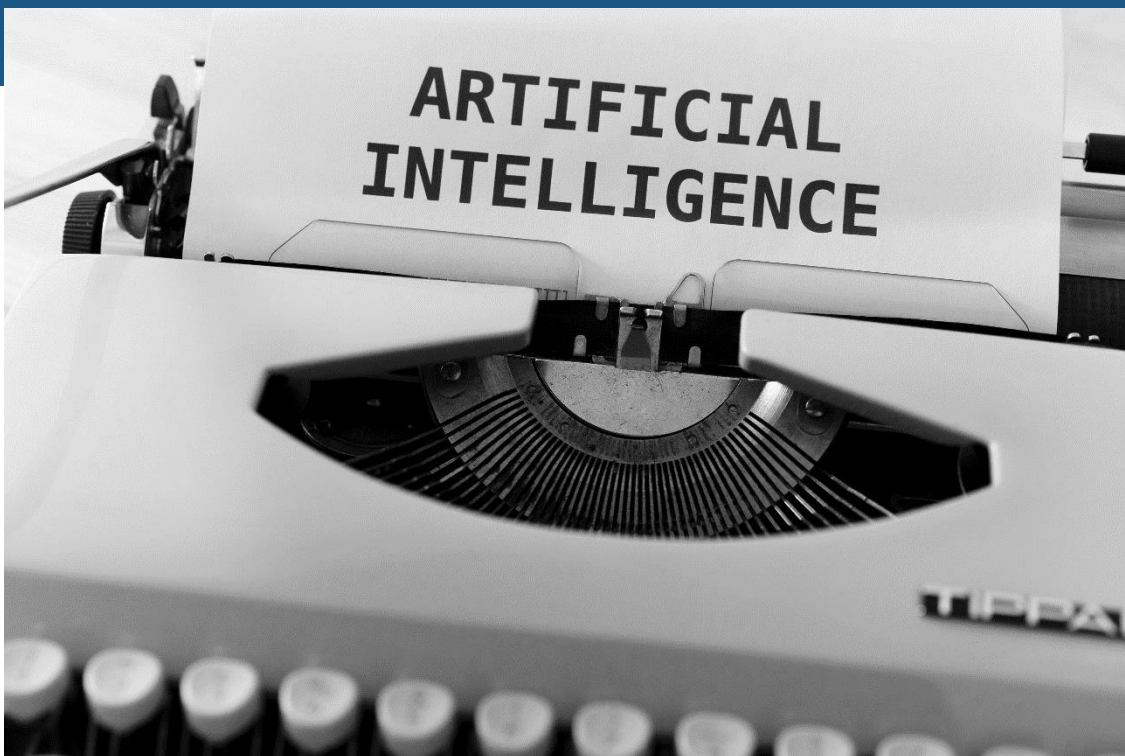


USING CHATGPT IN UNIVERSITY TEACHING



UNIVERSITÄT
HOHENHEIM



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AS Hochschuldidaktik / Mediendidaktik / **Digitalcoaches** Projekt DeLLFi



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ChatGPT is a language model developed by OpenAI, specifically a variant of the GPT (Generative Pre-trained Transformer) model architecture. It is designed to understand and generate human-like text based on the input it receives. GPT models, including ChatGPT, are trained on vast amounts of text data to learn patterns, context, and linguistic structures in order to generate coherent and contextually relevant responses.



Source: ChatGPT's answer to the question "What is ChatGPT?"

Using ChatGPT in university teaching

Using ChatGPT in university teaching has various advantages and can be justified as follows:

- Acquiring necessary **competences** (e.g., targeted input of queries into AI systems) for working with AI systems for future career paths (students will need to be able to use AI systems in many areas of their future careers – basic technological education is becoming increasingly important!)
- Appropriate use can promote students' **learning** (students can catch up on knowledge deficits and alleviate difficulties through independent utilization of ChatGPT – ChatGPT as a "learning companion")
- Promoting students' critical thinking (e.g., with the question: "How good are the results generated by ChatGPT?")
- **Simplification** of preparation, implementation, and evaluation of courses, materials, and performance (tasks, evaluation rubrics, structures, feedback, ...)
- Opportunities for **diversity** and **inclusion**: Students with disadvantages (e.g., language disadvantages) can use ChatGPT to study

