Course Syllabus

CERS-4874: Ethics and Technology

Fall 2022

**Instructor(s)**

Braden Molhoek, Director, CTNS

Ian G. Barbour Assistant Professor of Theology, Science, Ethics, and Technology Graduate Theological Union

(510) 649 2566 [bmolhoek@gtu.edu](mailto:bmolhoek@gtu.edu)

Office Hours are flexible, please contact to schedule a meeting

**Course Description**

This seminar will examine the relationship between ethics and technology by first looking at some foundational ethical theory and perspectives in science and religion and ethics and technology. The course will then shift to examine 5 issues in greater detail: (1) social media (eg. data privacy, addiction), (2) the environmental impact of technology (eg. climate change, raw materials), (3) machine learning, (4) gene editing, and (5) human modification (eg. brain/comptuer interfaces, transhumanism). Students will be evaluated through presentations on readings, reflections on a current issue in the news, and a research paper that includes constructing a moral argument. This course is aimed at MA and MDIV students as well as PhD students and does not require prerequisites in ethics or scientific/technology knowledge.

**Student Learning Outcomes and Assessment**

At the end of this course students will be able to:

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| --- | --- |
| Student Learning Outcome | Assessment |
| 1. Critically assess ethical issues involving technology | 1. Verbal ability to identify the morally relevant aspects of an ethical issue |
| 2. Construct a moral argument | 2. Verbal and written ability to construct a moral argument |
| 3. Assess the ethical implications of current events in technology | 3. Written assessments of moral issues and ethical analysis of these issues |
| 4. Demonstrate the ability to write a scholarly paper on ethics and technology | 4. Written assessment of this outcome through the final research paper. |

**Course Requirements**

1. Class Discussion, Presentation, and Pop Culture Assignment will allow students to demonstrate comprehension of the course material and the ability to analyze issues ethically.

2. Presentation, Pop Culture Assignment, and Final Research Paper will allow students to demonstrate the ability to construct a moral argument/assert a position on the use of technology.

3. Following and reflecting on a current event in technology through the course will allow students to identify morally relevant features of current events, analyze these events using tools developed through the course, and begin to take an ethical position.

4. The final research paper will allow students to show comprehension of course material, tools and insights gained throughout the course, to construct a moral argument/take an ethical position on the use of technology, and the ability to produce scholarly work in ethics and technology.

**Required Readings**

Ategeka, Chris. The Unintended Consequences of Technology: Solutions, Breakthroughs, and the Restart We Need 1st Edition, 2022. 978-1119817598

Baylis, Françoise. Altered Inheritance: CRISPR and the Ethics of Human Genome Editing, 2019. 978-0674976719

Coeckelbergh , Mark. AI Ethics (The MIT Press Essential Knowledge series), April 7, 2020. 978-0262538190

Eren, Halit. Impact of Technology on Environment: Climate Change and Instrumentation Paperback – March 21, 2022, 978-1669886419.

Additional readings placed on Moodle

See schedule for when which readings will be used in class

See Moodle for links to these additional readings or PDFs

**Assessment**

**Final Course Grade**

1. Participation (10 points) = 10%
2. Leading Discussion on Readings (1 discussions lead, 10 points) =10%
3. Pop Culture Assignment (10 points) =10%
4. Currents Events Reflections (4 reflections 350-500 words per reflection, 5 points each, 20 points total) = 20%
5. Research Paper 3500-4000 words (50 points) = 50%

