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This is an online course hosted on Canvas. There are no on-campus activities and there are no synchronous activities.

**Course Overview**

Human beings are constructing a new world through science and technology. Just consider the rapid changes in medicine, information, transportation, artificial intelligence, materials, energy, food, and more. In all these cases, we confront questions at the intersection of truth and power, knowledge and justice, progress and peril. The kind of world we create will be decided not simply by the expanding knowledge of science or the increasing powers of technology. It will depend on our visions about good and bad and right and wrong. In other words, we must think simultaneously of science and ethics. This course aspires to make you a better participant in the conversations that shape our lives in a high-tech knowledge society.

The class is divided into seven modules, each two weeks long. In module 1, we look at the terrain to be covered and explore a couple of case studies. Then, in modules 2 and 3, we will get some orientation on our basic terms: ethics and science. Next, we will explore ethical issues that arise in scientific research, especially misconduct (module 4) and research involving human subjects (module 5). Then, we will look at broader social contexts to explore the relationships between science and democracy. Module 6 will frame these relationships in terms of policy-for-science and module 7 will look at science-for-policy. We will use case studies and theories throughout the class to approach issues from top to bottom and vice versa.

**Learning Objectives**

By the end of this course, you will be able to:
• Understand basic concepts in ethics and the ethical norms at the heart of science and have a sense of their historical development
• Interpret, analyze, and assess ethical issues at the intersections of science and society
• Apply improved reading and critical thinking skills

Evaluation
Your grade will be based on three kinds of assignments:

Quizzes: 33.3%
Mid-term exam: 33.3%
Final exam: 33.3%
Total: 100%
Grades will be based on the traditional A-F scale, where an A is 90-100%, B is 80-89%, C is 70-79%, D is 60-69%, and F is 59% and below.

*Bonus: Students who make at least one post in the “Open Discussion about Ethics and Science” (found in the ‘Discussions’ tab on the left-hand menu in Canvas) will have their grade rounded up at the end of the semester if they are on the cusp between letter grades.

Assignments
Each assignment has clearly marked due dates in Canvas. No late assignments will be accepted unless they are accompanied with documentation establishing a UNT-approved reason for delayed work.

1. Quizzes: Taken directly from the instructional materials (readings, videos, and lectures). No surprises, nothing tricky. They are designed to keep you on track and help you to absorb the main ideas. You are welcome to consult the instructional materials and your notes as you take the quiz. Quizzes will be due each Sunday at 11:59 pm and will be posted at least four days prior to the due date. They are not timed.

2. Mid-term exam: A mix of multiple choice and short answer questions based on reading and lecture material. You are welcome to consult the instructional materials and your notes while taking the exam. The mid-term exam will be posted by October 16. The mid-term exam will be due at 11:59 pm on October 23.

3. Final exam: Similar in form to the mid-term. It will focus mostly on the second half of class but will include some comprehensive material. You are welcome to consult the instructional materials and your notes while taking the exam. The final exam will be posted by December 4. The final exam will be due at 11:59 p.m. on December 9.
All due dates will be posted on Canvas. Send questions to adam.briggle@unt.edu.

Mission Statement

I offer this course in service to the broader mission of the UNT College of Liberal Arts and Social Sciences, which is “to kindle the thirst for truth, justice, and beauty; to foster cultural literacy and scientific investigation; and to cultivate thinking, speaking, and writing abilities characterized by clear expression and logically coherent, evidence-based arguments. We see these as the values, forms of knowledge, and skills most needed by citizens of a democracy and by productive members of the global workforce.”

Textbook and Other Readings


Other readings can be found as articles in the appropriate spot on the course Canvas site.

Attendance and Study Tips

This is an online course and there are no requirements to attend any lecture or other activity at a specific time. That is, there is no required synchronous events. I will be recording and posting lectures via zoom throughout the semester and posting the quizzes and exams in a timely manner. I will consider you in good attendance if you watch those lectures the week that they are posted (and take good notes!) and stay on schedule with the assigned readings and quizzes. You won’t be able to march ahead of me in this class (other than maybe doing some reading in advance), because I am going to be posting fresh material fairly regularly. If you stay engaged on a weekly basis you won’t fall behind.

I recommend carving out some time two or three days per week to devote to this class. In other words, treat this like a regularly scheduled class…but you get to choose your own schedule. Work in the morning, the afternoon, weekends, the middle of the night… – whatever fits your needs; just strive to keep this class part of your weekly routine. I will strive to post lecture videos with slides and outlines in a timely fashion. I recommend downloading the outline and using that to help organize your own notes. If you find that you are falling behind or need any help, please reach out to me at adam.briggle@unt.edu.
Course Schedule

Start Here
The first step is to head to the “start here” material found in “modules” on Canvas. Here, you can find tips for Canvas, a little about me and my credentials to teach this course, and more.

