



WAGENINGEN
UNIVERSITY & RESEARCH



Master programmes


Wageningen University & Research


www.wur.eu/master | 2018-2019





Wageningen University & Research


Master students



5,480
students


57%
Dutch
students


43%
international
students



95
nationalities



58%
female


42%
male

Alumni



47,007
alumni


36,597
Dutch


10,410
international

live and/or work abroad


6%
Dutch
alumni



66%
international
alumni

Rankings


1
Agricultural university
in the world
National Taiwan University Ranking 2016-2017


1
University in the world in
the field of agriculture and
forestry
QS World University Rankings 2016


65
Of all universities worldwide
Times Higher Education Ranking 2016-2017


SustainaBul-Award winner
4 years in a row


1
The best university in
the Netherlands for the
12th year in a row
The Dutch study choice guide 'Keuzegids masters'


1
Shanghai Ranking
Academic ranking of world universities 2016.
Wageningen University & Research holds the
first position in the subjects 'agricultural sciences'
and 'food science & technology'.


Living in Wageningen


12min

to train station

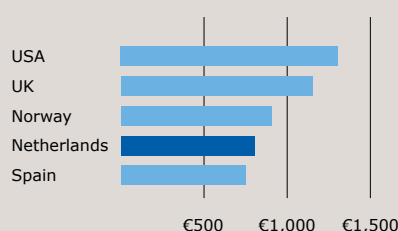

24min

to Utrecht



54min

to Amsterdam

Living expenses




60
different sports
for less than
€100 per year


16%
of the residents
is student

Wageningen University & Research

19 BSc programmes

29 MSc programmes



3
online
masters


18
MOOCs
on EdX



87 chair groups
8 partnerships



11
research
institutes



7
test locations &
innovation centres



2
libraries

Welcome

'To explore the potential of nature to improve the quality of life'

That is the mission of Wageningen University & Research. Within the domain of 'healthy food and living environment', our scientists and students work around the globe conducting research for non-governmental organisations, government agencies and the business community. Contributing to the improvement of the quality of life is our goal. Wageningen University & Research is the number 1 university when it comes to the agricultural life sciences and among the top 10 when it comes to environmental sciences. Our education programmes focus on complex issues in food production, the relation between food and health, environmental issues and biodiversity. These issues are subject to increasing worldwide concern.

At Wageningen, we first take a broad picture into account before zooming in on the finer details and subjects. This enables us to both understand processes on a molecular level and their influence on and interaction with higher integration levels, such as ecosystems, crop characteristics or human health.

A lot of the solutions seem to come from a technological approach, like creating better crops or smarter technology, but an approach from a merely biological, chemical or physical angle does not do the job. In the complex dynamics of the modern world, it is no longer possible to solve complex issues through a simple mono-disciplinary result or approach. Solving government issues and dealing with socio-economic and cultural constraints are as important as coming up with technical solutions. This approach is taught to our students and is the driving force behind our leading research groups. Our scientific and educational endeavours are internationally oriented and have an impact on society, policy and science.

On our wonderful campus students and scientists from around the world gather to form a large international community that bridges cultures in a natural way. This not only enriches the dynamic climate of our university, but it stresses the necessity to work together on a global scale and in international teams. Global challenges have no boundaries and co-operation is of utmost importance. In Wageningen, the ability to work in intercultural international teams comes naturally.

Besides this: did you know that Wageningen University & Research celebrates its 100th birthday in 2018?

I hope this brochure captures your interest and that we may welcome you in the near future as a new member of Wageningen University & Research's international academic community.

Prof. dr. Arthur P.J. Mol
Rector Magnificus



Master of Science programmes

| | | | |
|---|----|----|--|
| Studying in Wageningen | 4 | | |
| Admission & Application | 6 | | |
| Study online | 8 | | |
| <hr/> | | | |
| Life Sciences | | | |
| Animal Sciences | 10 | | |
| Genetics and Biodiversity | | | |
| Nutrition and Metabolism | | | |
| Global and Sustainable Production | | | |
| Adaptation, Health and Welfare | | | |
| Molecule, Cell and Organ Functioning | | | |
| Animal Ecology | | | |
| Professional Tracks and International Programmes | | | |
| Aquaculture and Marine Resource Management | 11 | | |
| Aquaculture | | | |
| Marine Resources and Ecology | | | |
| Marine Governance | | | |
| Biobased Sciences | 12 | | |
| Biomass Production and Carbon Capture | | | |
| Biorefinery and Conversion | | | |
| Biobased and Circular Economy | | | |
| Bioinformatics | 13 | | |
| Bioinformatics | | | |
| Systems Biology | | | |
| Biology | 14 | | |
| Animal Adaptation and Behavioural Biology | | | |
| Bio-interactions | | | |
| Molecular Ecology | | | |
| Conservation and Systems Ecology | | | |
| Evolution and Biodiversity | | | |
| Health and Disease | | | |
| Marine Biology | | | |
| Molecular Development and Gene Regulation | | | |
| Plant Adaptation | | | |
| Biosystems Engineering | 15 | | |
| Farm Technology | | | |
| Information Technology | | | |
| Systems and Control | | | |
| AgroLogistics | | | |
| Environmental Technology | | | |
| Biobased Technology | | | |
| Biotechnology | | 16 | |
| Cellular and Molecular Biotechnology | | | |
| Process Technology | | | |
| Medical Biotechnology | | | |
| Food Biotechnology | | | |
| Environmental and Biobased Technology | | | |
| Food Safety | | 17 | |
| Applied Food Safety | | | |
| Food Law and Regulatory Affairs | | | |
| Supply Chain Safety | | | |
| Food Technology | | 18 | |
| Ingredient Functionality | | | |
| Product Design | | | |
| Sustainable Food Process Engineering | | | |
| Food Biotechnology and Biorefining | | | |
| Dairy Science and Technology | | | |
| Gastronomy | | | |
| Sensory Science | | | |
| Food Digestion and Health | | | |
| Food Innovation and Management | | | |
| European Master in Food Studies | | | |
| Online Master Food Technology | | | |
| Food Quality Management | | 19 | |
| Quality Control and Assurance | | | |
| Quality and Food Logistics | | | |
| User-oriented Food Quality | | | |
| Quality Management and Entrepreneurship | | | |
| Molecular Life Sciences | | 20 | |
| Biological Chemistry | | | |
| Physical Chemistry | | | |
| Biomedical Research | | | |
| Physical Biology | | | |
| Nutrition and Health | | 21 | |
| Epidemiology and Public Health | | | |
| Online Master | | | |
| Nutritional Physiology and Health Status | | | |
| Molecular Nutrition and Toxicology | | | |
| Sensory Science | | | |
| Food Digestion and Health | | | |
| Organic Agriculture | | 22 | |
| Agroecology | | | |
| Sustainable Food Systems | | | |
| Double Degree Agroecology | | | |
| Plant Biotechnology | | 23 | |
| Functional Plant Genomics | | | |
| Plants for Human and Animal Health | | | |
| Molecular Plant Breeding and Pathology | | | |

