Future, Futurism, and Technology: The Philosophy of Virtual Reality (DRAFT COPY)

Course Instructor: Jordan Kokot   **Course Dates**:
Contact Information: jdkokot@bu.edu   **Course Location:**
Office Location: **Course Time:**
Office Hours: **Credits**:
Course Librarian: TBD
Contact Information:

Course Description

Humanity has expressed a remarkable capacity to invent and manipulate new realities. From dreams and ancient storytelling to modern 3d superhero movies and VR video games, we are all captivated by the process of losing ourselves in different worlds and different possibilities. Nowhere is this drive more pronounced than in the rapid rise of modern "alternate reality" technologies.

In this course, we will begin to explore some of the philosophical and ethical implications of the development of virtual reality in light of the meteoric rise of modern technology and the tremendous impact it has had on the human experience. In addition to investigating the history and technology of VR, MR (mixed reality), and AR (Augmented Reality), we will seek answers to difficult questions concerning the phenomenology, metaphysics, and social and ethical implications of VR technologies. What does it mean for something to be "virtual?" What is "real" about virtual reality? Are we all in a giant simulation? Would it matter if we were? Can we model consciousness and even develop robust artificial intelligences using lessons learned from VR technologies? Are we destined for a virtual future and what would it mean if we could change our appearance as easily as we can change a VR avatar? Can VR technology allow us a special window into the embodied experience of others? How will VR change the way we communicate, work, and learn?

In addition to classic texts in the philosophy of virtuality and technology by thinkers like Plato, Aristotle, Rene Descartes, and Martin Heidegger, we will also read seminal texts in the history of the technological development of VR by thinkers like Ivan Southerland and Michael Heim and cutting edge philosophical research by David Chalmers, Nick Bostrom, and Thomas Metzinger. Over the course of this semester, students will select and pursue their own semester-long research project on a subject in the philosophy of virtual reality. This project will be developed in several steps and with several different expressions, culminating in a class conference and an online class journal (you can find an example from a past semester at www.techandethics.com). During the second half of the semester and as student projects develop, a portion of our readings for each week will be selected by students from their independent research projects. This format invites collaboration between students on their research projects and provides important opportunities for students to discuss their findings. Public health situation permitting, we will also get some hands-on experience with VR equipment through the Brookline Interactive Group.

Course Objectives
You will develop your abilities to:

- strategically search for and select both scholarly and non-scholarly sources and read them with understanding, appreciation, and critical judgment
- craft responsible, considered, and well-structured written arguments;
- express yourself orally and converse thoughtfully about complex ideas

- engage a range of sources in order to address research questions and to communicate findings in the form of responsible, considered, and well-structured written arguments
- produce clear, coherent prose in a range of genres and styles, using different media and modes of expression as appropriate
- plan, draft, and revise efficiently and effectively, and help your peers do the same by responding productively to their work
- reflect on how research, reading, writing, and editing practices differ for varied audiences, genres, and purposes

Books and Other Course Materials

Braver, Lee. *Heidegger's Later Writings*. New York: Continuum International Publishing Group, 2009.

Grimshaw, Mark. *The Oxford Handbook of Virtuality.* Oxford, Oxford UP, 2014.

World of Tomorrow. Dir. John Hertzfeldt. (film available for rent or purchase here: https://vimeo.com/ondemand/worldoftomorrow/155036442)

Note: All books are available through Amazon and will be made available through the bookstore shortly. The only expense required for this class is the *World of Tomorrow* film by Hertzfeldt available on Vimeo for rent or purchase. Relevant sections from these texts will also be made available on Blackboard. This means that you only need to buy these texts if you enjoy using physical books.

Note: All course texts will be available on Blackboard (denoted as BB in the rest of this document). On Blackboard, texts in **black** are required. Texts in **blue** are recommended and should be considered supplemental readings.

Additional Resources: Finding reliable information about philosophy online can be tricky. I highly recommend the following sites:

The Stanford Encyclopedia of Philosophy: https://plato.stanford.edu/
The Internet Encyclopedia of Philosophy: https://www.iep.utm.edu/

Courseware
Our class has a Blackboard site that contains the syllabus, assignments, and other course-related materials.

