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Chapter 5 – GenAI Integrity Strategies

5.1 Vulnerable Assignments

5.1 Vulnerable Assignments	
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Contents	<p>As discussed in earlier chapters, the advent of GenAI has introduced a new set of challenges for HE, particularly in relation to assessment and learning outcomes. Unlike earlier technologies such as VR or even the internet, GenAI tools, such as ChatGPT, can perform complex academic tasks at or above graduate level, making them both a valuable resource and a potential concern for academic integrity. For example, these tools can help with:</p> <ol style="list-style-type: none"> 1. <u>Research Proposals</u>: AI can assist in drafting and refining hypotheses and methodologies. 2. <u>Literature Reviews</u>: AI's ability to summarize and synthesize information can be misused for quick compilation without deep understanding. 3. <u>Lab Reports</u>: AI can help in writing methodology, results interpretation, and discussion sections. 4. <u>Data Analysis Projects</u>: Coding assistance and data interpretation are areas where AI can contribute significantly. 5. <u>Case Studies</u>: AI can provide background information and potential analysis frameworks. 6. <u>Grant Applications</u>: AI can be used to draft and edit proposals. 7. <u>Presentations</u>: AI can assist in creating content and visual aids. 8. <u>Reflective Journals</u>: AI's role should be limited, as these are personal and subjective. 9. <u>Group Projects</u>: AI can support research and collaboration but may undermine individual contributions. 10. <u>Thesis/Dissertation</u>: AI can aid in drafting sections, which risks originality. 11. <u>Data Analysis Scripts</u>: AI can write and debug code for data analysis. 12. <u>Simulation Models</u>: AI can assist in developing and testing models. 13. <u>Bioinformatics Tools Development</u>: AI can contribute to initial code and algorithm design.

14. Machine Learning Projects: AI can be used to set up and refine machine learning models.
15. Algorithm Implementation: AI can aid in coding and testing algorithms.



(Image produced in DALL-E February 2024)

This compels us, as educators, to rethink not only *what* we teach, but *how* students engage with learning, and, importantly, the kinds of competencies they will need as they enter life sciences and related professions.

Assignments requiring lower cognitive skills, as categorized by the revised Bloom's Taxonomy, such as tasks involving remembering or understanding, are particularly susceptible to AI misuse. Advanced AI models like GPT-4 have demonstrated high accuracy in these areas. For instance, GPT-4's performance in answering psychosomatic medicine exam questions yielded a high success rate: 93% for detailed prompts and 91% for short prompts. Additionally, GPT-4's scores exceeded the student average in seven out of nine graduate-level biomedical science examinations and surpassed all student scores in four exams. The model excelled in fill-in-the-blank, short-answer, and essay questions but performed less effectively on questions involving figures with simulated data and those requiring hand-drawn responses. Therefore, teachers must be aware that multiple-choice questions, often reliant on lower-order skills, are easily completed by AI and should either be revised to mitigate risk or administered in controlled environments where AI tools cannot be used.

	<p>Moreover, recent advancements in AI, such as OpenAI's o1 model, have significantly improved performance in complex reasoning tasks. The o1-preview model achieved a near-perfect score on the <u>Dutch 'Mathematics B' final exam</u>, scoring 76 and 74 out of 76 points in two separate tests. This model employs techniques like 'Chain-of-Thought' prompting (see section 3.5), enabling step-by-step reasoning before generating responses, and has achieved notable results in various domains, including mathematics and coding.</p> <p>Considering it is nearly impossible to fully 'GenAI-proof' courses and assignments, it's important for you to evaluate their impact on your education and assessment practices. This unit will introduce thoughtful ways and strategies to incorporate GenAI into your courses and reduce its misuse (5.2), suggests potential adjustments to assessment strategies to protect academic integrity (5.3), particularly in writing assignments (5.4), introduces an assignment aimed at fostering creative and critical thinking (5.5), provides examples of ways to leverage GenAI in coding assignments (5.6), example disclosure agreements (5.7) and rubrics (5.8), you can adopt for your education.</p>
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5.2 Designing Thoughtful AI Use in Your Courses.