| | | | |
|--|----|--|----|
| Plant Sciences | 24 | Landscape Architecture and Planning | 37 |
| Crop Science | | Landscape Architecture | |
| Greenhouse Horticulture | | Spatial Planning | |
| Natural Resource Management | | | |
| Plant Breeding and Genetic Resources | | Leisure, Tourism and Environment | 38 |
| Online Master | | Tourism and Development | |
| Plant Pathology and Entomology | | Tourism and Natural Resource | |
| | | Tourism and Global Mobilities | |
| | | Tourism, Experiences & Place-making | |
| Water Technology | 25 | | |
| | | Metropolitan Analysis, Design and Engineering | 39 |
| Food Technology (online MSc) | 26 | | |
| | | Urban Environmental Management | 40 |
| Nutritional Epidemiology and Public Health (online MSc) | 27 | Environmental Economics | |
| | | Environmental Policy | |
| Plant Breeding (online MSc) | 28 | Environmental Systems Analysis | |
| | | Geo-information Science | |
| | | Management Studies | |
| | | Land Use Planning | |
| | | Urban Systems Engineering | |
| <hr/> | | | |
| Environmental Sciences | | Social Sciences | |
| Climate Studies | 30 | | |
| The Physical Climate System | | Communication, Health and Life Sciences | 42 |
| Biogeochemical Cycles | | Communication and Innovation | |
| Ecological and Agroecological Systems | | Health and Society | |
| Human-Environment Interactions | | | |
| Climate, Society and Economics | | Development and Rural Innovation | 43 |
| | | Communication and Innovation Studies | |
| Earth and Environment | 31 | Technology and Development | |
| Hydrology and Water Resources | | Sociology of Development and Change | |
| Meteorology and Air Quality | | | |
| Biology and Chemistry of Soil and Water | | International Development Studies | 44 |
| Soil Geography and Earth Surface Dynamics | | Sociology of Development | |
| | | Economics of Development | |
| Environmental Sciences | 32 | Inclusive Innovation, Communication and Development | |
| Environmental Quality | | Politics and Governance of Development | |
| Human-Environment Interaction | | | |
| Environmental Policy and Economics | | Management, Economics and Consumer Studies | 45 |
| Environmental Technology | | Business Studies | |
| | | Consumer Studies | |
| Forest and Nature Conservation | 33 | Economics and Governance | |
| Policy and Society | | Management in Life Sciences | |
| Management | | | |
| Ecology | | | |
| Geo-Information Science | 34 | | |
| | | Also at Wageningen University & Research | 46 |
| Geographical Information Management and Applications | 35 | Location of Wageningen | 47 |
| | | Steps to enrolment | 48 |
| International Land and Water Management | 36 | Meet us | 49 |
| Sustainable Land Management | | | |
| Irrigation and Water Management | | | |
| Adaptive Water Management | | | |

Studying in Wageningen



Housing

Most Dutch and international students of Wageningen University & Research also live in Wageningen. Idealis is the biggest student accommodation provider in Wageningen and you can apply for one of the several thousands of housing units they own. You can also try to find suitable housing via HousingDesk Wageningen or via one of the national organisations mediating housing in the Netherlands. Idealis will provide prospective students with information about the application procedure for student housing. Idealis will contact you approximately two to three months before the start date of your programme in Wageningen. After receiving the information about the application procedure you can register with Idealis as a house seeker and respond to the available housing offers on their website. If your current residential address is more than 130 kilometres away from Wageningen, you qualify for distance priority.

www.wur.eu/housing

The university

Wageningen University & Research is one of the leading international universities in the field of healthy food and living environment. Here, you will focus on current and future global issues that are of increasing importance to both industry and government. You are ensured personal guidance throughout your student career with a teacher-student ratio of 1:7. Which allows you to make the most of all the study options provided. Studying in Wageningen guarantees you premium quality education and an international quality benchmark on your curriculum vitae.

www.wur.eu/whywageningen

Campus and facilities



With 70.000 m², Wageningen Campus equals the size of 11 soccer fields. It offers excellent student facilities and it is a place where students, teachers, researchers and staff from all over the world come together and exchange ideas. Forum is Wageningen University & Research's largest education building. The main library is located in Forum and is open 14 hours per day. There are several places on campus where you can relax and enjoy a drink with your fellow students like the 'Grand Cafe' at Forum, 'the Spot' in Orion, or you can have lunch at the 'Restaurant of the Future'. Nearby, sports centre 'De Bongerd' offers over 60 different sports ranging from tennis, squash and indoor biking to football, rugby and athletics. There are multiple student associations and each study programme has its own study association that organises a wide range of activities and services for students.

www.wageningencampus.com

Wageningen town

The university is centrally located in the Netherlands. The cities Amsterdam, Rotterdam and The Hague are only one-hour travel by train from Ede-Wageningen's station and Utrecht only 25 minutes. From train station Ede-Wageningen to Wageningen Campus is a 12-minute bus ride. Wageningen is built on 'bicycle scale' meaning that all university facilities and the city centre are within cycling distance. There are historic and modern buildings, high-rise student flats, works of art and botanical gardens that all add to the diversity of Wageningen.



More than 10,000 students study in Wageningen and they, accounting for more than 20% of the population, turning Wageningen into a university town. The many international students, professors and researchers contribute to the international atmosphere. Wageningen has a thriving cultural and social life. Theatres, cinemas, student clubs, bars, nightlife and restaurants create the elegance of a city in a beautiful rural setting. The nearby floodplains of the Rhine river and National Park the Veluwe are ideal for those who enjoy nature, hiking, running or cycling.

Structure of the programme

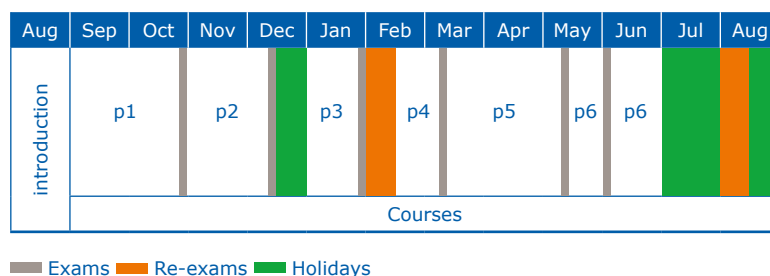
Wageningen University & Research offers 29 Master of Science (MSc) programmes and the language of instruction is English. All master study programmes are full-time, have a duration of two years and are comprised of 120 ECTS credits. In addition to this, it is possible to follow one of the three part-time online master specialisations from all over the world through the university's virtual learning environment. This pioneering way of studying is an ideal opportunity for you if you want to obtain a full master's degree, but are not able to spend two full years away from home.

In Wageningen, the academic year is split up into six periods. During each period, you follow one or two courses that are completed with an exam. The first three periods, and the fourth, fifth and sixth period run parallel to the European semesters, which means you can combine your courses in Wageningen with courses at other universities without running into scheduling problems.

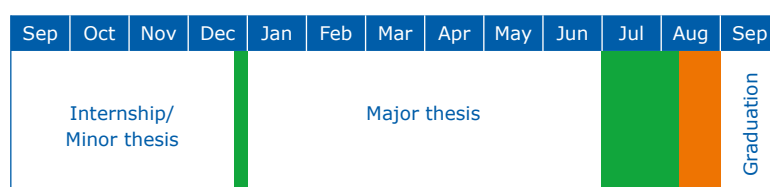
The first year of the master study programme is comprised of mandatory courses, but you also have several elective courses which allow you to specialise within your programme.

The second year includes an internship and a master thesis. The subject of the thesis is developed in consultation with a senior staff member. Students usually propose their own thesis research topics while taking ongoing research into account.

