UCT Framework for AI in Education

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Purpose and rationale

This UCT AI in Education Framework offers guidance for the responsible and ethical use of artificial intelligence (AI) in teaching, learning, and assessment.

AI is a large and loosely defined domain area. This framework is concerned with 'narrow' AI, as this is the type of AI currently available. There are other theoretical varieties of AI which may come to be in the future, but this framework will focus on the currently available capabilities. This diagram illustrates the types:

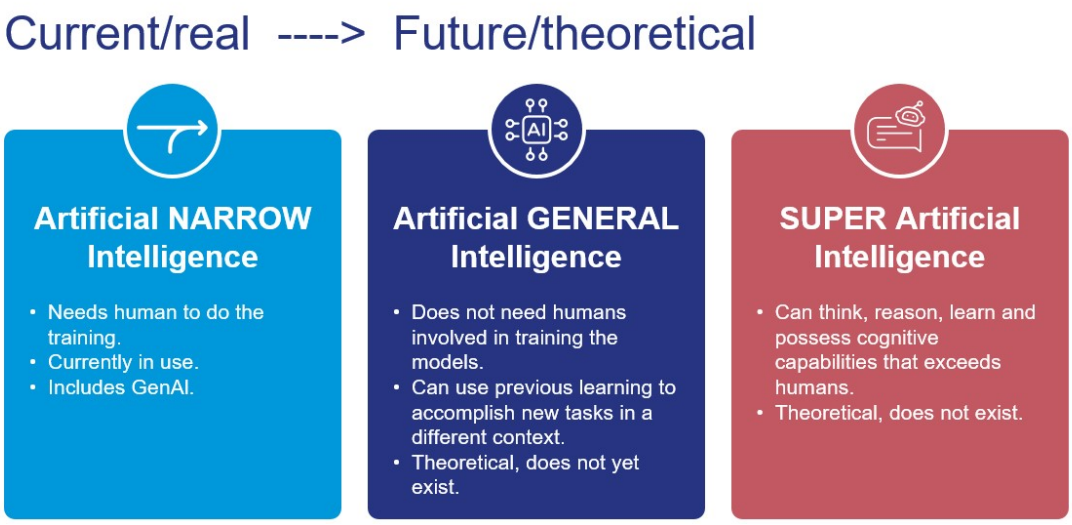

Figure 1: Types of AI Adapted from Martin Keen, IBM (Types of AI, November 2023)

Artificial intelligence (AI) refers to “a range of technologies that perform cognitive tasks, through machine learning, natural language processing, data mining, neural networks or an algorithm” (Zawacki-Richter et al., 2019).

AI is an expansive term that encompasses a wide range of methodologies and applications from computer vision to predictive analytics to machine learning and robotics.

The field of Artificial Intelligence (AI) has been evolving as a field for decades. But it has been the recent developments in *generative AI* (GenAI) that have moved it from the realm of computer science specialist applications into everyday use.

Generative artificial intelligence (GenAI) describes technologies such as ChatGPT, Claude or Dall-E trained to create new content, including audio, code, images, text, simulations, and videos. Universities globally have been engaging with and responding to the widespread prevalence and adoption of GenAI tools by both students and staff since 2023.

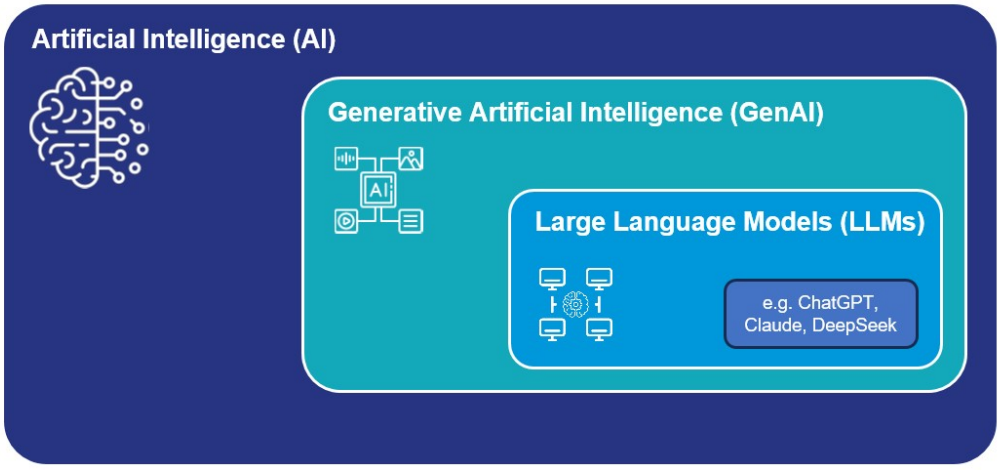

Figure 2: Illustration of how GenAI fits within Artificial Intelligence (Adapted from Henrik Kniberg, Generative AI in a nutshell, 2024)

AI technologies are opening possibilities for interacting with and even producing knowledge. With GenAI’s capacity to generate text and images, such tools offer academics, staff, and students the ability to brainstorm ideas, develop learning materials, and build resources or even create complete works (Paskevicius, 2024). The framework’s title retains the expansive use of ‘AI’ (i.e. UCT framework for AI in education), but there is more focus on GenAI because of the disruptive aspects for traditional teaching and learning[1].

As a “dual purpose” set of technologies, GenAI can both expand students’ potential and simultaneously undermine teaching pedagogies and the integrity of assessment practices. The purpose of this framework is to support informed and intentional decision making about how GenAI gets used in teaching and learning and how to support and shape other UCT institutional

[1] AI will be used in this framework document to be inclusive of GenAI, unless there is a need to specify GenAI. This may need to be revised as the field develops.

imperatives including assessment redesign and curriculum change initiatives across the university.

Throughout 2023-2024, UCT has taken steps to address the impact of GenAI by providing a range of resources including guides for both students and staff, as well as offering custom workshops, presentations, and podcasts to facilitate engagement with GenAI tools. Different departments and faculties have tailored their responses to suit the needs of their respective disciplines. Currently, there are numerous AI-related activities, resources, and guides available across the university, but many of these initiatives are happening in pockets, requiring coordination and centralised communication. If reviewing developments against the AI Maturity model for Education (JISC) UCT is now moving from the Experimenting and Exploring phase into an Operational phase and this requires the development of clear institutional principles and more systematic approaches.