Assignments and Grading Criteria

In order to make the most out of this course for you and your classmates, you will do a good deal of reading and writing, and you will engage in a variety of class activities. Specific course requirements are to:

- Develop a sustained research inquiry in which you explore a range of information sources and modes of research to help formulate and engage with research questions
- Communicate about your research in two or more genres to two or more distinct audiences

- Prepare reading, drafts, and exercises as assigned so that you are ready to participate in class
- Attend at least one conference with your instructor
- Reflect on your learning throughout the term in a portfolio, including a self-assessment at the beginning of the term and a reassessment at the end of the term

Grading and Evaluation

Your final grade will be calculated as follows:

Four major assignments:	75%
- Research proposal and annotated bibliography	15%
- Research Paper	25%
- Conference Presentation/Poster	15%
- Class Journal/Public Media Assignment	20%
Exercises and Handouts	10%
Attendance and Participation	15%

General Outline

During this class, you will embark on a semester long research project involving multiple modes of investigation, domains of inquiry, and genera of expression. This project will be oriented on developing and exploring a research question targeted at a specific VR related technology or technological trend. It will require extensive research which will be guided by a series of exercises and it will require you to produce multiple written and visual artifacts for different audiences. It will also require you to present your work to the class in a mock academic conference. More details on each stage of this project are provide below. You will also receive handouts explaining each step in even more detail.

Research Proposal & Annotated Bibliography

The preliminary stage of your work will require a research proposal and an annotated bibliography. These are two separate assignments (each worth 5% of your grade). The former will require you to outline both a research question and a general trajectory for your research. The second, which will be due later in the semester, will involve you compiling a list of your most important sources and giving a brief description of each source and why it is relevant for your project. Note that your research need not be finalized at this stage—you will likely continue to add to your project as you go through the subsequent stages.

Research Paper

The "core" of your research project is a traditional academic research paper, styled to be submitted to a journal or collection for publication. We will discuss the formal features of this paper as the semester progresses. You will also be required to produce an abstract of your project at this stage. This stage of the project will be worth 25% of your grade.

Conference Presentation/Poster

At this stage in the project, we will mimic a traditional academic conference. In our case, the conference will be modeled after the upcoming Society for Philosophy and Technology's "Technology and Society" conference to be held in Lille, France next Summer (https://lillethics.com/spt-2021/). Each student will either produce a short presentation or a poster explaining their research project. I will try to accommodate student preference in this matter. Over the course of several class periods, students will present their papers or their posters to the class. This stage is worth 15% of your grade.

Class Journal

The final stage of your research project will be converting your research into a piece of media designed for our online class philosophy journal, the "Online Journal of Technology and Ethics" (https://www.techandethics.com/). This media can take many different forms, ranging from a public facing essay to a TED style video essay. We will mimic the professional peer review process at this stage by providing each other with detailed comments, and then engage in an online discussion of each other's work. This stage will be worth 20% of your grade.

Exercises and Handouts

Over the course of the semester, you will be given several handouts and shorter exercises. These will be due as marked on the syllabus and on the exercise sheets themselves. These will be graded on a complete/incomplete basis. So long as they are completed in good faith and submitted on time, you will receive full credit. I will not accept late exercises. Though I may occasionally provide comments, I will not regularly do so. If you would like comments on an exercise, please let me know in advance and I will do my best to accommodate your request. These exercise will be worth 10% of your grade.

Participation and Attendance

Since this course is a seminar, your regular attendance and active participation are essential both to your own learning and to your classmates' learning. Under ordinary circumstances, missing more than one week of class (that is, missing three days of class) will lower your final grade by 1/3. Missing more than two weeks (five or more class periods) may lead to failing grade the course. If you have a special obligation that will require you to miss several classes (e.g., religious observances, varsity athletics), please talk with me at the beginning of the semester. Missed conference appointments will be counted as absences. In order to participate appropriately, you will be expected to prepare for class by reading all of the assigned texts and thinking critically about their content. There should never be a situation where don't have at least something important to say about a text in class.