"Rules" for student use of ChatGPT

In order to appropriately implement ChatGPT into your course, certain "rules of play" regulating students' work with the AI system should be transparently communicated in advance. By way of example, several "rules of play" are presented below, although they should be **adjusted and expanded** as necessary:

- **Disclosure** of all **aids** used (students must credit any use of ChatGPT in all of their work – joint determination of how to credit, e.g., footnotes)
- **Personal responsibility** for the results: Students must independently ensure that the results generated by ChatGPT which they incorporate into their work are correct and scientifically sound (students must "check" the results of ChatGPT and bear the responsibility for the results of their work)
- **No rules without exceptions**: For certain tasks, the use of ChatGPT may be prohibited.
- **Voluntary** use: All students are free to decide whether or not they wish to use AI systems and should be aware of the data protection aspects (if necessary, they should be advised to delete their ChatGPT prompt history in their personal settings after logging in)
- When using ChatGPT, **various laws must be observed**. Usually, the user is responsible for ensuring the laws are followed or that they have the right to carry out a particular process. For example, for data protection and processing personal information, the data subject's **consent** might need to be obtained. **Copyright** or **patent rights** must also be observed. So if photos or texts from another person are sent to ChatGPT, for example, the user must have the right to do this. Contracts might prohibit using AI to process research data that has been received or collected. The same applies to patent rights.

GPTalk – Internal university access to ChatGPT

Together with the University Didactics Office, KIM has set up an **internal university** access point to ChatGPT by openAI. The Hohenheim server for transferring data is called “GPTalk” and uses the new GPT-4-Turbo model from openAI with limited functions.

Lecturers can now link the GPTalk system into their ILIAS courses using the object “LTI-Konsument”. You can find instructions in the Schnell Digital learning module on ILIAS in the chapter GPTalk. Students who are in the ILIAS course then have the possibility to chat with a Large Language Model (LLM) without registering with openAI. KIM thus provides lecturers and students of the University of Hohenheim easy and high-quality access to the technology behind ChatGPT.

General notes on GPTalk:

- For data protection reasons, **no** chats are saved
- **No** data from third parties (e.g., emails, students’ written work, sensitive research data, or other third-party texts) may be entered (unless the copyright holders have given their explicit consent)
- The chat messages will still be processed by openAI servers
- Access data (e.g., the account name) is **not** transmitted.

Usage scenarios for university teaching

ChatGPT can be used in courses as well as for students’ individual studying purposes (the following scenarios are non-exhaustive examples of possible ways to use AI systems).

General information regarding usage of ChatGPT:

- All ChatGPT outputs should **always** be checked before they are integrated into course material. The more precise the input into the system, the better the output result (please note: Even if you enter precise inputs, the results from ChatGPT are not always accurate and should be compared with serious sources.)
- **Data protection** aspects must be considered (see rules of play)
- **Copyright:** Copyright protections cover the author’s intellectual and personal connections to their work and grant them the exclusive usage rights to that work
- **Usage rights:** Usage rights can be obtained from the author and granted to third parties for usage of copyright protected work.


