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## 1. Presentation



At **Tecnológico de Monterrey,** we are committed to training entrepreneurial and innovative leaders who are willing to put their knowledge and skills at the service of human flourishing. The cultivation of these attributes from an ethical perspective, together with the mastery of knowledge and technical efficiency, constitute the **professional excellence** we seek to develop in our student body (Strategic Plan, 2025).



We recognize that recent developments in the field of artificial intelligence have a significant impact on various areas of life. The ability of artificial intelligence to automate cognitive functions by establishing patterns, relating vast amounts of data, and improving with experience, opens up great possibilities to improve productivity in various industries and intervene in reality (Barbará, 2020), generating significant changes in the organization of work, the economy, culture, and society.

Education is not immune to these changes. **Artificial intelligence offers a wide variety of options for the creation of written content, computer codes, videos, audio, and images,** which has an immediate effect on the activities that we have traditionally used to evaluate and certify learning, forcing us to rethink, not only our teaching pedagogies, teaching methods, and assessment models, but also the content and skills we aspire to develop in our students and even in some

cases, the ends of the educational process.

In this context of change, we have prepared this document to offer our educational community ethical principles that serve as a reference to adopt and adapt the tools of artificial intelligence in our educational programs and institutional context, seeking to use them proactively and responsibly in the teaching and learning processes, as well as in the projects and activities of our organization.

At Tecnólogico de Monterrey, we have always considered **technology as a fundamental ally for the achievement of our educational purposes,** and we conceive it as a means that, when properly used, promotes the creation of knowledge, increases access to information, generates opportunities for learning and social well-being, while enriching the educational and creative experience of our community.

We recognize that the **benefits brought by artificial intelligence to our educational model** are only possible through the link between ethics and scientific development, as good judgment and integrity are essential to ensure that the use of these tools promotes learning, human flourishing, and sustainability. With this spirit, we make this document available to our faculty.





## General Premises on

the Use of Artificial
Intelligence

### General Premises on the Use of Artificial Intelligence

It is recommended to **update and enhance the learning and development of our students' skills** (from high school, undergraduate, graduate, and continuing education) through the use, adaptation, and application of artificial intelligence, in educational experiences and research projects, trying to use technologies that promote the ability to analyze, interpret, manage, and predict information, always under the ethical approach proposed in this document.

The Institution is committed to providing the faculty, through the Vice-Rectory of Faculty, with a comprehensive training program for the knowledge and use of Artificial Intelligence (AI), as well as support in development experiences that allow them to appropriately incorporate AI into the teaching-learning process. We invite you to visit the <u>CEDDIE</u> page to learn more.

**Options will be offered for the use of AI in different disciplines**, as well as for its application in the institutional environment, always adhering to the ethical principles of our Institution and the guidelines outlined in this document.

It is considered valuable for students to **learn to use AI tools responsibly and with ethical consciousness**, and to cultivate the necessary capabilities to make positive use of them that contributes to their personal and professional development.

Opportunities will be provided to ensure that our faculty and students are **aware of the possibilities and risks**, both technical and ethical, of AI. Likewise, guidance will be provided to promote safe and careful use of these tools.

Based on our commitment to academic excellence, any use of AI must adhere to our Code of Ethics, institutional values, and the principles of honesty, respect, trust, responsibility, courage, and fairness that are inherent to academic integrity. Any action, whether intentional or unintentional, that goes against these norms and principles will be considered misuse of AI tools.



# Ethical Principles for the Use of Artificial Intelligence

## Ethical Principles for the Use of Artificial Intelligence

The wide range of **possibilities offered by Artificial Intelligence (AI)** in creating content in the educational field presents ethical challenges due to the potential outcomes that can be achieved through both proper and improper use of these tools.

AI has the potential to:



Improper use can have negative effects, sometimes difficult to identify or anticipate, on the moral integrity of individuals, mental health, opinion formation processes, or the general perception of reality, among others (European Commission, 2019).

In this context, it is crucial to understand the importance of having ethical guidelines that guide the conscious use of these tools. It is essential to familiarize oneself with the risks associated with their application in order to promote optimal and responsible utilization of them.

#### Risks in the Use of Artificial Intelligence (AI)

The main risks in the use of AI are:



Below, each of these risks is described.

#### 1. Use of Personal and Institutional Data

Most AI tools, including ChatGPT, specify in their terms of use the possibility of taking ownership of all the information entered into their systems. The data becomes part of the tool's information database and can be used to generate new results. Thus, for example, **any data or query entered into ChatGPT immediately becomes public information. There are no guarantees of protection for personal or institutional data**, and there is no information about how they are used. To use them properly and protect sensitive data, it is important to review <u>Information and Data Governance Policies</u> as well as the notices provided by these tools regarding their use.

#### 2. Lack of Accuracy

Al tools, like ChatGPT, **do not necessarily provide accurate information**. It is common for their answers to be inaccurate, false, or outdated. Therefore, it is recommended to promote the habit of fact-checking the information provided and ensuring its accuracy.

#### 3. Biases

Al tools are inherently neutral, as they make predictions and recommendations based on the information they have been given. Therefore, if the dataset used to train the tool contains biases, stereotypes, or solely reflects the practices and customs of a particular community, the algorithms will perpetuate them, providing a biased or disconnected view of reality. For this reason, it is important to compare and verify the information provided by these tools (Barbará, 2020).