Participation means regular verbal engagement with the course material. For most of you, this will mean paying attention in class and contributing to the conversation on a regular basis. When we enter the research phase of our class, it will mean regular participation in research check-ins and in article selection (more on this below). Seminars work best when every voice is engaged in their own unique way. I know that this can be a hurdle for some students but it is important that you try to develop public speaking skills as well as you are able. You may supplement class participation with regular office visits. Bare attendance will earn you a D in this category. Attendance and participation are worth 10% of your grade.

Research Distribution and Participation

As we enter into the research phase of this course, each student will select a domain of inquiry (i.e., a "genera" of technology) that will delimit their research project. At present, I have identified seven genre or domains (AI, Computing, and Robotics; Information Tech, Privacy, and Entertainment; Transhumanism and Augmentation; Biotechnology and Gene Editing; Space Technology; Materials Science, Energy, and Industry; and Geo-Engineering and Environmental Issues) though we will have a conversation about whether these categories are adequate. I recognize that there is a good deal of overlap between these categories so some projects may not fall neatly into just one category. Additionally, if you have an idea for a project that doesn't fit into *any* of these categories, please let me know so we can work something out.

Each category will have at least two students. Each week, from week 5-12, we will discuss one of the six domains. The students whose projects fall within the topic of each week will be collectively select a short reading or bit of media on their topic relevant to their research for the class as a whole to read or watch. These readings must be distributed by the students to the class by class time on the Wednesday of their week. We will discuss the reading as group that Friday. During this discussion, the students who selected the reading will be responsible for directing the conversation.

Office Hours, Instructor Conferences, and Librarian Meetings

I will maintain regular office hours as described above. If you would like to meet with me but have a **hard conflict** with the above times, please let me know and we will work something out. Hard conflicts include other classes and necessary employment. If you do not have a hard conflict, I cannot promise that I will be able to meet with you. I am, however, often in my office at other times, so feel free to email me to see if I am available to help.

You will have several required and scheduled meetings with me over the course of the semester to discuss your research and your writing. Missing one of these scheduled meetings without notifying me of extenuating circumstances will count as an absence from class.

You are also required to meet at least once this semester with either our class research librarian (JD Kotula) or another similar librarian. Failure to do so will incur a one letter penalty on your attendance and participation grade. Meeting with a librarian is in your best interest! Doing so will almost certainly help you to develop a quality project. You are encouraged to schedule as many meetings as are helpful.

Submitting Assignments and Exercises

All assignments and exercises should be submitted to your personal Google Doc folder (provided the first day of class). Unless otherwise noted, the assumed submission time is at the BEGINNING of the class period on the day that the assignment is due. Assignments submitted even one minute after the deadline will be considered late unless other arrangements have been made.

Late and Missed Assignments

Unless you make other arrangements with me in advance, graded assignments will be penalized by one-third of a letter grade for each day they are late. Please note too that we will regularly work with our exercises and drafts in class. If you are habitually late with your assignments, you will be unable to participate fully in the class.

I am committed to providing you with timely written or verbal feedback on one draft of each major paper and written feedback and a grade on the final version of each major paper. You can generally expect my responses to your drafts within five or six days of your punctual submission of them; graded final versions will be returned to you within a week and a half.

Technology Policy

I recognize the inevitable irony of creating a "technology policy" for a class about technology. Computers, tablets, and similar devices will be generally permitted in this class. There will be a "zero tolerance" policy for anyone who abuses this privilege. If you are caught misusing technology in this class (checking social media, for example), you will no longer be able to use your device at all in the classroom. If three people are penalized in this way, then the entire class will lose technology privileges. For your own sake and for the sake of your classmates, please use your technology responsibly.

Academic Integrity

In this class, we will discuss conventions for using and citing sources in academic papers. Cases of plagiarism will be handled in accordance with the disciplinary procedures described in Tufts University's Academic Conduct Code. All students are subject to the Tufts code, which can be read online:
https://students.tufts.edu/student-affairs/student-code-conduct/iv-policies-regarding-student-behavior#B

Chosen Name and Gender Pronouns

This course aims to be an inclusive learning community that supports students of all gender expressions and identities. While class rosters are provided to instructors with students' legal names, please let me know if you would like to be addressed by a different name than that listed in the StudentLink. You are also invited to tell me early in the semester which set of pronouns (she/her/hers, he/him/his, they/their/theirs, etc.) you feel best fits your identity. If you have any questions or concerns, please do not hesitate to contact me.