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Contents	<p>GenAI tools are capable of performing a number of different tasks from writing code and developing research questions, to writing entire research papers. As these tools become more integrated into our everyday software such as Microsoft Word and Excel, it will be challenging to keep this technology out of our learning environments. Therefore, it is important to set clear boundaries on how <i>you</i> think these tools can be used. The GSLS GenAI Guidelines for Student, Teachers, and Research/Supervision have been designed to help support you with this.</p> <p>One of the most important things you can do to understand how these tools are being used in your courses is by test driving them on your course material. Pay special attention to how these tools answer your questions; what words they use, how are the sentences and arguments structured. The more familiar you are with GenAI responses, the more likely you will be able to detect their use.</p> <p>Below we have provided some additional tips on how you can adapt your course/s to help reduce the overuse of GenAI. By incorporating these strategies, you can not only help reduce the overuse of GenAI in your course, but it can also encourage a more collaborative approach to GenAI, while still embracing traditional academic skills such as writing assignments.</p>

	Type of education	Explanation	Example
	In-Class Assignments	Increase the frequency of in-class assignments to create opportunities for guided learning. While students may still access GenAI tools, the in-class context allows educators to establish clear boundaries for their use, initiate discussions about responsible integration, and provide formative feedback in real time. This fosters transparency and helps students reflect on <i>when</i> and <i>how</i> AI tools support their own thinking.	
	Oral Presentations and Discussions	Implement more oral assessments, such as presentations or debates, where students present their understanding and interpretation of topics. This encourages engagement and reduces reliance on AI-generated content.	
	Customised Questions	Design assignment questions that are specific to your course content, discussions, and experiences. These questions encourage students to demonstrate their engagement that goes beyond generic outputs.	'In our last lecture we discussed [topic]. Given the class discussion, what conclusions can be made about [topic]? Please provide examples from the discussion to support your conclusions.'
	Embed Critical Thinking with Process and Reflection	Design tasks that go beyond surface-level analysis by requiring students to document their reasoning, reflect on their learning, and engage creatively. Move away from an end-product focus to a process focus.	Have students analyse a complex case study and pair that with process notes and reflective commentary, therefore, making it harder to outsource the entire task and work in a more collaborative manner. I even ask students to be purposefully be subjective but ground it with proof.

	Encourage human qualities (courage, creativity, awareness, integrity, curiosity, and resilience)	Provide safe environments where students can take intellectual risks, explore complex problems, and push boundaries. Embed failure and uncertainty into you education and teach resilience and thoughtfulness.	In a research-based project, encourage students to tackle more ambitious topics, ones that might fail or not yield clear results. Have them reflect upon what made the project difficult, what was learned through failure or complexity, and how their approach evolved.
	Peer Collaboration and Review	Foster a collaborative environment where students work together on projects and peer-review each other's work. This approach can encourage original thought and minimises the need and desire to overuse GenAI.	

5.3 General Advice on Adapting Assessment Strategies and Criteria

5.3 General Advice on Adapting Assessment Strategies and Criteria	
Activity type	Page
Contents	<p>The presence of GenAI has created the need to re-evaluate our assessment strategies. While fully 'GenAI-proofing' courses is not possible, there are practices that can be adopted to help uphold academic integrity and align with the GSLS learning objectives. Below we have provided some general suggestions on how you can adapt your assignments and assessment criteria.</p> <p>1. Set Clear Boundaries and Expectations</p> <p>Define how and to what extent GenAI tools can be used in assignments, including a GenAI usage policy in syllabi and assignment instructions. This could include a disclosure agreement for students to state the extent of GenAI usage in their submissions, promoting transparency and accountability. Regular discussions about the ethical implications of using GenAI in academic work can also encourage students to consider their responsibilities of using these technologies.</p> <p>2. Emphasize and Assess Argument Quality and Evidence Use</p> <p>Consider modifying grading rubrics to prioritize the quality of the argument and the use of relevant, well-interpreted evidence, focusing less on grammar and sentence structure. For an example see unit 5.7.</p> <p>3. Verification of Sources</p> <p>Verify sources thoroughly to counteract potential inaccuracies from GenAI tools. Requesting students to provide links to their sources in the bibliography can aid in this process and reduce your workload. Additionally, adopting a citation style like APA, which requires page numbers for in-text citations, can help ensure the validity of references and streamline your assessment process.</p>