**Weekly Schedule**

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| --- | --- | --- | --- |
| Date and Topics | Readings | Activities | Items Due |
| September 8  Introductions  Syllabus  Ethics and Technology | \*Barbour Ethics in an Age of Technology Chapter 2,3  Ategeka, Intro, Chapter 1, Chapter 13  Eren Chapter 1 |  | N/A |
| September 15  Social Media  Data, Privacy, Use | Ategeka Chapter 3, Chapter 6,  Coeckelbergh Chapter 7  \*A Qualitative Study on the Reasons for Social Media Addiction  \*A review of theories and models applied in studies of social media addiction and implications for future research  \*Social Media Privacy: A Dozen Myths and Facts  \*Social media marketing: Who is watching the watchers? |  |  |
| September 22  Social Media  Freedom of Speech  Hate Speech  Truth  Continued next page | Ategeka Chapter 9  \*Racism, Hate Speech, and Social Media: A Systematic Review and Critique  \*The global organization of social media disinformation campaigns  \*Too little, too late: social media companies’ failure to tackle vaccine misinformation poses a real threat  \*How behavioural sciences can promote truth, autonomy and democratic discourse online  \*Fake news, social media and marketing: A systematic review  \*The Study of the Influence of Social Media on PostTruth Era  \*Virtual Reality: Ethical Challenges and Dangers |  | Current Events Reflection 1 Due |
| September 29  Environmental Impact of Technology  Land, Water, Air  Climate Change | Eren Chapter 3, 17-19, 22-25, 27-28  Ategeka Chapter 12  \*This is what we need to invent to fight climate change  \*Climate Change and Innovation Technology: A Review  \*Importance of considering technology growth in impact assessments of  climate change on agriculture  \*Will technology advances alleviate climate change? Dual effects of  technology change on aggregate carbon dioxide emissions |  |  |
| October 6  Environmental Impact of Technology  Information and Communication Technology | Eren Chapters 20-21, 26  \*The Hidden Environmental Toll of Smartphones  \*The Carbon Footprint of the Internet  \*Assessing ICT global emissions footprint: Trends to 2040 & Recommendations  \*Cobalt, recycling and the race toward clean energy  \*New electrolyte bolsters rechargeable battery design  \*New sodium metal anode for rechargeable batteries could replace lithium |  |  |
| October 13  Machine Learning  Work  Automation | Eren Chapter 29  Coeckelbergh Chapter 12  Coeckelbergh Chapter 1,5,6  Ategeka Chapter 11  \*Wallach Chapter 1  \*Book Chapter by Molhoek |  | Current Events Reflection 2 Due |
| October 20  Machine Learning  Bias, Decisions, Ethics | Coeckelbergh Chapter 8,9,10,11  \*Wallach Chapter 3  \*McIlwain  \*Examples of AI in Decision Making  \*Great promise but potential for peril  \*Machine Bias  \*Criminal Justice Algorithm Predicts Risk of Biased Sentencing  \*Dissecting racial bias in an algorithm used to manage the health of populations  \*Face Recognition Algorithm Bias: Performance Differences on Images of  Children and Adults  \*The Pastry A.I. That Learned to Fight Cancer |  |  |
| October 27 | Reading week | Break | Break |
| November 3  Machine Learning  AI/AGI  Gene Editing | Ategeka Chapter 4  Coeckelbergh Chapter 3,4  \*Artificial Intelligence and Ethics: Sixteen Challenges and Opportunities  \*Discourse analysis of academic debate of ethics for AGI  \*How AI Is Making Autonomous Vehicles Safer  \*The big new idea for making self-driving cars that can go anywhere  \*Bioethical issues in genome editing by CRISPR-Cas9 technology |  | Current Events Reflection 3 Due |
| November 10  Gene Editing  Non-humans | Ategeka Chapter 7  \*Genetic Modification of Animals: Potential benefits and concerns  \*Ethical arguments relevant to the use of GM crops  \*Genetic engineering of animals: Ethical issues, including welfare concerns  \*Agricultural GMOs—What We Know and Where Scientists Disagree  \*CRISPR versus GMOs: Public acceptance and valuation  \*The EU regulatory framework on genetically modified organisms  \*Application of genome editing in aquatic farm animals: Atlantic salmon  \*Mosaicism in CRISPR/Cas9-mediated genome editing |  |  |
| November 17  Asynchronous  Ethics and Technology in  Pop Culture | See further description below | Recorded Lecture  Moodle discussions |  |
| November 24 | Thanksgiving Holiday | Break | Break |
| December 1  Gene Editing  Humans  Human Modification  Brain Computer Interfaces  Moral Enhancement | Baylis Chapters 1-3  Coeckelbergh Chapter 2  \*Ethical considerations of gene editing and genetic selection  \*Intelligence, empathy, and memory: Exploring moral enhancement through gene editing, training, and computer–brain interfaces  \* Genetic Virtue Program: An Unfeasible Neo-Pelagian Theodicy?  \* Genetically Engineered Traits versus Virtuous  Living |  | Current Events Reflection 4 Due  Pop Culture Assignment Due |
| December 8  Human Modification  Transhumanism  Post-human | Baylis Chapters 4-7  \* Flashing the Yellow Traffic Light: Choices Forced Upon Us by Gene Editing Technologies  \* Cyborg, Gender, and the Posthuman Self  \* Introducing a New Transhumanist Theology |  |  |
| December 15 |  |  | Final Research Paper Due |

**Pop Culture Assignment**

This assignment will have the student engage with a work of popular culture to identify ethical issues that arise from the use of technology. Students will be asked to read or watch something of their choice (a list is provided below but students can also choose something else in consultation with the instructor). The written assignment includes a summary of the ethical issues (including a description of the technology and what raises these issues), a brief analysis of the ethical issues, and discussion questions that could be used to help lead a small group discussion of the pop culture material and ethics. Total length of the assignment 700-900 words

Examples of Material to choose from – warning, many of these contain mature themes including violence, nudity, and sexual material, again, it is your choice what you want to use for the assignment and can choose something not on the list with permission from the instructor:

Novel

Brave New World

TV shows

Altered Carbon (Season 1 Episodes 1,4,8)

Films

Gattaca

Elysium

Transcendence

Ex Machina

Her

**COVID-19 Policy**

For the most up-to-date policies regarding COVID-19, please refer to our resource page at <https://www.gtu.edu/coronavirus-resources-gtu>

The GTU requires everyone be fully vaccinated to enter the Hewlett Building for classes or library use. Students must submit their vaccination verification to vaccine@ses.gtu.edu.

