COURSE OUTLINE

(1) GENERAL

UNIVERSITY / Department	NATIONAL AND KAPODISTRIAN UNIVERSITY OF ATHENS / Department of History and Philosophy of Science
STUDY LEVEL	Postgraduate

COURSE CODE		**SEMESTER OF STUDY**	Spring
COURSE TITLE	Philosophy of Technology		
INSTRUCTOR(S)	Manolis Simos		

TEACHING ACTIVITIES	**TEACHING HOURS PER WEEK**	**ECTS**
Seminars	3	10

COURSE TYPE	specialization, skills development
PREREQUISITE COURSES	
LANGUAGE OF INSTRUCTION and EXAMINATIONS	English
COURSE OFFERED TO ERASMUS STUDENTS	
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The philosophy of technology course constitutes an introduction to the philosophical discussion of technology. Namely, we will discuss a series of critical approaches to two interlinked ideas; the idea of the inherent neutrality of technological artifacts, and the idea of technological determinism, that is, the idea of the inevitable development of technology in virtue of an inner logic. Specifically, we will discuss how technological materialities and their function can be understood not in terms of their internal properties, but as embedded in specific contexts, and, thus, as socially constituted. We will discuss how the access to and understanding of the world is constitutively mediated by technological artifacts, how specific technological configurations fashion different types of selfhood, and how the very distinction between the human and the technical can collapse. Finally, the course will end with an introductory discussion of ethical approaches to technology. Upon successful completion of the course, students: • will have gained familiarity with reading and discussing philosophical texts, • will be able to communicate clearly their views and arguments to both specialist and non-specialist audiences, • will have been accustomed to different contemporary approaches to technology,

- will have developed and been accustomed to a critical way of thinking that enables understanding technology as a social phenomenon that shapes power relations, but also, in turn, is shaped by them,
- will have developed and have been accustomed to the necessary set of conceptual tools for understanding and discussing the ethical and social challenges that derive from biomedicine and biotechnology, the relation between technology and environment, AI, and Big Data.

General Skills

- Critical thinking
- Independent work
- Work in an international environment
- Work in an interdisciplinary environment
- Generating new research ideas
- Exercise criticism and self-criticism
- Promotion of free, creative and inductive thinking
- Appreciate diversity and multiculturality
- Respect natural environment
- Show social, professional and moral responsibility and sensitivity to gender issues

(3) COURSE CONTENT

Course outline of thirteen weekly meetings:
1. Philosophy of technology: course structure and introductory remarks
2. Sociology of scientific knowledge (1)
3. Sociology of scientific knowledge (2)
4. Social construction of technology (1)
5. Social construction of technology (2)
6. Semiotic approaches to technology
7. Actor Network Theory (ANT) (1)
8. Actor Network Theory (ANT) (2)
9. Actor Network Theory (ANT) (3)
10. Postphenomenological approaches to technology (1)
11. Postphenomenological approaches to technology (2)
12. Ethics of technology (1)
13. Ethics of technology (2)

Weeks 2-3: Sociology of scientific knowledge

Focusing on the 'strong programme' of the sociology of scientific knowledge (SSK), as it is particularly exemplified in D. Bloor's work, we will discuss the critique of scientific realism and examine the notion of a socially constituted rationality.

Focus texts:

Bloor, D. 1991 [1976]. *Knowledge and Social Imagery*. The University of Chicago Press, chs. 1 and 2.

Bloor, D. 2011. *The Enigma of the Aerofoil*. The University of Chicago Press, "Introduction" and ch. 10.

Weeks 4-5: Social construction of technology

We will discuss the impact of the sociology of scientific knowledge to the philosophical investigation of technological artifacts. We will examine the way technological design is conceived as complex and contextual process, and how the adoption of specific technologies depends on specific cultural, social, and political factors.

Focus texts:

Winner, L. 1980. Do Artifacts Have Politics?. *Daedalus* 109 (1): 121–36.

Hecht, G. 1994. Political Designs: Nuclear Reactors and National Policy in Postwar France. *Technology and Culture* 35 (4): 657–685.

Week 6: Semiotic approaches to technology

We will discuss the conceptualisation of technical configurations in terms of systems of signs, and examine the way these configurations are analysed in light of semiotics and literary theory.

Focus text:

Latour, B. and Woolgar, S. 1986 [1979]. *Laboratory Life*. Princeton University Press, chs. 1, 6, and "Postscript to the Second Edition (1986)".

Weeks 7–9: Actor Network Theory (ANT)

We will discuss the relation between the semiotic approach and the 'actor-network-theory'. In the context of analysing the latter approach, we will examine the way in which nature, society, materialities and technological configurations are not conceived as distinct ontological categories, but, instead, in terms of a network of interrelated actants.

Focus texts:

Callon, M. 1984. Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. *The Sociological Review* 32 (1, suppl.): 196–233.

Latour, B. 1992. Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts. In Bijker and Law (eds.). *Shaping Technology/Building Society*. The MIT Press, pp. 225–258.

Latour, B. 2005. *Reassembling the Social. An Introduction to Actor-Network-Theory*. Oxford University Press, "Introduction", "Introduction to Part I", "Introduction to Part II", "Conclusion".

Weeks 10–11: Postphenomenological approaches

We will discuss the idea that human access and relation to the world is constitutively mediated by technical and technological artifacts, and examine, in turn, the way these material configurations fashion different types of subjectivity.

Focus texts:

Rosenberger, A. 2014. Multistability and the Agency of Mundane Artifacts: From Speed Bumps to Subway Benches. *Human Studies* 37: 369-392.

Rosenberger, A. 2022. Technological Multistability and the Trouble with the Things Themselves. In S. Vallor (ed.). *The Oxford Handbook of Philosophy of Technology*. Oxford University Press, pp. 374–391.

