Descriptif d'enseignement/*Course descriptions*

Cycle master

Semestre S1

Titre du cours — *Course title*

Intitulé du cours : Current Issues and Further Questions: Philosophy and Society

Type de cours : Séminaire

Langue du cours/Language of instruction: Anglais

Enseignant(s) — *Professor(s)*

Nom de l'enseignant : Xavier Landes

Titre ou profession : Associate professor, Stockholm School of Economics in Riga

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Résumé du cours — Objectifs — *Course description – Targets*

The course offers to investigate questions of direct relevance for the society. It aims at raising the philosophical underpinnings and implications of current social debates (e.g. climate change, happiness and wellbeing, inequality).

For 2022/2023, the focus will be on climate change and engineering. Climate change represents one of the most pressing global challenges. Traditional responses include *mitigation* (reduction of CO_2 and other greenhouse gas emissions) and *adaptation* (preparation for shielding populations against specific changes, e.g. by building seawalls, switching to drought-resistant crops). Another response has recently gained traction among some scientists and decision makers: *geoengineering* or *climate engineering*, which could be defined as the voluntary alteration of the climate to slow/revert it, or lessen some of its adverse impacts.

While humans have tried throughout history to influence the climate by various means more or less efficient (e.g. rituals, cloud seeding, wildfires), geoengineering has been gaining momentum during the last decade due to the failure of nations to seriously commit to mitigation. Because governments have difficulties to coordinate and agree on sufficient carbon abatement for averting drastic changes, the possibility of modifying the climate through carbon dioxide removal (CDR) or solar radiation management (SRM) has become increasingly attractive.

The course's aim is to introduce to the challenges caused by climate change and present the main technologies of CDR and SRM. The goal is to reach a fine-grained view of the multiplicity of issues raised by geoengineering techniques. At the end of the seminar, students should be able to:

- Understand the major political and ethical dimensions of climate change,

- Have a clear comprehension of the various CDR and SRM interventions and explain the differences between them,
- Critically assess how the benefits, efficacy, risks/uncertainties of each technique,
- Present and discuss the key arguments for and against geoengineering research and deployment,
- Identify and evaluate the major questions in terms of global governance and justice posed by geoengineering.

Evaluation – *Assessment*

The grade will be made of:

- 50% for participation and an online presentation of a text or a theme,
- 50% for an 8-page (per person) essay. Essays could be individual or written in groups of 2-4 people as long as each student clearly identifies the part s-he wrote.

Plan – Séances – *Course outline*

6 sessions of 3 hours

[N.B.: the literature for each session is subject to change.]

1. Introduction: Climate Change in the Anthropocene

Mandatory

Lewis, S.L., & Maslin, A. M. (2015). Defining the Anthropocene. *Nature,* 519, 171-180.

Santana, C. (2019). Waiting for the Anthropocene. *The British Journal for the Philosophy of Sciences, 70,* 1073-1096.

Complementary

Autin, W.J., & Holbrook, J.M. (2012). Is the Anthropocene an issue of stratigraphy or pop culture? and Answers, *GSA Today* 22(7), 60-61; e21-e23.

Crutzen, P.J., & Stoermer, E.F. (2000). The "Anthropocene". *IGBP Newsletter,* 41, 17-18.

Finney, S.C., Edwards, L.E. (2016). The "Anthropocene" epoch: Scientific decision or political statement? *GSA Today,* 26(3-4), 4-10.

2. What's Climate Engineering? How to Evaluate it?

Mandatory

Cox, E.M., Pidgeon, N., Spence, E., & Thomas, G. (2018). Blurred Lines: The Ethics and Policy of Greenhouse Gas Removal at Scale. *Frontiers in Environmental Science,* 6(38).

Preston, C. (2013). Ethics and geoengineering: reviewing the moral issues raised by solar radiation management and carbon dioxide removal. *WIREs Climate Change,* 4, 23-37.

Robock, A. (2008). 20 reasons why geoengineering may be a bad idea. *Bulletin of Atomic Scientists*, 64(2), 14-18.