#### 4. Plagiarism

The ease with which these tools can answer questions can tempt students to rely on them for learning activities, undermining the quality of learning and the development of student autonomy. There is also the risk of using these tools without declaring it, which is considered a violation of academic integrity. Therefore, it is crucial to be familiar with the guidelines of academic integrity and the instructions contained in this document.

#### **5. Intellectual Property**

Certain AI tools do not recognize the authorship of the information they provide, and in this regard, it is important to consider that ideas or writings published on these platforms become part of their databases and lose their originality, becoming public domain information. Awareness of this possibility is essential, as intellectual property and respect for authorship are values that we recognize at the Tecnológico de Monterrey and that we consider important to promote in knowledge production processes.

To prevent these risks, it is crucial to **ensure that the use of AI is guided by a set of ethical principles** that serve as a reference to guarantee that it is a tool in service of human development rather than an end in itself.



#### **Ethical Principles for the Use of Artificial Intelligence (AI)**

#### 1. Respect for Human Dignity

Individuals have intrinsic value that demands recognition in all circumstances, and it should never be undermined. When using AI tools, we must ensure that we treat individuals with due respect and not as mere means or objects. This means that AI **should not be used to manipulate, condition, or influence people's behavior** (European Commission, 2019).



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#### 2. Non-maleficence

It is essential to ensure that the use of AI does not cause any harm, whether intentional or unintentional. Harm can refer to damage to a person's reputation, property, privacy, freedom, health, or physical and psychological interests. Special provisions should be made for individuals in vulnerable situations who may not have the capacity to protect their own interests.

To fulfill this principle, it is recommended to:



Incorporate the habit of verifying the level of security and reliability provided by AI systems and, if possible, establish measures of protection to prevent adverse or unforeseen effects.



Confidently monitor the use of AI, habits and effects that are being adopted among students, as well as ensure that they are developing the ability to reflect on these matters.



Adhere to <u>institutional</u> <u>guidelines</u> regarding the use of personal and organizational data.



Review the notices provided by these tools regarding the use that will be made of our information and always protect institutional data.



Avoid damaging the corporate, personal, or reputational image of any individual.



Always obtain written consent, without exception, when using someone's image or voice.

#### 3. Promotion of Autonomy

Autonomy refers to the capacity of individuals to make decisions for themselves, based on accurate information, contrasting viewpoints, and reasonable arguments that are coherent and founded on respect for human dignity. All should be used to protect and develop this capacity, which means enhancing the ability to discern with ethical perspective and a sense of responsibility.

In the educational context, the application of this principle means to:



Keep in mind that the responsibility for the misuse of Al lies with the person who used the tool.



Assess to what extent AI promotes the development of cognitive and social skills.



Promote the practice of identifying the entities responsible for managing AI tools and requesting explanations regarding the processes used for decision-making (Barbará, 2020).

#### 4. Equity

This principle is based on recognizing the equal dignity of individuals and refers to the importance of promoting equal access to the benefits and opportunities provided by AI. This entails ensuring that the use of AI is inclusive, respectful of the plurality of values, democratic processes, human deliberations, and tolerance.

In the educational context, the application of this principle involves to:



Promote equitable access to Al tools, as well as the content they generate.



Strive for data and products used to be representative of the diversity of constituent groups within the population, paying attention to the inclusion of vulnerable groups.



Encourage the use of AI to be peoplecentered, aiming to satisfy social needs with quality and justice.



Advocate for the benefits created by AI to be shared and not exclusive to a single social group.

#### 5. Security

The protection of data and institutional information is crucial. We must ensure that we operate in technically secure environments that are **less susceptible to being used for malicious purposes or unauthorized ends.** 

In an educational context, this entails that:



#### 6. Veracity

Accurate (authentic and verified) information is important for life in society and democracy. It is necessary for citizens to develop freely and be able to defend themselves against abuses of power, incompetence, or corruption. Veracity is, therefore, a social need (Siurana, 2010), and the lack of it generates distrust.

The use of algorithms and AI in social media has stimulated the proliferation of discursive practices that can deceive and condition people's freedom of choice. In the era of fake news and alternative facts, social division has deepened, sometimes based on false discourses that promote conflicts and confrontations, driven by interests, beliefs, and subjective emotions, which have little connection to an accurate description of social reality.

#### Using AI based on the principle of **veracity** implies to:





Promote the habit of reviewing and contrasting the content generated by these tools, expanding and completing it if necessary.





Cultivate the ability to identify true and authentic information from that which is not. That which adheres to objective reality, that situates facts in their proper context, and that allows for the formation of a precise and coherent image of the world.





Strengthen the capacity to distinguish between reasons and emotions.



Verify that the results of AI are not promoting biased views of reality.

#### 7. Explainability and Transparency

All should be intelligible. To the extent possible, we should be able to understand the capabilities, purposes, and information that the Al has been fed in order to comprehend the recommendations it generates and be able to explain it to the parties or individuals who may be directly or indirectly affected by the content generated by these tools. Furthermore, the use of Al should be transparent; meaning, its use should be declared in our academic and research production.

Compliance with this principle in the educational field entails:





Specify in which activities AI can be used, why it will be incorporated, and what type of AI tools will be considered acceptable (See Appendix I).