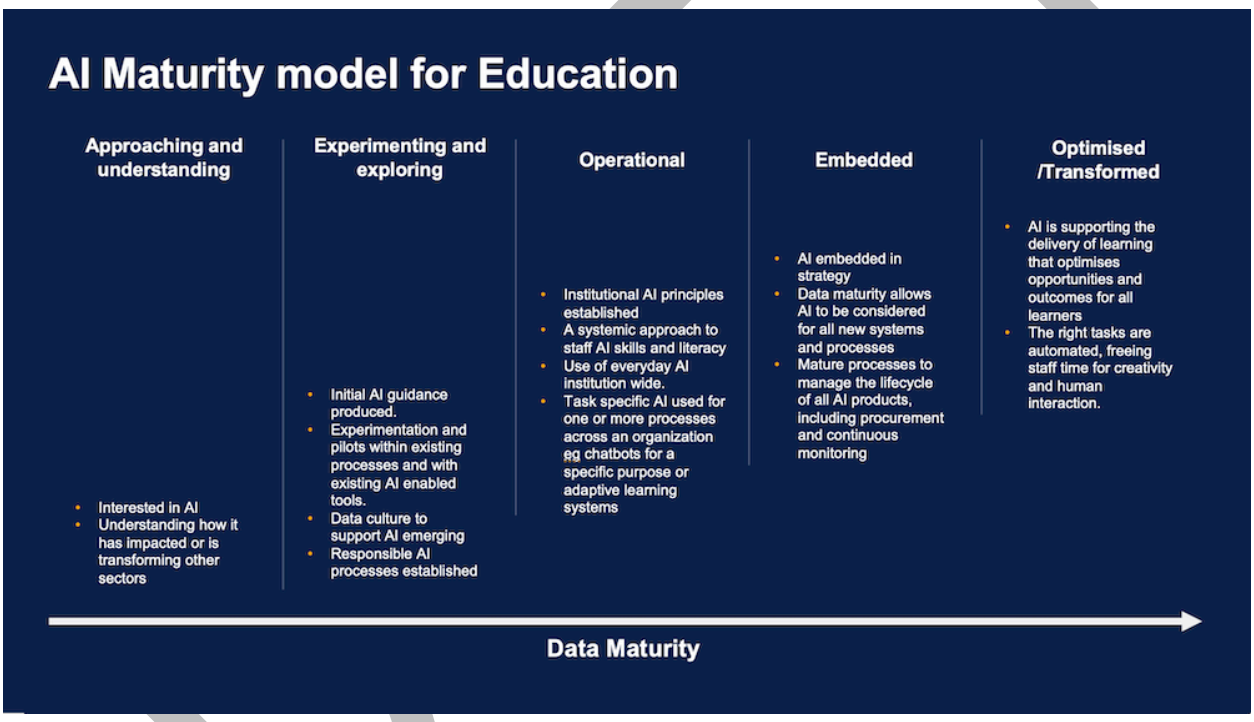

Figure 3: AI maturity model for education (Webb, 2024)

Alongside the communication of principles that frame UCT's approach to AI in education, this proposed framework offers an opportunity to review and investigate existing AI activities and resources, curating them into a more accessible and organised format. By doing so, UCT can improve ease of access and ensure that these resources are more easily discoverable by the university community.

The Centre for Innovation in Learning and Teaching (CILT) has, over the past 18 months, gathered data on AI-related engagements at the departmental level, including the resources and

activities that have taken place. This data showcases the responsiveness of the UCT community to the AI landscape but also exposes gaps and emerging needs.

There is a need for a unified, consistent, and coordinated framework that can be adapted to the diverse contexts within the university. This framework seeks to ensure that all stakeholders are well-supported as AI continues to evolve.

The focus of this framework is:

- To provide guidance on the responsible and effective use of AI in education at UCT
- To promote AI literacies and ethical use among students and staff
- To ensure the integrity of teaching, learning, and assessment in an AI-mediated environment
- To promote reviewing curricula that accommodates AI technologies appropriate to the discipline
- To consider the potential of AI technologies to support innovation in teaching and learning

The rapid advancement of GenAI presents ongoing challenges for institutional policy development, as the pace of technological innovation often outstrips the ability of regulatory frameworks to adapt. In response, this framework has been informed by the AI Resource Guides, which serve as dynamic, continuously updated references for both teaching staff and students. While UCT, as an institution that needs to provide guidance on the integration of GenAI in teaching and learning, faculties are best placed to develop the most appropriate approaches for their disciplines in response to these developments. Given the evolving nature of AI in higher education, it is essential to document and analyse how staff and students across faculties engage with the faculty guidelines and this framework. Capturing these experiences will provide valuable insights that can inform the ongoing refinement of institutional AI policies, ensuring they remain responsive to the needs of the academic community.

The focus of this framework is to establish general principles for shaping ongoing decision making as well as provide practical guidance and links to resources and services available or in planning.

This framework has received input from several university stakeholder groups. The Online Education Sub-Committee's (OESC) AI in Education Working Group has solicited feedback from the UCT community on what is happening across the university and what needs to be prioritised, as well as what is happening at universities elsewhere. The concerns reflect those raised elsewhere, such as the need for developing AI literacies and to address concerns about academic integrity. Other UCT specific challenges include how to integrate UCT's new assessment policy that responds to AI's impact and to consider practicalities such as the extra workload on lecturers to investigate the unethical use of AI and to redesign assessments.

The framework also addresses the risks of overemphasising AI-related assessment misconduct. Neither ignoring nor banning AI at universities is a feasible option. AI detection is unreliable, and the use of AI enabled detection tools poses risks to the university as well as to students. UCT encourages a more honest and realistic approach, acknowledging the evolving nature of AI

tools as heralding changes in practices including what is taught and how it is taught and assessed.

This framework aligns with Vision 2030 in relation to emphasising ethical use, equity, and social justice principles in promoting responsible AI use in teaching and learning. UCT is committed to making AI tools accessible to all students, regardless of their background and abilities, and will continue to explore AI innovations to lead and shape a future where AI is likely to be ubiquitous.

Principles for AI in Education at UCT

In relation to Vision 2030, drawing on existing principles in related policies, and the deliberations of the AI in Education working group of the OESC, this framework proposes the following principles:

UCT is committed to supporting the ethical and responsible use of AI to support teaching and learning

- UCT is committed to fostering critical AI literacies as a key competency for students and staff
- UCT is committed to maintaining a human-centred approach to education
- UCT is committed to ensuring equity and accessibility in AI use
- UCT is committed to balancing innovation with responsible implementation
- UCT is committed to supporting continuous learning and agility to adapt to AI advancements

Three pillars for AI engagement

To operationalise the principles for AI in Education at UCT, the framework promotes three organising themes which we call **pillars**. These pillars have been developed from ongoing campus engagements as well as drawing on emerging practices at universities in the sector and globally:

1. Promoting **AI literacies** for staff and students
2. Promoting and ensuring **assessment integrity**
3. Exploring and investing in **AI-enabled opportunities for innovation** in teaching, learning and curriculum design

Together these pillars seek to address both risks and opportunities providing a **roadmap** for responsible engagement and adoption of AI tools appropriate to UCT's teaching and learning mission and imperatives.

