

Module: One Health and Climate Change

Assignment to the study programme Certificate programme "EUGLOH Certificate of Advanced Studies in Global Health"

Assigned module parts

Learning form	Course (compulsory)	Turnus	ECTS
Lecture & Seminar	WP 2 One Health and Climate Change	WiSe	3

Type of module	Elective module with compulsory courses
Participation requirements	None
Time in the course of studies	Semester 2
Duration	1 semester
Contents	The course will introduce students to the connections between climate change and health. The content material provides a framework to understand the basic mechanisms of climate change and the extent of its impacts on human and animal health, identifying the connection between planetary challenges and local threats. Role-playing exercises encourage the practice of thinking systemically, adopting holistic perspectives, and working with creativity and collaboration to find immediate and long-term solutions.
Learning Outcomes	• understand the basic mechanisms of climate change and its environmental impacts on the planet; • understand the One Health approach, its definitions, history, and current discourses; • understand the relationships between climate change and global health problems and explain the dimensions of impacts on human, animal, and environmental health systems; • develop One Health solutions to climate change-related health problems and plan their implementation.
Form of the module examination	Poster Presentation, Quiz, Written Assignment, Presentation
Type of assessment	The module is graded.

Prerequisite for the award of ECTS credits	The ECTS points are awarded upon passing the module examination assigned to the module (or the assigned compulsory and, if applicable, compulsory elective examination parts).
Person responsible for the module	Bernarda Espinoza Castro
Language(s) of instruction	English
Other information	None

Reading List

- **Aparicio-Effen, M., et al. (2022).** Climate Change Health Impacts: The Need for Watershed and Ecohealth Approaches Base for Health Adaptation Strategies and Policies. In Handbook of Human and Planetary Health. Climate Change Management. Springer, Cham.
- **Bernabucci, U. (2019).** Climate change impact on livestock and how can we adapt. *Animal Frontiers: The Review Magazine of Animal Agriculture*, 9(1). Campbell, L. P., et al. (2019). Climate Change and Disease. Yale University.
- **Carballo-Bolaños, R., et al. (2020).** Thermal Stress and Resilience of Corals in a Climate-Changing World. *Journal of Marine Science and Engineering*.
- **Charlson, F., et al. (2021).** Climate Change and Mental Health: A Scoping Review. *International Journal of Environmental Research and Public Health*.
- **Doherty, R. M., et al. (2017).** Climate change impacts on human health over Europe through its effect on air quality. *Environmental Health*.
- **Duncan, C., et al. (2022).** Climate Change and Animal Health - Chapter 4: The Study and Classification of Climate-Associated Diseases in Animals. CRC Press.
- **Ebi, K. L., et al. (2021).** Extreme Weather and Climate Change: Population Health and Health System Implications. *Annual Review of Public Health*, 42.
- **Evans, B., et al. (2014).** A history of One Health. *Rev. Sci. Tech. Off. Int. Epiz.*
- **Filho, W. L., et al. (2022).** Understanding and Handling Zoonoses. In Handbook of Human and Planetary Health. Climate Change Management. Springer, Cham.
- **Franchini, M., & Mannucci, P. M. (2015).** Impact on human health of climate changes. *European Journal of Internal Medicine*.
- **Godbold, J. A., & Calosi, P. (2013).** Ocean acidification and climate change: advances in ecology and evolution. *Philosophical Transactions of the Royal Society B: Biological Sciences*.
- **Graff, G., et al. (2022).** Climate Change and Animal Health - Chapter 10: An Introduction to the Economics of Climate Change and Animal Health. CRC Press.
- **Guisan, A., et al. (2019).** Climate Change Impacts on Mountain Biodiversity. Yale University.
- **Kahn, L. H. (2021).** Developing a one health approach by using a multi-dimensional matrix. *One Health*, 13.
- **Kaufman, L. (2019).** Invasive Species and Climate Change. Yale University.
- **Lacetera, N. (2019).** Impact of climate change on animal health and welfare. *Animal Frontiers: The Review Magazine of Animal Agriculture*, 9(1).
- **Locke, J. T. (2009).** Climate change-induced migration in the Pacific Region: sudden crisis and long-term developments. *The Geographical Journal*.
- **Maccracken, M. C. (2019).** What Is Climate Change? Yale University.
- **Malhi, Y., et al. (2019).** Climate change and ecosystems: threats, opportunities and solutions. *Philosophical Transactions of the Royal Society B: Biological Sciences*.
- **Monika, B., et al. (2019).** Climate Change Mitigation Using Terrestrial Ecosystems. Yale University.

- **Ogden, N. H., & Drebot, M. A. (2023).** Climate Change and Animal Health.
- **Prakash, S. (2021).** Impact of Climate Change on Aquatic ecosystem and its biodiversity. International Journal of Biological Innovations (IJBI).
- **Schneidemesser, E. V., et al. (2015).** Chemistry and the Linkages between Air Quality and Climate Change. Chemical Reviews (ACS).
- **Sessitsch, A., et al. (2023).** Microbiome Interconnectedness throughout Environments with Major Consequences for Healthy People and a Healthy Planet. Microbiology and Molecular Biology Reviews.
- **Tilman, G. D., et al. (2019).** Saving Biodiversity in the Era of Human-Dominated Ecosystems. Yale University.
- **Weatherly, J., et al. (2023).** The mental health impacts of human-ecosystem-animal relationship.
- **Williams, J. W., & Burke, K. D. (2019).** Past Abrupt Changes in Climate and Terrestrial Ecosystems. Yale University.
- **Zhang, X., et al. (2022).** From concept to action: a united, holistic and One Health approach to respond to the climate change crisis. Infectious Diseases of Poverty.
- **Zinsstag, J., et al. (2011).** From “one medicine” to “one health” and systemic approaches to health and well-being. Preventive Veterinary Medicine.

Abbreviations and explanations

CP	Credit Points,
ECTS points	ECTS European Credit Transfer and Accumulation System
SoSe	Summer semester
WiSe	Winter semester