI
- Design competence-based assessments
- Teach AI skills wherever its use is required or cannot be excluded
- Use AI-free assessment formats only where compliance can be verified in a legally defensible manner

2 Fundamentals and the acquisition of competencies

- AI makes fundamental knowledge and core competencies more important than before, especially critical analytical thinking.
- Productive use of AI requires a high level of independent problem-solving competence.
- The ability to obtain good results using AI is a new competence that should be taught.

3 Assessments and final theses

- Written work, particularly coursework, project reports and final theses, remains important.
- The written product alone is not decisive: understanding of the subject matter must be assessed. The work process may additionally be assessed.
- The following forms of assessment were specified:
  A Oral examination or viva voce („Kolloquium“)
  B Supervision of the work process AND an oral examination or viva voce (“Kolloquium”)

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Derived recommendations for action

Possible next steps for departments and degree programmes, derived from the working-group findings and the concluding discussion.

01 **Embed the use of AI in curricula**

Explore the practical use of AI in suitable exercises, project modules and academic work; make the necessary tools accessible and teach the required skills.

02 **Explicitly safeguard disciplinary fundamentals**

Strengthen independent problem-solving, plausibility checks and critical evaluation of AI-generated results as essential competencies.

03 **Define AI literacy as a learning outcome**

Teach appropriate use, subject-specific verification and the limitations of AI-assisted results.

04 **Develop differentiated and transparent rules**

Specify in which teaching and assessment situations AI may be used and which achievements students must demonstrate independently.

05 **Align assessments with competence acquisition**

Use AI-free formats only where conditions can be monitored reliably and in a legally defensible manner; otherwise choose appropriate means of assessing individual competence.

06 **Ensure that written work demonstrates understanding**

Always assess subject-matter understanding, either through an oral examination/viva voce (“Kolloquium”) or through supervision of the work process combined with an oral examination/viva voce (“Kolloquium”).

07 **Keep responsibility for grading with examiners**

AI may support assessment but must not assign grades autonomously. Examiners must review AI-generated assessment suggestions professionally; accepting them without review is not permitted.

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