While the pillars stand alongside each other, there are clear dependencies. AI literacies is required for staff and students to better understand the possibilities for both assessment integrity and AI-enabled innovations. Promoting assessment integrity will require the investigation of AI-enabled innovations to support future assessment practices.

1. Promoting AI literacies and capabilities for staff and students

An immediate need exists for developing AI literacies among staff and students (Paskevicius, 2024). There is now a consensus that banning generative AI use or alternatively uncritically permitting all forms of AI are both unworkable and shortsighted strategies. Concerns remain that the development of academic competencies is most at risk and students may be offloading learning activities by overly relying on AI.

AI literacies involve sound knowledge about the basic functions of AI, ability to ethically apply AI knowledge, concepts and applications in different scenarios and ability to critically evaluate AI technologies, communicate and collaborate effectively with AI (Ng et al., 2021). Universities worldwide are recognising the importance of equipping graduates for the requirements of the workplace, which will to an increasing extent require sophisticated capacities to work with AI tools (see for example: Southworth et al, 2023; Cerny, 2024). Essentially AI literacies emphasises understanding "how to communicate effectively and collaboratively with generative AI technologies, as well as evaluate the trustworthiness of the results obtained" (Pretorius, 2023).

This develops understanding of what AI can be used for, what it does not do well and how to acknowledge its use. These definitions capture both intended uses and potential misuses that go beyond mere functional skills (Bali, 2024). AI literacies require cultivating critical thinkers who can use AI effectively and ethically, while being aware of its broader societal implications.

Beyond general AI literacies, expressions of uncertainty and a sense of urgency exist among those seeking to understand how AI impacts their disciplinary practices. Capacity development should consider both the opportunities generative AI presents for expanding learning in fields and disciplines as well as the challenges it poses. AI literacies need to provide practical opportunities for staff and students to learn appropriate use of different tools for their disciplinary context while also developing an awareness of the wider societal value and risks, and the capacity to critically evaluate any outputs.

AI literacies links to existing academic literacies development in information literacies and critical literacies that takes place both at a disciplinary level and through institutional channels such as the libraries, faculty orientation programmes, writing centres and research support services. While related, these existing initiatives are unlikely to be able to incorporate a specialised AI literacies capacity development without additional interventions.

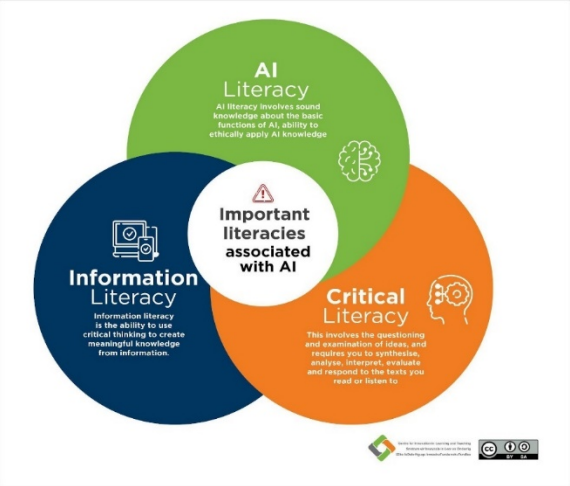

Figure 4: Overlapping academic literacies
(Staff Guide Teaching and Learning with AI Tools, CILT)

Current research initiatives can help identify attitudes and practices (for example, workload, lack of knowledge or access) that influence the misuse of AI on the one hand and resistance to explore AI on the other, to prepare the best approach to promoting AI literacies among staff and students.

Based on the literature (Ng et al., 2021; Walter, 2024; Bali, 2024 ; Jisc, 2024) and emerging practices at universities (for example: University of Johannesburg; University of Florida; University of Sydney; Oregon State University; Monash University) an AI Literacies framing for UCT focuses on five topics covering knowledge, skills and dispositions, foregrounding the promotion of critical thinking and human-centred engagement with AI tools.

Figure 5: Framework for AI literacies at UCT (CILT (2024), adapted from Bali (2024))

1. **Understand how it works:** Provide explanations of some of the key concepts and underpinning technologies in GenAI including machine learning and large language models to develop an understanding of GenAI functionality for a non-specialist audience (i.e., no prior knowledge of computer science is assumed).
2. **Examine ethical issues:** Introduce and explore the current and emerging ethical challenges within the field of GenAI to equip staff and students with the knowledge and tools to make ethical choices about the use and applications of AI. This includes questions about privacy and data protection; practices around citation and acknowledging use of AI tools; environmental and social impacts; the risks of algorithmic bias, digital inequalities and exploitative AI labour practices.
3. **Adopt a just approach:** Encourage critical reflection on the integration of GenAI in higher education with a focus on promoting participation, justice and care, and recognising that no technology is neutral. Introduce frameworks that encourage thoughtful and meaningful use of GenAI for teaching, learning and administrative practices.
4. **Assess appropriate use:** Introduce various applications and types of tools with an emphasis on comparing and evaluating their capabilities and limitations for different tasks and applications.

5. **Engage critically:** Teach effective AI tool usage through hands-on practice. Focus on prompt engineering, parameter setting, and output evaluation.

While a common AI Literacies framework will be adopted, the materials will include a range of examples and different contexts aimed at specific interest groups, such as teaching staff, support staff and students.

Guidance and support

An AI Literacies framework and learning materials will be useful resources to provide foundational skills, but some students may struggle with understanding the appropriate use of AI in their academic work. It is important for departments and teaching staff to also offer discipline specific guidance and support systems that help students navigate these technologies ethically and effectively. This could involve providing workshops, resources, or tutorials on responsible AI use and how to integrate it within academic work without breaching institutional policies.

Additionally, students may benefit from regular check-ins where their understanding of AI policies and their applications within the course can be assessed. This support can help students develop a more nuanced understanding of the role AI should play in their learning.

Maintaining ongoing communication with students about AI use and academic integrity expectations is essential. As AI tools evolve, so should the guidelines provided by educators. Regular reviews of course policies on AI use, in alignment with institutional frameworks, can ensure that students remain informed about what is expected of them.

Actively opening opportunities for student questions and feedback regarding AI policies can create a collaborative environment that fosters trust and transparency. This continuous dialogue models a human-centred approach to working with AI tools and helps maintain a positive learning environment where academic integrity is respected, and students feel supported in their educational journey.

Roadmap to support AI Literacies

What is already in place

- CILT AI guides for staff, students, and researchers
- An AI Literacies Interactive guide for staff - Self paced learning on Amathuba
- CILT has presented a number of workshops that respond to requests from various departments and faculties. The workshops have been customised to the various disciplines.
- UCT libraries workshops

What is required

Short term

- Resources on AI literacies available online for easy access by UCT community
- AI literacies training opportunities to be available in early 2025.

