



Minors in English for exchange students

www.wur.eu/minors



WAGENINGEN
UNIVERSITY & RESEARCH

Studying in Wageningen

Exchange students from partner universities have the possibility to follow a minor at WUR. Minors consist of sets of courses of 24 ECTS on BSc level within a thematic field or as an introduction to a specific study domain. Minors are scheduled in either the first or the second semester of the academic year. Minor programmes are subject to change, visit the website for up-to-date and detailed descriptions: www.wur.eu/minors.



Overview

First semester

- Agricultural Business Management
- Animal Sciences
- Biobased Sciences
- Bioinformatics
- Biology of Infectious Diseases
- Bionanotechnology
- Climate Change: Mitigation & Adaptation
- Concepts in Crop Production
- Consumer Behaviour
- Data Science
- Earth and Biosphere
- Food Technology
- Foods of Animal Origin
- Freedom from Hunger
- Geo-information for Environment and Society
- Healthy Ageing in Humans and Model Species
- Innovation and Entrepreneurship
- International Land and Water Management
- Natural Resource Conflict and Governance
- Plant Biotechnology
- Psychobiology of Eating Behaviour
- Seagriculture
- Supply Chain Management
- Urban Environmental Management

Second semester

- Animal Farming: Systems and Management
- Biotechnology
- Disaster Risk and Resilience
- Ecosystem services of Insects
- Experimental Plant Sciences
- Geo-information for Environment and Society
- Global One Health
- Living Earth
- Marine Living Resources
- Plant Breeding
- Quantified Self
- Sustainable Agriculture and Consumption
- Wildlife Biodiversity



First semester

September - January



Agricultural Business Management

Students obtain insights in the environment influencing the current and future position of an agricultural business.

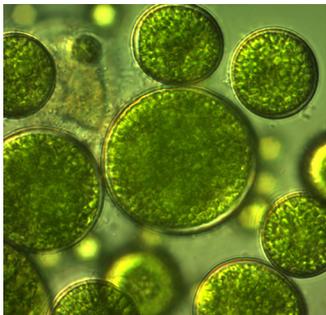
- Economics of Agribusiness
- Agricultural Business Economics
- Management and Marketing
- Decision Science 1
- Advanced Management and Marketing



Animal Sciences

Comprehensive knowledge on the Animal Science disciplines: Epidemiology, Adaptation Physiology and Nutrition.

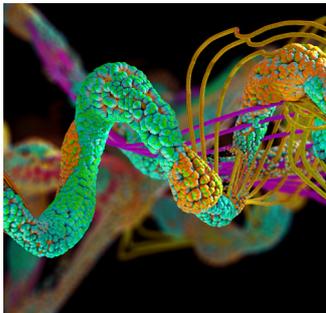
- Introduction to Animal Sciences
- Veterinary Epidemiology and Economics
- Immunology and Thermoregulation
- Principles of Animal Nutrition



Biobased Sciences

The transition from fossil to sustainable energy and biobased materials requires technical innovation and different approaches in chain management.

- Principles of Biobased Economy
- Bioresources
- Biorefinery
- Circular Economy
- Seaweed Biology and Cultivation



Bioinformatics

Progress in the life sciences increasingly relies on the power of computation to answer biological questions. New devices generate large amounts of measurements, which can only be analysed by computer.

- Practical Computing for Biologists
- Data Analysis and Visualization
- Biological Discovery through Computation
- Introduction to Bioinformatics
- Advanced Bioinformatics
- Programming in Python



Biology of Infectious Diseases

Human and animal health are under a constant threat of infectious diseases caused by viruses, bacteria, fungi, nematodes and many eukaryotic endoparasites that are transmitted by a range of vectors, usually insects and mites, or contaminated food.

- Basics of Infectious Diseases
- Microbial Disease Mechanisms
- Frontiers in Medical and Veterinary Biology
- Economics of Animal Health and Food Safety
- Veterinary Epidemiology and Economics



Bionanotechnology

Nanostructures are present everywhere in biological systems, from proteins to cytoskeletons and from molecular motors to nanopatterned leaves, and have specific structural or more complex functions.