Communicate all the information available about the AI tools that will be used in the learning process, their risks, and benefits.





Understand how the specific algorithmic evaluations and learning processes that will be utilized in the teaching process work.





Periodically evaluate the results of the predictions and/or recommendations made by the AI tools to assess the relevance of their use.

#### 8. Responsibility

This principle refers to the duty of reflecting on the consequences of our actions before carrying them out. It entails making informed and reasonable decisions and being accountable for the impact they may have on other people and the environment. Acting responsibly involves understanding the reality, being aware of the social needs that require attention, and devising projects and strategies that enable us to address them, promoting sustainability and the common good.

In the academic sphere, this implies the following:



Get to know the official AI tools that are available in the academic software portfolio under the AI collection.



In the case of promoting the use of language models, it is recommended to use TecGPT, the institutional tool that covers the same functions and guarantees the protection and safeguarding of our information. We recommend visiting **Support**Services at mitec.



Get to know, explore, and implement the pedagogical, technological, and assessment guidelines provided by the Institution to incorporate AI into the teaching-learning process.

- EduToolsTec
- CEDDIE



Promote the habit of reflecting on the consequences of using AI, as well as identifying the level of responsibility acquired through its use.



Monitor and assess the effectiveness and impact of using AI tools in the teaching-learning process.

#### 9. Social and Environmental Well-Being

The use of AI should be oriented towards promoting the common good, sustainability, and the preservation of life on the planet. Its use and application should guarantee a favorable balance between potential benefits and risks. This implies taking care of those involved, promoting inclusion, preventing harm, and protecting and promoting human dignity.

In the academic field, this implies:



Being attentive to the impact of using AI systems on the mental and social well-being of the Tec community and society at large.



Documenting the impact on social and environmental well-being of using AI in research and learning activities.

We recommend reviewing in detail the Policy for the Use of Artificial Intelligence Tools aimed at all collaborators of the Tecnológico de Monterrey, available at: MiTec > Work a Tec > Mis herramientas y servicios > Mis Recursos Digitales > Políticas y Procedimientos TI





## Artificial Intelligence and Academic Integrity

### Artificial Intelligence and Academic Integrity

At Tecnológico de Monterrey, we understand academic integrity as the honest, committed, trustworthy, responsible, fair, and respectful behavior in learning, research, and the dissemination of culture (Academic Regulations, Chapter IX).

We believe that **academic excellence** is the result of the confluence between knowledge mastery, the development of technical skills, and the commitment to act with integrity.

Our aspiration, from the **perspective of academic integrity,** is that our students:

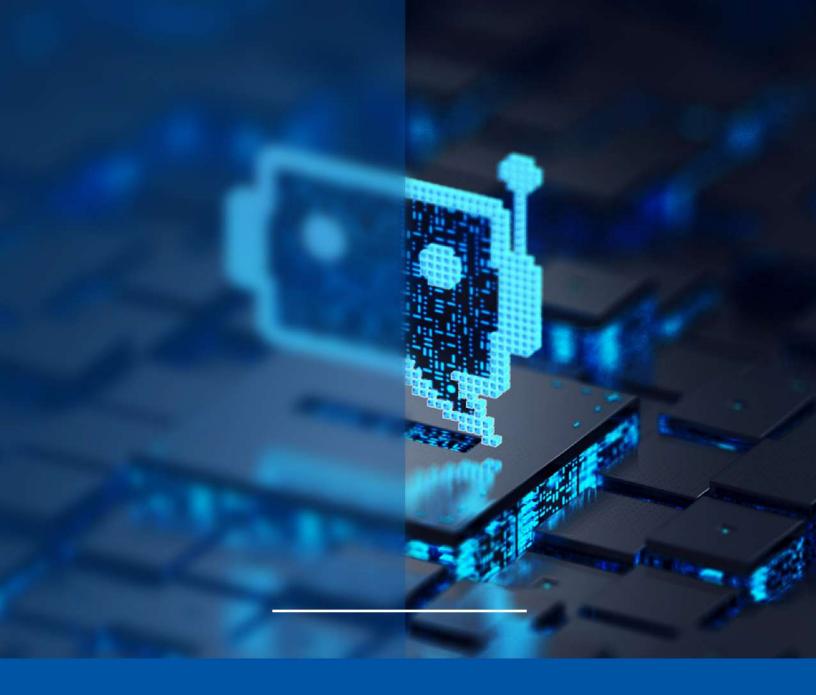


In order to achieve these purposes, the use of Artificial Intelligence (AI) by students must comply with the following specifications:

- 1. Al tools may be used as long as their use has been approved by the teacher or person in charge of the academic activity in question. If the teacher has not made any statement regarding this matter, it is the student's responsibility to explicitly inquire whether they can be used or not.
- 2. The use of AI must comply with the ethical guidelines described in this document.
- 3. It is **essential to acknowledge or declare the use of AI** and never submit work done with these tools as if it were one's own, as deception regarding the authorship of a document is considered a violation of academic integrity.

The instructions for declaring the use of AI can be found in the "Appendices" section of this document. See **Appendix II**.





## 5. Guidelines for the Use of Artificial Intelligence



### Guidelines for the Use of Artificial Intelligence

The advent of Artificial Intelligence (AI) in the field of education **offers potential for innovation and the generation of enriching learning experiences,** which led us to rethink the ways of teaching and learning.