4. Personalised Reasoning Assessment

Aim to assess how students personalise their reasoning and arguments, encouraging them to move beyond generic responses that might be generated by GenAI tools.

5. Layered Assignment Design

Consider structuring assignments in stages, where students submit different versions over time. This approach not only enables monitoring of their progress but also allows for distributing the final grade across these stages. It also can reduce the pressure to use GenAI for completing assignments and rewards the learning process. See unit 5.4 on how to do this with writing assignments.

6. Explicit Integration of GenAI in Assignments

Where appropriate, acknowledge the role of GenAI as a tool. Its use could be suggested for initial drafts or brainstorming, with a requirement for students to critically assess and develop upon the AI-generated content. Students should always have the right to opt-out of using LLMs if they wish. In this case, you could provide an example LLM output and have them critique and reflect upon the answer.

7. Incorporate GenAI Usage in Rubrics

Adjusting rubrics to account for how students use GenAI. This includes evaluating whether they've used it ethically, effectively, and critically. See example rubrics in unit 5.7.

8. Use of Annotated Submissions

Additionally, you could ask students to submit annotated versions of their work, indicating which parts were assisted by AI and explaining their modifications and rationale. Including reflective elements where students describe their use of GenAI, how they modified it, and its impact on their learning process could be insightful.

If you are still struggling with what and how to adapt your curriculum and assessment criteria you can contact the GSLSGenAISupport@umcutrecht.nl for help.

5.4 Writing Assignments

5.4 Writing Assignments	
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Contents	<p>Units 5.1-5.3 have highlighted the susceptibility of writing assignments to GenAI overuse. However, these assignments remain a pillar of education, crucial for developing skills such as synthesising information, critical thinking, and coherent articulation of thoughts. The challenge, then, is not to eliminate but to evolve these assignments and the way we assess them. This section provides some helpful strategies for effectively designing and assessing writing assignments in a way that acknowledges GenAI's presence while preserving their educational value.</p> <p>> <u>Detecting GenAI</u></p> <p>Currently, there are no assessment tools that can accurately detect GenAI content. However, when assessing writing assignments consider the following indicators that may suggest GenAI involvement:</p> <p>1. Uniform and Repetitive Writing Style: GenAI tools tend to produce text with a consistent style that may lack the unique voice or idiosyncrasies of a student's writing. They can also be very repetitive; making the same point over and over again. They also often provide a summary at the end of each main point, which can be a watermark for its usage.</p> <p>2. Overly Flourished Language or Unnatural Language: GenAI tools often produce text with vocabulary and phrasing that may not match a student's established writing style. They also tend to inflate points, overly formalise content with unnecessary descriptive language and transition words (therefore, moreover, additionally), and overuse punctuation marks like the em dash (—). While the em dash is a legitimate punctuation mark, its excessive use might indicate AI involvement. It's important to note that reliance on stylistic elements alone is not a definitive indicator of AI-generated text, as these features are also consistent with novice writing.</p>

3. Inaccurate or Invented References: GenAI tools have enhanced their ability to provide citations and references. However, these tools still produce inaccurate or fabricated references, leading to misinformation. Because they search the entire web and not just peer reviewed journals, some sources used to support arguments may not be appropriate for academic work. It is, therefore, crucial for educators and students to carefully verify all citations and data used. For further guidance on proper referencing practices, see unit 5.3.