- BioNanoTechnology: Introduction
- BioNanoTechnology: Sensors & Devices
- BioNanoTechnology: Nanomedicine
- ABC: About Building Cells
- General Toxicology
- Chemical Biology
- Advanced Cellular Imaging Techniques



Climate Change: Mitigation & Adaptation

Increasing major climate-related events and new high-end projections of climate change, sea level rise and socio-economic development illustrate the large and urgent call for suitable and innovative adaptation and mitigation measures.

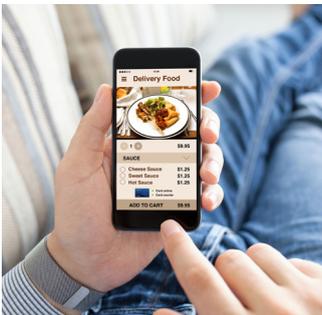
- Adaptation and Mitigation Strategies for Society
- Adaptation to Climate Change
- Climate Change Economics and Policy
- Principles of Earth and Ecosystem Science
- Sustainability Transitions
- Introduction to Environmental Systems Analysis
- System Earth: Climate and Global Change



Concepts in Crop Production

Food security, depletion of natural resources and need for economically viable, sustainable and socially acceptable cropping and farming systems.

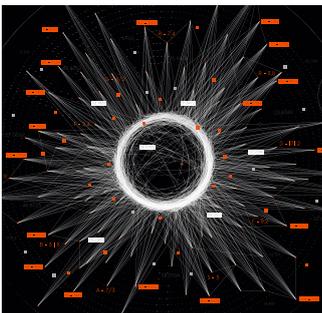
- Physiology and Development of Plants in Horticulture
- Systems Analysis and Modelling
- Crops, Physiology and Environment
- Introduction Organic Production Systems
- Soil-Plant Relations



Consumer Behaviour

A broad introduction into consumer behaviour and focus on the way in which consumers adopt and use products and services that are brought to the market by a production chain.

- Principles of Consumer Studies
- Diversity and Inclusion in Consumption
- Lifestyles and Consumption
- Food Culture and Customs



Data Science

The digital footprint of Life, Environmental, Social, Food and Nutrition Sciences is increasing at unprecedented speed, bringing opportunities for data-driven innovation in both research and industry.

- Data Management
- Big Data
- Data Analysis and Visualization
- Geo-Information Science for Society
- Programming in Python



Earth and Biosphere

The Earth's surface and the atmospheric boundary layer in which life can exist. Focuses on the physical, chemical and biological processes within and between soil, water and atmosphere.

- Water Quantity and Quality
- System Earth: Climate and Global Change
- Meteorology and Climate
- The 4th Dimension in Earth Sciences
- Programming in Python
- Introduction Geo-information Science



Food Technology

Aspects of food microbiology, food chemistry, food physics and food process engineering play a central role during food production.

- Food Chemistry
- Food Production and Preservation
- Food Physics
- Mathematical Concepts & Food Technology
- Food Microbiology



Foods of Animal Origin

Quality systems and quality aspects of foods of animal origin are discussed together with food related allergies and intolerances. Includes courses on important sources of dietary protein like meat, milk and insects.

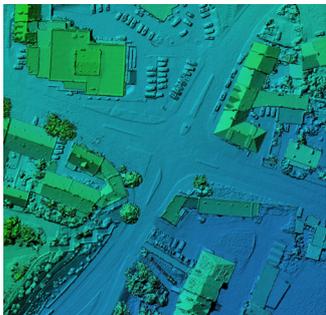
- Meat Science
- Milk in the Dairy Chain
- Food Related Allergies and Intolerances
- Insects as Food and Feed



Freedom from Hunger

Understand the interplay between global and local factors in producing hunger and to design human rights-based responses to food crises.

- Food Crises: the Big Picture
- Food, Nutrition and Human Rights
- Global Food Security
- Law and Public Power
- Humanitarian Aid and Reconstruction



Geo-information for Environment & Society

The combined use of earth observation techniques (Remote Sensing) and Geographic Information Systems (GIS) for problem solving within the environmental and social disciplines is an asset of the Wageningen approach.

- Remote Sensing
- Geo-Information Tools
- GRS BSc research project
- Introduction Geo-information Science
- Geo-information for Society



Healthy Ageing in Humans and Model Species

Focuses on the role of nutrition, lifestyle and physical exercise for healthy ageing.