**Its implementation must be aligned with the ethical principles** presented here, the framework of academic integrity of the Institution, and promote learning and the development of disciplinary and cross-cutting competencies in students. Below, we present a set of guidelines for its use.



#### **Guidelines for Faculty**

Access to unlimited information and AI tools that simplify creative processes **generate the need to update pedagogical strategies for learning** and even some of the functions of the teaching profession. With the awareness of the impact that the use of AI tools entails, we present the following guidelines:

- 1. **Familiarize yourself with AI tools.** Dedicate time to train yourself, explore, and learn about their functionalities, advantages, ethical challenges, and limitations in order to visualize their potential in teaching and learning. This will allow you to select tools that are useful for the educational process and relevant to your area of expertise.
- 2. Review the offering of teacher training on topics related to AI. We recommend reaching out to the Center for Faculty Development and Educational Innovation (CEDDIE) and visiting Teaching Hub, designed specifically to support faculty with creative ideas and successful practices to innovate in the classroom. Also, check out EduToolsTec, where you can find technological resources to enrich the teaching and learning process.
- 3. Ensure that the use of AI tools contributes to your students' learning and the development of disciplinary or cross-cutting competencies defined for the learning units, in accordance with the <u>principles of academic integrity</u>. To do this, it is important to incorporate authentic assessment strategies and provide feedback to your students on their learning process.
- 4. **Deliberate and strengthen the understanding of intellectual property,** the importance of giving credit to authors, and taking responsibility for products created with the support of AI. Emphasize the importance of original work produced by the student, discussing what the student's contribution will be and their input into the activity.
- 5. **Intentionally define activities that develop critical thinking,** teach your students to identify biases and limitations generated by AI tools, and cultivate the student's ability to assess the scope of the contributions of the AI tool.
- 6. Explicitly and clearly state the use of AI tools that students will be able to use in class.
  - a. Clearly state in your course syllabus or in Canvas, in the "Announcements" section, the corresponding instructions for activities in which you consider it appropriate for your students to use AI tools, also clarifying the criteria you will apply for their evaluation.
  - b. Facilitate dialogue with your students to establish the knowledge about AI that you believe they should have in the context of your learning unit, as well as to clarify the terms of AI use from the beginning of the academic period. We recommend implementing an "Artificial Intelligence Notice" prior to activities that can be performed by your students using AI. In the

- "Appendices" section of this document, you can refer to an example of such notice. See **Appendix I**.
- c. Ask your students to indicate the use of AI, the prompt they used, and the percentage of its usage. Review the recommendations made by <u>APA</u> for declaring the use of ChatGPT in the development of a paper, and <u>MLA Style</u> for declaring the use of materials (images, videos, audios) created with generative AI tools. In the "Appendices" section of this document, you can consult both declarations. See <u>Appendix II</u>.
- d. Recommend that your students use Turnitin Draft Coach to identify similarities in their texts and improve their citation skills.
- e. Guide your students throughout the course on the proper use of these tools and their ethical commitment.
- 7. Make it clear to your students that **not respecting the established rules in class for the use of AI** and using these tools fraudulently to gain an academic advantage **is a violation of integrity and will be treated as such.**
- 8. In the event of an integrity violation, speak with the student and report the situation to the Campus Academic Integrity Committee (CIAC, by its acronym in Spanish), which will analyze the case and determine the applicable consequences in accordance with Chapter IX of the Academic Regulations. See: MiTec docentes >> Servicios >> Académicos >> Normatividad Académica >> Políticas y Reglamentos >> Seleccionar nivel de estudios >> Reglamento Académico para alumnos.
- 9. It is recommended to avoid using tools for AI-generated text detection, as they are inaccurate. It is advisable to review the work based on your own judgment and experience, as well as to complement it with other pedagogical strategies, such as talking with your student to get to know their abilities and honestly expressing your doubts, asking about the topic, or requesting that they write a paragraph to contrast their linguistic register and verify if the desired learning outcomes were achieved. Check more information in Appendix III.
- 10. **Combine the use of AI with other technologies and strategies available**, such as peer review, oral assessment, and flipped classroom strategy, to name a few.
- 11. When using artificial intelligence tools to design a course or learning activity, you must declare it, so that its use is transparent and visible to your students and colleagues. In the "Appendices" section of this document, you can review the elements that this declaration must contain, as well as an example. See **Appendix IV.**

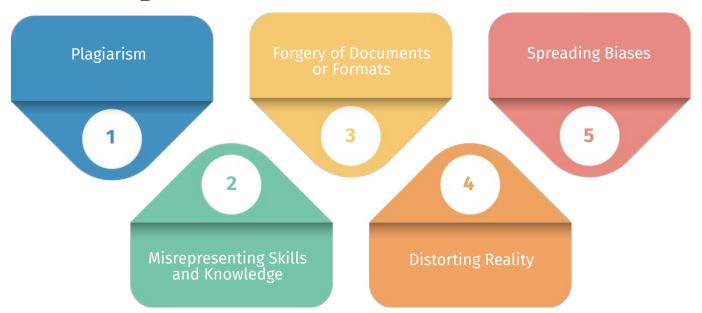
We invite you to explore the **potential of AI** for your class and to use it effectively and appropriately.