4. Biases and Inaccuracies: GenAI responses can exhibit biases or factual inaccuracies. See 2.7 for more details.

5. Information Confusion: GenAI might mix up information, altering sentences and their meaning.

One of the best ways to identify GenAI generated text is to familiarise yourself with its output and when possible a student's writing. If you suspect that a student may have misused an AI tool, initiating a discussion with the student should always be the first step. See the [GSLS GenAI Teacher's Guide](#) for step-by-step advice on how to handle suspected misuse.

> Reducing GenAI Use in Writing Assignments

1. Set clear boundaries: Define how and where you think GenAI tools can be used in writing assignments. This should include how students report usage. See example disclosure agreements in unit 5.6.

2. In-class assignments: Conduct parts of the assignment during class time. This allows for direct observation and guidance. Students will also be less likely to use the tools in an unauthorised way.

4. Encourage original thought: Assign tasks that require personal insights or unique perspectives, which are challenging for GenAI to replicate.

5. Group projects: Encourage collaborative work where students discuss and develop ideas together. Group dynamics often bring out individual perspectives and reduce the likelihood or need for GenAI dependency.

6. Break down and re-weight assignments: Segment larger assignments into smaller, process-focused tasks. This approach

emphasizes the importance of each step in the research and writing process, and allows for more frequent assessment points, reducing the temptation to use GenAI for major portions of the work.

7. Adding GenAI to rubrics: As mentioned in unit 5.3, consider adding GenAI usage in your rubric evaluation. For further details of what this could include see unit 5.7.

> Example Assignments

Scaffolded Writing Assignment

Aligning assignment design with clear learning objectives is crucial in determining the appropriateness of scaffolding in writing assignments. Scaffolding, which involves breaking down complex tasks into manageable steps, can enhance student learning by emphasizing the process over the final product. However, its implementation should be guided by the specific goals of the course or assignment.

Considerations for Implementing Scaffolding:

1. Learning Objectives: Evaluate whether the primary aim is to develop students' writing processes, critical thinking, and research skills. If so, scaffolding can be highly effective.
2. Class Size: Recognize that scaffolding requires providing feedback at multiple stages, which can be challenging in large classes. Strategies such as [peer reviews](#) and [collaborative learning](#) can help manage the workload.

Assignment

Developing a Research Question (5-10%):

Start by having students formulate and refine a research question. This stage tests their ability to identify and focus on a relevant and researchable topic. You can monitor this over multiple weeks as the students become more involved in the subject.

Example: "Submit a one-page proposal outlining your initial research question for the project on [specific topic], including why it's

significant in the field of [subject area]." You could even have students work on this in class or in teams.

A familiar template you can use is:

- I study....[topic]...because I want to find out why/how/to what extent...[question]. In order to understand....[rationale or motivation].

Writing the Methodology (10%):

Students should detail the methods they plan to use in their research. This assesses their understanding of various research techniques and their applicability.

Example: "Draft a methodology section explaining the approaches you will use for your research on [topic], justifying your choices." This methodology can be part of the final submitted paper.

Critical Evaluation of Sources/Literature (10-15%):

Assign a task where students critically review literature relevant to their topic. This tests their ability to analyse and synthesise information from various sources.

Example: "Provide a critical literature review related to your research question, highlighting key debates and gaps in the existing research."

This can help them write up their introductions and final discussions of their research papers.

Annotated Outline of Final Project (10-15%):

Have students prepare an annotated outline of their final project, explaining their source selection and data focus.

Example: "Create a detailed outline of your final paper, including any preliminary findings and relevant literature." This not only helps students think about their final report but also a task very difficult to complete by GenAI tools.

Include a Presentation (10-20%):

Require students to present their findings or arguments as part of the assignment. This oral component can demonstrate their personal grasp of the material and provide an additional layer of understanding beyond the written work.

Reflection on the Research and Writing Process (10%):

A reflection paper can help students articulate their learning journey and the challenges they faced.

Example: "Write a reflection on your research process, discussing how your understanding of the topic evolved and any difficulties you encountered."