- Concepts and Theories of Healthy Aging
- Interventions for Healthy Ageing
- Personal Genetics
- Nutrition and Cancer
- Pharmacology and Nutrition
- Development and Healthy Aging



Innovation and Entrepreneurship

Focuses on the value of knowledge, innovation and entrepreneurship in life sciences, environmental sciences and agriculture.

- Principles of Entrepreneurship
- Management and Marketing
- Economics of Science and Technology
- Financial and Business Management
- Agricultural Business Economics



International Land and Water Management

Management of land and water is essential for achieving sufficient and sustainable food production and food security worldwide.

- Irrigation and Water Management
- Land Degradation and Remediation
- Global Food Security
- Introduction Geo-information Science
- Adaptation to Climate Change



Natural Resource Conflict and Governance

Build a distinctive profile in the domain of resource conflict and environmental justice.

- Resource competition worldwide
- Environmental Justice in Practice
- Communicating for Sustainability and Responsible Innovation
- Water Governance: Concepts and Practices
- Communities, Conservation and Development
- Gender and Natural Resources Management



Plant Biotechnology

Relevant knowledge on cell biology, genetics, plant physiology and molecular biology.

- Plant Biotechnology
- Genomics
- Plants and Health 1
- Plant Breeding
- Fundamentals of Plant Pathology & Entomology
- Genetic Analysis, Tools and Concepts



Psychobiology of Eating Behaviour

The minor introduces students to an unique and quickly expanding science area of the psychobiology of food choice/eating behaviour and its consequences for nutrition and health.

- Principles of Consumer Studies
- Principles of Sensory Science
- Nutritional Neurosciences
- Persuasion in Consumer Communication



Seagriculture

Seagriculture is rapidly gaining worldwide interest as one of the pillars of a biobased economy. Aims at knowledge and insights on sustainable seaweed production and value creation of seaweed biomass.

- Marine Systems
- Sustainable Seaweed Chains
- Seaweed Biology and Cultivation
- Circularity in Aquatic Food Production



Supply Chain Management

Aims at a theoretical basis of and introduction to multidisciplinary analysis of food supply chains.

- Financial and Business Management
- Decision Science 1
- Supply Chain Management
- Management and Marketing



Urban Environmental Management

Securing a safe and healthy urban environment is becoming increasingly important. This minor deals with the management of environmental flows like water, waste and energy. Together with the technologies and stakeholders that accommodate and use these flows in cities.

- Environmental Management and Industry
- Principles of Entrepreneurship
- Sustainability Transitions
- Basic Technologies Urban Environment
- Data Science Concepts
- Planning for Urban Quality of Life



Second semester

February - June



Animal Farming: Systems and Management

An introduction into the sustainability characteristics of various systems in which terrestrial or aquatic animals have to produce, as well as comprehensive knowledge on the quality of products of animal origin and the animal science disciplines reproduction and disease control.

- Systems Approach in Animal Sciences
- Aquaculture and Fisheries
- Quality of Animal Products
- Reproduction and Fertility
- Infections and Disorders



Biotechnology

Biotechnology is defined as the industrial exploitation of living organisms or exploitation of components derived from these organisms. Students will learn more about the exciting developments in biotechnology.

- Cell Physiology and Genetics
- Enzymology
- Separation Process Design
- Environmental Process Engineering
- Gene Technology
- Bioprocess Engineering Basics BT



Disaster Risk and Resilience

This minor prepares students from both social and natural sciences for challenges related to disaster risk management. It offers conceptual tools and professional competencies to develop an effective and responsible engagement with recovery processes.

- Natural Hazards and Disasters
- Urban Disaster Governance and Resilience
- Disaster Risk Management and Nature Based Solutions
- Risk Communication
- Innovation and Transformation
- Land and Water Politics



Ecosystem services of Insects

Focus on the application of ecological knowledge to durable management of insect pests.

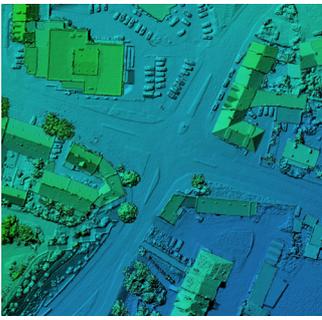
- Insect Ecology
- Biological Control of Insects
- Fundamental & Applied Biology of Insects
- Molecular and Evolutionary Ecology
- Behavioural Ecology



Experimental Plant Sciences

Focuses on the improvement of the quality of plant production and plant products for various purposes, including health-related, pharmaceutical and industrial use.