- Orientation programmes for first-year students to include introductory AI literacies materials

Medium/Long term

- AI literacies resources adapted and applied based on disciplinary focus
- AI literacies resources updated to respond to changing landscape
- Centralised AI hub for all UCT AI activities, workshops and presentations

Relevant policies to support AI Literacies

- Digital and Online Education Policy 2024
- Assessment Policy 2024
- Disability Policy 2021

Relevant parts of the Digital and Online Education Policy reference the use of artificial intelligence technologies to *enhance and support active learning and teaching* (4.f). It further requires staff and students to *familiarize themselves with the ethical use of AI technologies* (4.g, and 4.k) and commits UCT support units to offering staff technical *support* and *advice on the ethical and appropriate use of artificial intelligence* (4.o). Digital and Online Education Policy 2024

Principle 7 of the Assessment Policy asks for thoughtful *and creative responses in assessment design when considering the* challenges posed by generative artificial intelligence. To be able to produce "a thoughtful and creative response" requires a sound understanding of GenAI which means staff involved in assessment design require AI literacy. (Principle 7: Assessment integrity should be assured) Assessment Policy 2024

The Disability Policy commits to maintain *parity of access to education and university resources* for all students (Preamble). This is relevant in ensuring the design and format of AI literacies training considers the range of users to ensure fair access and reduce barriers. Disability Policy 2021

Resources

- CILT AI guides for staff, students, and researchers https://cilt.uct.ac.za/teaching-resources/artificial-intelligence-teaching-learning
- CILT has presented a number of workshops that respond to requests from various departments and faculties. The workshops have been customised to the various disciplines.

2. Promoting and ensuring assessment integrity

Following the rapid adoption of generative AI, concerns about academic integrity, assessment practices, and students subverting learning tasks are being raised, challenging the validity of existing assessment practices. Many of the traditional artefacts produced for assessments that are considered proxies for learning such as essays, projects and reports can now be completed partially or wholly by generative AI. There are immediate challenges to be faced - such as

managing assessment in large classes and understanding the limitations of plagiarism checkers - while dealing with the medium-term challenge of rethinking assessment outcomes.

Banning or blocking AI tools is not feasible. It is therefore crucial that the parameters for AI usage are clearly specified for every assessment task (see examples Student AI Declarations). Assessments that focus on the learning outcomes of programmes or courses so that students are aware of the knowledge and skills that the course is intended to impart, and the ways in which AI shortcuts may prevent students from gaining that knowledge, and/or the spaces where AI usage is permissible, can help to reduce misuse. In the UCT context, it is particularly important to take steps to reduce the risk of increasing inequality between students because of the cost of advanced tools.

Current AI detection tools, despite claims to the contrary, have been found to be unreliable in university contexts, often producing false positives or negatives, or easily being subverted. Unlike traditional plagiarism checkers, AI detection tools are relying on statistical methods to estimate the likelihood that a piece of text was generated by AI. This can lead to wrongful accusations of academic misconduct, damaging trust between lecturers and students and creating an adversarial learning environment. While reverting to invigilated in-person exams may be feasible in some cases, this will not be possible or desirable to meet the assessment goals or to ensure assessment validity for many assessments.

In line with global higher education trends, UCT acknowledges that assessment practices are being and will continue to need to be adapted in the short term to ensure assessment integrity and validity. Drawing on guidance from the Australian Tertiary Education Quality Standards Agency, this framework concurs that:

- **Forming trustworthy judgements about student learning requires multiple, inclusive, and contextualized approaches to assessment.** Existing assessment types may no longer be suitable on their own. This will require the use of multiple assessments of different types that when used together, provide greater trustworthiness and allow for practices that are more inclusive.
- **Assessment and learning experiences equip students to participate ethically and actively in a society where AI is ubiquitous.** New questions are being raised about what is worth assessing and, consequently, what and how students learn. Students will need to develop the ability to use AI tools while developing understandings of the ethics, limitations, biases, and implications of AI. To respond to academic integrity concerns will require incorporating these new technologies into higher education in a thoughtful and evidence-informed manner. Responding to the risk posed by generative AI needs to focus not only on what is inappropriate but also on what is appropriate.

The implication is that in the short-term existing assessments will need to be adapted, which may include a focus on programmatic assessment (rather than course level) and strategies to assess the process as well as the products of assessment. In the longer term it is likely that assessment design will be required to adequately respond to the pervasiveness of generative AI. This will require a review and reconceptualisation of the learning outcomes of a given course or qualification.

Governance and policies

The UCT Assessment Policy (adopted in 2024) provides a framework to enable the conditions for redesigning assessments. This policy recognises assessment as an integral component of the curriculum and a means to project what we value. The Digital and Online Education Policy for UCT (adopted in 2024) is promoting greater flexibility, accessibility and resilience through digital technologies, including assessment design. The UCT Disability Policy (adopted in 2021) also calls for a range of reasonable accommodations and alternative assessment modes so individuals with disabilities have equal and equitable access to opportunities.

The UCT Policy for the Prevention and Management of Academic Misconduct by Students (adopted in December 2023) expects students to "always be able to defend the truthfulness and accuracy of the work they present as their own without the aid of technologies, materials or collaboration not allowed for the assignment". Cheating to gain an unfair advantage is considered misconduct and students who use generative AI to complete an assessment are considered together with those engaging in contract cheating, where a person pays someone else to do the work. The UCT policy does permit students to use of "software that detects and corrects spelling and grammatical errors." AI use would also be permitted if this were explicitly stated in the assessment instructions.

AI tools can offer valuable support for students, but they should not replace foundational academic skills. Educators have a responsibility to help students understand why independent learning, critical thinking, and the ability to complete assessments without over-reliance on AI are essential for both academic success and personal development. Many departments and courses have developed further guidelines responding to AI and specific to their discipline and learning outcomes. Some have not permitted the use of generative AI while others have required a declaration of use as part of a plagiarism declaration. In other cases, students may use generative AI tools or require explanations justifying the appropriate use. Teaching staff should define when and how generative AI tools can be used in academic work. Students need to understand these boundaries to avoid unintentionally violating academic integrity policies.

In instances where AI is allowed, educators should specify which tools are acceptable and provide guidelines on how to acknowledge these appropriately. Requiring students to declare whether they have used AI tools in their assignments helps ensure transparency and accountability. Additionally, students should be encouraged to justify and defend the accuracy and authenticity of their work, including keeping a record or portfolio of use that they can be asked to share, particularly when AI has been involved.

There is a need to develop guides and frameworks to support assessments redesigns, ranging from short-term to longer term responses (examples from Kings College London):

- **Making your assessments less vulnerable Generative AI:** The topics may be very specific, or students may be required not to use any generative AI. This is likely only a short-term response or in a trusted environment. Redesigning assessments will likely be needed in future.

