Mechanical Minds in History and Philosophy

Course Description
The idea that mental processes are mechanical is pervasive in contemporary thinking about what minds are and how they work, serving as a guiding principle behind artificial intelligence research. How did this notion arise and what assumptions underlie it? What past debates are embedded in present conceptions of the mechanical mind? This course tracks the emergence of analogies between minds and machines in early modern philosophy and science, and explores artificial intelligence’s philosophical lineage. To this end, we will examine the work of Thomas Hobbes, René Descartes, Blaise Pascal, G. W. Leibniz, Charles Babbage, Ada Lovelace, and Alan Turing, among others, together with historical investigations of the machines that inspired their thinking.

Course Overview
This course is primarily a discussion seminar. Students are expected to attend each session having read the assigned texts. Class readings are drawn from the history of philosophy as well as secondary studies of corresponding topics from the history of science and technology. Discussions of course content will be supplemented with research tutorials and workshops as relevant.

Required Texts: Students should acquire copies of the below texts, available at the NYU bookstore. *All other texts will be made available as PDFs through NYU Classes

ISBN: 0872204200

ISBN: 022652826X
Assignments

In addition to regular participation and attendance, students are required to submit the following assignments (see assignment details below course schedule):

- 7 1-page mini-commentaries on the assigned reading.
- One take-home midterm exam. Three questions will be distributed in class. Students choose one question to respond to. Responses should be 7–8 pages, double-spaced, 12 pt. font.
- One research exercise.
- One final paper: 10 pages maximum, double-spaced, 12 pt. font. Questions will be distributed in class.

Detailed descriptions of the assignments will be distributed at relevant times during the semester.

Evaluation

Participation: 10%
Mini-Commentaries: 30%
Research Exercise: 10%
Take-Home Midterm Exam: 25%
Final Essay: 25%

Course Schedule

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<th>Week 1: Introduction</th>
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<td>Overview</td>
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<th>Week 2: Reason and Reckoning</th>
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<td>Class 3</td>
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<tr>
<td>Reading: John Haugeland, “The Saga of the Modern Mind,” chapter 1 of Artificial Intelligence the Very Idea, 15–46</td>
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<th>Week 3: Isolating the Mind</th>
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<td>Class 5</td>
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<tr>
<td>Reading: René Descartes, Meditations, meditations 1–2 (10 pages)</td>
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Class 6  
Reading: René Descartes, *Meditations*, meditations 3–4 (17 pages)

**Week 4: Universal Reason**

Class 7  
Reading: René Descartes, *Meditations*, 5–6 (16 pages)

Class 8  
Reading: René Descartes, *Discourse on Method*, 1–3 (17 pages)

**Week 5: Automata and the Artificial**

Class 9  
Reading: René Descartes, *Discourse on Method*, 4–6 (25 pages)

Class 10  
Reading: Jessica Riskin, “Descartes Among the Machines,” 44–76

**Week 6: Machine Bodies and the Universal Characteristic**

Class 11  
Reading: G.W. Leibniz, “The Human Body, like that of any animal, is a sort of machine”  
(6 pages)  
G.W. Leibniz, “On the General Characteristic” (8 pages)  
Midterm Exam Questions Distributed

Class 12  
Reading: Matthew Stewart, “God’s Attorney,” in *The Courtier and the Heretic*, 75–94  

**Week 7: Reckoning Machines**

Class 13  
Reading: Pascal, *Pensées*, selections (~5 pages)  

Class 14  
Historical Lecture & Mid-Term Exam Discussion  
Due: Mid-Term Exam

**Week 8: The Human Machine**

Class 15  
Reading: Julien Offray de La Mettrie, *Man a Machine*, selections (~20 pages)
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<th>Class 16</th>
<th>Reading: Jessica Riskin, “The Adventures of Mr. Machine,” in <em>The Restless Clock</em>, 151–188</th>
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**Week 9: Musical Machines and Defecating Ducks**

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<th>Class 17</th>
<th>Reading: Adelheid Voskuhl, “The Harpsichord-Playing Android; or, Clock-Making in Switzerland,” in <em>Androids in the Enlightenment</em>, 37–86</th>
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| Class 18 | Reading: Jessica Riskin, “The Defecating Duck, or, the Ambiguous Origins of Artificial Life,” *Critical Inquiry*, 2003 (32 pages)  
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**Week 10: Engines and Industry**

Research Discussion  
Research Exercise Distributed |
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<th>Class 20</th>
<th>Reading: Ada Lovelace, “Translator’s Notes to an Article on Babbage’s Analytical Engine” (40 pages)</th>
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**Week 11: The Imitation Game**

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<th>Class 21</th>
<th>Reading: Alan Turing, “Computing Machinery and Intelligence” (28 pages)</th>
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| Class 22 | Reading: Jessica Riskin, “Outside In,” in *The Restless Clock*, 296–336  
Research Exercise Due |
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**Week 12: Minds, Feedback, and Computers**

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<th>Class 23</th>
<th>Reading: Hans Jonas, “Cybernetics and Purpose: A Critique” (29 pages)</th>
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<th>Class 24</th>
<th>Reading: Ned Block, “The Mind as Software of the Brain” (40 pages)</th>
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Final Paper Questions Distributed
Week 13: Does the Mind Work that Way?