Academic year 2018-2019



Academic year 2019-2020



The Annual Introduction Days (AID) are held prior to the start of the Master programme and are highly recommended for all new students. During the introduction programme, you can become acquainted with Wageningen, your fellow students and the university:

<https://aidwageningen.nl/en>.



International character

Wageningen University & Research has a very international character with students coming from over 95 different countries. Through partnerships with numerous Dutch and international companies and governments, Wageningen University & Research has become a major university in Europe and one of the best universities world-wide in the field of life sciences. As a result, students have no problems finding internships, challenging work experience spots and career opportunities around the world.

Application & Admission

General admission requirements

All MSc study programmes at Wageningen University & Research have the following general admission requirements:

- A bachelor degree (or equivalent) in a field of science relevant to the selected programme;
- Sufficient quality of the BSc degree as shown by an average mark of at least 7 (Dutch system), a Grade Point Average (GPA) of at least B/B+ (US system) or a classification as 2nd upper (UK system); (**visit www.wur.eu/admission for specific requirements**)
- Good working knowledge of mathematics and/or statistics;
- Fluency in English, both written and spoken (see schedule).

In addition to these general requirements, specific requirements may apply to individual programmes. See the website of the specific MSc programmes for more information.

English language proficiency

| | Level 1 | Level 2 |
|-----------------------------------|---|---|
| IELTS | Overall grade 6.0 (with a minimum sub-score of 6.0 for speaking) | Overall grade 6.5 (with a minimum sub-score of 6.0 for speaking) |
| TOEFL | Internet-based 80 (with a minimum sub-score of 20 for speaking) | Internet-based 92 (with a minimum sub-score of 23 for speaking) |
| RATEr | OOPT 60 Writing borderline. Speaking borderline. | OOPT 70 Writing pass. Speaking borderline. |
| Cambridge FCE | Pass at grade B or above | Pass at grade A |
| Cambridge CAE | Pass at grade C or above | Pass at grade B or above |
| Cambridge CPE | Pass at grade C or above | Pass at grade B or above |
| International Baccalauréat | 3 for English | 4 for English |
| German Abitur | 06 Punkte for English | 09 Punkte for English |
| Belgium ASO | 60 for English | 70 for English |

Level 2: MSc Communication Health & Life Sciences - MSc Development and Rural Innovation - MSc Food Quality Management - MSc Food Safety - MSc Health and Society (specialisation) - MSc International Development Studies - MSc Management, Economics and Consumer Studies - MSc Metropolitan Analysis, Design & Engineering - MSc Organic Agriculture - MSc Plant Biotechnology - online MSc Plant Breeding - MSc Plant Sciences. All other programmes require Level 1. The RATEr can be taken at Wageningen in'to Languages. Note: IELTS and TOEFL tests should have been taken no longer than two years prior to the application. www.wur.eu/into

Study expenses

Study expenses consist of tuition fees, research fees, living expenses (housing, foods, drinks) and other expenses (insurance, residence permit, handling fee, books, study materials). These expenses are an indication only, see the website www.wur.eu/tuitionfee for up-to-date information.

| | EU/EFTA students | Non-EU/EFTA students |
|----------------------------------|------------------|----------------------|
| 2018-2019 | | |
| Tuition fee* | € 2,050 / year | € 18,600 / year |
| Estimated living expenses | € 10,680 / year | € 10,800 / year |
| Other expenses | € 500 / year | € 1,500 / year |

*Except online master programmes, more information can be found on page 8.

Application deadlines

| | February 2018 | September 2018 | February 2019 |
|--------------------------------|---|---------------------|--|
| Dutch, EU/EFTA students | 1 December 2017 | 1 July 2018* | 1 December 2018 |
| Non-EU/EFTA students | 1 October 2017 | 1 May 2018 | 1 October 2018 |
| Study programme | Bioinformatics Biotechnology Biology Environmental Sciences Forest & Nature Conservation Molecular Life Sciences Organic Agriculture Plant Biotechnology Plant Sciences | All programmes | Bioinformatics Biotechnology Biology Environmental Sciences Forest & Nature Conservation Molecular Life Sciences Plant Biotechnology Plant Sciences |

*Except online master programmes, these have a staggered admission procedure. The deadline for applications is 1 May. See page 8.

Application procedure

Step 1: Application

- **A completed MSc application form.**
www.wur.eu/applicationform
- **BSc degree.** A copy of your Bachelor degree (or equivalent as recognised by Nuffic) in Dutch or English (or a certified English translation). Students in the final year of their Bachelor may also apply for admission prior to graduation.
The Academic Committee on Admissions can tentatively admit students based on a transcript of their academic record and the expected date of graduation. Students must submit the official degree before 1 September. Students who require an entry visa for the Netherlands must submit proof of graduation before 1 July.
- **Transcript of your academic records.** A copy in Dutch or English (or a certified English translation) including a list of marks or grades obtained during your Bachelor and your Grade Point Average (GPA).
- **Sufficient English language proficiency test results.**
- **A statement of motivation.**
- **Curriculum Vitae.**

Only complete applications will be forwarded to the Academic Committee on Admissions. You will receive a registration letter by email containing a username and password with which you can check your application status in our Student Tracking Admissions Registration System (STARS).

Step 2: Result and confirmation

Your application for admission will be evaluated by the Academic Committee on Admissions of Wageningen University & Research. The decision will be communicated through an official letter, sent by email. The committee will also inform candidates if the application is not accepted. The letter of admission is required before you can apply for most fellowships. International students should confirm their participation in the programme. When you have been admitted to the programme log on to STARS and complete the confirmation form.

Step 3: Payment

Upon receipt of your confirmation form, an invoice will be sent to you or to your sponsor. The invoice includes important information about the payment. The required amount should be paid into our bank account before the deadline as mentioned on the invoice (www.wur.eu/tuitionfee). Do not make any payments before receiving the invoice.

Step 4: Visa (non-EU/EFTA nationals only)

Nationals of Australia, Canada, Japan, Monaco, New-Zealand, South Korea, U.S.A or Vatican City need a residence permit to study in the Netherlands.

If you are a national of any other non-EU country you need both a MVV entry visa and a residence permit.

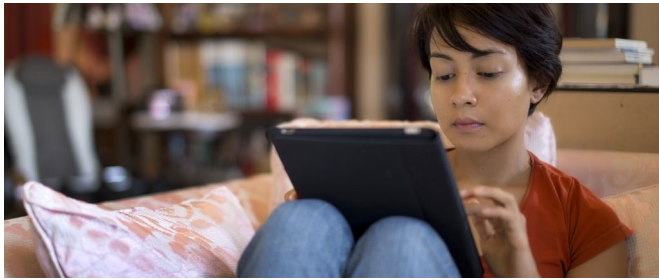
It is not possible to apply for a MVV entry visa and a residence permit yourself. International Office of Wageningen University & Research will start this procedure upon receipt of your payment.

Part of the Dutch immigration policy is that all international students who require a resident permit will be subject to a yearly study progress check. Students must obtain at least 50% of the credits per year (or part of a year). The immigration office will cancel the residence visa of students who do not meet these criteria.

Step 5: Housing and insurance

Idealis will contact you with about the housing application procedure if you have confirmed your application for your studies in STARS (EU students) or after you have settled your invoice with the university (Non-EU students). Idealis will contact you approximately two to three months before the start date of your programme in Wageningen. After receiving the information about the application procedure you can register with Idealis as a house seeker and respond to the available housing offers on their website (www.idealis.nl).





