



## Interdisciplinary MSc and Doctoral Education in Climate System Science at the University of Hamburg

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Modern education in climate system sciences is based on a number of disciplines such as meteorology, geophysics, oceanography, geosciences and also economics and social sciences. Facts across these disciplines are required to address the faced key issues related to climate change effectively. Climate experts need to have profound knowledge that can only be achieved in interdisciplinary MSc and PhD programs.

In Europe, graduate students who completed a BSc degree are typically proceeding with MSc programs to increase knowledge and qualification. Afterwards, the participation in a doctoral program may follow. Many doctoral programs include courses supporting disciplinary methodological and scientific background in particular. Those courses derive either from advanced MSc programs or specific trainings. Typically, interdisciplinary exchange is difficult to achieve at any stage of disciplinary graduate programs.

Recent developments showed the need to educate climate experts in interdisciplinary MSc programs in climate system sciences for both researchers and professionals outside the university. The University of Hamburg offers an interdisciplinary 2-yr MSc program in Integrated System Sciences with 120 ECTS (30 compulsory, 90 eligible) in English language. If the MSc student decides to proceed with a PhD thesis, he/she may not necessarily complete the MSc program but may start to work on a specific and disciplinary doctoral thesis for 3 years. Each doctoral student is guided by an advisory panel (AP) which meets at least bi-annually. The AP consists of a Principal Advisor, a Co-Advisor and a Chair of the panel who come from neighboring disciplines. The structured doctoral program with only 12 CPs includes interdisciplinary compulsory courses and tailor-made eligible expert courses. Summer schools and soft skill courses add to both MSc and doctoral programs.

Accordingly, the new graduate school concepts in climate system sciences at the University of Hamburg supports starting with the interdisciplinary MSc program Integrated Climate System Sciences and then get in-depth disciplinary expertise during PhD studies. The completion of the total MSc curriculum may not be essential. Advantages and limitations of this concept will be discussed.