# Unethical Actions in the Use of Artificial Intelligence



### Unethical Actions in the Use of Artificial Intelligence



Below, each of these actions is described.

- Plagiarism: The use of Artificial Intelligence
   (AI) must be declared, and it should never
   be claimed as one's own work if it has been
   partially or entirely generated by AI. Its use
   must be explicitly reported.
- Misrepresenting skills and knowledge: One must be honest about their own strengths and weaknesses. AI should not be used to gain an academic advantage by simulating knowledge and skills that one does not possess.
- Forgery of documents or formats: Manipulating or altering data, documents,

videos, audios, or any other format without the author's consent is a form of deception.

- 4. **Distorting reality:** Manipulating videos, voice recordings, audio, images to alter reality and presenting it as authentic is a form of falsification.
- 5. Spreading biases: Technological tools, in principle, are neutral, but the information and algorithms they have been trained on may not be. It is the responsibility of each user to thoroughly understand each AI tool, ensuring that its results do not undermine human dignity or create discrimination. The use and outcomes of AI should align with our institutional values.

It is important to assume the responsibility that corresponds to us for the ethical use of tools with our students and within the academic community to which we belong.



## 7. Support Resources

#### Support Resources

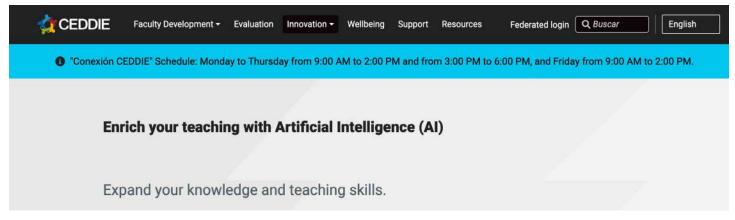
Al tools are numerous, and their implementation should be in line with the development of knowledge or competencies, adhering fully to the principles of academic integrity. We recommend visiting the <u>Academic Integrity Website for Faculty</u>, where you will find supporting resources.



The <u>Institute for the Future of Education (IFE)</u>, thinking about teaching and learning processes with AI, offers the faculty a variety of articles of interest related to the pedagogical and ethical use of AI tools.



The Center for Faculty Development and Educational Innovation (<u>CEDDIE</u>) offers a wide variety of talks and webinars on topics related to AI, as well as technical and pedagogical resources for use in education.