You can work from wherever you are through our virtual online learning platform, with a personal approach. During the courses, you will closely collaborate with lecturers, tutors and your fellow online master students through online group work, forum discussions or peer reviews. Studying online is a way of profiting from today's modern learning environments and really utilizes the opportunities that technology provides us with.

Combine study and work

The online masters are designed as a part-time study, which gives you the flexibility to combine study and your professional career. In the first two years, you will follow a series of courses with a study load of approximately 20 hours per week. The online masters may include one or two short mandatory period of course work in Wageningen, in order to take part in the necessary lab-practical's. The course work is followed by a tailor-made internship and Master thesis. Depending on the effort and time you invest, the programme will take 3-4 years to complete. After successful completion, you will obtain a fully recognised Master of Science degree from Wageningen University & Research. More information on the admission requirements and the application procedure can be found on page 6 and 7.

Study expenses for online masters

The online master programme may take 3 or 4 year to complete, depending on how you want to do your thesis and internship. If you are able to spend approximately 40 hours per week in the third year on your thesis and internship, you can finish the programme in 3 years.

The tuition fees mentioned below are estimations, because the fees for 2019 and beyond are not yet known. Please visit the website for more detailed information www.wur.eu/tuitionfee

Other expenses that are not covered by the tuition fee are the costs for the short stays(s) in Wageningen for lab-practical's. The travel and accommodation costs of these Wageningen Weeks are not included in the tuition fee. Incidentally you will also need to buy a book for a course that is not included in the tuition fee, you can finish the programme in 3 years.

Estimation of tuition fees for students starting in September 2018:

| | EU/EFTA nationals | | Non-EU/EFTA nationals | |
|------------------|---|---|---|---|
| | Finish in 3 years (3rd year full-time) | Finish in 4 years (3rd and 4th year part-time) | Finish in 3 years (3rd year full-time) | Finish in 4 years (3rd and 4th year part-time) |
| 2018-2019 | € 2,100 | € 2,100 | € 10,000 | € 10,000 |
| 2019-2020 | € 2,100 | € 2,100 | € 10,000 | € 10,000 |
| 2020-2021 | € 2,100 | € 2,100 | € 10,000 | € 10,000 |
| 2021-2022 | | € 2,100 | | € 10,000 |
| Total | € 6,300 | € 8,400 | € 38,000 | € 40,000 |

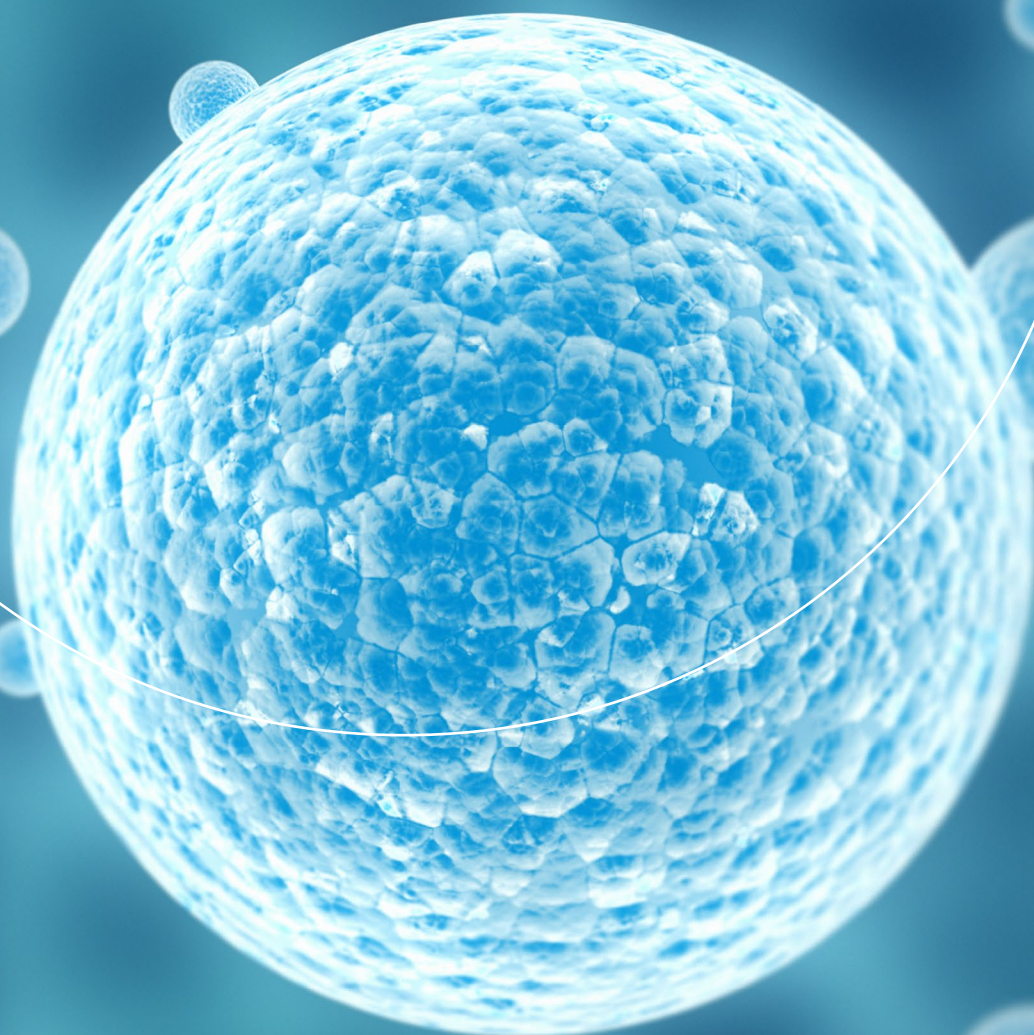
Staggered admission procedure for online masters

The online masters have a staggered admission procedure, because study places are limited. Applicants who wish to start in September 2018 must submit their application at the latest on 1 May 2018 in order to be included in this procedure. The first allocation date will be on 31 May 2018. Should the number of academically admissible applicants exceed the number of places

available, the study places will be allocated based on the following criteria: relevant pre-education, GPA, level of English, relevant work experience and motivation. In the following table you can see four situations with corresponding effect on your admission:

| | More academically admissible applicants than study places | Not all study places are filled |
|---|---|---|
| Applied before 1 May and academically admissible | Study places will be allocated based on the qualities of the applicant. If you do not receive an offer, you will be put on the waiting list | Admitted |
| Applied between 2 May and 1 July and academically admissible | You will be put on the waiting list, no guarantee of a study place | Admitted if there are still places (first come first serve) |

Life Sciences



MSc Animal Sciences

Dr René P. Kwakkel | Programme Director | +31 (0)317 48 31 47 | education.animalsciences@wur.nl | www.wur.eu/mas

Programme summary

Animals are an integral part of our society: they provide us with food and companionship. Sustainable animal husbandry and livestock development is influenced by technical factors, such as feed supply, animal health, management and genetics, and also by infrastructural and socio-economic factors. Today's animal scientists need in-depth scientific training combined with a critical attitude towards all these factors.

The master Animal Sciences offers 6 specialisations. Within each specialisation you can choose different study tracks. You will take in-depth courses to prepare you for your 6 months master thesis. In addition, you take skills courses, and you do a minor thesis or internship, in the same field as your specialisation, or in a different field. Because there are many options, study advisors support you with your choices to make an individual programme that best fits your interests.

