

Generative Artificial Intelligence (GenAI): Guidance for Staff

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AI in Higher Education

Generative AI (GenAI) has rapidly altered the landscape of higher education. The ability of GenAI tools to produce human-like language and images has sparked an international debate about its influence on education, particularly learning and the assessment of learning.

At CCCU we recognise the potential of GenAI to support learning, teaching, research and working practices. However, we are aware of the tools' limitations and the ethical complexity of their widespread use within the University. **Therefore, our approach to the adoption and use of these tools is educative rather than punitive.** In this guidance, we will explain how we recommend staff approach the learning, teaching and integration of GenAI into their teaching and research practice. As these technologies and our approach to them continue to evolve, this guidance may be subject to change.

“
We recommend that you read this guidance alongside the
[Student Guidance](#)

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Generative AI (GenAI)

What is GenAI?

GenAI refers to a category of artificial intelligence algorithms that produce content in response to prompts. Non-generative AIs have been in use for many years, including in traditional search functions used by Google Search, Amazon, Netflix etc. GenAI has made significant advances since 2018 and is now easily accessible through user-friendly interfaces. The most common of these are chatbots, image generators and search engines which integrate GenAI to improve results. Using natural language prompts, users can produce human-like text responses, images, code and designs, as well as connect plug-ins to improve capabilities in specialist areas, such as mathematical and technical problem solving. These tools are increasingly capable of advanced reasoning, meaning that users with very little technical ability in computer science can take advantage of highly developed GenAI tools. However, the best tools are purchase or subscription only.

I've heard about ChatGPT. What is it?

ChatGPT stands for Chat Generative Pre-trained Transformer. It is a chatbot built on a generative artificial intelligence system that uses natural language processing to produce human-like text responses to prompts entered by the user. The chatbot's response depends on the prompt entered, and a user can enter multiple prompts to alter the original answer given. ChatGPT is owned by OpenAI, and trained on their large language model. OpenAI's most recent paid-for model is [GPT-4o \(omni\)](#), their 5th release in the past 2 years. Other GenAI chatbots work in a very similar way but may have access to different training data and use different algorithms, therefore giving different levels of depth and accuracy to their responses.

How does it work?

GenAI systems that focus on text, learn patterns and relationships between words and phrases in natural language use. Large language models are trained on enormous amounts of data “mined” from open-source internet content. They then reproduce these patterns in response to prompts. These models have “self-attention” mechanisms that allows them to decide on the relative importance of each part of the prompt entered by the user and decide what information is most relevant. It can then create contextualised responses. Therefore, text-based GenAI systems operate like very powerful search engines that also summarise content into human-like written responses.

What are its limitations?

1. GenAI chatbots cannot distinguish between truth and falsehood. They generate responses based on the most likely, or most common, pattern of language available in their training data. Training data can become obsolete very quickly and any data that is published behind a paywall, such as academic or professional publications, are not included in open-access models.

However, internet connected chatbots can access current information and many academic databases and data sets now have integrated GenAI tools. Always check the type of tool you are using to understand the type and currency of the data set it is drawing its answers from.

2. As GenAI cannot decide on, or be held accountable for, the truth of the information it reproduces, it can produce incorrect, biased and discriminatory responses.
3. It can also produce entirely fictional or nonsensical responses, called “hallucinations”. These appear to occur when the training data is not sufficient to answer the prompt, so the GenAI makes it up in plausible-sounding language.

These, and other, ethical issues will be discussed throughout this guidance.

What about plug-ins?

Plug-ins, software that enhances an existing programme’s performance, combine LLMs’ language capabilities with their specialisms. The ability to use plug-ins is mainly available for subscription versions of GenAI chatbots or for individual purchase. Plug-ins perform many specialist tasks, e.g. mathematics, coding, summarising PDFs, text-to-speech, diarising appointments, or even finding discount fashion, travel itineraries and restaurant reservations.

AI literacy

Non-generative AI has been in our lives for a long time already (Siri, Alexa & Google Dot, biometric passports, facial recognition on social media & law enforcement, lane assist on cars, spellcheck, autocomplete, internet search functions, etc.) and is likely to become ever-more prevalent.