## 8. Bibliographic References

- Abarca, C. (2023). "Inteligencia artificial: 5 hitos que detonan la inteligencia artificial", en Conecta. Recuperado de: <a href="https://conecta.tec.mx/es/noticias/nacional/educacion/inteligencia-artificial-5-hitos-que-detonan-la-transformacion-digital">https://conecta.tec.mx/es/noticias/nacional/educacion/inteligencia-artificial-5-hitos-que-detonan-la-transformacion-digital</a>
- Amézquita, A. (2023). "Inteligencia artificial generativa: ¿Qué es? ¿Es un riesgo o ventaja? En Conecta. Recuperado de: <a href="https://conecta.tec.mx/es/noticias/guadalajara/educacion/inteligencia-artificial-generativa-que-es-es-un-riesgo-o-ventaja">https://conecta.tec.mx/es/noticias/guadalajara/educacion/inteligencia-artificial-generativa-que-es-es-un-riesgo-o-ventaja</a>
- Barbará, A. (2020). Prologo. Inteligencia Artificial. Decisiones automatizadas en Cataluña. Generalitat Catalana.
- Bertram, T. (Sep. 2022). Es inteligencia artificial el nuevo reto. Recuperado de: https://www.udem.edu.mx/en/node/56141
- Comisión Europea, Dirección General de Redes de Comunicación, Contenido y Tecnologías, Directrices éticas para una IA fiable, Oficina de Publicaciones, 2019, <a href="https://data.europa.eu/doi/10.2759/14078">https://data.europa.eu/doi/10.2759/14078</a>
- Eaton S. (Ene. 2023). Inteligencia artificial e integridad académica. Recuperado de: <a href="https://drsaraheaton.wordpress.com/2022/12/09/sarahs-thoughts">https://drsaraheaton.wordpress.com/2022/12/09/sarahs-thoughts</a> artificial-intelligence-and-academic-integrity/
- Eaton, S. (Jun. 2021). Artificial Intelligence, Algorithmic Writing & Educational Ethics. Recuperado de: <a href="mailto:file:///c:/Users/l01035048/Downloads/CSEA2021-EatonMindzakMorrison-">file:///c:/Users/l01035048/Downloads/CSEA2021-EatonMindzakMorrison-</a> ExploringtheImpactsofTextGeneratingTechnologiesonAcademicIntegrity%20(1).pdf
- European Comission (2019). Ethics Guidelines for Trustworthy Al. Retrieved from: https://data.europa.eu/doi/10.2759/14078
- García, D. (2021). Postverdad, en Pizzi, J. y Cenci, M. (Orgs) Glosario de Patologías Sociales, Pelotas, editorial UFPel
- Grupo de expertos de alto nivel sobre inteligencia artificial (2018) Directrices Éticas para una IA fiable, Comisión Europea, consultado en: <a href="https:/ec.europa.eu/digital-single-market/en/high-level-expert-group-artificial-intelligence">https:/ec.europa.eu/digital-single-market/en/high-level-expert-group-artificial-intelligence</a>
- Huang, K. (Ene, 2023). El efecto ChatGPT: Las universidades cambian sus métodos de enseñanza. New York Times. Recuperado de: <a href="https://www-ntimes-com.cdn.ampproject.org/c/s/www.nytimes.com/es/2023/01/18/espanol/chatgpt-plagio-universidad.amp.html">https://www-ntimes.com/es/2023/01/18/espanol/chatgpt-plagio-universidad.amp.html</a>
- IBM (2023). Shedding light on AI bias with real world examples. Retrieved from <a href="https://www.ibm.com/think/topics/shedding-light-on-ai-bias-withreal-world-examples">https://www.ibm.com/think/topics/shedding-light-on-ai-bias-withreal-world-examples</a>
- IBM (2024). What are AI hallucinations? Retrieved from https://www.ibm.com/topics/ai-hallucinations
- McAdoo T. (2023). How to Cite ChatGPT en American Psychological Association. Recuperado de: https://apastyle.apa.org/blog/how-to-cite-chatgpt
- MillS A. (2003). Adaptando la escritura universitaria a la era de Modelos de Lenguaje a Gran Escala como ChatGPT en Foro Administración, Gestión y Política Pública. Recuperado de: <a href="https://forogpp.com/2023/01/24/adaptando-la-escritura-universitaria-a-la-era-de-los-grandes-modelos de-lenguaje-como-chatgpt-proximos-pasos-para-educadores/">https://forogpp.com/2023/01/24/adaptando-la-escritura-universitaria-a-la-era-de-los-grandes-modelos de-lenguaje-como-chatgpt-proximos-pasos-para-educadores/</a>
- MLA Style Center (2024). How do I cite generative AI in MLA style? Retrieved from https://style.mla.org/citing-generative-ai/
- Mollick E. (2022). ChatGPT is a Tipping Poit for AI en Harvard Business Review. Recuperado de: <a href="https://hbr.org/2022/12/chatgpt-is-a-tipping-point-for-ai">https://hbr.org/2022/12/chatgpt-is-a-tipping-point-for-ai</a>
- Novoa J. y Hernández S. (2023). "El rol de los prompts en la inteligencia artificial: importancia, conceptos básicos y recomendaciones". Recuperado de: <a href="https://ceddie.tec.mx/es/ensenar-y-aprender-con-inteligencia-artificial-ia">https://ceddie.tec.mx/es/ensenar-y-aprender-con-inteligencia-artificial-ia</a>
- OpenIA. (2023). ChatGPT (versión del 17 de noviembre) [Modelo de lenguaje grande]. https://chat.openai.com/chat
- Russell Group principles on the use of generative AI tools in education, (2023), consultado en: Sabzalieva, E. y Valentini, A. (2023). Chat GPT e e inteligencia artificial en la educación, UNESCO, disponible en: (<a href="http://creativecommons.orglicenses/by-nc-sa/3.0/igo/">http://creativecommons.orglicenses/by-nc-sa/3.0/igo/</a>).
- Siurana, J. C. (2010). La sociedad ética. Proteus, Madrid.
- Standford Graduate School of Education (2022). Stanford faculty weigh in on ChatGPT's shake-up in education. Recuperado de: <a href="https://ed.stanfordedu/news/stanford-faculty-weigh-new-ai-chatbot-s-shake-learning-and-teaching?print=all">https://ed.stanfordedu/news/stanford-faculty-weigh-new-ai-chatbot-s-shake-learning-and-teaching?print=all</a>
- Stanford Graduate School of Education. (Dic. 2022) Stanford faculty weigh in on ChatGPT's shake-up in education. Recuperado de: <a href="https://ed.stanfordeducation.">https://ed.stanfordeducation.</a> Recuperado de: <a href="https://ed.stanfordeducation.">https://e
- Tecnológico de Monterrey (2023). Inteligencia artificial e integridad académica. Recuperado de:

  https://tecmx.sharepoint.com/sites/IntegridadAcademica/SitePages/Inteligencia-Artificial-e-Integridad-Acad%C3%A9mica.aspx
- UNESCO (2021). Recomendación sobre la ética de la inteligencia artificial. Recuperado de: https://www.unesco.org/es/articles/recomendacion-sobre-la-etica-de-la-inteligencia-artificial
- UNESCO (2023). Ética de la inteligencia artificial. Recuperado de: https://www.unesco.org/es/artificial-intelligence/recommendation-ethics



9.
Appendices



#### Appendix I: Example of a Notice for a Learning Activity that Uses Artificial Intelligence (AI)

It is recommended that the following text be included within the activity as a declaration of the intentional and designed use of AI for fulfilling the learning objectives within the institutional regulatory framework. This message empowers teachers by encouraging them to enable the use of AI according to their criteria and in alignment with institutional regulations during the learning activity.

It is suggested that, whenever AI is used, students explain to what extent the tool helped them develop an idea or improve a project or proposal.