By adopting this structured approach, you can ensure a more holistic assessment of students' research skills, critical thinking, and ability to engage with complex topics. This method not only evaluates the final product but also the valuable learning process leading to it.

The remaining % would be allocated to the completed assignment or any other in-class assignments.

For comprehensive guidance on scaffolding assignments see these links below:

[Generative AI & Writing Assignment Design](#)

[Assignments and Generative AI](#)

5.5 Creative and Critical Thinking Exercise

5.5 Creative and Critical Thinking Exercise	
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Contents	<p>Designing assignments where students are challenged to think critically, creatively, and ethically about complex problems can not only be a valuable exercise, but it can also be a good way of assessing students' knowledge and understanding with minimal reliance on GenAI tools.</p> <p>Assignment Title: "Ecosystem Restoration Challenge"</p> <p>Description: In this assignment, student groups are tasked with designing a comprehensive plan for restoring a degraded ecosystem within a specific geographical area. The goal is to encourage creative and critical thinking while applying ecological principles.</p> <p>Key Components to Reduce GenAI Overuse:</p> <ol style="list-style-type: none"> 1. Working in groups 2. In class work 3. Presentation 4. Self-reflection piece <p>Where GenAI can be used:</p> <p>At the start of the assignment, it's important to set clear guidelines on how GenAI tools may be used. For this assignment, GenAI tools can be quite helpful, for example, in brainstorming ideas, structuring arguments, or designing multimedia images. Clarity and transparency are crucial. If there's a concern about overuse, consider having students work on GenAI-assisted parts in class, which helps reduce the likelihood of unauthorised use.</p> <p>Instructions:</p> <ol style="list-style-type: none"> 1. <u>Select a real-world degraded ecosystem:</u> Student groups choose an actual ecosystem that has been negatively impacted by human activities (e.g., deforestation, pollution, habitat destruction).

	<p>2. <u>Identify key ecological issues:</u> They must analyse the ecological issues that have led to the degradation of the chosen ecosystem. This includes understanding the causes and consequences of the problem.</p> <p>3. <u>Develop a restoration plan:</u> Based on their analysis, the groups create a detailed restoration plan. This plan should address the following aspects:</p> <ul style="list-style-type: none"> • Species selection: Identify native plant and animal species suitable for the ecosystem. • Habitat reconstruction: Design strategies for rebuilding habitats and ecosystems. • Monitoring and assessment: Establish methods for monitoring progress and assessing the success of the restoration. • Community engagement: Consider involving local communities and stakeholders in the restoration process. <p>4. <u>Justify their choices:</u> Groups must provide a well-reasoned argument for each element of their restoration plan. They should explain why they selected specific species, habitat reconstruction methods, and community engagement strategies.</p> <p>5. <u>Ethical considerations:</u> Encourage them to reflect on the ethical implications of their restoration plan. How does their plan consider the well-being of the ecosystem, wildlife, and local communities?</p> <p>6. <u>Presentation:</u> the groups will then present their restoration plan to the class, highlighting the creative and critical thinking that went into their choices. They can make an infographic, video, or whatever creative way they want to present their findings.</p> <p>7. <u>Self-reflection piece:</u> Conclude the project with a brief reflective essay where individually students discuss their key learnings and personal contributions. They should identify specific insights gained, critically evaluate their role and input within the group, and consider how their approach to the project reflects ethical reasoning drawing on specific examples from working with their team. This reflection will not only deepen their understanding, but also provide valuable insights for grading their engagement and understanding of the assignment.</p>
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5.6 Leveraging LLM in Coding Assignments