Office of Disability Services

I assume that all of us learn in different ways. If there are circumstances that may affect your performance in this class, please talk to me as soon as possible so that we can work together to develop strategies for accommodations that will satisfy both your learning needs and the requirements of the course. Whether or not you have a documented disability, Tufts provides many support services that are available to all students.

Disability Services is the office responsible for assisting students with disabilities. If you have a disability that interferes with your learning (whether visible or invisible, physical or mental), you are encouraged to register with this office. Disability Services will work with you to determine appropriate accommodations for your courses, such as additional time on tests, staggered homework assignments, or note-taking assistance. This office will give you a letter outlining the accommodations you need that you can share with your teachers; specific information about your disability will remain private. If you have any questions about accommodation, or what constitutes a disability, I invite you to speak with me or to Disability Services.

Note on Faculty Involvement and Responsibilities

It is important for me to point out that while this class and teaching in general are extraordinarily high priorities for me, they are by no means my only academic responsibilities. A key difference between a high school teacher and a college professor is that, unlike high school teachers, college professors are expected to produce original written research, be involved in academic conferences and publications, take an active role in bettering their department, apply for grants and fellowships, maintain memberships in various academic associations, advise individual students on their projects, etc. In fact, institutions often stress activities like the production of original research *over* teaching responsibilities when it comes to hiring and advancement decisions. Without weighing in on whether this emphasis is appropriate, it is important for you to keep in mind that I have *many* responsibilities beyond this class. You are a high priority and I will do everything I can to help you grow as a thinker and writer over the course of this semester, but there are limits to the time and energy I can commit to this course.

Course Schedule

This schedule is intended as a blueprint and is subject to change based on the needs of the class. Any changes will be announced in class and will be posted on Blackboard.

Date	Learning goals	Readings due	Assignments due
Unit 1, Course Foundations: Technology, the Future, and Virtual Reality In this unit, we will lay the theoretical and philosophical groundwork for the course, beginning with a general discussion of the "ontology" of technology (i.e., what *is* technology) and moving into a conversation about the role technology has played in human culture and in individual human lives, setting the stage for our more targeted conversation about alternate reality technologies. We will then begin to think more carefully about the sorts of trends and patterns exhibited by technological development in recent decades, and about what those trends might mean for the future. On a practical level, we will begin discussing the basics of a research project, including how form a good research question, how to delimit a domain of inquiry, how to think about sources, and how to think about your audience.			
Week 1: What is Technology?			
Jan. 20	- Define course goals - Discuss/Review Syllabus - Introduce topic - Discussion: What is research? What is Technology? What is "future?" Why should philosophers care about VR? - Exercise 1 handed out	**Required:** - Arthur, *The Nature of Technology,* Ch. 1 (BB) - Southerland, Ivan E. "The Ultimate Display" - This syllabus **Recommended:** - *Physics,* Book II - Fassio, "How to Read Philosophy" (BB) - Philosophy of Technology	Come with questions about the syllabus and the course and thoughts about technology.

		(SEP)	
Week 2: What is Technology (cont.)? What is "future?"			
Jan. 27	- Aristotle on Nature and Technology - Exercise 2 handed out - Introduce Technology and Society Conference - What is research and how does it work? - What *is* the future?	**Required:** - Aristotle, *Physics,* Book II (excerpts) - Schummer, "Aristotle on Technology and Nature" - Hertzfeldt, *World of Tomorrow* (on Viemo) **Recommended:** - Max, "How Humans are Shaping our Own Evolution" - Review Phil. of Tech. Conference CFA (www.spt.org) and the Online Journal of Technology and Ethics (techandethics.com)	- Exercise 1: Initial self-assessment (due)
Week 3: Futurism, Phenomenology, and Postphenomenology			
Feb. 3	- The Singularity and Transhumanism - Technology as a mode of access - Library Orientation - Research Questions - Exercise 3 handed out	**Required:** - Kurzweil, 1-21 - Braver, 82-97 (*Question Concerning Technology*) - Rosenberger and Verbeek, *A Postphenomenlogical Field Guide* **Recommended:** - Braver, 70-82 (*Modern Science, Metaphysics, and Mathematics*) - Heidegger, *Question Concerning Technology*	- Exercise 2: Note Taking/Reading Log
Week 4: What's "virtual" about VR? What makes something "real?"			

