

# MSc Earth and Environment

**Alumnus Nick Gorski.** He came from Canada to Wageningen because of the excellent reputation the Netherlands has in the field of water. During his time here he conducted two thesis research projects. The first dealt with the fluxes of sediment-bound contaminants in a river basin in south-western Turkey. The second involved the development of a new modeling methodology for heterogeneous flow and solute transport in unsaturated soils. *"I had the opportunity to do classes, field work, and research in other countries. It was an excellent way to put what you have learned into context."* After graduating in Wageningen Nick went on to work for the KWR Watercycle Research Institute in Nieuwegein, Netherlands



## Programme summary

Planet Earth is a fascinating and complex system supporting all life. It contains all priceless natural resources that are exploited by mankind for the supply of food, water, energy and other commodities. It is the foundation for mankind's prosperity and quality of life. Planet Earth, however, is under significant pressure and it is becoming increasingly difficult to sustain an ever growing human population and to secure a sustainable society for future generations. Scarcity of water, soil degradation, loss of biodiversity, vulnerability to severe weather and climate change are just a few examples of major issues that need to be addressed.

Geoscientists at Wageningen University study Planet Earth and its quality for life. Using tools from physics, chemistry, biology and mathematics, they build a quantitative understanding of the composition, structures and processes of the Earth and its atmosphere, as well as its resources and the influence of human activity. Thus, geoscientists have an important role to play in improving natural resource management and in removing obstacles to sustainable development.

Study of the Earth system largely focuses on understanding of the interdependent physical, chemical and biological processes, and on developing models that describe these processes on relevant scales. This allows scenarios to be developed which describe expected local, regional and/or global changes, and the time scale on which they will occur. In Wageningen the focus is on the Earth's 'Critical Zone' -including the atmospheric boundary layer- where flows of energy and

matter determine the conditions for sustaining life; hence the name Earth and Environment. Students of the programme will develop advanced modelling skills with due attention to methods for up- and down-scaling; they will learn to think in ranges of temporal and spatial scales.

## Thesis tracks

Students of the programme will specialise by selecting a major thesis subject and its preparatory courses, called the thesis track. The MSc Earth and Environment is a comprehensive programme offering its students a wide choice of thesis subjects. There are options focussing on the physical, chemical or biological aspects of soil, water and atmosphere. Other tracks are dealing more with the integrated or spatial approaches. We offer the following thesis tracks:

- Aquatic Ecology and Water Quality Management
- Atmospheric Chemistry and Air Quality
- Earth System Science
- Hydrology and Quantitative Water Management
- Meteorology
- Nature Conservation and Plant Ecology
- Soil Biology and Biological Soil Quality
- Soil Chemistry and Chemical Soil Quality
- Soil Geography and Landscape
- Soil Physics, Ecohydrology and Groundwater Management

The combination of profound disciplinary training with an Earth system's approach prepares graduates from the MSc Earth and Environment for dealing with the scientific and societal questions of the future. The programme further allows space for several elective courses and it has a special variant in preparation for a PhD study.

## Other interesting programmes

MSc Biology, MSc Climate Studies, MSc Environmental Sciences, MSc International Land and Water Management, MSc Plant Sciences.



## Admission Requirements

For general admission requirements, see page 40. More information about specific admission requirements can be found on the website.

## Your future career

Graduates from this programme are well equipped with the knowledge and skills to continue their academic training as a PhD student, or to start a career as a scientific professional at universities, research institutes, and consultancies. Depending on their specialisation, graduates may take up positions as meteorologist, hydrologist, water quality scientist or soil scientist in the public or private sector.