Duke University Department of Chemistry
Guidance of Acceptable Use of AI for Graduate Milestone Exams

Introduction

This policy outlines acceptable and unacceptable uses of artificial intelligence (AI) software, such as ChatGPT, Bard, and other large language models, for graduate students submitting written work to satisfy milestone requirements of the Chemistry graduate program, including the Preliminary Exam, Propositional Exam, Masters Thesis, and PhD Dissertation. This policy is meant to offer guidance on how to use new AI tools in a manner consistent with Duke's Standards of Conduct. By adhering to this policy, you contribute to maintaining the integrity and excellence of the Chemistry Department's academic program. Note that expectations for use of AI for coursework are under the discretion of the Instructor of Record for each course, and may differ from the guidelines described here. Likewise, the use of AI for graded research or other research conducted under the supervision of a Principal Investigator (PI) is at the discretion of the PI.

AI tools do not qualify for authorship. All co-authors on submitted work are responsible for the content of the work. For student exams, the student is ultimately responsible for the content of the submitted work. While there are opportunities to use AI tools to enhance learning and improve clarity, their use is not a substitute for critical thinking, scholarly analysis, or independent thought. If you choose to use generative AI tools in your work, you must understand the advantages, disadvantages and potential risks of using these technologies.

Examples of Acceptable Uses of AI Tools:

1. Stimulate thinking: Brainstorm various angles as to the significance or relevance of your research and identify knowledge gaps suitable for your proposal.
2. Structuring: Draft outlines.
3. Writing Refinement: Run abstracts, sentences, or paragraphs through the software to check for grammatical errors and improve writing style.
4. Feedback Incorporation & Revision: Direct the software to provide ideas for restructuring your document based on feedback.
5. Disclosure**:** If you use AI software beyond spell check and grammar suggestions, include a brief "AI Use Disclosure" statement just before your references to disclose which AI software you have used and how you have used it.

Potential Problems with the use of AI:

1. Plagiarism: Copying and pasting text, images, media, etc. generated by AI software into your document without attribution counts as plagiarism as defined by Duke. Repeating or slightly modifying phrases, sentences, or passages generated by AI tools without attribution is also plagiarism. Proper scholarly procedures require that all quoted material be identified by quotation marks or indentation on the page, and the source of information and ideas, if from another, must be identified and be attributed to that source. As described in the [Duke Community Standard](#), plagiarism is not tolerated and may result in disciplinary action. Note that using AI as a grammar correction tool does not count as plagiarism. Duke library has a [website](#) with resources on proper AI citation.

2. Incorrect Information: AI models can generate inaccurate or misleading information. Verify any information with credible sources, i.e., from multiple literature articles.

3. Superficial Understanding: AI is not a substitute for reading the literature on your own and applying critical thinking to the problems you face. An over-reliance on AI sources may result in a superficial understanding of your subject, which will become apparent in the oral component of the examination. Ask yourself, or have peers ask, questions to check whether you fully understand the topic.

4. Lack of Data Security: Know that any content uploaded to AI tools may be retained by the tool's parent company and utilized in their training models. It is therefore not possible at this time to guarantee data security or privacy protections for such content. As a consequence, AI tools must not be used to generate output that would be considered non-public, for example, proprietary or unpublished research. Uploading unpublished data to generative AI tools should only be done with extreme caution and requires explicit permission from the PI.

Updates. This guidance was developed in March 2024 and is subject to review and amendments by the Chemistry Department.