- Plant Breeding
- Pre-breeding
- Genomics
- Plant Plasticity and Adaptation
- Gene Technology
- Regulation of Plant Development



Geo-information for Environment and Society

The combined use of earth observation techniques (Remote Sensing) and Geographic Information Systems (GIS) for problem solving within the environmental and social disciplines is an asset of the Wageningen approach.

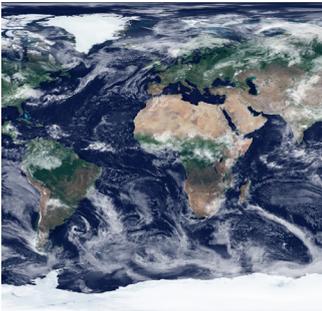
- Remote Sensing
- Geo-information Tools
- GRS BSc research project
- Introduction Geo-information Science
- Geo-information for Society



Global One Health

Emphasize the interdependence of human health with the health of animals, plants and sustainable ecosystems from a global perspective.

- Introduction to Global One Health
- Disease Ecology
- Decision making in Global One Health
- Health Issues in Daily Life; Beta-Gamma
- Food Hazards



Living Earth

An introduction to earth sciences. Including soil science, hydrology and meteorology.

- Field Research Water and Atmosphere
- Soils of the Northwest European lowlands
- Water 2
- Principles of Soil Processes
- Introduction Atmosphere
- Soil Quality
- Geo-information Tools
- Hydraulics and Hydrometry



Marine Living Resources

Focuses on the use and management of living resources in aquatic ecosystems with a particular focus on coastal zones, seas and oceans.

- Aquaculture and Fisheries
- Introduction Marine and Estuarine Ecology
- Sustainability in Fish and Seafood
- Ocean and Coastal Governance
- Practical Aquatic Ecology and Water Quality
- Marine Life



Plant Breeding

Introduces students to the field of plant breeding with a focus on breeding for resistance and quality in major food, feed and ornamental crops.

- Plant Breeding
- Pre-breeding
- Breeding for Tolerance and Quality
- Modern Statistics for the Life Sciences
- Plant Cell and Tissue Culture
- Advanced Statistics
- Genetic Analysis Trends and Concepts



Quantified Self

Focuses on recent developments in information technology and communication sciences which have the potential to revolutionize the collection of valid dietary and lifestyle data.

- Internet-based Communication
- Applied Information Technology
- Quantified Self
- Assessment of Nutritional Status (online)
- Psychobiology of Food Choice and Eating Behaviour
- Assessment of Dietary Intake (online)



Sustainable Agriculture and Consumption

Touches upon all aspects of organic production and sustainability: agro-ecological, social and economic.

- Globalization and Sustainability of Food
- Introduction to Organic Production Systems
- Conservation Agriculture
- Sustainable Marketing
- Agroecology
- Agrobiodiversity



Wildlife Biodiversity

Understanding of the relation between genetic variation and ecology of life histories, from individuals, populations, and species to communities.

- Life History Evolution
- Wildlife Conservation Genetics
- Climate Change Ecology
- Population and Quantitative Genetics
- Animal Ecology





More information and contact

For more and the most up-to-date information please visit www.wur.eu/minors or check our study handbook: wur.osiris-student.nl/#/onderwijscatalogus/extern/minor

You can apply as an exchange student or as an (international) student from another Dutch university ('bijvak' studenten).

To apply as an exchange student, please see: www.wur.eu/exchange
application.studentexchange@wur.nl

To apply as a national guest student from Dutch universities ('bijvak' studenten), please see:
www.wur.nl/en/Education-Programmes/Student-Service-Centre/Show-SSC/Bijvak-Student-1.htm
ssc@wur.nl

Visiting address

Wageningen Campus, Forum building
Droevendaalsesteeg 2
6708 PB Wageningen
The Netherlands

Postal address

P.O. Box 414
6700 AK Wageningen
The Netherlands



www.facebook.com/wur



www.twitter.com/wur



www.instagram.com/uniwageningen



www.youtube.com/Wageningenuniversity (WURtube)
www.youtube.com/wurcast (WURcast)