- **Incorporating possibility for AI use in assessments:** Identify appropriate uses of generative AI tools in assessment tasks, with appropriate guidelines. This is a medium to longer-term approach, where the future adoption of generative AI is recognized.
- **Adopting authentic assessment at course and programme levels:** Consider other forms or approaches to assessment where the vulnerabilities of traditional assessment to generative AI is a catalyst for facilitating Assessment for Learning. This may be a medium to longer term approach, depending on your context.

UCT acknowledges that assessment review and redesign will create additional workload for staff and tutors. The university will need to provide additional support to facilitate assessment reviews, redesigns, and assessment administration.

Emerging good practices for supporting assessment integrity

What is already in place

Initiatives to support changing assessment practices to respond to AI include:

- Assessment Studio – offered by CILT
- Staff and student guides on AI for teaching and learning – developed by CILT
- Good Practices for Assessment Guide with exemplar case studies
- Assessment redesign for AI: an interactive guide – self paced on Amathuba
- Consultations offered by CILT and through the Assessment Framework Working Group on request for departments and individuals (email: CILT Helpdesk).
- UCDG Project 4; Sub-project AI and Assessment Literacy to support AI in assessment literacy and practices to enhance assessment (2024-2026)

What is required

Short term

- The Assessment Framework Working Group (AFWG) to take forward the development of this pillar in line with its role to support the implementation of UCT's Assessment policy.
- Departments establish guidelines to enable better informed decisions about how AI might be used
- Departments to engage with students about guidelines for the use of GenAI in assignments
- Explore AI use that can be adapted for assessments, where appropriate
- Encourage and support making assessments less open to be completed by Generative AI
- Further develop the Assessment Studio to respond to evolving staff needs brought about by AI use – offered by CILT

Medium/Long term

- Support the redesign of assessments based on revised learning outcomes

- Support reconceiving authentic assessments so that they are less susceptible to AI misuse.
- Offer a short course on assessment for staff capacity building
- Encourage the use of multiple assessment types that when used together provide greater trustworthiness of the integrity of the process of assessment.
- Investigate tools to support assessment including tools to capture and assess process or which can support establishing authorship.

Relevant Policies and resources for assessment integrity

Academic Misconduct policy 2023

The UCT Policy for the Prevention and Management of Academic Misconduct by Students (adopted in 2023) expect students to "always be able to defend the truthfulness and accuracy of the work they present as their own without the aid of technologies, materials or collaboration not allowed for the assignment". Cheating to gain an unfair advantage is considered misconduct and students who use generative AI to complete an assessment are considered together with those engaging in contract cheating, where a person pays someone else to do the work. The UCT policy does permit students to use of "software that detects and corrects spelling and grammatical errors." AI use would also be permitted if this were explicitly stated in the assessment instructions.

"Cheating is the practice of attempting to gain an unfair advantage. This includes accessing prohibited materials in an examination, making use of 'essay mills', language models such as chatbots (e.g., ChatGPT and other large-language models or generative Artificial Intelligence), and any service or software that provides answers to assessments, or writes or re-writes assignments or parts thereof, other than software that detects and corrects spelling and grammatical errors. The only permissible instances of such practices are where they are explicitly permitted by the terms of the assessment instructions. In the case of group work, cheating includes students indicating that they have participated in group work when in fact they have not." (UCT Policy for the Prevention and Management of Academic Misconduct by Students).

Assessment policy 2024

The UCT Assessment Policy (adopted in 2024) provides a framework to enable the conditions for redesigning assessments. This policy recognises assessment as an integral component of the curriculum and a means to project what we value.

Academic integrity: **"**Ensuring that the process or product offered for assessment meets the criteria stipulated for that assessment is crucial for valid decision-making. Steps should be taken to promote a culture of integrity and assessment practices that promote integrity. When required, collaboration should be stipulated. The challenges posed by generative artificial intelligence require thoughtful and creative responses in assessment design." pg.9 (UCT Assessment Policy)

UCT Disability Policy 2021

The UCT Disability Policy (adopted in 2021) also calls for a range of reasonable accommodations and alternative assessment modes so individuals with disabilities have equal and equitable access to opportunities.

"The University undertakes to encourage and support UCT Academic practitioners to enable them to provide accessible teaching and learning environment/methods to students through Universal Design Principles in new course offerings. b. Educating academic staff with regard to the range of reasonable accommodations, and alternative assessment modes; and access to remote teaching and learning methods." (Disability Policy 2021)

Digital and Online Education Policy 2024

The Digital and Online Education Policy for UCT (adopted in 2024) promote greater flexibility, accessibility and resilience through digital technologies, including assessment design.

"UCT is committed to engaging students and lecturers in an active learning community through relationships of care which privileges human mediation of digital education. The use of artificial intelligence technologies should be based on responsible and ethical practices that enhance and support active learning and teaching." (Digital and Online Education Policy for UCT)

3. Promoting AI-enabled innovation in teaching, learning and curriculum design

The rapid evolution and societal uptake of AI requires a thoughtful and future-facing approach to how UCT engages with its possibilities for teaching and learning. The innovation pillar signals UCT's intent to explore, test, and where appropriate integrate AI into our educational practices. Globally, universities are at differing stages of how they are engaging with AI beyond concerns about assessment integrity and promoting assessment literacy. Some Australian universities have embraced AI as a collaborative and efficient tool, preparing students and staff to use it ethically and responsibly. While this requires significant academic upskilling, it reflects the need for universities to consider the role of AI to support or enhance their teaching and learning approaches.

Guidance and support

AI-enabled innovation in teaching and learning is premised on leveraging the affordances of these emerging tools to enhance teaching and learning as well as considering how these tools may offer potential responses and solutions to UCT's institutional imperatives, such as supporting multilingualism, curriculum change and redesign, advancing digitally enabled education and supporting student success.

To achieve this, UCT needs to give attention to developing and prioritising use cases that speak to teaching and learning imperatives and to critically evaluate AI tools. As a multi-purpose set of widely available technologies, some staff and students are already finding and implementing AI for various use cases, including building custom bots for personal and course-level use, using

AI as personal tutors, experimenting with AI tools for marking, grading and feedback, and using tools for developing course materials and assessments.

However, to move beyond pockets of localised use and to ensure this use is ethical and responsible, this framework promotes a co-ordinated and institutional approach to managing responses to AI-enabled innovative projects. This ensures that the potential benefits are made available to a larger number of people and that investments in innovation projects are appropriately scaled for efficiency and to maximize investments. Any institutional projects would also need to adhere to existing policies regarding procurement, privacy and ethical use.

Roadmap to support AI enabled innovation

What is being done

Currently there are pockets of exploration and experimentation occurring in various departments with requests for scaled up projects, access to various tools and funding requests to innovate.

Institutional projects managed through CILT that are in development include:

- AI Teaching Innovation Grant launched by the DVC T&L in January 2025.
- Exploring the use of AI tools within Amathuba for formative assessment.
- Piloting AI for generating notes from lecture videos to enhance accessibility and student learning.
- Evaluating various AI tools and use cases to assess their suitability and scalability for teaching and learning at UCT.