Scenario	Description	Competence acquisition
Which scenarios can ChatGPT be used for within courses?	<p>More detailed description of the scenario</p> <p>Lecturers: What must I contribute as a lecturer?</p> <p>Students: What must the students contribute?</p> <p>Input example (What can be input into ChatGPT in order to implement the scenario)</p>	<p>What specific aspects should be considered in this scenario (e.g., data protection)</p>
<p>Task creation (new perspectives on topics and tasks)</p>	<p>If the parameters are provided (topic, content, length, ...), ChatGPT can design tasks which may be implemented in a course (optionally, a direct proposed answer can also be generated)</p> <p>Lecturers/Students Formulate the parameters for your tasks and “feed” ChatGPT with this information.</p> <p>Input example: “Formulate a task on the topic of apiculture with the focus on the bees’ nutrition and formulate the appropriate answer in a paragraph response.”</p>	<ul style="list-style-type: none"> - Students (and lecturers) must be aware of the relevant data protection and copyright aspects - Tasks designed by ChatGPT must always be checked and, if necessary, revised
<p>Summary (or “other” explanation) of scientific texts and design of individualized course materials</p>	<p>By inputting texts, ChatGPT can be used to summarize the most important aspects of a text, to generate an “alternative” explanation, and to demonstrate abstract concepts more simply using examples. This way, individual course materials can be created from existing scripts (a summary may, depending on the information provided in the ChatGPT input interface, be provided in bullet points or as a paragraph).</p> <p>Lecturers/Students Copying the texts and formulations of the ChatGPT prompt</p> <p>Input example: “Summarize the following text in bullet points.”</p>	<ul style="list-style-type: none"> - Students (and lecturers) must be aware of the relevant data protection and copyright aspects - Confidential data may only be input with the appropriate copyright or usage rights. - Course materials designed by ChatGPT should be checked for accuracy by the students (comparison with sound scientific sources)
<p>Creating educational “games” (e.g., quizzes) – ChatGPT as a “learning companion”</p>	<p>ChatGPT allows you to create “games” such as quizzes for certain topics, thus enabling “easier” learning (note: inputting your own course materials can provide more suitable results).</p> <p>Lecturers: Enter the topics and instructions (input of individual course materials)</p> <p>Students: Enter the topics and instructions (for use in independent study)</p> <p>Input example: “Create a multiple-choice quiz with three questions, each with four possible answers, and place the focus on the topic of pollination of flowers.”</p>	<ul style="list-style-type: none"> - Students (and lecturers) must be aware of the relevant data protection and copyright aspects - Data from other sources may only be input with permission. - Course materials designed by ChatGPT should be checked for accuracy by the students (comparison with sound scientific sources)
<p>Exercises in text analysis and evaluation (critical review of scientific texts)</p>	<p>Text passages about various topics can be generated within ChatGPT. Analyzing and evaluating texts of this kind is necessary in order to be able to critically question and review content generated by ChatGPT; it also promotes the students’ textual understanding.</p> <p>Lecturers: Provide a topic</p> <p>Task</p> <p>Students: Input the parameters and requirements for generating a text. Analyze the generated text</p>	<ul style="list-style-type: none"> - Students (and lecturers) must be aware of the relevant data protection and copyright aspects - Data from other sources may only be input with permission. - The analysis and evaluation of the text passages should be discussed in the plenary session in order to transparently present all errors/critical parts (if necessary, several key



		questions for critical review may be provided)
Brainstorming with ChatGPT (source of inspiration)	<p>ChatGPT can be used to gather ideas within a course setting as well as for preparation or follow-up work. With the AI system, you can search for topics and view them from new angles (e.g., find an original approach to a new topic or ideas for linking prior and new knowledge).</p> <p>Lecturers: Enter topic into ChatGPT and, if necessary, provide students' task Students: Enter topic into ChatGPT</p> <p>Input example: "What information should be included in a presentation on the topic of honey?"</p>	<ul style="list-style-type: none">- Students (and lecturers) must be aware of the relevant data protection and copyright aspects- Data from other sources may only be input with permission.
Assessment of own text passages	<p>By inputting your own (self-written) texts with the task of summarizing the most important information, text passages can be "assessed" (do they contain the most important points and can the AI system identify these?).</p> <p>Lecturers/Students Input (copy-paste) your own text into ChatGPT and prompt the AI to summarize the most important points. Compare the summary to your own goals for text creation (What information should be included in the text and can this information be identified?)</p> <p>Input example: "Summarize the following text in bullet points."</p>	<ul style="list-style-type: none">- Students (and lecturers) must be aware of the relevant data protection and copyright aspects- Data from other sources may only be input with permission.

Possible usage scenarios


Example 1: Designing a task (non-quiz format)

 Please create an exam question on the topic of bee nutrition that would have the following text as the ideal response:

Bees have an entirely vegetarian diet. Sweet plant juices – in particular nectar – are their most important nutritional source. To meet their protein needs, they are dependent on pollen. Species of colony-building genera and families, such as bumblebees, stingless bees, and particularly honeybees keep stores of food. This allows for the entire colony to survive in periods without food, such as, for example, the rainy season (the tropics) or during wintertime in colder climates.


