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| **Faculty Information** | **Name** | Brian A Wildeboer |
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| **Home University** | Hanyang University |
| **Department** | CEEC |
| **Homepage** | n.a. |
| **Course Information** | **Class No.** | TBA | **Course Code** | CUL1220 | **Credits** | 3 |
| **Course Name** | Ethics of Science and Technology |
| **Lecture Schedule** | Mon-Fri 9:00-15:00 |
| **Course Description** | The study of ethics in science and technology is critical for promoting responsible, ethical behavior, fostering public trust, and ensuring that advances in these fields are consistent with societal values and benefit humankind as a whole. It is critical to the responsible and sustainable development of science and technology. STEM fields have the potential to make a significant impact on society, both positive and negative. STEM students need to be able to think critically about the ethical implications of their work and to make decisions that are responsible and ethical. By learning about ethics, STEM students can develop the skills and knowledge they need to make responsible and ethical decisions in their professional careers. This is essential for promoting public trust in science and technology and for ensuring that these fields are used for the benefit of society.This course is designed to introduce students to the ethical considerations that arise in STEM fields. Students will learn about ethical theories and frameworks, and they will apply these theories to real-world STEM scenarios. The course will cover a wide range of topics, including scientific misconduct, research ethics, intellectual property, environmental ethics, social and ethical responsibility of scientists and engineers, etc. |
| **Course Objective** | By the end of this course, students will be able to:• Define and explain key ethical concepts • Apply ethical theories and frameworks to real-world STEM scenarios• Identify and analyze ethical issues in STEM research and practice• Communicate their thoughts on ethical issues in a clear and concise manner |
| **Prerequisite** | THIS IS A VERY DISCUSSION HEAVY COURSE. If you are not comfortable expressing your opinion in groups and to the class, this may be a challenging course.The course teaching methods will include:Lectures on ethical theory: The instructor will give lectures on different ethical theories and frameworks, such as utilitarianism, deontology, and virtue ethics. This will help students to develop a foundation in ethics that they can use to analyze and make decisions about ethical issues in STEM. Discussions relating to real-world examples and case studies: The instructor will lead discussions and/or debates on real-world examples and case studies of ethical issues in STEM. This will help students to apply the ethical theories and frameworks that they have learned to real-world situations. THIS IS A VERY DISCUSSION HEAVY COURSE. If you are not comfortable expressing your opinion in groups and to the class, this may be a challenging course. The group project includes an essay and presentation: Students will work in groups to complete a project on an ethical issue (chosen by the students but approved by the instructor) in STEM. The project will include an essay and a presentation. This will give students the opportunity to work collaboratively to complete in-depth research and analysis of an ethical issue, and to communicate their findings to others. |
| **Materials/Textbooks** | No textbook- all materials will be provided by the professor via the course LMS |
| **Evaluation** | **Attendance** | 10% | **Quiz** | % |
| **Assignment** | 10% | **Mid-term Exam** | 20% |
| **Presentation** | % | **Final Exam** | % |
| **Group Project** | 40% | **Participation** | 20% |
| **Etc.** | **Evaluation Item** | **Ratio** |
|  |  |
|  | % |
| Total | 100% |
| **Daily** **Lecture Plan** | Day 1 | Greeting/ Course Syllabus/ What is Technology? / What are Ethics? / Is Technology Neutral -Value-Neutrality Thesis (arguments for and against)- Does tech change behavior? / Theories of Ethics- Rights |
| Day 2 | Theories of Ethics- Justice/ Utilitarianism/ The Common Good / Group project introduction |
| Day 3 | Theories of Ethics- Virtue Ethics/ Care ethics/ Framework for Ethical Decision Making- Case Studies- engineering- Challenger space shuttle explosion |
| Day 4 | Case Studies- social media- Cambridge Analytics, Facebook- Rohingya genocide/ bioethics- CRISPR medical or designer babies, Tuskegee syphilis study/ Group project work |
| Day 5 | Midterm Exam/ Case Studies- Threats of AI and privacy/ Threats of AI and safety/employability/ Group Project work |
| Day 6 | Case study (chosen from subjects not covered by group projects)- after each case study is examined, time will be given for students to meet with their groups and continue to develop the group project. |
| Day 7 | Case study (chosen from subjects not covered by group projects) |
| Day 8 | Group Project Presentations |
| Day 9 | Group Project Presentations/ Final in-class writing assignment |