Short Term

- Establish a mechanism to gather data for current use cases and issue a call for new use cases. This could be via a sub-group of the OESC's AI in Education Working Group.
- Evaluate projects currently being piloted for extension or rollout e.g. formative assessment in Amathuba
- Establish a stable set of tools and technologies available to the UCT community including reviewing AI enhancements of existing licenced tools.

Medium or long term

- Explore scalability and implementation from AI grant proposals

Relevant policies for AI-enabled innovation

- Digital and Online Education Policy (2024)
- Disability Policy (2021)
- Interim: Privacy and Data Protection Policy

Roles and Responsibilities (Governance)

Various UCT policies guide the roles and responsibilities at different levels of the institution when considering the adoption and integration of generative AI. These policies ensure that all stakeholders are aware of their duties and that AI integration is approached thoughtfully and inclusively across the university. The students and lecturers at the individual level, faculties, departments, and support units at the operational level with the third category being the university executive structures. The roles and responsibilities of each stakeholder grouping will be discussed in the three categories listed to unpack the activities under each output:

- AI literacies – supporting students and staff with making use of Generative AI effectively and productively along with the ability to critically evaluate the trustworthiness and appropriateness of the results obtained.
- AI assessment integrity – ensure the integrity of teaching, learning, and assessment in an AI-mediated environment.
- AI-enabled innovations – exploration of AI tools for the effective and responsible use of AI in teaching and learning.

Students (Undergraduate and Postgraduate)

Students are responsible for engaging with AI literacies initiatives to build their understanding of how AI tools work, how to use them ethically, and how to critically evaluate the results they generate.

As specified in the Digital and Online Education Policy, 2024 (see section 6k.), students are expected to uphold academic integrity by ensuring their work reflects their own efforts, even when AI tools are used for support. Properly citing AI usage is essential to maintaining accountability and ethical scholarship. They should abide by the various policies such as UCT's Misconduct policy. Students need to understand the lecturer's approach to AI tools use and whether AI tools are allowed.

Students should be encouraged to explore AI innovations responsibly, applying AI tools to enhance their learning, especially considering accessibility and equity. Learning to use AI tools ethically and effectively can help prepare for careers where AI is a collaborative tool.

Academic and Teaching Staff

Teaching staff are in the position to take the lead in developing and enhancing AI literacy within their disciplines. This involves introducing students to guides and resources available as well AI tools relevant to their fields, advising them in using these tools critically and ethically or communicating to students if they are not allowed to use AI tools.

It is the role of teaching staff to ensure that AI use in assessments is transparent and fair and implement the UCT's Assessment policy. Some disciplines more than others will be required to design curriculum and assessments that consider AI capabilities. Staff must communicate with students regarding the use of AI in courses or, if AI is not allowed, ensure that the students are aware of the reasons this choice was made.

As specified in the Digital and Online Education Policy, 2024 (Section 6.g.), teaching staff are encouraged to become familiar with emerging technologies, explore AI innovations, and to attend training and workshops to keep abreast of AI landscape in their disciplines.

Administrative Staff

Administrative staff ensure the smooth implementation of the Digital Online Education Policy and UCT's specific administrative processes, supporting the effective use of AI across the institution.

In their work, administrative staff may be able to engage with AI innovations such as workflow automation systems powered by AI, AI-enabled scheduling tools, and chatbots to provide student support. This will enhance their digital fluency and improve their operational efficiency.

Faculty and Departmental Level

Existing committees and structures, such as Faculty Teaching and Learning Committees or departmental committees, can effectively lead the implementation of UCT-wide AI initiatives.

These committees can promote the consistent application of AI tools and policies that are tailored to their specific faculties, departments, and disciplines. With support from Faculty Teaching and Learning structures, these committees play a vital role in fostering AI literacies, maintaining assessment integrity, and driving innovation within academic programmes.

At this level, a priority will be to develop a consistent approach to AI-related academic integrity and support staff to design assessments that reflect the learning outcomes, reducing the risk of AI misuse. Departments can encourage AI innovation by piloting new tools and integrating AI into teaching and learning.

The Teaching and Learning committees can monitor and discuss emerging developments that might require adapted responses in the disciplines and contribute this feedback to the institutional level to keep the AI framework relevant.

Support departments (CILT, ICTS, Libraries, Careers Services)

Support departments play a key role in providing the infrastructure, training, and resources to provide students, teaching staff and academics with the necessary resources and training opportunities to fulfil their roles and responsibilities.

Centre for Innovation in Learning and Teaching (CILT)

As mandated in the Digital and Online Education Policy (Section 6 month), CILT should develop and update resources and guidelines for staff and students on ethical and effective AI use, offering regular training sessions. Ensure AI literacies training resources for staff and students are accessible and available on Amathuba.

Ensure these resources are integrated into existing courses and workshops. Collaborate with departments to create AI literacies materials tailored to each discipline.

Work with academic staff to design assessments that integrate AI, offering guidance on how to incorporate or restrict AI tool use. Provide workshops to help lecturers adapt their assessments in line with UCT's Assessment Policy and review course curriculum in line with the Digital Online Education Policy.

Pilot AI tools such as AI chatbots or intelligent tutoring systems in partnership with departments. Evaluate the effectiveness of these tools and expand successful innovations across more programmes, continuously collaborating with departments to refine AI integration.

Office of Inclusivity and Change (OIC) and Disability Services

Promote the adoption of inclusive approaches to the use of AI tools by reviewing policies, materials and tools.

Works with other stakeholders (like ICTS and CILT) to guide the selection and implementation of AI tools to meet the needs of students and staff with disabilities.

Collaborates with faculties to modify curricula and assessments using AI tools that offer alternative, equivalent assessment modes, ensuring fair evaluation for students with disabilities.

Information and Communication Technology Services (ICTS)

Ensure secure and reliable access to AI tools by managing the infrastructure, including licensing and user permissions, with adherence to relevant standards around digital accessibility when purchasing and implementing new technologies (Disability Policy, 2011, Section 13). Provide cybersecurity training specific to AI tools to protect user data and privacy, supporting both staff and students in safe AI use.

Provide advice and training to operational staff who can optimise AI tools to improve efficiency and streamline processes.

Ensure AI-enabled plagiarism detection and assessment platforms are integrated into UCT's learning systems, offering technical support and training to staff. Collaborate with academic departments to ensure AI tools used in assessments comply with data security protocols.

In consultation with CILT, evaluate and test a range of AI tools, both proprietary and open source, to identify the most suitable for teaching, learning, and administration. Ensure AI tools adhere to UCT's risks, security and data protection policies as well as ensuring their compatibility with current systems and supporting their integration across the university.