Bee collecting nectar on basil blossom

Polylectic bee species collect pollen from nectar sources of various botanical families as food for their brood. Unlike oligolectic species, they are ecological generalists.

 **Exam Question:** 📄 👍 💬

Discuss the dietary habits and nutritional strategies of bees, highlighting the importance of various food sources and their impact on colony survival. In your response, address the role of nectar and pollen, the significance of food storage, and the contrast between polylectic and oligolectic bee species.


Example 2: Summarizing scientific texts

 Please summarize the following text in bullet points: Bees (apiformes or anthophila) are a group of insects comprising several families of hymenoptera.

Colloquially, the term bee is generally used to refer to only a single species, namely the Western honeybee (*apis mellifera*), which is paid the most attention due to its role as a colony-building honey producer as well as due to its defensiveness. However, bees are actually quite a large group comprising very different species. Many of them, particularly the ones who live solitarily, are summarized under the term wild bees.

Anatomy of a bee using the example of a sand bee with labeled body parts

Depending on the author, the scientific name for bees varies. In his seminal work *The Bees of the World*, Charles Michener prefers the name apiformes. This name is in keeping with the entomologist Denis J. Brothers.[1] Many other authors call bees anthophila. This name, which was already used in the 19th century, was revived by Michael S. Engel.



- Bees are insects in the group Apiformes or Anthophila within the Hymenoptera order. 📄 👍 💬
- The term "bee" colloquially refers mainly to the Western honeybee (*Apis mellifera*), known for honey production and colony-building.
- Bees encompass a diverse range of species beyond honeybees, including solitary species referred to as "wild bees."
- Different authors use varying scientific names for bees: "Apiformes" (Charles Michener, Denis J. Brothers) and "Anthophila" (revived by Michael S. Engel).


Example 3: Designing educational “games” with “weak” prompts

KE Please use the following text to create a quiz with 5 multiple choice questions: Nutrition

Bees have an entirely vegetarian diet. Sweet plant juices – in particular nectar – are their most important nutritional source. To meet their protein needs, they are dependent on pollen. Species of colony-building genera and families, such as bumblebees, stingless bees, and particularly honeybees keep stores of food. This allows for the entire colony to survive in periods without food, such as, for example, the rainy season (the tropics) or during wintertime in colder climates.

Bee collecting nectar on basil blossom

Polylectic bee species collect pollen from nectar sources of various botanical families as food for their brood. Unlike oligolectic species, they are ecological generalists.

 **Nutrition Quiz** 📄 👍 🗨

Question 1: What is the primary source of carbohydrates in a bee's diet?

- a) Insects
- b) Seeds
- c) Nectar
- d) Pollen

Question 2: How do bees fulfill their protein requirements?

- a) By consuming sweet plant juices
- b) By hunting small insects
- c) By collecting pollen


Example 4: Designing educational “games” (e.g. quizzes) with “strong” prompts

KE Please use the following text to create a quiz with 5 multiple choice questions on the topic of bees' nutrition with three possible answers per question:

Bees have an entirely vegetarian diet. Sweet plant juices – in particular nectar – are their most important nutritional source. To meet their protein needs, they are dependent on pollen. Species of colony-building genera and families, such as bumblebees, stingless bees, and particularly honeybees keep stores of food. This allows for the entire colony to survive in periods without food, such as, for example, the rainy season (the tropics) or during wintertime in colder climates.

Bee collecting nectar on basil blossom

Polylectic bee species collect pollen from nectar sources of various botanical families as food for their brood. Unlike oligolectic species, they are ecological generalists.

 **Bees' Nutrition Quiz** 📄 👍 🗨

Question 1: What is the primary source of nutrition for bees?

- a) Insects
- b) Nectar
- c) Seeds

Question 2: How do bees meet their protein requirements?

- a) By consuming nectar
- b) By hunting insects
- c) By collecting pollen

Question 3: Why do species like bumblebees, stingless bees, and honeybees store food?

- a) To attract other insects



Sources:

This handout used **ChatGPT** to generate examples as well as to define terms.

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