Complementary

Jamieson, D. (1996). Ethics and Intentional Climate Change. *Climatic Change,* 33: 323-336.

Nordhaus, T. (2018). The two-degree delusion. *Foreign Affairs*. Retrieved from: https://www.foreignaffairs.com/articles/world/2018-02-08/two-degree-delusion

3. Geoengineering Technologies: Carbon Dioxide Removal and Solar Radiation Management

Mandatory

National Research Council. (2015). *Climate Intervention: Carbon Dioxide Removal and Reliable Sequestration*. Washington, DC: The National Academies Press, 29-36.

National Research Council. (2015). *Climate Intervention: Reflecting Sunlight to Cool Earth*. Washington, DC: The National Academies Press, 29-46.

The Royal Society (2009). *Geoengineering the Climate: Science, Governance and Uncertainty*. London: The Royal Society, 9-36.

Available here: https://royalsociety.org/topics-policy/publications/2009/geoengineering-climate/

Complementary

Gardiner, S. (2011). Some Early Ethics of Geoengineering the Climate: A Commentary on the Values of the Royal Society Report. *Environmental Value,* 20(2), 163-188.

Hamilton, C. (2013). *Earthmasters: The Dawn of the Age of Climate Engineering*. New Haven and London: Yale University Press, chapter 2 'Sucking Carbon'.

Hamilton, C. (2013). *Earthmasters: The Dawn of the Age of Climate Engineering*. New Haven and London: Yale University Press, 3 'Regulating Sunlight'.

McLaren, D.P. (2019). Beyond "Net-Zero": A Case for Separate Targets for Emissions Reduction and Negative Emissions. *Frontiers in Climate*, 1(4).

4. The Case for Geoengineering: From Research to Deployment (beginning of students' presentations)

Mandatory

Frumhoff, P.C., & Stephens, J.C. (2018). Towards legitimacy of the solar geoengineering research enterprise. *Philosophical Transactions of The Royal Society A,* 376(2119), 20160459.

Gardiner, S.M., & Fragnière, A. (2018). Moving Beyond the Oxford Principles to an Ethically More Robust Approach. *Ethics, Policy & Environment,* 21(2): 143-174. (Read in conjunction with Rayner *et al.* [2013]).

Keith, D. (2017). Toward a Responsible Solar Engineering Research Program. *Issues in Science and Technology,* 33(3).

Morrow, D., & Svoboda, T. (2016). 'Geoengineering and Non-Ideal Theory'. *Public Affairs Quarterly,* 20(1), 83-102.

Complementary

Flegal, J.A., & Gupta, A. (2018). Evoking equity as a rationale for solar geoengineering research? Scrutinizing emerging expert visions of equity. *International Environmental Agreements: Politics, Law and Economics,* 18, 45-61.

Morrow, D.R., Kopp, R.E., & Oppenheimer, M. (2009). Towards ethical norms and institutions for climate engineering research. *Environmental Research Letters,* 4.

Rahman, A., Artaxo, P., Asrat, A., & Parker, A. (2018). Developing countries must lead on solar geoengineering research. *Nature,* 556: 22-24.

Rayner, S., Heyward, C., Kruger, T., Pidgeon, N., Redgwell, C., & Savulescu, J. (2013). The Oxford Principles. *Climate Change,* 121, 499-512.

Stephens, J.C., & Surprise, K. (2020). The hidden injustices of advancing solar geoengineering research. *Global Sustainability* 3(e2): 1-6.

5. Risks and Uncertainties

Mandatory

Gardiner, S.M. (2013). The Desperation Argument for Geoengineering. *PS: Political Science and Politics,* 46(1), 28-33.

McKinnon, C. (2020). 'The Panglossian politics of the geoclique'. *Critical Review of International Social and Political Philosophy,* 23(5), 584-599.

Wolff, J. (2020). Fighting risk with risk: solar radiation management, regulatory drift, and minimal justice. *Critical Review of International Social and Political Philosophy,* 23(5), 564-583.