Weeks 12-13: Ethics of technology

In the final two weeks, we will have an introductory discussion of ethical approaches to technology. Focusing on AI systems, we will discuss ethical issues that derive from the design and use of technologies, like the ones of bias, privacy, and opacity, along with a series of normative (deontology, consequentialism, contractarianism, virtue ethics) and more sociological and descriptive approaches.

Focus texts:

Tsou, J. Y. and Walsh, K. P. 2023. Ethical Theory and Technology. In G. J. Robson and J. Y. Tsou. (eds.). *Technology Ethics. A Philosophical Introduction and Readings*. Routledge, pp. 62–72

Coeckelbergh, M. 2022b. *The Political Philosophy of AI*. The MIT Press, chs. 3 and 5.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

TEACHING FORMAT	Classroom lectures and discussions
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	• PowerPoint presentations • e-class online platform use • e-mail communication
TEACHING STRUCTURE	*(see table below)*

Activity	Semester Workload
Lecture	26
Discussion	13
Independent study	211
Total (30 hours of work per credit unit)	**300**

STUDENT EVALUATION	1. Class participation (20%) 2. Weekly paper (80%) Weekly paper (450 words): written summary and commentary of precirculated focus texts that are to be discussed in class.

(5) RECOMMENDED BIBLIOGRAPHY

General works

Olsen, J. K. B., Pedersen, S. A., and Hendricks, V. F. (eds.) 2009. *A Companion to the Philosophy of Technology*. Blackwell.

Vallor, S. (ed.) 2022. *The Oxford Handbook of Philosophy of Technology*. Oxford University Press.

Weeks 2-3: Sociology of scientific knowledge

Barnes, B., Bloor, D., and Henry, J. 1996. *Scientific Knowledge. A Sociological Analysis*. The University of Chicago Press.

Bloor, D. 1991 [1976]. *Knowledge and Social Imagery*. The University of Chicago Press.

Bloor, D. 2011. *The Enigma of the Aerofoil*. The University of Chicago Press.

Collins, H. M. 1985. *Changing Order. Replication and Induction in Scientific Practice*. Sage Publications.

Shapin, S. and Schaffer, S. 1985. *Leviathan and the Air-Pump*. Princeton University Press.

Weeks 4-5: Social construction of technology

Bijker, W. E. 1995. *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. The MIT Press.

Bijker, W. E. and Law, J. (eds.) 1992. *Shaping Technology/Building Society. Studies in Sociotechnical Change*. The MIT Press.

Hecht, G. 1994. Political Designs: Nuclear Reactors and National Policy in Postwar France. *Technology and Culture* 35 (4), 657–685.

Winner, L. 1980. Do Artifacts Have Politics?. *Daedalus* 109 (1): 121–36.

Week 6: Semiotic approaches to technology
Innis R. E. 2003. The Meanings of Technology. *Techné* 7 (1): 49–58.

Latour, B. and Woolgar, S. 1986 [1979]. *Laboratory Life*. Princeton University Press.

Weeks 7–9: Actor-Network-Theory (ANT)
Callon, M. 1984. Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay. *The Sociological Review* 32 (1, suppl.): 196–233.

Latour, B. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Harvard University Press.

Latour, B. 1992. Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts. In Bijker and Law (eds.). *Shaping Technology/Building Society*. The MIT Press, pp. 225–258.

Latour, B. 1999. *Pandora's Hope*. Harvard University Press.

Latour, B. 2005. *Reassembling the Social. An Introduction to Actor-Network-Theory*. Oxford University Press.

Law, J. 2009. Actor Network Theory and Material Semiotics. In B. S. Turner (ed.). *The New Blackwell Companion to Social Theory*. Blackwell, pp. 141–158.

Mol, A. 2010. Actor-Network Theory: Sensitive Terms and Enduring Tensions. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*. Sonderheft, 50: 253–269.

Weeks 10–11: Postphenomenological approaches
Ihde, D 1993. *Postphenomenology. Essays in the Postmodern Context*. Northwestern University Press.

Ihde, D. 2009. *Postphenomenology and Technoscience. The Peking University Lectures*. State University of New York Press.

Rosenberger, A. 2014. Multistability and the Agency of Mundane Artifacts: From Speed Bumps to Subway Benches. *Human Studies* 37: 369-392.

Rosenberger, A. 2022. Technological Multistability and the Trouble with the Things Themselves. In S. Vallor (ed.). *The Oxford Handbook of Philosophy of Technology*. Oxford University Press, pp. 374–391.

Rosenberger, R. and Verbeek P.-P. (eds.) 2015. *Postphenomenological Investigations. Essays on Human-Technology Relations*. Lexington Books.

Weeks 12-13: Ethics of technology
Coeckelbergh, M. 2020. *AI Ethics*. The MIT Press.

Coeckelbergh, M. 2022a. *The Political Philosophy of AI*. The MIT Press, chs. 3 and 5.

Coeckelbergh, M. 2022b. *Robot Ethics*. The MIT Press.

Noble, S. U. 2018. *Algorithms of Oppression. How Research Engines Reinforce Racism*. New York University Press.

O'Neil, C. 2016. *Weapons of Math Destruction. How Big Data Increases Inequality and Threatens Democracy*. Crown.

Robson, G. J. and Tsou, J. Y. (eds.). *Technology Ethics. A Philosophical Introduction and Readings*. Routledge.

Tsou, J. Y. and Walsh, K. P. 2023. Ethical Theory and Technology. In G. J. Robson and J. Y. Tsou. (eds.). *Technology Ethics. A Philosophical Introduction and Readings*. Routledge, pp. 62–72.