Our tailor-made and thesis-oriented programme trains you to become skilled professional animal scientists, well equipped to develop modern, efficient and humane ways to care for and make the best use of the animals who share our lives.

Your future career

Our graduates often start as scientific researchers, advisors, trainers, nutrition or breeding specialists or policymakers. Common employers are companies involved in animal nutrition or breeding, research institutes and universities, but also regional and (inter)national governmental and non-governmental organisations. Graduates usually advance to a managerial level as their careers progress.

Specialisations

Genetics and Biodiversity In this specialisation, quantitative, population and molecular genetic approaches are integrated to protect and use sources of genetic variation in captive populations of animals and livestock species.

Nutrition and Metabolism The aim of this specialisation is to understand the relation between nutritional demands, diet formulation, digestion and metabolism in animals, and their responses in terms of performance, health and waste emission.



Global and Sustainable Production This specialisation studies the development of sustainable animal systems across the world by integrating knowledge from different disciplines. The goal is to ensure global food availability in a responsible way.

Adaptation, Health and Welfare This specialisation focuses on the adaptive capacity of individual or groups of animals to a changing direct environment, such as dietary or housing interventions.

Molecule, Cell and Organ Functioning This fundamental specialisation focuses on mechanisms and processes at all levels of physiology: from molecules, to organs, to the individual animal.

Animal Ecology This specialisation studies the interaction between animal populations and their wider environment, i.e. the ecosystem ((partly) affected by human intervention).

Professional Tracks and International Programmes

In addition to a specialisation, you can choose a *professional track* that prepares you for a specific career. You can focus on Research, Education, Communication & Policy or Business & Management. Furthermore you have ample opportunity to gain international experience, by participating in one of our *Double Degree programmes*, or by taking courses at a foreign university or doing a thesis abroad. The study advisor is there to support you in your choices.

Admission requirements

See page 6

Related programmes

MSc Biology – MSc Forest and Nature Conservation
MSc Aquaculture and Marine Resource Management
MSc Biosystems Engineering – MSc Organic Agriculture



Alumnus Bram Bronsvort | “My work as a Geneticist for Hypor combines scientific research with practical implementation of a breeding program. I am involved in pig research and responsible for making genetic progress, by selecting and combining superior individual animals to be the parents for the next generation. The MSc programme provided me with multidisciplinary knowledge on animal production and resonated well with the desired skills for my job. It gave me the opportunity to learn the scientific background and to apply my passion for animal breeding.”

MSc Aquaculture and Marine Resource Management

Vera van Berlo MSc | Study Advisor | +31 (0)317 48 20 53 | mam@wur.nl | www.wur.eu/mam

Programme summary

Oceans, seas, estuaries and lakes are major providers of ecosystem goods and services such as food, tourism and coastal protection. In many cases, exploitation levels have bypassed the carrying capacity of these ecosystems, leading to devastating effects on biodiversity and ecosystem functioning.

To preserve marine biodiversity and its ecosystem functions, innovative and sustainable solutions are necessary. Therefore, there is a need for young professionals who know how to take an integrative approach to marine ecosystems management. In this programme you learn to solve interdisciplinary problems in aquatic systems by both looking at the ecology of organisms and communities, and social and management aspects.

The programme starts with courses that give a common basis on aquaculture and marine resource management. In these courses, you will learn the principles of marine ecology and the governance of marine systems, the biology and ecology of aquatic organisms and the role of science in public policy processes. Within Aquaculture and Marine Resource Management, you can choose one of three specialisations: Aquaculture; Marine Resources and Ecology; Marine Governance.

Your future career

The interest in sustainable management of the seas and coasts is booming, while there are only few professionals available with an integrated and specialised training in this field. Numerous types of specialists are needed, including technical specialists, researchers, consultants and project leaders in commercial, governmental and non-governmental organisations. Check our website for our career booklet with examples of jobs our alumni currently have.

Specialisations

Aquaculture deals with the culture of numerous aquatic organisms (such as finfish, shrimp, shellfish, ornamental fish, corals, sponges and algae) in a wide range of culture environments (from sea enclosures to semi- extensive ponds and high-tech recirculation systems). Production methods should guarantee the health and well-being of the culture, organisms, and be sustainable, economically viable, socially accepted, and result in safe and healthy products. This can only



be achieved through knowledge and skills in aquatic production ecology based on knowledge of biological, physical and chemical integrity of water bodies and insight in economic and social driving factors.

Marine Resources and Ecology focuses on the sensitivity of marine communities in relation to human interventions, including climate change, fisheries and habitat destruction. You will learn to address limiting factors in order to be able to contribute to an improved biodiversity, environmental quality and sustainability of marine ecosystems. This requires insight into population dynamics and fishery yield, the ecological processes that form the basis for the marine food chains, the interaction between species and the functioning of the different ecosystems.

Marine Governance provides you with the skills and tools to understand sustainable governance and economics of marine and coastal systems. The goals and strategies of national and international commercial enterprises, non-governmental and governmental organisations and international institutions are analysed, and their effects are evaluated in relation to both organisations and ecosystems involved. You will become proficient in the function of new private governance instruments, such as eco-certification and environmental credits.

Admission requirements

See page 6

Related programmes

MSc Animal Sciences - MSc Biology - MSc Forest and Nature Conservation - MSc Environmental Sciences



Alumna Momo Kochen | “I currently work at MDPI, an Indonesian grassroots organisation that works with small scale fishermen and their associated supply chains to ‘do the right thing’. We are implementing Fisheries Improvement Projects aiming for MSC certification, building and testing traceability technology and implementing the world’s first Fair Trade project for wild caught seafood. My job is very versatile: One day I am in Jakarta working with the national government on fisheries management development, the next I am measuring fish and drinking coffee with the fisherman in a rural community in Eastern Indonesia.”

Specialisations:

Biomass Production and Carbon Capture within MSc Plant Sciences | Dr. Anja Kuipers | +31 (0)317 48 28 39 | mps.msc@wur.nl
Biorefinery and Conversion within MSc Biotechnology | Dr. Sonja Isken | +31 (0)317 48 2241 | mbt.msc@wur.nl | www.wur.eu/mbs

Programme summary

Many challenges, current and future, lie ahead in a transition to a sustainable biobased economy. The number of people in the world is growing, as are the levels of well-being and prosperity. It is possible for all nine billion humans to have a relatively high level of prosperity and welfare in 2050. For this to happen, however, major changes in the way we deal with food, animal feed, materials and energy are required. Right now, materials and energy are often produced from fossil fuels, and this should increasingly be replaced by biomass in the future. The main challenge for the current generation of students is to work on improving resource efficiency and the use of land in order to meet all these needs, while not forgetting climate, biodiversity, multiple land use, recreation and social issues.

You will cover the transition from a petrochemical to a biobased society from the different disciplines in a multidisciplinary, holistic approach. The programme includes design of production chains including biomass production, bioconversion, biorefinery and social, logistic and economic transition processes. New products will be designed in multidisciplinary teams, taking into account the socio-economic, ethical and environmental aspects related to biomass production and carbon capture in an international context. Wageningen offers many pilot facilities, such as AlgaePARC, Acrres and CAT AgroFood, as well as production facilities for products such as bioplastics, chemicals and packaging materials.

