Institut für Meteorologie
Summer Semester 2019

UNIVERSITÄT LEIPZIG

Course announcement and syllabus

Climate Dynamics

(Master-Pflicht-Modul P4)

Instructors:	Johannes Mülmenstädt (Lecture) Jan Kretzschmar (Exercises)
Location:	Seminarraum, vor dem Hospitaltore (Lecture) CIP-Pool (Exercises)
Zeit:	Wednesdays, 13:15—14:45 (Lecture) Wednesdays, 15:00—15:45 (Exercises)
Start date:	Wednesday, 3 April 2019 (Lecture) Wednesday, 10 April 2019 (Exercises)
Topics:	Radiation and greenhouse effect; dynamics and general circulation of oceans and atmosphere; internal variability; forcing and feedbacks; anthropogenic climate change
Exam:	Oral (30 min.), dates to be announced
Textbooks:	Peixoto and Oort (1991): Physics of Climate Hartmann (1994): Global Physical Climatology Stewart (2005): Introduction to Physical Oceanography (open-source textbook)

Syllabus

3 April	Introduction
10 April	Radiation
17 April	Atmosphere
24 April	General circulation of the atmosphere
8 May	General circulation of the oceans I
15 May	General circulation of the oceans II
22 May	Lithosphere, biosphere, cryosphere

29 May	Internal variability; ENSO
5 June	Forcing and feedbacks in the climate system
12 June	Robust projections of climate change
19 June	Uncertainties in climate projections due to clouds and aerosol
26 June	Arctic amplification
3 July	Attribution of climate change to anthropogenic activities
10 July	Social aspects of climate change; Review