Module 1: Introduction and Overview
Weeks 1 and 2: Aug. 24 – Sept. 6
Learning Objectives:
- Understand what this course entails and why it is relevant and important
- Identify central themes that will be revisited throughout the course
- Recognize how these themes take shape in different case studies

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<tr>
<th>Week</th>
<th>Instructional materials</th>
<th>Assessment</th>
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| 1    | • Read: Briggle and Mitcham, *Chap. 1 “Introduction and Overview”  
      • Watch: Lecture Introduction to the Course | Quiz 1a  
      (Due Sept. 6) |
| 2    | • Watch: Master Shi Heng Yi “5 Hindrances to Self-Mastery”  
      2020  
      • Read: Martine Rothblatt From Transgender to Transhuman  
      2011 *Both Prefaces and Chapter Five “Science and Sex”  
      • Watch: Lecture Case Studies and Themes | Quiz 1b  
      (Due Sept. 13) |

Module 2: What is Ethics?
Weeks 3 and 4: Sept. 7 – Sept. 20
Learning Objectives:
- Examine ethics as a field of inquiry
- Identify and distinguish the main kinds of ethics and normative ethical theories
- Apply these concepts and theories to case studies

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| 3    | • Read: Martin Luther King, Jr. “Letter from a Birmingham Jail” 1963  
      • Read: Briggle and Mitcham, Chap. 2 “Ethical Concepts and Theories” | Quiz 2a |
• Watch: Lecture Introduction to Ethics
• Watch: Lecture Ethical Concepts and Theories

4 • Read: Leon Kass “The Wisdom of Repugnance” 1997
• Read: Ruth Benedict “A Defense of Ethical Relativism” 1934
• Read: Peter Singer “Animal Liberation” 1994
• Watch: Lecture Cloning and Descriptive Ethics
• Watch: Lecture Relativism and Meta-ethics
• Watch: Lecture Animals and Normative Ethics

Quiz 2b

*For some accessible videos on ethics, I suggest this Crash Course series (7 videos) as well as Michael Sandel’s lecture series on Justice (19 videos). [These are just suggestions, not required.]

Module 3: Science and its Norms

Weeks 5 and 6: Sept. 21 – Oct. 4

Learning Objectives:
• Examine the norms and values entailed in scientific inquiry
• Categorize and assess different scientific norms
• Recognize the historical development of these norms

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| 5    | • Read: Briggle and Mitcham, Chap. 3 “Science and its Norms”
      | • Read: Robert K. Merton “The Normative Structure of Science” 1945
      | • Watch: Lecture What is Science?
      | • Watch: Lecture Values in Science | Quiz 3a |
| 6    | • Watch: Cosmos Episode 1
      | • Watch: Cosmos Episode 3
      | • Watch: Lecture A Brief History of Science
      | • Watch: Lecture Science in a Democracy | Quiz 3b |

Module 4: The Responsible Conduct of Research

Weeks 7 and 8: Oct. 5 – Oct. 18

Learning Objectives:
• Understand the meaning of responsible conduct of research
• Examine the historical and social contexts of research misconduct
• Compare and assess different explanations for research misconduct
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| 7    | • Read: Briggle and Mitcham Chapter 4 “Research Ethics I: Responsible Conduct”  
      • Read: National Academies Fostering Integrity in Research 2017, “Summary,” Chapter One “Introduction” and Chapter Two “Foundations of Integrity in Research” (note, you can download a free pdf at the link provided here)  
      • Watch: Lecture The Responsible Conduct of Research  
      • Watch: Lecture Doing Things Right and Doing the Right Things | Quiz 4A |
| 8    | • Read: Ullica Segerstrale “The Importance of being Right vs the Importance of being Earnest” 1992  
      • Read: William Broad and Nicholas Wade “Fraud and the Structure of Science” 1992  
      • Watch: Lecture Three Theories about Misconduct | Quiz 4B |

*Mid-term exam posted on October 16.

*Mid-term exam due on October 23 at 11:59 pm.

**Module 5: Science Involving Human Subjects**

Weeks 9 and 10: Oct. 19 – Nov. 1

Learning Objectives

- Identify the main ethical norms governing research with human subjects
- Explain the development of these norms
- Recognize the importance of protecting vulnerable people

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| 9    | • Read: Briggle and Mitcham Chapter 5 “Research Ethics II: Science Involving Humans”  
      • Read: Michael Selgelid and Euzebiusz Jamrozik, “Infecting healthy people in vaccine research can be ethical and necessary” 2019  
      • Watch: Lecture Expanding Scientists’ Responsibilities  
      • Watch: Lecture Science with Human Subjects: A Brief History | Quiz 5a |
| 10   | • Read: Allan Brandt “The Case of the Tuskegee Syphilis Study” 1978  
      • Read: Allyson Kelley, et al. “Research Ethics and Indigenous Communities” 2013  
      • Watch: Lecture Tuskegee, Racism, and Research Justice  
      • Watch: Lecture Science and Indigenous Knowledge | Quiz 5b |
Module 6: Policy for Science