One of our tasks will be to learn how to use GenAI effectively and ethically. It is important that

we work with our students as they also navigate this rapidly evolving digital landscape. Therefore, we need to consider how GenAI affects our disciplinary fields, how it intersects with the way we teach, how our students learn now, and how they will work in the future. We encourage academic staff to co-create with students and look for opportunities to build learning communities where insights and experiences from learners and teachers can cross-pollinate.

This may mean upskilling ourselves, revisiting current working and teaching practices and considering new ways of learning, teaching and assessing, using GenAI as a part of our toolkit.

Staff are encouraged to explore GenAI, including, but not limited to, chatbots, image generators, research tools and AI-enhanced database searching, so they are familiar with the technology that is available to their students. At present, we are consulting on the best approach to staff development in this area and are working with other University stakeholders to develop a University-wide approach to GenAI use. Notwithstanding, if you would like to learn more about using GenAI within your learning, teaching, and assessment activities, please get in touch with the Technology Enhanced Learning team in Learning and Teaching Enhancement.

Using generative Artificial Intelligence for learning and teaching

Engagement and debate

As the reality of GenAI use in higher education continues to evolve, staff are actively encouraged to discuss, contribute and consult with students, each other, and central services about their experiences working, teaching, learning and researching with AI.

We encourage staff with teaching and pastoral responsibilities to discuss the pros and cons of using GenAI systems with students. Similarly, course teams may wish to facilitate a forum for discussion and debate between colleagues.

Teaching with GenAI

There are many ways GenAI can be used creatively and critically for learning and teaching. Learning with GenAI can incorporate simultaneously acquiring knowledge about a particular topic and learning digital literacy skills that encompass ethically aware and critical use of the tool itself. By designing teaching activities using GenAI, lecturers can integrate subject specialist knowledge, digital skills for future employment and develop traditional critical thinking skills around truth, accuracy, agency, meta-cognition and reflection.

Despite its potential for reproducing the bias that already exists in societal discourse, GenAI also offers opportunities to level the playing field for students who face barriers to producing clear written content in English, perhaps because English is an additional language, or due to learning differences. By making extremely powerful spelling, punctuation and grammar editing and proofreading openly available, assessors are free to reduce emphasis on the mechanics of

writing in their marking and feedback and focus on the quality of thinking, understanding and creativity expressed.¹

Further discussion of the permissible use of GenAI for assessments is discussed in the Assessment section below.

Information Literacy

Every subject at the University has a dedicated Learning and Research Librarian who supports staff and students. Librarians are experts in information literacy, that is finding, evaluating, organising and disseminating information. If you would like to learn more about how to teach students to find and use good quality information sources, [contact your subject librarian](#).

Foregrounding Human Intelligence

A key tenet of higher education is the development of thinking skills. Whether these are termed lifelong learning skills, critical thinking skills or meta-cognitive skills, the principle that students will learn how to think for themselves is core to our purpose. Therefore, it is important to discuss the effects of using GenAI on human agency. The decisions GenAI makes about what information to include and exclude in its responses and the language it uses to express them remain opaque. It remains vital to teach students how their specific personal, reflective, embodied and localised experiences affect the acquisition and use of knowledge and how their individual perspectives can lend these processes value.

Students should be made aware explicitly that they remain wholly responsible for their outputs, regardless of whether the information and ideas contained within them are generated by AI.

Ensure you have read the [Student Guidance](#) and have worked through it with your students.

¹ The quality of written English is expected to be maintained, in line with OfS requirements, however the tools to achieve this are now more powerful and widely available. Where students require subject-specific support to improve their written English, this should be provided in accordance with existing marking rubrics.

[Click here](#) for some ideas on incorporating GenAI into teaching.