5.6 Leveraging LLM in Coding Assignments	
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Contents	<p>Below is a list of ways to Leverage LLMs in Coding Assignments. For further advice and ideas you can also see the Utrecht University Generative AI for Computing Education Teaching Materials.</p> <p><u>Ways LLMs Can Help in Coding Assignments</u></p> <p><u>Understanding Concepts:</u></p> <ul style="list-style-type: none"> • Explanation of Coding Concepts: ChatGPT can explain complex coding concepts, such as object-oriented programming, recursion, or data structures. • Learning New Languages: Provide tutorials and examples for learning new programming languages. • Code Syntax and Semantics: Explain the syntax and semantics of programming languages. <p><u>Planning and Designing:</u></p> <ul style="list-style-type: none"> • Algorithm Design: Assist in designing algorithms by discussing possible approaches and their efficiency. • Flowcharts and Pseudocode: Help in creating flowcharts and writing pseudocode before actual coding. <p><u>Writing Code:</u></p> <ul style="list-style-type: none"> • Code Snippets: Provide code snippets for common tasks (e.g., reading a file, creating a plot, connecting to a database). • Library Recommendations: Suggest libraries or frameworks that are suitable for specific tasks. • Function and Class Design: Help design functions and classes by discussing best practices and design patterns. <p><u>Debugging and Troubleshooting:</u></p> <ul style="list-style-type: none"> • Error Messages: Interpret error messages and suggest possible fixes.

	<ul style="list-style-type: none"> • Common Bugs: Identify common bugs and suggest debugging strategies. • Code Review: Review code to identify potential issues or improvements. <p><u>Optimizing Code:</u></p> <ul style="list-style-type: none"> • Performance Tips: Provide tips on optimizing code for better performance. • Refactoring Suggestions: Suggest ways to refactor code to improve readability and maintainability. <p><u>Documenting Code:</u></p> <ul style="list-style-type: none"> • Commenting: Help in writing meaningful comments for code. • Documentation: Assist in creating documentation for code, including docstrings for functions and classes. • ReadMe Files: Help draft ReadMe files for projects, explaining how to set up and use the code. <p><u>Learning Resources:</u></p> <ul style="list-style-type: none"> • Tutorials and Guides: Recommend tutorials, guides, and other learning resources. • Practice Problems: Suggest coding practice problems and challenges to improve skills. • Q&A Sessions: Conduct Q&A sessions to clarify doubts and answer specific questions. <p><u>Project Management:</u></p> <ul style="list-style-type: none"> • Task Breakdown: Help break down a large project into smaller, manageable tasks. • Version Control: Explain the use of version control systems like Git and best practices for collaborative coding. • Deadline Management: Provide tips on managing deadlines and prioritizing tasks. <p><u>Testing and Validation:</u></p> <ul style="list-style-type: none"> • Unit Tests: Assist in writing unit tests to ensure code functionality. • Test Cases: Suggest test cases to cover different scenarios and edge cases. • Mock Data: Provide mock data for testing purposes.
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Soft Skills:

- Code Collaboration: Provide tips on collaborating with others on coding projects.
- Presentation Skills: Help prepare presentations or reports on coding projects.

Example of Usage ScenariosUnderstanding Concepts:

Student: "ChatGPT, can you explain what a binary search tree is and how it works?"

ChatGPT: "A binary search tree (BST) is a data structure where each node has at most two children..."

Writing Code:

Student: "ChatGPT, how do I read a CSV file in Python?"

ChatGPT: "You can use the pandas library to read a CSV file. Here's an example:

```
import pandas as pd; data = pd.read_csv('file.csv')."
```

Debugging:

Student: "ChatGPT, I'm getting a 'TypeError: unsupported operand type(s)' error in my code. How do I fix it?"

ChatGPT: "This error usually occurs when you try to perform an operation on incompatible types. Check the types of the variables involved..."

Documenting Code:

Student: "ChatGPT, can you help me write a docstring for this function?"