#### **Artificial Intelligence Activity**

#### **Academic Integrity Notice**

You are about to use Artificial Intelligence (AI) in a learning activity, so it is important to take the following considerations into account:

- Consult your teacher regarding the guidelines or criteria for the ethical and proper use of the AI tool you are going to use. Inquire about the permitted type of tool, the portion or percentage of the work that should be done with it, and how to account for its use. Ensure that you have clarity on what you should and should not do with it to ensure your learning.
- Use these tools as resources that promote and facilitate your skills and knowledge. Remember that achieving academic excellence requires behavior aligned with the Academic Regulations and the commitments you made by signing "My Commitment to Integrity" (Refer to the Academic Regulations).

#### **Appendix II:** How to Declare or Describe the Use of Artificial Intelligence (AI) Tools

In order to promote a culture of integrity and reinforce the authentic assessment process, it is essential to emphasize the importance of building a culture of transparency in the use of AI, and for both faculty and students to declare their utilization.

- 1. For students, it is important to provide the context in which AI is used. This includes describing the tool, explaining how it was used, and the purpose. Teachers may ask students to provide an example of how they used AI, analyze the results of its implementation, and discuss potential ethical implications.
- 2. If the tool is a chatbot like ChatGPT, it is important to remember that these are prediction engines based on algorithms. There is no actual author behind the generated text, and by its nature, it is not considered a reliable source of information.
- 3. If the instructional strategy used by the teacher requires the use of chatbots, such as ChatGPT, it is suggested to review the recommendations provided by APA for declaring their use in a work.
- Provide the "prompt" or question.
- Place a relevant excerpt from the text generated by the chatbot in quotation marks.
- Include the consulted source in parentheses: author and year.
- Students can be asked to provide the complete text generated by the chatbot in an appendix.

The following example was created by Timothy McAdoo and extracted from the official APA Style page:

"When I asked, 'Is the division between the left side of the brain and the right side of the brain real or just a metaphor?' the text generated by ChatGPT indicated that while the two brain hemispheres are somewhat specialized, 'the notion that people can be characterized as 'left-brained' or 'right-brained' is considered an oversimplification and a popular myth' (OpenAI, 2023)."

OpenAI. (2023). ChatGPT (March 14 Version) [Large language model]. https://chat.openai.com/chat To declare the use of images, videos, and audios created with generative AI tools, **MLA Style** recommends considering the following:

- 1. Identify the type of material (image, video, audio) and number it.
- 2. Describe the prompt used to generate this material.
- 3. Mention the AI tool used, its version, the date of creation, and the link to the tool.

Below is an example of how to declare the use of images created with AI tools.



Fig. 1. "Pointillist painting of a sheep in a sunny field of blue flowers" prompt, DALL-E, version 2, OpenAI,

8 Mar. 2023, labs.openai.com/

#### **Appendix III: Use of AI in Writing**

#### Considerations

Tools for detecting the use of AI are imprecise; therefore, they are not a definitive source for determining whether AI was used. The recommendation in these cases is **not to use AI detection tools** but rather to implement pedagogical strategies that allow verifying that the text in question was developed by the student themselves and that it achieved the learning objective.

#### Pedagogical Recommendations

Activities or tasks done without supervision or guidance run the risk of being completed with AI assistance. Eliminating tasks that involve written texts is not the solution. We recommend the following:

- Promote a formative approach. Engage in conversations with your students about the importance of developing their critical, analytical, reflective, and argumentative skills through writing.
- Show interest in reading their ideas. Encourage them to develop their writing skills and foster their ideas.
- Request contextualized writing. Design strategies that allow for linking writing with class discussions or problems that require solutions or reflections.
- Provide continuous feedback. Discuss their ideas, review drafts, suggest bibliographies, ask for references and citations, etc.
- "If students use AI tools that are not part of the instructional strategy defined by the teacher, they should be informed that such use will be considered a violation of academic integrity."

#### • Educational Technology for Similarity Detection

At Tecnológico de Monterrey, we provide you with educational technology for text similarity detection. After four years of using Unicheck, starting from January 1, 2024, you will have access to Turnitin's Originality. You can find more information on the <u>CEDDIE</u> and <u>EduToolsTec</u> websites.

This new technology will allow us to:

- Extend the scope of source detection (82,000 journals and over 82 million articles and documents).
- Display warnings, metadata, or flags for strange or blank characters.
- Ensure the same experience that faculty and students have when using Unicheck.

Remember: **avoid using tools to detect AI use.** Instead, it is recommended to employ pedagogical strategies, such as having a conversation with the student and honestly expressing your concerns, asking questions about the topic, or requesting that they write a paragraph to contrast their linguistic style and verify if the intended learning outcomes were achieved.



#### **Appendix IV:** How to Declare the Use of AI by the Teacher in the Design of a Course or Activity

In line with the values of transparency, honesty, and trust, the teacher must declare the use of AI tools in various educational processes, such as activity design, resources or materials, assessment strategies, feedback, etc. This declaration should be placed in a visible location so that the reader is aware of its use.

The declaration should contain the following elements:

- 1. Acknowledge the use of the AI tool. This involves:
- Mentioning the name and version of the AI tool used.
- Including the name of the company that created the AI tool (if applicable).
- Providing the URL of the AI tool (if applicable).
- 2. **Describe the use of the AI tool.** This means explaining what it was used for and providing context.
- 3. **Include the teacher's commitment to using AI tools ethically** to enhance learning.