Ethics

Generative AI systems pose many ethical issues that staff and students should be aware of when using them for work, research and creating content. Many issues are still emerging through current research, but some that you may wish to **encourage discussion with your students** about, include:

- Bias in training data, including on gender, race, religion, sexuality, disability, and geo-politics, among others. This is the same discussion we would have about using quality information for academic research.
- Misinformation, including "hallucinations", where GenAI gives authoritative-sounding answers that are factually incorrect.
- The unfairness inherent in un-critically using GenAI to complete assessed coursework, or sensitive tasks in a work environment.
- Training GenAI on copyrighted images, texts, music and code, which are then remixed/reproduced without compensation to the original creator.
- The role of academic researchers in "cleaning" data, accessed under not-for-profit licenses, which is then used by for-profit enterprises. Examples exist in the fields of facial recognition, photography and video generation.
- The use of workers in poorer economies for data-labelling tasks. Data-labelling is the process by which humans "tag" raw data to give it context for that machine-learning. This practice includes humans viewing and labelling offensive, illegal and harmful content so that GenAI systems can learn not to reproduce it in their responses to users.
- Data security, as many GenAI tools store data from prompts and re-use it as training data.
- The concentration of GenAI technology in a handful of private companies, mainly based in the USA.

Learning to use Artificial Intelligence effectively

The effectiveness of GenAI's responses relies in greater part on the prompts the user enters. The art/science of writing effective prompts has been dubbed "prompt engineering". A prompt 'sets

the context for the conversation and tells the LLM what information is important and what the desired output form and content should be.’²

Whilst this is still an emerging area, here are some top tips gleaned through traditional internet searching:

1. **Be specific.** Give all key information, including the information you want, and the length and format of the output, e.g. find me a **recipe** for **vegan chocolate brownies** that uses **metric measurements**.
2. **Give context.** If you provide contextual information the response you are given will be more relevant to your specific needs, e.g. I am having a **party for 20 children** and I want to bake vegan chocolate brownies to go in their **party bags**. Find me a recipe that uses metric measurements.
3. **Provide examples.** If it’s possible to offer an example of the output you would like, but with your specific data instead, you are more likely to get a suitable response, e.g. you could offer the chatbot a link to a recipe site or chef you particularly like, or provide an example of a non-vegan recipe you enjoy and ask for a similar vegan alternative.
4. **Fine tune.** If you don’t get the answer you’re after, try changing the vocabulary of your prompt, e.g. **sugar-free** vegan chocolate brownie, or **kid-friendly** chocolate brownie. You could also adopt a persona and ask it to write a response “in the style of...”

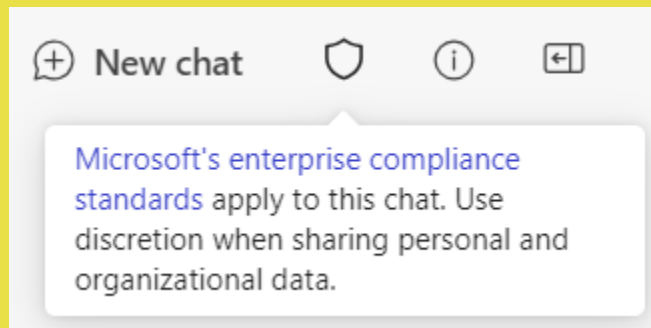
² White, J. et al. (2023) ‘A Prompt Pattern Catalog to Enhance Prompt Engineering with ChatGPT’. arXiv. Available at: <https://doi.org/10.48550/arXiv.2302.11382>.

Data protection

GenAI companies collect and store data shared with them on sign up and during interaction with their chatbots and image creators, unless you specifically opt-out. Companies use this information for analysis, research, development and to comply with legal obligations, e.g. detection and prevention of fraud.

Microsoft Copilot offers [commercial data protection](#) through the University's institutional licence. Your data will not be stored or used to train Microsoft or OpenAI's models (the company that supplies GenAI capabilities to Microsoft).

To securely access Copilot log into copilot.microsoft.com using your CCCU credentials. You will see a shield symbol when you are successfully logged in.



We recommend maintaining confidentiality for yourself and your students when using these tools by redacting personal or commercially sensitive information, or information protected as intellectual property (IP).

Current government [guidance for Civil Service employees](#) offers an indication of the information security concerns surrounding the use of GenAI in the

Artificial Intelligence and Academic Integrity

Detection

Controlling the use of GenAI with surveillance and detection software is not currently feasible. Companies such as Turnitin have developed GenAI detection tool that provides a percentage value indicating how much of a document may have been written by GenAI writing tools.