New MSc programme coming up. At this moment the specialisations are offered within the MSc Biosystems Engineering, MSc Biotechnology and the MSc Plant Science. As from September 2018 the specialisations will be included in the upcoming MSc Biobased Sciences. The MSc Biobased Sciences will start in September 2018 on condition that the current accreditation process by the Dutch Flemish Accreditation Organisation (NVAO) will be completed successfully.

Your future career

Students with this specialisation are well trained to work in a multi- and interdisciplinary team in a biobased research and development environment as scientist, process engineer or manager. Graduates will have careers in the agrifood business, water companies, energy producers, logistics, governmental and non-governmental organisations. They will work in an innovative and emerging market.



Specialisations

Biomass Production and Carbon Capture

The specialisation Biomass Production and Carbon Capture focuses on the knowledge of plant physiology and development, agronomy, genetics and breeding, and plant biotechnology for biomass production in fields, greenhouses, forests and the sea. Trade-offs between biomass components (fibers, proteins, etc.) are studied in an integrated systems approach.

Biorefinery and Conversion

The specialisation Biorefinery and Conversion focuses on the processing steps, starting from biomass refinery up to the production of chemicals, biopolymers or renewable energy. Engineering is fully integrated with organic chemistry, biochemistry and biology and product quality- and process requirements from the interested party or customer.

Biobased and Circular Economy

The specialisation Biobased Transition focuses on knowledge of economic and logistic aspects to enable the transition from a petrochemical to a biobased society.

Admission requirements

See page 6

Related programmes

MSc Biotechnology - MSc Plant Sciences - MSc Biosystems Engineering - MSc Plant Biotechnology - MSc Environmental Sciences



Alumna Ellen Slegers | “After my Master I started my PhD research during which I developed simulation models for micro-algae production. During my PhD research I got intrigued by the on-going innovations for the biobased economy. Now I am a post-doc researcher at Wageningen University & Research. The university offers a unique combination between biological and technological research and is very strong in applying systematic approaches to complex and interrelated research areas. My research focuses on sustainable biorefinery designs, and in particular how we can include sustainability assessment during early stages of biobased process development.”

MSc Bioinformatics

Dr. Sonja Isken | Programme Director | +31 (0)317 48 22 41 | mbf.msc@wur.nl | www.wur.eu/mbf

Programme summary

DNA contains information about life, but how is this information used? Biological data, such as DNA and RNA sequence information produced by next-generation sequencing techniques, is accumulating at an unprecedented rate. Life scientists increasingly use bioinformatics resources to address their specific research questions. They bridge the gap between complex biological research questions and this complex data. Bioinformaticians use and develop computational tools to predict gene function(s) and to demonstrate and model relationships between genes, proteins and metabolites in biological systems.

Bioinformatics is an interdisciplinary field that applies computational and statistical techniques to the classification, interpretation and integration of large-scale biological data sets. If different data types are joined then complex interactions in biological systems can be studied. The use of systems biology methods to study complex biological interactions offers a wealth of possibilities to understand various levels of aggregation and enables control of biological systems on different scales. Systems biology approaches are therefore quickly gaining importance in many disciplines of life sciences, such as in applied biotechnology, where these methods are now used to develop strategies for improving production in fermentation. Other examples include bioconversion and enzymatic synthesis, and in the study of human metabolism and its alteration. In these examples, systems biology methods are applied to understand a variety of complex human diseases, including metabolic syndromes and cancer. This master programme focusses on the practical application of bioinformatics and systems biology approaches in many areas of the life sciences. To ensure that you acquire a high level of understanding of modelling and computing principles, the students are trained in the fundamentals of database management, computer programming, structural and functional genomics, proteomics and systems biology methods. This training includes advanced elective courses in molecular biology and biostatistics.

Your future career

Bioinformatics and systems biology are new fast growing biology based interdisciplinary fields of research poorly served by the traditional curricula of life sciences. As demand has outpaced the supply of bioinformaticians, the first job after graduation is often a PhD project at a research institute or university. It is expected that five years after graduation, about one third will stay employed as a scientist at a university or research centre,



while the others choose for careers at research-oriented pharmaceutical and biotechnological companies.

Thesis tracks

The bioinformatics track focuses on the practical application of bioinformatics knowledge and skills in molecular life sciences. It aims at creating and using bioinformatics resources to address specific research questions. The knowledge and skills gained can be applied in many life science disciplines such as molecular & cell biology, biotechnology, (human) genetics, health & medicine and environmental & biobased technology.

The systems biology track focuses on the study of the complex interactions in biological systems and on the emerging properties derived from these. Systems biology approaches to complex biological problems offer a wealth of possibilities to understand various levels of aggregation. It enables control of biological systems on completely different scales, ranging from the molecular cellular level to marine, plant, or animal ecosystems to a desired state. The knowledge and skills gained can be applied in many life science disciplines including molecular and cell biology, applied biotechnology, genetics, medicine and vaccine development, and environmental and biobased technology.

Admission requirements

See page 6

Related programmes

MSc Biotechnology - MSc Molecular Life Sciences - MSc Plant Biotechnology - MSc Biology.



Alumnus Tom van den Bergh | *"It is sometimes difficult for doctors to diagnose genetic diseases caused by missense mutations. A missense mutation does not necessarily mean that you have the gene-associated disease and will become ill, since not all missense mutations lead to appreciable protein changes." Tom created a database for Fabry's disease for his final thesis. He wrote a computer programme that reads publications and stores all information about Fabry mutations in its database. After graduation he initiated a start-up company. At the moment he is working at Bio-Product and combining this job with PhD research at the university chair Systems and Synthetic Biology."*

MSc Biology

Ir Arno Hoetmer | Study Advisor | +31 (0)317 48 52 23 | mbi.msc@wur.nl | www.wur.eu/mbi

Programme summary

The MSc Biology allows you to get a broad overview of the latest developments in biology, from genes to ecosystems. You learn to critically discuss the newest scientific developments in the biological sciences. Within your area of specialisation, you deepen your knowledge and skills in a certain subject. To prepare for a successful international career, we strongly encourage you to complete part of your programme requirements abroad.

Your future career

Many graduates from the MSc Biology study programme enter careers in fundamental and applied research. Besides that, biologists end up in the field of communication and education, consultancy or governance. Compared to other Dutch universities, many biology graduates from Wageningen University & Research find a position abroad. See our online career booklet for current jobs of our alumni.

Specialisations

Animal Adaptation and Behavioural Biology focuses mainly on adaptation of animals that have occurred in the course of time, mechanisms involved in these adaptations and behaviour of animals.

Bio-interactions gives you the opportunity to obtain knowledge about interactions between organisms, from a molecular to an ecosystem level. You apply this knowledge on for example natural pest control.

Molecular Ecology is about using molecular techniques to solve ecological questions. Think of interactions between plants and viruses, microbial diversity in an ecosystem or the influence of the environmental factors on a population.

Conservation and Systems Ecology focuses on fundamental ecological processes. You learn to analyse ecosystems and interpret relations between chemical/physical processes and bioprocesses. You can use this knowledge to manage and conserve ecosystems.

Evolution and Biodiversity emphasizes the systematics of biodiversity in an evolutionary perspective. Subjects that will be addressed in this specialisation are: evolution, genetics, biosystematic research and taxonomic analysis.



Health and Disease revolves around mechanisms that play a role in maintaining the health of humans, animals and other organisms. You look at the regulation of the immune system and observe the role of organs in immune responses.

