

“Klimaatverandering” in het onderwijs aan VU, UU en WU.

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Vragen

- Huidige inbedding van klimaatverandering in het BSc en MSc onderwijs
 - Universiteit Utrecht
 - Vrije Universiteit
 - Wageningen Universiteit

- Behoeften
 - Versterking deelaspecten klimaatonderwijs
 - Gezamenlijk onderwijs
 - Studie materiaal (reader, boek, ...)



Scope MPOC master, UU, IMAU

*Research master 2 years (English) ~20 students/year

Approach:

*Physical (and chemical) understanding of the climate system, quantitative data interpretation, theoretical analysis and numerical modelling

Admission:

*Bachelor degree in Physics or MPOC related, in a broad sense, but enough background in Mathematics and Physics

- 1st year -Courses (3 compulsory)
8 courses * 7.5= (60 ECTS)
- 2nd year -Research
Two small projects (15 ECTS)
Thesis (45 ECTS)



Universiteit Utrecht



[Faculty of Science
Physics and Astronomy]

Five Research Themes IMAU



Atmospheric Dynamics and Boundary Layers

Atmospheric Chemistry and Physics

Ice and Climate

Oceans and Climate

Physics of Coastal systems



Universiteit Utrecht



[Faculty of Science
Physics and Astronomy]

Missing (less well developed) Themes

Turbulence

Boundary Layer Meteorology

Carbon cycle

...



Universiteit Utrecht



[Faculty of Science
Physics and Astronomy]

Universiteit Utrecht

- GEO4-1413 Biogeochemistry
 - prof.dr. J.B.M. Middelburg
 - Emphasis on aquatic environments
 - Hand-outs
 - Chemical Oceanography and the Marine Carbon Cycle. Emerson and Hedges, 2008, Cambridge University Press.

Vrije Universiteit

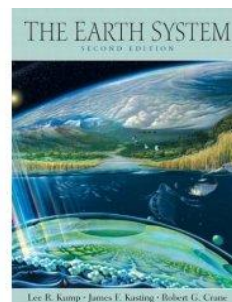
■ ...



Wageningen Universiteit

■ BSc Soil, Water, Atmosphere

- System Earth: Scale Dependence, Feedbacks and Global Change
 - Kump et al. 2004. The Earth System (second edition). Pearson Education.



■ BSc Minor Climate Change: Mitigation and adaptation strategies for society

- Principles of Earth and Ecosystem Science
 - Chapin et al. 2002. Principles of Terrestrial Ecosystem Ecology. Springer.
- System Earth: Scale Dependence, Feedbacks and Global Change
 - Kump et al. 2004. The Earth System (second edition). Pearson Education.
- Integrative Project on Adaptation to Climate Change
 - New course; material to be developed



Wageningen Universiteit

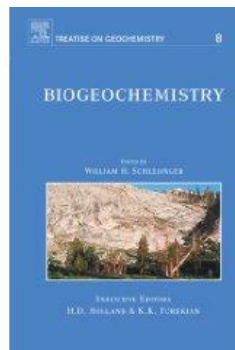
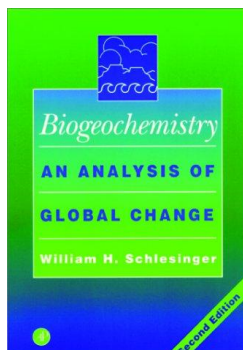
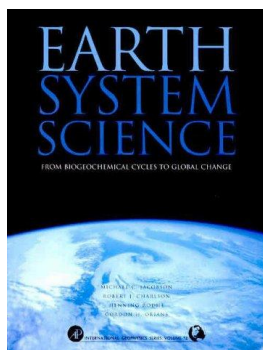
■ MSc Climate Studies: Earth, Life and Society

- Principles of Earth and Ecosystem Science
 - Chapin et al. 2002. Principles of Terrestrial Ecosystem Ecology. Springer.
- Biogeochemical Cycles
 - **Reader; to be developed**
- Earth System Modeling
 - A Climate Modelling Primer, K. McGuffie & A. Henderson-Sellers
 - Additional reader
- Climate Change: Impacts, Adaptation and Mitigation
 - 3 Working Group IPCC Fourth Assessment Reports at Technical Summary level
 - CD-ROM with the underlying IPCC reports
- Field Training Earth System Science
 - Reader



Course Biogeochemical Cycles

■ Books used so far:



- Now we use a reader, but is in need of improvement.



Reader → book on biogeochemistry

- MSc niveau
- Ontwikkelen aan UU, VU en WU
- Modules ?
 - Voorkennis
 - Niveau
 - Nadruk op marine vs terrestrisch
- Veel vakkennis aanwezig
- Editor die het samen brengt