We think that altering our teaching and assessment practices is a more pedagogically sound alternative to relying on detection and punitive arrangements to manage the arrival of open

access GenAI tools. As with all digital innovations in learning and teaching, we continue to investigate, research and monitor developments so that our approach remains appropriate.

Academic Integrity and GenAI

Our existing [Academic Integrity Policy](#) places the responsibility on lecturers and course teams, with support of professional services, to proactively teach students about academic integrity at all levels of study (1.4; 3.2). We encourage all staff to familiarize themselves with the policy, however the key points pertinent to the acceptable and unacceptable use of GenAI are:

1.3.1. take responsibility for your own work

1.3.2. refrain from any actions that would give you an unfair advantage over other students

1.3.3. be honest in presenting your work for assessment and ensure it is your own work. You must not get others (including generative AI) to complete the work for you, in whole or in part

1.3.4. acknowledge the work of others (including generative AI), by including a complete reference, where it contributes to your work

and

3.4. Students may choose to ask someone to proof-read their work before submitting it. Any editing help of this nature must be acknowledged at the beginning of the work and follow the guidance in the Academic Misconduct Procedures.

Use of GenAI in assessments should be declared and its outputs/use should be fully cited and referenced (see below for further guidance).

GenAI tools highlight the urgency and importance of integrating conversations about academic integrity, including plagiarism, referencing, copyright, bias and inaccuracy, into teaching at regular points throughout a student's academic journey.

If you decide to allow the use of GenAI within your assessments, ensure that students are clear about the parameters of acceptable use and the reason for any restrictions, how you will check their fair use, and that they are able to reference it correctly.

We highly recommend that Module Leads place a statement in the assessment section of their relevant student handbooks and Blackboard sites outlining any restrictions or guidelines related to the use of GenAI on that module. This will ensure that students are aware of any limitations on the use of GenAI and can help to promote consistency across different assessments within a module.

If you suspect a student has gone beyond the boundaries of acceptable use of GenAI, as defined by your assessment criteria in conjunction with the [Academic Integrity Policy](#), then the [Academic Misconduct Procedures](#) apply as normal.

Acknowledging GenAI in assessed work

All use of GenAI in assessed work should be acknowledged and fully referenced.

1. We recommend that course teams provide students with a choice of generic statements that can be used verbatim, or adapted, to add at the top of their written work:
 - a. No content created by GenAI has been included in this work.
 - b. I acknowledge the use of outputs from [insert the name of GenAI tool used] in the learning, preparation, planning or proofreading of this work.
 - c. I acknowledge the inclusion of outputs from [insert the name of GenAI tool used] in this work, in modified form.
2. We recommend that students include all prompts used and outputs generated by GenAI as an appendix in their written work. You may decide that examples are sufficient.

A majority of GenAI chatbots have a facility to copy/email your conversation, so this should not add substantively to students' assessment preparation time.

3. All use of GenAI should be referenced. See Cite Them Right for advice on how to reference following your subject's conventions. The guide for Harvard is available [here](#).

Acknowledging GenAI in published work

Researchers are discovering the potential for GenAI to speed up a number of research-related tasks, particularly around literature reviews and data analysis. Several tools are explicitly designed and pitched at the academic community for this purpose. Things to consider when using GenAI to conduct research for publication include:

- The proposed journal's rules on GenAI use. Springer Nature has led the way with [a policy](#) and [ground rules](#) that explicitly prohibit GenAI as a co-author on grounds of accountability and responsibility, but permit its use when fully acknowledged.
- The uploading of published academic work to GenAI tools for summary, as this may breach the University's copyright arrangements with publishers.

See also: [Academic Integrity Toolkit](#)

[Academic Integrity and Misconduct](#) student webpages

Transparency

GenAI tools have the potential to be extremely useful to both staff and students in many areas of work and study life. We must use GenAI responsibly ourselves and teach our students to do the same.

Course teams should be direct and transparent about the use of GenAI in developing teaching and assessment activities and provide a clear rationale for any restrictions on its use by

students. This can help to promote academic integrity and prevent any misunderstandings or ethical issues.

See also: [Course Management Handbook](#)

[Module Leaders' Handbook](#)

Assessment

Assessment Design

Modifying the design and structure of assessments can diminish the probability of students engaging in cheating while also improving their learning experience.