The use of AI tools does not replace my commitment and responsibility as a teacher to the teaching-learning process. Therefore, I commit to reviewing and verifying the results derived from AI to ensure the academic quality of the course content, projects, and activities.

Here is an **example incorporating the three elements mentioned** to declare the use of AI tools by the teacher in a **course/activity**:

#### **Declaration of the Use of AI Tools**

This **course/activity** was designed with the support of the following artificial intelligence tools:

- 1. **Consensus** (Consensus NLP, <a href="https://consensus.app/">https://consensus.app/</a>). It was used to find literature related to the course topic.
- 2. **ChatGPT 3.5 on TECgpt** (Azure OpenAl Service, <u>mitec.itesm.mx</u>). It was used for translation, summarization, and improving the wording of content and learning activities.
- 3. **Adobe FireFly** (Adobe, <a href="https://www.adobe.com/mx/products/firefly.html">https://www.adobe.com/mx/products/firefly.html</a>). It was used as support to generate specific images for all course activities.

The use of AI tools does not replace my commitment and responsibility as a teacher to the teaching-learning process. Therefore, I commit to reviewing and verifying the results derived from AI to ensure the academic quality of the course content, projects, and activities.

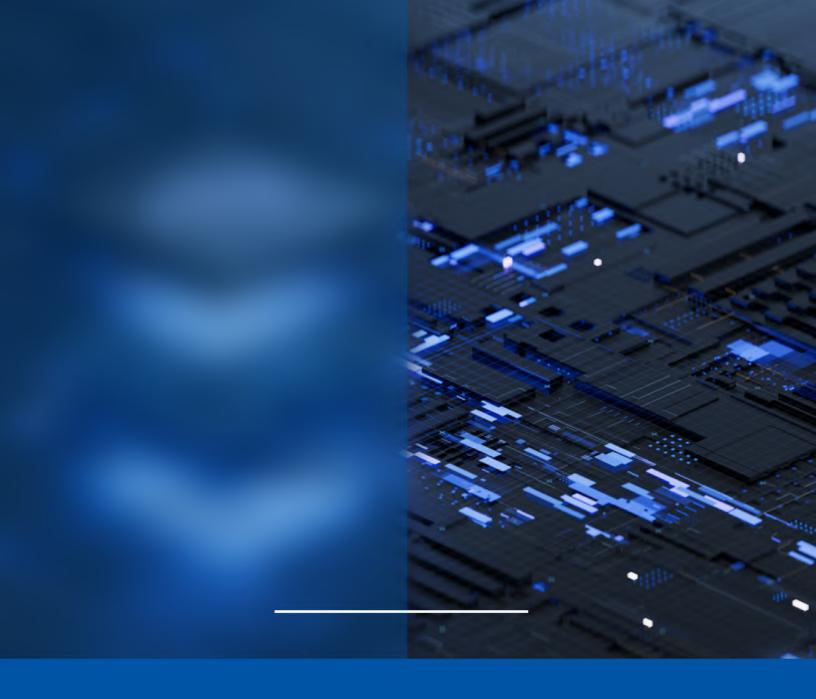
In addition to the declaration in the course/activity, if the teacher extracts or makes use of texts generated by large language models (LLMs), such as ChatGPT in TECgpt, it is recommended to follow the <u>APA</u> format, which requires the use of in-text citations and adding references that attribute the use of the AI tool.

The following example was created by Timothy McAdoo and taken from the official APA website.

When given a follow-up prompt of "What is a more accurate representation?" the ChatGPT-generated text indicated that "different brain regions work together to support various cognitive processes" and "the functional specialization of different regions can change in response to experience and environmental factors" (OpenAI, 2023; see Appendix A for the full transcript).

#### Reference

OpenAI. (2023). ChatGPT (Mar 14 version) [Large language model]. <a href="https://chat.openai.com/chat">https://chat.openai.com/chat</a>



10. Glossary



#### AI Hallucination.

It is a phenomenon in which a large language model (LLM), such as a generative AI chatbot or a computer vision tool, perceives patterns or objects that are nonexistent or imperceptible to human observers, generating results that are incoherent or completely inaccurate (IBM, 2024).

#### Artificial Intelligence (AI).

It is a branch of information technology that allows machines to learn and perform tasks through algorithms and systems (Abarca C., 2023).

#### Bias in Al.

Also known as machine learning bias or algorithmic bias, it refers to AI systems that produce biased outcomes that reflect and perpetuate human prejudices within a society, including historical and current social inequality. The bias can be found in the initial training data, in the algorithm itself, or in the predictions produced by the algorithm (IBM, 2023).

#### ChatGPT

It is a language model based on the GPT (Generative Pre-trained Transformer) architecture, developed by OpenAI. This model specializes in generating coherent and contextual text in response to questions or instructions provided in the form of a conversation (OpenAI, 2023).

#### Generative Artificial Intelligence (GenAI).

Refers to the combination of databases to generate, for example, text or images that did not previously exist (Amézquita, J., 2023).

#### Prompt.

It is an input, command, or instruction of what is being asked of artificial intelligence (Novoa, J., 2023).

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#### **Agradecimientos:**

**Decanatura de la Escuela de Humanidades y Educación:** Judith Aurora Godoy Decanatura de Invetigación de la Escuela de Humanidades y Educación: Francisco Díaz Estrada

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