

35872 Environmental and Health Economics

module number
35872
module title
Environmental and Health Economics
module coordinator
Dr. Benedikt Janzen

examination number	credit points (ECTS)	hours per week (SWS)
xxxxxx	5	2+2
availability	duration	recommended semester
Summer semester	1 semester	2

workload
Lecture 2 SWS (30 hours class instruction; 45 hours self-study) Uebung 2 SWS (30 hours class instruction; 45 hours self-study)
Calculation is based on: every hr./sem.-week corresponds to 60 minutes. One semester is presumed to be 15 weeks, i.e. 14 course + 1 exam week
module applicability
Modulgruppe D: Governance, Institutions and Development
reference to the LPO I
recommended requirements
Solid knowledge in (undergraduate) microeconomics Solid knowledge in microeconometrics, in particular quasi-experimental methods
obligatory requirements
language
English

content
This course focuses on the economic analysis of health and the environment. We begin by introducing the theoretical concepts of environmental economics, including the theories of externalities and environmental policy. While these concepts provide a foundation, the primary focus of the course is empirical. We start by exploring the causal impact of temperature extremes on human health (and other aspects of human life) and the environmental policies aimed at mitigating or adapting to these effects. We will discuss different approaches to measuring the social cost of carbon, a key tool for effective climate policy design. We then turn our focus to other environmental hazards resulting from increased human economic activity—such as air pollution, water pollution, noise pollution, toxic substances, and biodiversity loss—and their causal impact on human health, while assessing the effectiveness of various environmental policies in mitigating these risks. We will look at inequalities in environmental exposure and damages from an economic perspective, and discuss the distributional impacts of environmental policies. Finally, we will explore international

environmental issues, such as transboundary pollution and pollution-haven effects, and their connections to human health.
intended learning outcomes (ILOs)
Students who have successfully participated in this module should be able to <ul style="list-style-type: none"> • demonstrate a clear understanding of theoretical concepts in the field of environmental economics • interpret empirical evidence on the topics discussed and assess the merits and limitations of empirical studies • describe and discuss the impact of environmental stressors on human health and other aspects of human life • assess the relative strengths and weaknesses of environmental policies and contribute to well-informed debates on the intersection of environmental and health economics
teaching methods
Classroom lecture with interactive elements (Vorlesung mit Seminarcharakter) Übung with tutorials and student presentations
required attendance
examination (type of examination, scope)
Portfolio (final exam and presentation)
overall grade relevance
80% final exam and 20% presentation
possibility of retake exam
reading list
Textbook Phaneuf, D. J., & Requate, T. (2016). <i>A course in environmental economics: Theory, policy, and practice</i> . Cambridge University Press.
Articles Graff Zivin, J., & Neidell, M. (2013). Environment, health, and human capital. <i>Journal of Economic Literature</i> , 51(3), 689-730. Dell, M., Jones, B. F., & Olken, B. A. (2014). What do we learn from the weather? The new climate-economy literature. <i>Journal of Economic literature</i> , 52(3), 740-798. Auffhammer, M. (2018). Quantifying economic damages from climate change. <i>Journal of Economic Perspectives</i> , 32(4), 33-52. Banzhaf, S., Ma, L., & Timmins, C. (2019). Environmental justice: The economics of race, place, and pollution. <i>Journal of Economic Perspectives</i> , 33(1), 185-208. Hsiang, S., Oliva, P., & Walker, R. (2019). The distribution of environmental damages. <i>Review of Environmental Economics and Policy</i> . Carleton, T., Jina, A., Delgado, M., Greenstone, M., Houser, T., Hsiang, S., ... & Zhang, A. T. (2022). Valuing the global mortality consequences of climate change accounting for adaptation costs and benefits. <i>The Quarterly Journal of Economics</i> , 137(4), 2037-2105. Barreca, A., Clay, K., Deschenes, O., Greenstone, M., & Shapiro, J. S. (2016). Adapting to climate change: The remarkable decline in the US temperature-mortality relationship over the twentieth century. <i>Journal of Political Economy</i> , 124(1), 105-159. Deryugina, T., Heutel, G., Miller, N. H., Molitor, D., & Reif, J. (2019). The mortality and medical costs of air pollution: Evidence from changes in wind direction. <i>American Economic Review</i> , 109(12), 4178-4219. Barwick, P. J., Li, S., Lin, L., & Zou, E. Y. (2024). From fog to smog: The value of pollution information. <i>American Economic Review</i> , 114(5), 1338-1381. Zou, E. Y. (2021). Unwatched pollution: The effect of intermittent monitoring on air quality. <i>American Economic Review</i> , 111(7), 2101-2126.

Ebenstein, A. (2012). The consequences of industrialization: Evidence from water pollution and digestive cancers in China. *Review of Economics and Statistics*, 94(1), 186-201.

Marcus, M. (2022). Testing the water: Drinking water quality, public notification, and child outcomes. *Review of Economics and Statistics*, 104(6), 1289-1303.

Keiser, D. A., Mazumder, B., Molitor, D., & Shapiro, J. S. (2023). Water works: Causes and consequences of safe drinking water in America, mimeo.

Dean, J. T. (2024). Noise, cognitive function, and worker productivity. *American Economic Journal: Applied Economics*, 16(4), 322-360.

Taylor, M. S. (2011). Buffalo hunt: International trade and the virtual extinction of the North American bison. *American Economic Review*, 101(7), 3162-3195.

Frank, E., & Sudarshan, A. (2024). The social costs of keystone species collapse: Evidence from the decline of vultures in India. *American Economic Review*, 114(10), 3007-3040.

Hollingsworth, A., & Rudik, I. (2021). The effect of leaded gasoline on elderly mortality: Evidence from regulatory exemptions. *American Economic Journal: Economic Policy*, 13(3), 345-373.

Marcus, M. (2021). Going beneath the surface: Petroleum pollution, regulation, and health. *American Economic Journal: Applied Economics*, 13(1), 72-104.

Banzhaf, H. S., Ma, L., & Timmins, C. (2019). Environmental justice: Establishing causal relationships. *Annual Review of Resource Economics*, 11(1), 377-398.

Colmer, J., & Voorheis, J. (2020). The intergenerational effects of early-life pollution exposure, mimeo.

Currie, J., Voorheis, J., & Walker, R. (2023). What caused racial disparities in particulate exposure to fall? New evidence from the Clean Air Act and satellite-based measures of air quality. *American Economic Review*, 113(1), 71-97.

Hernandez-Cortes, D., & Meng, K. C. (2023). Do environmental markets cause environmental injustice? Evidence from California's carbon market. *Journal of Public Economics*, 217, 104786.

Tanaka, S., Teshima, K., & Verhoogen, E. (2022). North-South displacement effects of environmental regulation: The case of battery recycling. *American Economic Review: Insights*, 4(3), 271-288.

Heo, S. W., Ito, K., & Kotamarthi, R. (2025). International spillover effects of air pollution: Evidence from mortality and health data. *Review of Economics and Statistics*, forthcoming.

additional notes