The GTU does maintain a medical and religious exemption policy. Students with a medical or religious exemption are required to test negative once a week. Students who are displaying any COVID-like symptoms for any reason are prohibited from coming to campus. When possible, students who have tested positive, or are experiencing symptoms but feel well enough to attend class, should request to attend class via Zoom.

Masks are optional, but we strongly encourage masks for anyone who is unvaccinated, immunocompromised or prefer masking for safety.

**Plagiarism**

Plagiarism is the presentation of another’s ideas, methods, research, or words without proper acknowledgement. It runs the gamut from failing to cite a reference (sloppy scholarship), to passing off another’s work as one’s own. It includes close paraphrasing as well as lifting of entire lines nearly verbatim without acknowledgement. As the effects of the plagiarism will be the same regardless of intent, intent will not be construed as essential to the act, although it may be considered in determining whether the charge of plagiarism should be pursued or what the penalty may be. For more information see Section I under Institutional Policies in the [Doctoral Handbook](https://moodle.gtu.edu/mod/folder/view.php?id=284883). [MA Handbook.](https://moodle.gtu.edu/mod/folder/view.php?id=287552)  For general requirements for proper acknowledgement in written work, see the most current edition of Kate Turabian, *Manual for the Writers of Term Papers, Theses, and Dissertations* and *The Chicago Manual of Style.*

**Arrangements in Cases of Documented Disability**

If you will need special arrangements for meeting course requirements for reasons of documented disability, please speak to one of the instructors very early in the term so that appropriate arrangements can be made. A description of the GTU policy regarding accommodation for differently abled students can be assessed [HERE](http://gtu.edu/admissions/life-at-gtu/students-with-disabilities).

**Honor Code**

Students in all courses and phases of the Doctoral Program are subject to the GTU Honor Code, described in section F, Doctoral Program Policies the [Doctoral Handbook](https://moodle.gtu.edu/mod/folder/view.php?id=284883). [MA Handbook.](https://moodle.gtu.edu/mod/folder/view.php?id=287552)  Please note: “Documented evidence that a student has violated the honor code may result in immediate expulsion from the program.”

**Title IX Policy**

Title IX refers to a section of the Education Amendments of 1972 law that prohibits sex discrimination in educational programs and activities at schools that receive federal financial assistance. Title IX protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students and other persons at the GTU are subject to and protected by this policy, regardless of their sex, sexual orientation, gender identity, part- or full-time status, disability, race, national origin or other protected category, in all aspects of the GTU’s educational programs and activities. See section J under Institutional Policies in the [Doctoral Handbook](https://moodle.gtu.edu/mod/folder/view.php?id=284883). [MA Handbook.](https://moodle.gtu.edu/mod/folder/view.php?id=287552)

**Other GTU Policies**

Students and faculty in required Doctoral Seminars are also subject to GTU Institutional Policies, detailed in the [Doctoral Handbook](https://moodle.gtu.edu/mod/folder/view.php?id=284883). [MA Handbook.](https://moodle.gtu.edu/mod/folder/view.php?id=287552)  Non-discrimination, AIDS non-discrimination, and Drug Free Environment, Inclusive Language, Plagiarism, and Exceptions and Accommodations

**GTU Statement on Diversity**

The GTU, an academic and faith community, is committed to valuing difference, affirming individual uniqueness, and encouraging alternative points of view within an educational and working environment of mutual respect and discipline. The GTU is committed to trust and dialogue.

This commitment requires that as a consortium and as individuals, we aggressively challenge:

(1) social, intellectual, and theological perspectives which intentionally and unintentionally exclude;

(2) behavior based on prejudice; and

(3) images that ignore, demean, and denigrate.

The GTU seeks to live out its mission in the context of a commitment to diversity as it educates individuals for vocations of ministry and scholarship, equips leaders for a future of diverse religions and cultures, teaches patterns of faith which nurture justice and peace, and serves as an educational and theological resource for local communities, the nation, and the world.

**Inclusive Language**

All students in this course are requested to use gender inclusive language when referencing humanity unless one is directly quoting a text.

**Pronouns**

GTU affirms the richness of diversity and expects students to practice civility and inclusion of all perspectives in respectful conversation and dialogue, which includes the use of students’ preferred names and pronouns. All students should be referred to by the names and pronouns they use for themselves.