Feb. 10	- Planning research and best practices
	  o Theory as a lens
	  o Finding and documenting sources
	  o Finding a Research Niche
	  o Thinking about arguments and Argumentation
	- Exercise 4 handed out
	- Assignment Roadmap
		Required:
		- Noe, Alva "Is the visual world a grand illusion?" (*J. Conscious. Stud.,* 2002)
		- Heim, Michael R. "The Paradox of Virtuality" (*The Oxford Handbook of Virtuality,* 2014)
		Recommended:
		- Metzinger, Thomas K. "Why is Virtual Reality Interesting for Philosophers?" (*Front. In Robotics,* 2018)
			- Exercise 3: Beginning Research— finding and evaluating claims

Unit 2: Research as Exploration

In this unit, you will conduct open-ended research to develop and shape a research question that will drive your project. You will design and propose an executable research project. In this unit we will also begin doing weekly check-ins on research progress. We will also be conducting a very broad survey of several relevant questions in the philosophy of virtual reality, including metaphysics, simulation theory, ethics, phenomenology, and aesthetics. We will also begin weekly research and writing check-ins.

Week 5: Caves, Dreams, and Demons—A brief history of virtual thinking

Feb. 17	- Finish discussing Heidegger - Start discussing Rosenberger, et al. - Review Exercise 4 - Discuss Biondi and Schnider - Talk about Theory	**Required** - Plato's Cave (*The Republic*) - Descartes' Dream Argument (*Meditations*) - Nozick, Robert "The Experience Machine" **Recommended:** - Bittarello, Maria, "Mythologies of Virtuality" (*The Oxford Handbook of Virtuality,* 2014) - Penny, Simon, "Virtual Reality as the End of the Enlightenment Project" (*Culture on the Brink*, 1998)	- Exercise 4: Draft Initial Research Plan and Question (to be exchanged with a peer for comments) - Start instructor/student conferences - Exercise 4b: Return comments to peer

Week 6: Virtual Realities and The Technology of VR (VR, AR, MR, XR)

Feb. 24	- Research Clinic (with Librarian) - Research, Bibliographies, and Citation - Exercise 5: Annotated Bibliography, handed out	**Required** - LaValle, Steven M. *Virtual Reality,* 2018 (excerpts) - Nevelsteen, Kim, "Virtual world, defined from a technological perspective" - Bruce Damer, "The Virtuality and Reality of Avatar Cyberspace (*The Oxford Handbook of Virtuality,* 2014) **Student Selected** - TBD **Recommended:** - Travinor, Grant, "Towards an Analysis of Virtual Realism" (DiGRA, 2019) - LaValle, Steven M. *Virtual Reality* (full text)	- Schedule one-on-one meeting with librarian by this date

Simulation Theory—is all reality virtual reality? Does it Matter? (VR and Metaphysics)

March 3	- Discuss Bibliographies - Anatomy of a Research Paper - Evaluating arguments and planning your own - Research Paper Assignment Sheet	**Required** - Chalmers, David, "The Virtual and the Real" (*Disputatio*, 2017) - Bostrom, Nick "Are you Living in a Computer Simulation" (*Philosophical Quarterly,* 2003)	- Exercise 5: Annotated Bibliography (Draft—final to be included with final draft of Research Paper)

	handed out - Exercise 6: Planning and Drafting handed out	**Student Selected** - TBD **Recommended:** - Chalmers, David, "The Matrix as Metaphysics" (*Philosphers Explore the Matrix,* 2005) - Heim, M. *Virtual Realism* (exceprts) - Travinor, Grant, "On Virtual Transparency (2019) - Bekenstein, Jacob "Information in the Holographic Universe" (2007)	

Unit 3: Writing for an Academic Audience
In this unit, you will apply the best practices of writing and research—planning, drafting, integrating feedback, and revising—to communicate your research to an academic audience with authority and precision. We will also continue discussing various domains of technology and maintain our weekly check-in schedule.