Weeks 11 and 12: Nov. 2 – Nov. 15

Learning Objectives

- Explain and critique the post-World War II contract for science in society
- Recognize and assess the ways science and policy interact in a democracy
- Apply your understanding to a case study

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<td>11</td>
<td>- Read: Briggle and Mitcham Chapter 9 “Science and Politics I: Policy for Science”&lt;br&gt;- Read: Vannever Bush <em>Science—the Endless Frontier</em> Chapter 1 “Introduction and Chapter 3 “Science and the Public Welfare”&lt;br&gt;- Watch: Lecture Science Budgets as Values Statements&lt;br&gt;- Watch: Lecture Autonomy, Accountability, and Broader Impacts</td>
<td>Quiz 6a</td>
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<tr>
<td>12</td>
<td>- Read: Leon Kass “Forbidding Science: Some Beginning Reflections” 2009&lt;br&gt;- Read: John Ioannidis “Why Most Published Research Findings are False” 2005&lt;br&gt;- Watch: Lecture Forbidden Knowledge&lt;br&gt;- Watch: Lecture Is Science Rotting?</td>
<td>Quiz 6b</td>
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Module 7: Science for Policy

Weeks 13, 14, and 15: Nov. 16 – Dec. 3

Learning Objectives

- Examine the role of science in guiding and justifying democratic policymaking
- Recognize and assess ways in which science is politicized
- Apply your understanding to a case study

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| 14 | - Read: Glenn Kessler “DeVos’s claim that children are ‘stoppers’ of covid-19” 2020  
- Read: Elizabeth Kolbert “The Catastrophist: The climate expert who delivered news no one wanted to hear” 2009 (2020 reprint)  
- Watch: Lecture The Politicization of Science  
- Watch: Lecture Should Scientists be Activists? | Quiz 7b |

*Final exam posted by Dec. 4.

*Final exam due on Dec. 9 at 11:59 pm.

### Reading and Writing

I believe that in college you are not just learning whatever material you cover in your classes. More importantly, you are learning how to learn – that is, you are developing skills to take with you for the rest of your life’s journey. Reading and writing are a couple of these skills. For what it is worth, here are my thoughts about excellence in reading and writing.

### Reading

Level 1 – skimming without understanding or being able to summarize
Level 2 – grasping isolated points here and there
Level 3 – having a systemic understanding that grasps the basic order of the piece at hand
Level 4 – understanding not just the logic and structure of the argument, but also penetrating beneath it to see the assumptions that guide and frame it.
Level 5 – being able to integrate the material into your life and use it in the world; seeing the world anew as a result of being transformed by the reading.

### Writing

1. **Grammar, syntax, diction, spelling**
   1. Well-formulated sentences, paragraphs, and sections
   2. Thoughtful, appropriate, and precise word choice
   3. Words spelled correctly, no basic grammatical errors

2. **Organization/structure:**
   1. Clear statement of purpose/thesis
   2. Informs reader of what the piece will accomplish
   3. Logically organized, good transitions, coheres as a whole

3. **Scholarship**
   1. Adequate research of relevant resources (appropriate content included)
   2. Follows stated format guidelines (if there are any)
   3. Appropriate tone and style for intended audience, clean presentation

4. **Critical thought, assessment, and originality**
Disability Accommodation

UNT Policy 16.001 Disability Accommodation for Students and Academic Units.

“The University of North Texas (UNT or University) does not discriminate on the basis of disability in admission, treatment, or access to its programs or activities, nor in employment in its programs or activities. The University is committed to providing equal educational access for qualified students with disabilities in accordance with state and federal laws, including the Americans with Disabilities Act of 1990 as Amended, and Section 504 of the Rehabilitation Act of 1973. In addition, the University is committed to making all programs and activities sponsored by UNT accessible, as required by the Texas Accessibility Standards and the Americans with Disabilities Act Accessibility Guidelines. To this end, all academic units are willing to make reasonable and appropriate adjustments to the classroom environment and the teaching, testing, or learning methodologies in order to facilitate equality of educational access for persons with disabilities.”

Student Academic Integrity

UNT Policy 06.003 Student Academic Integrity Faculty Affairs.

“The University of North Texas promotes the integrity of learning and embraces the core values of trust and honesty. Academic integrity is based on educational principles and procedures that protect the rights of all participants in the educational process and validate the legitimacy of degrees awarded by the University. In the investigation and resolution of allegations of student academic dishonesty, the University’s actions are intended to be corrective, educationally sound, fundamentally fair, and based on reliable evidence.”