ChatGPT: "Sure! Here's an example docstring: """This function calculates the factorial of a number. Parameters: n (int): The number to calculate the factorial for. Returns: int: The factorial of the number. """

	<p><u>Testing and Validation:</u></p> <p>Student: "ChatGPT, how do I write unit tests for my function?"</p> <p>ChatGPT: "You can use the unittest module in Python. Here's an example: <code>import unittest; class TestMyFunction(unittest.TestCase): def test_case1(self): self.assertEqual(my_function(5), 120).</code>"</p> <p><u>Conclusion</u></p> <p>By integrating LLMs like ChatGPT into coding assignments, students can receive personalized guidance and support throughout the coding process. This approach not only helps them understand and overcome specific challenges but also encourages independent learning and critical thinking. By using the BRAVE(R) framework to structure their interactions, students can effectively leverage LLMs as a valuable tutor, enhancing their coding skills and overall understanding of programming concepts. Students should, however, always be allowed to opt-out of using a LLM in their assignments. In this case, you can provide the example LLM output and have the student critique and reflect upon it.</p>
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5.7 Example GenAI Disclosure Agreements

5.7. Example GenAI Disclosure Agreements	
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Contents	<p>For each course or programme you teach or oversee, it's important to give students clear guidelines on how Generative AI tools should and shouldn't be used. We've provided a few examples below that you can adjust to fit the needs of your specific course or programme. Feel free to use and adapt them as needed. Please note that for written assignments it is mandatory for students to provide a disclosure agreement (see chapter 1.3).</p> <p>EXAMPLE DISCLOSURE AGREEMENTS</p> <p>AI Disclosure Agreement for Assignments:</p> <p>This course permits the use of GenAI tools for [...<i>fill in</i>...]; however, it is imperative that all artificially generated material is explicitly identified. Upon submission of your assignment, you are required to disclose the extent to which these tools were employed (e.g., ChatGPT, Gemini, etc.). Any material generated by GenAI must be properly cited, indicating the model source in parentheses or a footnote. At the end of your paper please include the following statement. Failure to adequately disclose your GenAI use will be dealt with in the same way as fraud.</p> <p>This paper used (did not use) GenAI for the following components: <i>Choose none to all of the following</i>: brainstorming, outlining, sentence generation, study design, editing, or other (when other please provide a description of use).</p> <p>AI Disclosure Agreement for Courses:</p> <p>Example 1</p> <p>Generative AI (GenAI) can be used during this course for [... <i>fill in</i>...]. Learning to use GenAI tools is an emerging skill, therefore, please use the resources provided by the university to improve your proficiency with these tools. If you have any questions</p>

regarding how and when to use GenAI, feel free to consult your teachers. It is important to bear in mind the following limitations:

- The quality of the results generated by GenAI relies on the quality of your prompts. Learning to successfully craft high-quality prompts requires practice.
- Exercise caution and avoid placing complete trust in the results produced by GenAI. Always verify any output with another reliable source.
- Acknowledge your use of GenAI, this can be done by including a paragraph at the bottom of an assignment that explains what you used GenAI for. Failure to disclose this information is in violation of academic guidelines.
- Be thoughtful about when GenAI is useful. Avoid using it if it is not appropriate for the specific case or circumstance.

Example 2

In this course we recognise the value of Generative AI (GenAI) tools, such as ChatGPT, Bard, and other similar technologies, in enhancing academic research and writing. These tools are permitted for use in various stages of your academic work, including brainstorming, outlining, study design, editing, and image creation. We encourage you to utilise the free versions of these tools to ensure equitable access for all students. We also ask you to adhere to the following guidelines when using these tools:

1. **Explicit Disclosure:** All use of GenAI must be explicitly disclosed. At the end of your document, include a statement detailing the extent of GenAI utilisation in your work. The statement should specify the components aided by GenAI, such as brainstorming, outlining, study design, editing, or image creation. For example: "This paper utilised ChatGPT [version e.g., 3.5, 4, or 4o] (date) for outlining and editing."
2. **Prompt History Appendix:** Alongside your disclosure, you may be asked to provide full prompt history in an appendix. This transparency is crucial for understanding the context and extent of AI assistance in your work.
3. **Appropriate Use:** Exercise discretion in deciding when GenAI tools are beneficial and appropriate for your work. Refrain from using these tools in situations where they might compromise the integrity or originality of your academic contributions.