Marine Biology provides you with insights in the complexity of the marine ecosystem. You learn about the impacts of, for instance, fishery and recreation on this ecosystem or the interaction between different species.

Molecular Development and Gene Regulation deals with gene regulations and developmental mechanisms of organisms. You use microscopic and molecular techniques to explore for example enzymatic regulation or embryonic development.

Plant Adaptation is about the adaptations that different plants gained in order to adjust to various conditions. You learn to understand the regulation processes in plants that underlie these adaptations.

Admission requirements

See page 6

Related programmes

MSc Aquaculture and Marine Resource Management - MSc Animal Sciences - MSc Biotechnology - MSc Forest and Nature Conservation - MSc Molecular Life Sciences - MSc Organic Agriculture - MSc Plant Biotechnology - MSc Plant Sciences



Alumna Renske Onstein | “After my master I started my PhD at the University of Zurich on flowering plants. Why are there so many species of flowering plants? Where do they come from, who is related to who, and what has triggered some groups to evolve many species, whereas other groups are species-poor? I want to find out what drives speciation and answer this question within a phylogenetic context, using DNA, distribution data, morphological/physiological data and fossils. I’m enjoying the challenge, the philosophy and the opportunities PhD research brings: conferences in Brazil, fieldwork in South Africa and inspiring discussions.”

MSc Biosystems Engineering

Gerard Straver MSc | Study Advisor | +31 (0)317 48 39 08 | mab.msc@wur.nl | www.wur.eu/mab

Programme summary

In the master Biosystems Engineering you are trained in finding innovative solutions. The programme combines knowledge of technology and living systems with integrated thinking using a systems approach. Solutions can be applied to food or non-food agricultural production throughout the whole agricultural supply chain. During the programme, you develop independence and creativity while acquiring skills that enable you to analyse problems and work as part of an interdisciplinary team. Biosystems Engineering is a broad study programme which offers you a lot of possibilities to fill in the programme according to your specific interests. Biosystems Engineering is a small-scale programme where there is personal attention for every student and students know each other.

Your future career

Most graduates are employed in the agro- food sector or related sectors of industry, varying from local to international companies. Four representative functions frequently fulfilled by Biosystems Engineers are:

Designer

Designer of innovative systems in agriculture, like new livestock husbandry systems, automated information systems, climate control systems for greenhouses or bio-energy production systems.

Product engineer

A product engineer is responsible for a product group. The product engineer ensures continuation of quality by being the bridge between sales, research and development and management.

Logistic engineer

The logistic engineer designs, monitors and executes complex processes in the agro-food supply chain to ensure products are efficiently transported to their destination.

Researcher

Researcher at the research & development department of a technical-agricultural company like John Deere. Or researcher at a university or research institution.

Thesis tracks

The programme of Biosystems Engineering has no specialisation but thesis tracks. Each thesis track contains two or three courses that prepare you for doing a thesis in this field.

Farm Technology: This track focuses on sensing, modelling and systems design of on-farm primary production processes. The main application fields are arable farming, livestock production and horticulture, but also the potential of novel systems like algae and insect production is explored.

Information Technology: Information and communication technology play an increasing role in optimizing agricultural production processes. Design and management of business information systems, software engineering, database design and simulation are useful tools in information technology you will learn in this track.

Systems and Control: Production processes and machines have to be operated as efficient as possible while reducing environmental impact. In this track you learn how computer models and simulations can help to achieve optimal control for broad spectrum of applications.

AgroLogistics: The goal of agrolistics is to get the right quantity and quality of product at the right location at the right time. This requires the design of innovative networks in the agri-food chain in which you also incorporate requirements of stakeholders.

Environmental Technology: Closing cycles and reusing waste and by-products are key issues in environmental technology. You learn how to design systems in such a way that they reuse waste or separate it into distinct and reusable components.

Biobased Technology: The importance of biobased economy is increasing. In this track, you learn more about process engineering, biological recycling technology and biorefinery. You learn how to develop a physical model and analyse these models using software.

Admission requirements

See page 6

Related programmes

MSc Animal Sciences - MSc Plant Sciences - MSc Geo-information Science - MSc Geographical Information Management and Applications - MSc Organic Agriculture.



Graduate Thijs Verploegen | “Biosystems Engineering is not just focusing on big tractors and impressive machines! The programme offers a broad spectrum of methods and knowledge. During my internship at Bosch Deepfield Robotics in Germany, I also focused on entrepreneurship. In my internship, I combined Internet-of-Things with entrepreneurship. I was able to continue with this mix as a job. Since that day, I enjoy my diverse function as a product manager in which I focus on small, innovative solutions for agriculture.”

MSc Biotechnology

Dr. Sonja Isken | Programme Director | +31 (0)317 48 25 92 | mbt.msc@wur.nl | www.wur.eu/mbt

Programme summary

Biotechnology is defined as the industrial exploitation of living organisms or components derived from these organisms.

Its practical applications include age-old techniques such as brewing and fermentation, which are still important today. In recent decades, gene modification has revolutionised the biotechnology industry, spawning countless new products and improving established processes. Modern biotechnology has become an applied area of science with a multidisciplinary approach embracing recombinant DNA technology, cellular biology, microbiology and biochemistry, as well as process design and engineering.

Your future career

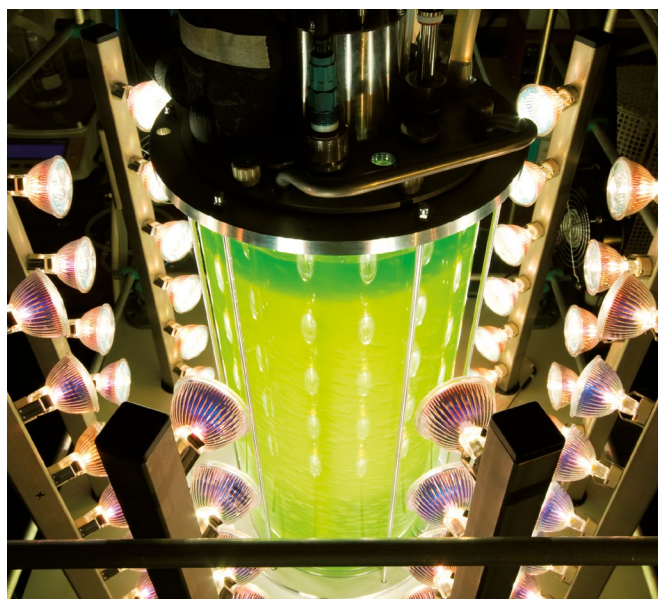
Graduates in biotechnology have good career prospects. More than 60 percent begin their careers in research and development. Many of these master graduates go on to earn their PhD degrees and often obtain management positions within a few years. Approximately 30 percent of our graduates start working for biotechnology companies immediately.

Relatively few begin their careers outside the private sector or in a field not directly related to biotechnology. In the Netherlands, some graduates work for multinational companies such as MSD, DSM, Heineken, Unilever and Shell, while others find positions at smaller companies and various universities or research centres such as NKI and TNO.

Specialisations

Cellular and Molecular Biotechnology focuses on the practical application of cellular and molecular knowledge with the aim of enhancing or improving production in micro-organisms or cell cultures. Possible majors: molecular biology, biochemistry, microbiology, virology and cell biology. The knowledge and skills gained can be applied in food biotechnology, medicine and vaccine development, environmental and biobased technology.