UCT Libraries

Offer training and guidelines to postgraduate students specifically on AI research tools and citation practices. Collaborate with other departments to make AI research and information literacy workshops available to both staff and students. Support academic staff in ensuring students are acknowledged the use of AI, aligning with UCT's academic misconduct policies. Provide tools and advice to postgraduate students on the ethical use of AI in their research and writing.

Explore emerging AI-enhanced research tools that can help students and staff conduct advanced research. Collaborate with departments to explore new AI innovations in library services, ensuring these tools enhance both teaching and research capabilities.

Careers Service

Integrate AI skills into career programmes, offering workshops to students on AI competencies needed in the job market. Work closely with industry stakeholders to ensure students are prepared with the right AI skills for their careers.

Provide guidelines to students on the ethical use of AI when preparing job applications, ensuring CVs and cover letters reflect original work. Offer one-on-one support to review applications and highlight appropriate AI tool use.

Collaborate with employers to track the impact of AI in various industries, using this information to adjust career development programmes. Regularly update students on the latest AI-driven job market trends to ensure they stay competitive. Communicate to departments and executive the AI trends in various disciplines.

Communications and Marketing Department (CMD)

Provide co-ordination for the communication of all activities on UCT's website. This AI hub on UCT's webpage should be easy to find and have links to the various AI activities and events.

Ensure clear communication about AI framework and UCT executive decisions on the use of AI. Support all departments to communicate the various roles and responsibilities in one central place on the UCT website or an appropriate mechanism that allows easy access to the various AI guides, resources and events.

Lead communication campaigns that address concerns about AI use, promoting ethical and responsible practices. Collaborate with academic departments to showcase successful AI innovations and their positive impact on teaching and learning.

Institutional level committees

The role of the Online Education subcommittee (OESC) as a subcommittee of the Senate Teaching and Learning Committee, is to ensure implementation of the AI framework through communication with the DVC Teaching and Learning and the faculties. The committee reports on the activities of the UCT AI in Education working group and reports upwards to the Senate Teaching and Learning committee.

Executive

Under the office of the DVC Teaching and Learning, set strategic goals for AI literacies at UCT, ensuring that every department is aligned in offering AI-related training and resources. Monitor the progress of AI literacies programmes and adjust institutional support where necessary.

Oversee the development and implementation of AI assessment policies, ensuring they uphold UCT's academic integrity and align with the broader educational mission. Provide oversight to ensure assessments are fair and transparent across all departments.

Drive the adoption of AI tools across UCT, leading initiatives that encourage collaboration between departments. Foster an institutional culture of innovation, where AI is integrated responsibly into both teaching and operational practices.

Consider establishing a centralised AI hub — a portal where all stakeholders can access curated resources, guides, and activities. This hub could also serve as a platform to promote AI-specific events, making it easier for departments, staff, and students to stay informed and actively participate in UCT's AI initiatives. Such a hub would ensure a more coherent streamlined approach to AI integration across the university. This hub may align with or be part of the forthcoming VC's Strategic AI Initiative.

Implementation and Review

The implementation of the AI for Education Framework is not a fixed process but a dynamic, evolving effort that will respond to the rapidly changing landscape of artificial intelligence. The table below outlines the activities that the various stakeholders can work towards achieving over the next 12 months. The goal of the process is to gather feedback from faculties about what needs refinement with the intention of reaching a sufficient consensus to adopt a policy for the institution.

Stakeholder	**Activities and Outputs**	**Timeline**
Executive Level (Office of DVC Teaching and Learning)	UCT is committed to supporting the ethical and responsible use of AI, fostering critical AI literacy as a core competency for staff and students, and ensuring equity and accessibility in AI use. Review AI reports from the DVC TL on all outputs planned and implementation of the AI framework	Short Term (12 months): Ensure faculties develop appropriate guidance for use of AI. Long Term (12 to 24 months): Implement AI equity policies, monitor progress and evaluate outcomes.
Online Education Sub-Committee	Lead the consultations on AI in education framework and guidelines for integrating AI in teaching and learning. Collaborate with departments to implement the framework across faculties, ensuring alignment with institutional policies. Play the role of a centralised AI reporting structure gathering inputs from those coordinating activities across faculty and departments.	Short Term (0-6 months): Co-ordinate the consultation and framework reviewing process. Medium Term (12 months): Gather feedback about AI tools in education. Long term (12-24 months): Based on the feedback,

		draft a policy on AI for the institution
Teaching and Learning Committees	Work with academic staff to redesign assessments that either incorporate AI or protect against AI misuse. Review curriculum in the specific disciplines to promote validity, critical thinking, creativity, and ethical use of AI tools. Gather data on AI use across disciplines. Aligned decisions with UCT's relevant policies. Engage with HoDs and communicate the implementation of the AI framework to ensure consistency in AI use in assessments and teaching practices.	Short Term (0-6 months): Collect data and ensure alignment with UCT policies. Long Term (6-12 months): Implement policies and review alignment with AI framework.
CILT	Develop self-paced AI literacies learning materials, workshops, guides, and resources for staff and students. Convene an "Innovation in AI" working group to allocate grants for proposals	Short Term (0-6 months): Launch AI literacies training resources for staff and students. Gather evidence of use and adapt training resources based on feedback. Long Term (6-12 months): Expand pilot projects and integrate AI tools into learning modules.
Libraries	Organise AI capabilities workshops and training focused on ethical and critical engagement with AI tools. Work with other departments to communicate the ethical use of AI in research, teaching and learning. Provide AI-powered research tools and guides for students and academic staff.	Short Term (0-6 months): Roll out workshops and initial AI resources. Long Term (6-12 months): Fully integrate AI-powered tools into library services.
Careers Service	Develop educational content and resources on AI in the World of Work Integrate AI World of Work trends, skills and ethical use for application processes in Careers Service offerings.	Short Term (0-6 months): Include AI in the World of Work content in the Career Guide. Make digital resources available on the Careers website and market it through Careers

	Collaborate with employers and faculties on tracking the impact of AI on industries.	Service social media channels. Long Term (6-12 months): Fully integrate information on AI skills for the workplace in all Career Readiness and Employability offerings (including webinars, workshops, relevant resources, one-on-one CV reviews and career consultations)
ICTS	ICTS should collaborate with the Executive Level to ensure that all students, regardless of background, have access to necessary AI tools and training. This could include offering open-source AI tools, providing access to AI-enabled devices on campus, and creating subsidised data packages for online learning resources. Special attention should be given to ensuring that students with disabilities have accessible AI resources.(Queried: Section to be changed based on a discussion with ICTS)	
Communications and Marketing department	Provide a link on the UCT website, collating all AI-related activities, guides, and policies. Communicate through the Executive any strategic AI related decisions. Support the implementation of the AI framework by communicating progress and updates.	Short Term (6 months): Develop and launch the AI Hub. Long Term Ongoing promotion of AI-related activities and tracking engagement.
HoDs (Heads of Departments) or Teaching and Learning Committees	Provide teaching staff with AI resources, guides and policies and customise them to the specific discipline. Conduct workshops and engagements on AI ethics and integrate AI literacies into core curriculum modules. Review and adapt assessments to incorporate AI tools or safeguard them against AI misuse.	Short Term (0-6 months): Workshops and curriculum review. Long Term (6-12 months): Full integration of AI literacies in the curriculum and AI-resilient assessments.
Teaching staff, academics, administrators and tutors	Provide discipline-specific AI tools and training for students. Encourage critical engagement with AI outputs. Revise assessments and curricula to reflect AI-driven changes in education. Prepare	Short Term (0-6 months): Access AI literacies training and courses. Align current UCT policies with ethical use of AI tools.