Studies have indicated that several factors impact how positively students approach assessments. When they have a personal connection to the questions they tackle, comprehend how the assessment contributes to their long-term learning objectives, complete preliminary work beforehand, and engage in discussions about their initial efforts with peers, they are less inclined to cheat.

These qualities can be incorporated into authentic assessments, which are assessments that mirror real-life scenarios, demand cognitive rigor, and necessitate genuine evaluation.

Tasks which require more authentic student engagement with the learning process include:

- Reports on independent research activities,
- Progressive/reflective portfolio-style assignments that are built up over time,
- Briefs for real clients, or simulations of real-world professionals,
- Assessments based on location, needing in-place knowledge (e.g. field trips),
- Interactive oral assessments,
- Programme-level or synoptic assessment,
- Analysis of images or videos,
- Video-based assessments,
- Interpretation or creation of real-world artefacts.

Formative assessment

GenAI synthesises its answers from training data, namely the internet, without necessarily discerning between high- and poor-quality information. It is a useful tool for forming ideas into sentences, if you already know the information contained is correct. However, core critical thinking skills remain vital to discern between correct and incorrect knowledge.

Educating students about the advantages and limitations of GenAI through taught synchronous or a-synchronous activities is an important safeguard lecturers can build into their usual critical

thinking development activities.

Opportunities to test students' ability to do the things GenAI does reasonably well, e.g. re-produce knowledge, apply theory or summarise a research paper, are best done formatively. Concept checks of core knowledge are best scaffolded into formative assessment. Alternatively, the weighting given to these tasks in summative assessments could be reduced, with more weighting given to the elements of learning that GenAI cannot easily replicate, such as evaluation, explaining meaning in context and reflection on personal learning.

"At risk" assessments

Assessment type changes require [minor changes](#) to validated modules. This is typically a lengthy process which can put off assessment re-design. As we are entering a cycle of significant change with the new Academic Framework, there is an opportunity to address assessment design holistically.

However, if you are concerned that your current assessment is at risk from GenAI, there are a few steps you can take to mitigate this now:

1. Be explicit in your assessment guidance about the acceptable use of GenAI & discuss this with students.
2. Change the assessment question to ensure reasoning skills are required.
3. Re-visit your marking rubrics to ensure that to pass, a student must exhibit analytical, evaluative and critical skills, appropriate to their level of study. This must be kept in line with learning outcomes.
4. Introduce a reflective element to written tasks, particularly reflecting on learning, or events in synchronous teaching time.
5. Introduce annotated bibliographies, and tailor these to texts that are on the core reading list and you know well.
6. Exclude the use of descriptions, lists and plans as GenAI tools are very adept at producing these.

Equitable access

Currently, there are many open-access GenAI tools, however newer and more powerful versions tend to be subscription only. Free versions often restrict the number of requests a user can make per day, whereas paying users have unlimited access. It is likely that future iterations of GenAI tools will mostly require payment or subscription.

Therefore, there is an emerging digital equality issue surrounding the use of GenAI for teaching and assessment, as students with lower incomes or less internet connectivity may be less able to afford access to emerging technology. Equitable access must be considered when designing learning, teaching and assessment activities using GenAI.

Discussion, evaluation and dissemination

1. Talk with students and colleagues about GenAI and consider your joint approach.
2. Course teams are encouraged to create local groups to discuss the use of GenAI in teaching and assessment.
3. Colleagues are encouraged to engage with GenAI in their discipline, sector and/or industry, for research and teaching and consider its impact on students' subject learning.
4. Case studies are encouraged – please submit your preferred format to LTE for publication on [Prism](#). Guidelines for submissions can be found [here](#).
5. The University has many interdisciplinary networks through which to share research and best practice. Course Directors are encouraged to facilitate and disseminate learning through these channels. Co-creation across disciplines will become increasingly necessary as GenAI advances, and we are all learning together.

Further Resources

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Selected Glossary of AI terms

Algorithm – a defined procedure, or set of rules, used in mathematical or computational problem solving to complete a particular task.

Artificial Intelligence (AI) – a branch of computer science dealing with the ability of computers to simulate intelligent human behaviour.