Class 25

Class 26
Reading: Hubert Dreyfus and John Haugeland, “The Computer as a Mistaken Model of Mind” (16 pages)

Week 14: Conclusion: Where are We Now?

Class 27
Review & Workshop Papers
Bring Completed Draft to Class

Class 28
Final Essay Due / End-of-Semester Discussion

Learning Outcomes
By the end of the semester students should:
1. Be able to restate and evaluate the strength of arguments in scientific and philosophical texts.
2. Have a foundation for college-level research practices in the humanities.
3. Have a strong introductory grasp of concepts related to the historical and philosophical development of the idea of the mechanical mind.
4. Have an introductory understanding of the philosophical principles that underlie the pursuit of artificial intelligence.

I. ATTENDANCE & PARTICIPATION—10%:
More than two unexcused absences will automatically result in a lower grade. Chronic lateness will also be reflected in your evaluation of participation. Regardless of the reason for your absence you will be responsible for any missed work. Travel arrangements do not constitute a valid excuse for rescheduling exams. There are no extra credit assignments for this class.

This portion of your grade is based on how you conduct yourself in the classroom space. Accordingly, attendance, absences, and lateness account for only a portion of this part of your grade. This course is primarily a discussion-based seminar. Our collaborative aim is to create a space where everyone feels comfortable engaging in discussion and exchanging ideas. This means, then, that you are expected to come prepared to each class having read the assigned material and to base class discussions directly on the assigned reading. Now, this semester we will be reading some very difficult texts. Reading assignments will range between 20 and 40
pages for each class session. It is highly recommended that you read the assigned texts at least twice, if not more times, before each class session.

Perhaps the most important element of creating an open space for dialogue is being respectful of what other people say and the manner in which they express themselves. And so, it is especially important that you listen to others. The foundation of a lively discussion consists in caring as much for the words and thoughts of others as you do for your own.

II. MINI-COMMENTS—30%:
Each week I will pose a question that relates to the assigned reading and class discussions. You will then have to write a 1 page response paper that directly addresses the question. I will present the questions in class and will also post them on Classes. Response papers are due in class on Mondays and I will typically give the prompts on Wednesdays* (exceptions to this are listed on the course outline above). They will be graded on the scale of check, check plus, or check minus. There will be 7 responses due in total over the course of the semester. Students have the option to choose which weeks to turn in a mini-commentary, as long as they turn in at least 7 across the semester. At the end of the semester, I will drop your lowest grade on these assignments. (While students are expected to turn in all 7 of the response papers, only 6 of these will count toward the final grade.) Late responses will not be accepted for a grade. When writing the responses, do your best to directly address the questions posed. You will be graded on how deeply you are engaging with the material and your ability to clearly restate arguments, think critically, and summarize the texts in your own words.

III. Research Exercise—10%
You will have to complete one research scavenger hunt exercise. The aim of this assignment is to help you build research skills and become familiar with the resources available to you in the NYU community. A specific outline of the activity will be distributed on class 19, and the activity itself will be due on class 21.

IV. Midterm Exam—25%
Midway through the term, I will distribute a set of questions to which you will have to respond. You will be able to choose one question from a variety of options. You will have one week to complete the exam, on your own schedule. Your response should address the chose question directly and should be 7–8 pages, 12pt. font, double spaced.

V. Final Essay—25%
The final essay will be similar in format to the midterm exam: I will distribute a list of questions and you will choose one. For the final essay, you must incorporate two (2) secondary sources: one you must choose from a list of possible sources that I will provide; the other you must find on your own. The final essay should be 10 pages, 12pt. font, doubled spaced, and formatted according to the guidelines of the Chicago Manual of Style.
Henry and Lucy Moses Center for Students with Disabilities
If you are in need of accommodations to take part in this seminar and complete the required assignments, please contact the Moses Center for Students with Disabilities. The instructor will work with students and the Center in order to ensure that adequate conditions are in place so that all students are able to succeed in this course.
mosescsd@nyu.edu / 212-998-10003 / 726 Broadway, 3rd Floor, New York, NY 10003

Evaluation Rubric
A = Excellent
This work is comprehensive and detailed, integrating themes and concepts from discussions, lectures and readings. Writing is clear, analytical and organized. Arguments offer specific examples and concisely evaluate evidence. Students who earn this grade are prepared for class, synthesize course materials and contribute insightfully.
B = Good
This work is complete and accurate, offering insights at general level of understanding. Writing is clear, uses examples properly and tends toward broad analysis. Classroom participation is consistent and thoughtful.
C = Average
This work is correct but is largely descriptive, lacking analysis. Writing is vague and at times tangential. Arguments are unorganized, without specific examples or analysis. Classroom participation is inarticulate.
D = Unsatisfactory
This work is incomplete, and evidences little understanding of the readings or discussions. Arguments demonstrate inattention to detail, misunderstand course material and overlook significant themes. Classroom participation is spotty, unprepared and off topic.
F = Failed
This grade indicates a failure to participate and/or incomplete assignments
A  = 94-100
A- = 90-93
B+ = 87-89
B  = 84-86
B- = 80-83
C+ = 77-79
C  = 74-76
C- = 70-73
D+ = 65-69
D  = 60-64
F  = 0-59