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| | <ol style="list-style-type: none">4. Restriction on Data Upload: Do not upload any raw or unpublished data into GenAI tools to preserve confidentiality and intellectual property rights.5. Academic Integrity: We rely on your responsible use of GenAI tools as outlined in these guidelines. Transparency in your work is essential. Please be aware that non-compliance will be treated as academic fraud and addressed to maintain our high academic standards. |
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By thoughtfully adhering to these guidelines, you can effectively leverage GenAI tools as valuable assistants in your academic work. This human-centred approach ensures that your intellectual contributions remain at the forefront, with GenAI serving as a supportive tool to enhance and expand your academic pursuits.

5.8 Example Rubrics

5.8 Example Rubrics	
Activity type	Page
Contents	<p>The GSLS has now integrated a disclosure statement into its <u>assessment rubrics</u>, requiring students to explicitly declare the extent of their GenAI usage in assignments. Students are expected to include a disclosure statement at the beginning or end of their work, detailing how GenAI tools were utilized, even if such tools were not employed. This practice ensures clarity regarding the origin of the content and maintains the credibility of academic submissions.</p> <p>For research and business reports, as well as writing assignments, the GSLS rubrics incorporate this disclosure requirement. An example disclosure statement might be:</p> <p><i>"In this research project, I utilized GenAI, specifically ChatGPT 4.0, to assist in the literature review and drafting phases. The AI tool was used to generate initial summaries of existing studies on CRISPR-Cas9 gene-editing technology and to provide suggestions for structuring the methodology section and enhancing my writing skills. I critically reviewed all AI-generated content to ensure accuracy and uphold academic integrity. Using GenAI improved my efficiency, but I remained vigilant to validate all information to maintain the rigour and originality of the work."</i></p> <p>For further guidance on implementing disclosure agreements and to access example templates, educators can refer to the GSLS's resources: example <u>disclosure agreements</u> or in section 5.7 of this tutorial.</p> <p>For teacher who would like students to further reflect on GenAI usage or integrate its use into your courses/assignments here below are some example rubrics you could use:</p> <p>Version 1: Ethical and Effective Use of GenAI</p> <ul style="list-style-type: none"> • Insufficient (< 5.5): Students use GenAI uncritically, with little to no ethical consideration or reflection on its impact. There



	<p>is a lack of originality in the integration of AI-generated content, and no effort is made to go beyond the initial AI output.</p> <ul style="list-style-type: none"> • Sufficient (>5.5 – 7.5): Students demonstrate awareness of ethical considerations in using GenAI and make an effort to integrate AI-generated content thoughtfully. They provide evidence of modifying the AI output to fit their assignment context, though the critical engagement with GenAI's limitations and potential biases is only moderately developed. • Good (> 7.5): Students excel in ethically and effectively using GenAI, showing advanced critical engagement with its capabilities and limitations. They demonstrate innovative integration of AI-generated content, significantly enhancing their work with thoughtful modifications and original insights. The work includes detailed annotations indicating AI assistance and reflects deeply on the ethical implications and learning outcomes of GenAI use. <p>Version 2: Application of GenAI in Problem-Solving and Innovation</p> <ul style="list-style-type: none"> • Insufficient (< 5.5): The student demonstrates minimal engagement with GenAI tools, showing little understanding of their application in problem-solving contexts. There is a lack of innovation, and the work does not reflect any enhancement through AI assistance. • Sufficient (≥ 5.5 – 7.5): The student utilizes GenAI tools to address specific problems, demonstrating a basic understanding of their capabilities. The work shows some innovation, with evidence of AI-assisted enhancements, but lacks depth in integrating AI insights into the overall problem-solving process. • Good (> 7.5): The student effectively integrates GenAI tools into the problem-solving process, showcasing a deep understanding of their functionalities. The work exhibits significant innovation, with AI contributions thoughtfully woven into the analysis and solutions. The student critically evaluates AI-generated inputs, ensuring originality and a high level of academic integrity.
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