

EEE5R03/EEE5T03

Engineering Ethics and Academic Integrity

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Subject learning outcomes

1. Demonstrate knowledge and understanding of the concepts and **principles of academic integrity and ethics**.
2. Demonstrate awareness and ability to analyse **academic integrity and ethical issues**, such as copyright and plagiarism, and act properly to avoid academic and ethical misbehaviours.
3. Recognise important **ethical issues and practices in a university context**.
4. Understand the implications and concerns on **academic integrity raised by the latest technology**, such as ChatGPT and other Generative Artificial Intelligence (GenAI) tools.
5. Identify and deal with complex **ethical and professional issues in discipline-specific settings**, and be able to **communicate effectively** the issues to the stakeholders and the public.
6. **Critically analyse and discuss problem** cases related to engineering ethics and academic integrity.

Teaching schedule

Week 1: Engineering ethics – A focus of attention

Week 2: Ethics – The core value of engineering

Week 3 and 4: Making ethical decisions in engineering

Week 5 and 6: Research ethics and misconduct

Week 7: Involving human subjects and animals

Week 8 and 9: Rights and responsibilities regarding intellectual property

Week 10 to 12: Cyber ethics; ethical use of Generative AI

Week 13: Sharing of students' works

Assessment

| Assessment Method | No. | Weighting (%) | Intended Subject Learning Outcomes to be Assessed | Description/Remarks |
|---------------------------|-----|---------------|---|--|
| Quizzes | >10 | 20% | 1, 2, 3, 4, 5 | Quizzes conducted after each lecture. |
| Reflective writing | 1 | 40% | 1, 5, 6 | An analysis of an ethical problem related to the research project/field of professional work of the student. |
| Presentation | 1 | 40% | 1, 5, 6 | Oral presentation of the analysis made in the reflective writing. |

This subject will be assessed on a **pass/fail** grading system and will not be included in the GPA calculation. To pass the subject, students need to attend all lectures and score 50% or higher in the total marks. Besides, students need to achieve 100% attendance in the lectures to pass the subject.

References

1. Caroline Whitbeck (2011). *Ethics in Engineering Practice and Research*, Cambridge University Press.
2. Lance Eliot (2023). *Generative AI ChatGPT And AI Ethics*, Lance B. Eliot.
3. Markus Christen, Bert Gordijn, and Michele Loi (2020). *The Ethics of Cybersecurity*, Cham : Springer.
4. Kristin Shrader-Frechette (1994). *Ethics of Scientific Research*, Lanham, Md.: Rowman & Littlefield.
5. University of California, San Diego (UC San Diego). *Resources for Research Ethics Education*, <http://research-ethics.net>.
6. Jun Fudano, Daniel Schwarz, and John Gayed, *TokyoTechX: Science, Engineering, AI & Data Ethics*, edX Online course.