	students for AI-driven professional environments and ensure ethical AI use in their academic work.	Report to HoDs or Teaching and Learning on incidences related to AI use. Introduce AI tools and revise assessments. Long Term (6-12 months): Ongoing curriculum updates and incorporation of AI-driven teaching innovations.
Students (undergraduate & postgraduate)	Build AI literacies skills to critically evaluate AI outputs and apply AI effectively in academic and professional contexts. Engage with AI tools responsibly, adhering to AI ethics policies.	Short Term (0-6 months): Participate in AI literacies courses. Long Term (6-12 months): Demonstrate AI proficiency in assessments and projects.

Glossary

While many of these AI terms are widely used and generally understood, their specific application within the context of higher education needs clarification. It's easy to assume that the terminology is self-explanatory, but when applied to AI in education, these concepts take on new dimensions. The purpose of this glossary is to ensure that stakeholders — such as students, lecturers, and faculty — clearly understand how AI can be used to support learning, teaching, and administrative processes in a university setting. By defining these terms in an educational context, we remove ambiguity and ensure AI tools are applied effectively and ethically in higher education environments.

Adaptive Learning	Subject or course material is adjusted based on the performance of the learner. The difficulty of material, the pacing, sequence, type of help given, or other features can be adapted based on the learner's prior responses. https://circls.org/educatorcircls/ai-glossary
AI Literacies	The ability for university students, lecturers, and administrators to understand how AI works in an academic context. This includes knowing how to use AI tools responsibly in coursework, research, and teaching, and how to make ethical decisions when relying on AI-generated content.
Artificial Intelligence (AI)	Computer systems that are designed to perform tasks associated with human intelligence, such as pattern recognition or decision making. This framework relates to "narrow" AI (or ANI) which means technologies that are programmed to perform a single task, such as predicting the weather or playing chess. AI can also refer to the

	theoretical capability of “General” AI (or AGI) or Super AI that can successfully perform any intellectual task that a human being can without human supervision. AGI and super AI do not yet exist. AI in education includes the technology designed for academic tasks like marking assignments, analysing student performance, or supporting online learning. This version of AI is not general but focused on improving educational processes, supporting faculty, and helping students succeed.
Bias in AI in Education	When AI used in higher education gives inaccurate or unfair results due to biases in the data it learned from. For example, an AI system that recommends student resources might favour certain groups over others. It is crucial to address these biases to ensure equal opportunities for all students and staff.
ChatGPT	A tool specifically useful for students and faculty, allowing them to ask questions, generate text, or get help with academic writing. While it can be a helpful resource in research or assignment preparation, its outputs should be critically assessed, as it may not always be accurate.
Deep Learning	An AI technology that helps with more complex tasks like analysing student data or predicting academic performance. It can be useful for lecturers to identify which students need help or for admin to optimise course offerings based on trends. However, deep learning models are often hard to interpret, so human oversight is important.
Generative AI for University-Level Tasks	A broad category that refers to AI that can create – or “generate” – data, including text, images, video, or audio. ChatGPT is a text-based form of generative AI; other tools, such as DALL-E for visual art and Runway for video, are rapidly growing in popularity and prominence. AI that helps create educational materials such as course content, research summaries, or even study aids. For instance, lecturers can use generative AI to design quizzes, while students might use it to get help writing essays or preparing presentations. Generative AI should be used carefully to maintain academic integrity.
Human-centered approach	A human-centered perspective sees AI systems working with humans and helping to augment human skills. People should always play a leading role in education, and AI systems should not replace teachers. https://circls.org/educatorcircls/ai-glossary It emphasises that AI tools be used to meet the specific needs of university students, lecturers, and administrative staff. It ensures that AI supports learning, teaching, and management tasks in ways that prioritise human well-being, fairness, and inclusivity.
Large Language Model (LLM)	An advanced AI that helps with writing, research, and academic communication. These models can draft essays, explain difficult concepts, or provide feedback on student work, but they should be used as a support tool, not a replacement for critical thinking or academic rigour.

Machine Learning	AI systems that analyse patterns in student or institutional data to make predictions. For example, machine learning might predict which students are at risk of dropping out based on their behaviour, allowing universities to provide timely support. This AI is tailored to academic data and is not used for general AI tasks.
Neural Networks	AI systems that process large amounts of academic data, helping with things like automated marking or adaptive learning systems. Neural networks can identify gaps in student understanding, allowing lecturers to tailor their teaching methods. These models are designed to support education-specific outcomes.
Transformer Model in Academic Settings	An AI model particularly useful for language processing in education. It can summarise research articles, help lecturers mark student papers, or assist students in learning new languages by understanding sentence structure and context. This model is designed for academic tasks, not for general AI applications.
Transformer Model in Ethical AI Use	The practice of using AI in ways that are fair, transparent, and beneficial to all university stakeholders. For example, using AI to help students without relying too heavily on automated marking systems that could make unfair judgements. Ethical AI use ensures that technology supports rather than harms the educational process.

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UCT Resources

- Staff Guide: Assessment and academic integrity in the age of AI
  Bitly Link: https://bit.ly/3MtP0IV
- Staff Guide: Teaching and learning with AI tools
  Bitly Link: https://bit.ly/3NLL5ZD
- Student Guide: Using ChatGPT and other AI tools in education
  Bitly Link: https://bit.ly/3XqrsLm
- Staff Guide: Developing effective prompts for generative AI tools
  Bitly Link: https://bit.ly/4dXYO9Q
- Researchers' Guide: Ethical use of generative AI for research purposes
  Bitly Link: https://bit.ly/3yTsA0G

UCT Policies

- Academic Misconduct Policy 2023
- Digital and Online Education Policy 2024
- Assessment Policy 2024
- Disability Policy 2021

Website:

- https://libguides.chapman.edu/AI/glossary
- https://aascu.org/resources/a-university-leaders-glossary-for-ai-and-machine-learning/
- https://circls.org/educatorcircls/ai-glossary
- Kings College London 'AI Guidance' website