Week 8: VR, Phenomenology, Embodiment, and Immersion			
March 10	- What makes a good thesis? - Arguments and Argumentation	**Required** - Yee, Nick "The Proteus Effect" (*Human Communication Research*, 2007) - -Calleja, Gordon "Immersion in Virtual Worlds" (*Oxford Handbook on Virtuality,* 2014) **Student Selected** - TBD **Recommended:** - Gualeni, S. "Augmented Ontologies" (Philos. Technol., 2014) - Gibson, J.J., *An Ecological Approach to Visual Perception* (1979) - Riva, Giuseppe, "Being Present in a Virtual World" (*The Oxford Handbook of Virtuality,* 2014)	
Week 9: Virtual Reality, Consciousness, and Artificial Intelligence			
March 17	- Exercise 6 Handed out - Workshop on Planning Documents - Structuring papers	**Required** - Metzinger, Thomas K. "Why is Virtual Reality Interesting to Philosophers" (*Front. In Robotics and AI, 2018*)	- Exercise 6a: Central Claim (discuss in class) - Exercise 6b: Planning and Drafting (bring to class)

		Student Selected - TBD **Recommended:** - Cogburn, Jon, "Against Brain-in-a-Vatism," (*Philos. Technol.,* 2014)	
Week 10			

Week 10: Virtual Reality and Communication			
March 31	- Introductions and Conclusions - Incorporating Sources - Writing/Research check-in - Exercise 7: Abstracts handed out - Counterarguments	**Required** - Biocca, Frank, *Communication in the Age of Virtual Reality* (selections) **Student Selected** - TBD **Recommended:** - Ohl, S. "Tele-Immersion concepts" (*IEEE Trans. Visual. Comp. Graph.,* 2017)	- Final version of research paper due at midnight, Sunday, (option to resubmit for 1/3 letter improvement by the last day of class)

Unit 4: Academic Conferences and Class Journal Project

In this unit, you will transition first to a new genre, and then to a new audience, highlighting how new contexts call for different kinds of argument, research, and prose style. You will first convert your research paper into either a conference presentation or poster. We will then have our own mini-conference modeled on the Society for Philosophy and Technology conference on Technology and Society (https://www.spt.org/cfa-technology-and-society-leuven-september-2019/). You will then transition into preparing a version of your research for public media version of your research (a TedTalk, a video essay, an op-ed, a magazine article, etc) which will be posted as part of our class journal, *The Online Journal of Technology and Ethics* (found here: techandethics.com)

Week 11: Virtual Reality, Art, and Entertainment			
April 7	**-** Public Writing Assignment Sheet handed out - Abstracts and Conferences - Metacognitive Work 1 handed out in class	**Required** - Lindley, C.A. "Trans-reality gaming" - Travinor, Grant, *The Art of Videogames,* 2009 (excerpts) - Benjamin, Walter, *The Work of Art in the Age of Mechanical Reproduction* (excerpts) **Student Selected** - TBD **Recommended:** - Searles, Rebecca "Virtual reality can leave you with an existential hangover" (*The Atlantic*) - -Sibilla, Federica "I am (not) my avatar" (*Journal of Psychosocial Research*, 2018)	- Exercise 7: Long Abstracts, draft due.

Week 12: Social Implications and the Ethics of VR/Wrap-up			
April 14	- Posters and Presentations - Public writing, genre,	**Required** - Brey, Philip, "The ethics of representation and action in	- Long Abstract (final) Due

	and audience - Exercise 8: Who is my audience? Handed out	virtual reality" (*Ethics and Information Technology,* 1999) - Gooskens, Geert, "The Ethical Status of Virtual Actions" (*Ethical Perspectives* 2010) - Beanotherlab.org (The Machine to Be Another **Student Selected** - TBD **Recommended:** - "The Social Ontology of Virtual Environments" (Brey, Philip, *The American Journal of Economics and Sociology,* 2003) - Mandary, Michael, "Real Virtuality" (*Front. In Robotics*, 2016)	
Week 13: Class Conference/Journal Exhibition			
April 28	- Class Conference		- Final Presentations and Journal Submissions due