Artificial General Intelligence (AGI) – the theoretical ability for computers to simulate general human intelligence, including the ability to think, reason, perceive, infer, hypothesise, but with fewer errors. This is not yet reality, but is the goal of many large AI research enterprises.

Artificial Narrow Intelligence (ANI) – the ability of a computer to simulate human intelligence when focused on a particular task. A well-known example of this is the development of chess-playing computers, which beat the best human players in the early 2000s and are now accepted as training tools available on any smartphone.

Bias – Any pre-learned attitude or preference that affects a person's response to another person, thing or idea. In the context of GenAI it commonly refers to a chatbot's reflection of bias present in its training

data (namely, the internet) in its responses to users' queries.

Big data – an accumulation of a data set so large that it cannot be processed or manipulated by traditional data management tools. It can also refer to the systems and tools developed to manage such large data sets.

Data mining – the practice and process of analysing large amounts of data to find new information, such as patterns or trends.

Data tagging – a process in data classification and categorisation, in which digital 'tags' are added to data containing metadata. In the context of GenAI, training data for Large Language Models is tagged by humans so the AI can learn whether to include or exclude it from its responses. This may be to comply with legal requirements, or ethical and moral codes.

Deep learning – a subset of machine learning that works with unstructured data and, through a process of self-correction, adjusts its outputs to increase its accuracy at a given task. In the context of AI, this process is closely related to reinforcement learning.

Generative Artificial Intelligence – Generates new content from existing data in response to prompts entered by a user. It doesn't copy from an original source, but rather paraphrases text or remixes images and produces new content. It learns via unsupervised training on big data sets, but does not reason or think for itself.

Hallucination – Answers from GenAI chatbots that sound plausible, but are untrue, or based on unsound reasoning. It is thought that hallucinations occur due to inconsistencies and bias in training data, ambiguity in natural language prompts, an inability to verify information, or lack of contextual understanding.

Large Language Model (LLM) – A specific type of GenAI that specialises in producing natural language. Chatbots such as Gemini, Copilot and GPT-4 are examples of LLMs.

Machine Learning – The capacity of computers to adapt and improve their performance at a task, without explicit instructions, by incorporating new data into an existing statistical model.

Natural Language Processing (NLP) – The analysis of natural language by a computer. It is a field of computer science that takes computational linguistics and combines it with machine and deep learning models to allow computers to understand text and speech, and respond accordingly. Voice activated "smart" technologies and translation software are two of many everyday uses for NLP.

Neural networks – a computing architecture, or machine learning technique, where a number of processors are interconnected in a manner inspired by the arrangement of human neurons; they can learn through a process of trial and error.

Pattern recognition – a data analysis method that uses machine learning to recognize patterns, or regularities, in big data.

Plug-in – a small piece of software that enhances the ability a larger system or application to fulfil a specific task, e.g. a referencing plug-in on a web browser can pull the metadata from a webpage into a reference management system to create a bibliographic entry.

Recurrent neural networks (RNN) – a neural network that is trained to “remember” past data to predict what should come next. It is used for ordinal tasks, such as language translation and natural language processing, as language is sequential arrangement of letters to create meaning.

Reinforcement learning – a process whereby a deep learning model learns to become more accurate at a specific task based on feedback. The process by which it improves its accuracy is called backpropagation.

Supervised learning – a machine learning method where the model is trained using data that has been labelled by a human, i.e. training using examples. This is useful for predicting future outcomes based on past trends where data already exists.

Turing Test – a ‘test’ devised by British computer scientist Alan Turing to distinguish if a computer was “intelligent”. He posited that a human interrogator must ask questions over a fixed period of time to both a computer and a human, and distinguish which was which based on their replies. A computer would be deemed to have passed the Turing Test when a human could not distinguish between its responses and a human’s.

Unsupervised Learning – a machine learning method where the model identifies patterns in unlabelled data and makes inferences for use on future, unseen data. This is useful for looking at raw data and seeing if there are patterns occurring.

Feedback

If you have any feedback on, or questions arising from, this guidance, please complete our [Feedback Form](#).

A member of LTE will review responses at regular intervals and get back to you.