Complementary

Davies, G. (2013). Privatisation and De-globalisation of the Climate. *Carbon and Climate Law Review,* 7(3), 187-193.

Hulme, M. (2014). *Can Science Fix Climate Change?* Cambridge: Polity Press, chapter 2 'Designing a Global Thermostat', 32-56.

Surprise, K. (2020). Stratospheric imperialism: Liberalism, (eco)modernization, and ideologies of solar geoengineering research. *EPE: Nature and Space*, 3(1), 141-163.

6. Justice and Governance

Mandatory

Biermann, F. *et al.* (2022). Solar geoengineering: The case for an international non-use agreement. *WIREs Climate Change*, 13(3), e754.

Hourdequin, M. (2018). Geoengineering Justice: The Role of Recognition. *Science, Technology, & Human Values*

McLaren, D.P. (2018). 'Whose climate and whose ethics? Conceptions of justice in solar geoengineering modelling.' *Energy Research & Social Science,* 44, 209-221.

Reynolds, J.L. (2019). Solar geoengineering to reduce climate change: a review of governance proposals. *Proceedings of the Royal Society A* 475(2229): 20190255.

Complementary

Gupta, A., Möller, I., Biermann, F., Jinnah, S., Kashwan, P., Mathur, V., Morrow, D.R., & Nicholson, S. (2020). Anticipatory governance of solar geoengineering: conflicting visions of the future and their links to governance proposals. *Current Opinion in Environmental Sustainability,* 45, 10-19.

Horton, J., & Keith, D. (2016). Solar Engineering and Obligations to the Global Poor. In Preston, C.J. (ed.) *Climate Justice and Geoengineering: Ethics and Politics in the Atmospheric Anthropocene* (pp.79-92). London and New York: Rowman and Littlefield.

Horton, J.B., Reynolds, J.L., Buck, H.J., Callies, D., Schäfer, S., Keith, D.W., & Rayner, S. (2018). Solar Engineering and Democracy. *Global Environmental Politics,* 18(3), 5-24.

Svoboda, T., Keller, K., Goes, M., & Tuana, N. (2011). Sulfate Aerosol Geoengineering: The Question of Justice. *Public Affairs Quarterly,* 25(3), 157-179.

Talberg, A., Christoff, P., Thomas, S., & Karoly, D. (2018). Geoengineering governance-by-default: An earth system governance perspective. *International Environmental Agreements: Politics, Law and Economics*, 18, 229-253.

Bibliographie — *Bibliography:*

Burns, Wil C.G. and Andrew L. Strauss (eds.) (2013). *Climate Change Geoengineering*. Cambridge: Cambridge University Press.

Fleming, James Rodger (2010). *Fixing the Sky*. New York: Columbia University Press.

Gardiner, Stephen M., Simon Caney, Dale Jamieson and Henry Shue (eds.) (2010). *Climate Ethics*. Oxford: Oxford University Press.

Gerrard, Michael B. and Tracy Hester (eds.) (2018). *Climate Engineering and the Law*. Cambridge: Cambridge University Press.

Goodell, Jeff (2010). *How to Cool the Planet*. Boston and New York: Houghton Mifflin Harcourt.

Hamilton, Clive (2013). *Earthmasters*. New Haven and London: Yale University Press.

Hulme, Mike (2014). *Can Science Fix Climate Change?* Cambridge, UK: Polity Press.

Keith, David (2013). *A Case for Climate Engineering*. Cambridge, MA: The MIT Press.

Kintisch, Eli (2010). *Hack the Planet*. Hoboken: Wiley.

Morton, Oliver (2015). *The Planet Remade*. London: Granta.

Preston, Christopher J. (ed.) (2012). *Engineering the Climate*. Lanham: Lexington Books.

Preston, Christopher J. (ed.) (2016). *Climate Justice and Geoengineering*. Rowman and Littlefield.

Reynolds, Jesse (2019). *The Governance of Solar Engineering*. Cambridge: Cambridge University Press.

Stilgoe, Jack (2015). *Experiment Earth*. London and New York: Routledge.