Process Technology focuses on engineering strategies for developing, enhancing or improving production in fermentation, bioconversion and enzymatic synthesis. In addition, up- and downstream processing is included. Possible majors: bioprocess engineering, food or environmental engineering and biobased chemical technology. The knowledge and skills gained can be



applied in food biotechnology, medicine and vaccine development, environmental and biobased technology.

Medical Biotechnology focuses on the use of modern biotechnology in the development and production of new vaccines and medicines. Advanced molecular and cellular techniques are used to study diagnostic and production methods for vaccines and medicines. Possible majors: molecular biology, microbiology, virology and cell biology.

Food Biotechnology focuses on the application from biotechnology to food processing. The approach includes microbial and biochemical aspects integrated with process engineering and chemistry. Possible majors: food microbiology, food chemistry and process engineering.

Environmental and Biobased Technology focuses on the design and development of biotechnological processes for solving environmental problems by removing waste products or by producing renewable energy and biobased products. Possible majors: environmental technology, bioprocess engineering, microbiology and biobased chemical technology.

Admission requirements

See page 6

Related programmes

MSc Molecular Life Sciences - MSc Food Technology - MSc Bioinformatics - MSc Plant Biotechnology - MSc Environmental Sciences - MSc Biobased Sciences



Alumnus Sina Salim | *"In America and Brazil, production of maize and sugarcane for bio-ethanol takes up enormous swathes of arable land that could otherwise be used for food production. This leads to the well-known food versus fuel dilemma. An alternative method for producing biodiesel is the use of algae. Sina Salim's first job was to develop a cheap and energy efficient harvesting method to ultimately produce biodiesel from algae, a competitor of fossil fuel. Later he became operational scientist at Bioprocess Pilot Facility B.V. and worked at different companies. Now he is working as Manager Business Development at a sub-department of the Ministry of Economic Affairs."*

MSc Food Safety

Ralf Hartemink | Programme Director | +31 (0)317 48 35 58 | food.science@wur.nl | www.wur.eu/mfs

Programme summary

Wageningen University & Research is one of the few universities in Europe able to offer education and research in all fields of food safety. This does not only include technological disciplines such as microbiology and toxicology, but also the legal, economic and communication aspects. The Food Safety programme at Wageningen University & Research is one of the most modern and innovative in the world. Started in 2000 as the first of its kind, it is still the only two-year, full-time Master Food Safety programme offered in Europe and the only programme offering Food Safety Law. The programme prepares graduates for careers in the food industry, government or consumer organisations; the three key players in international food safety management.

The food industry is increasingly confronted with farm-to-table food safety measures, regulations, legislation and guidelines aimed at controlling food hazards. As a result, there is an increasing demand for managers with expertise in food safety evaluation who are able to survey and monitor the chemical, microbiological and physical parameters of product composition and product safety. Food safety experts are able to understand and analyse the variation in quality and safety of products. They are also able to assess the potential risks involved in the adoption of new production methods and processing techniques. Food safety evaluation concerns food constituents, agro-chemicals, environmental contaminants and natural toxins.

Food regulations are getting more and more complex, creating the need for regulatory affairs specialists in industry or in lobbying organisations. The programme is the only programme offering Food Safety Law for students with either a technological or a legal degree, thereby, fulfilling the need in society for such positions.

Your future career

The employment market is promising and all recent graduates found jobs with relative ease. The demand for university-trained professionals in this field is currently higher than the number of graduates available. Most recent graduates found jobs in the private sector, at universities or at food safety research institutes. Many graduates enter careers in government and go on to managerial positions. Due to the increased efforts of the EU in the development of national food safety organisations, there will be many more job opportunities in various European countries, both for technological as well as regulatory specialists.



Specialisations

The programme offers three specialisations. All three specialisations have the courses on Food Safety Management and Food Law in common.

Applied Food Safety deals with the more technological (microbiology, toxicology, risk assessment) part of food safety. Students can combine this with Food Safety Economics. Thesis topics are also in these fields. Graduates generally work in industry, universities and research institutes.

Food Law and Regulatory Affairs is open for students with a technological or legal background. Courses focus on (international) food law, intellectual property rights and management. Theses are on food law. Graduates generally work as regulatory affairs specialists in industry.

Supply Chain Safety deals with safe food and ingredient supply. Globalisation leads to serious risks of contamination. In tropical countries, companies also face wars and political problems. Students can choose a thesis track at Food Microbiology, Business Economics, Law and Governance or Operation and Research Logistics.

Admission requirements

See page 6

Related programmes

MSc Food Quality Management - MSc Food Technology - MSc Nutrition and Health.



Student Natalie Merlinski | *"Ever since I saw the programme I knew it was what I was looking for. Being offered by one of the top universities in the food field, its sound history and specific but integrated approach, made it unique. Now, I know I made the right choice. The multicultural environment of the university, teaching level, practical approach and openness of professors, made it a challenging and profitable experience."*

MSc Food Technology

Ralf Hartemink | Programme Director | +31 (0)317 48 35 58 | food.science@wur.nl | www.wur.eu/mft

Programme summary

The Food Technology programme at Wageningen University & Research has been in place for more than 50 years and is considered one of the best and most innovative programmes in its field in Europe. We offer high-level courses and research in all areas of food science; ranging from advanced technological fields such as process engineering or chemistry, to fields with a more economic or sociological focus, such as marketing and gastronomy.

The Food Science and Technology group is larger than that of any other European university. It includes a wide range of departments: Food Chemistry, Food Physics, Food Microbiology, Food Quality and Design, and Food Process Engineering. The master Food Technology covers nearly all aspects of food science and technology. As a result of being a very broad field, students need to choose one of the specialisations offered.

Your future career

Graduates find jobs with relative ease, especially in the Netherlands and Western Europe. Recent graduates found positions worldwide, from small- and medium-sized companies to large multinationals, at universities as PhD students, and at research institutes. Graduates also work in the field of process technology at innovation centres, innovative food companies or government agencies.

Specialisations

Ingredient Functionality deals with the composition of food. It focuses on the role of various components, ingredients or structures in the quality and functionality of the final product. It deals with sensory, nutritive and textural aspects of foods in relation to their components.

Product Design focuses on the design and development of new and/or improved products. The focus is on the processes used in food technology, how consumers perceive the new product and on modelling new product concepts and processes.

Sustainable Food Process Engineering focuses on the development of processes that are more efficient in their use of raw materials, energy, water and other utilities. Students can also learn how to use a process in order to improve a product.

Food Biotechnology and Biorefining focuses on using micro-organisms and enzymes in food production. It also deals with processes that can be used for biorefinery or to process agricultural raw materials.

Dairy Science and Technology focuses on the dairy production chain. Students learn about the components and quality of dairy-related products, in combination with courses in the field of chemistry and physics, or fermentation or processing.

Gastronomy deals with the molecular science behind products used in retail, catering industry, and so on. Scientific insights are used to develop improved food preparation techniques. Attention is also paid to the cultural aspects of food.

Sensory Science combines Food Technology with Nutrition and Health. The focus is on how sensory systems function, how this is related to the product and how to analyse these aspects.

Food Digestion and Health focuses on the food on its way in the digestive track. This can be applied to design foods with desired properties and functionalities. You take courses of food technology in combination with courses of human and animal nutrition.

Food Innovation and Management combines courses in food technology with courses in management studies. It is intended for students who wish to work on product development in small businesses or students who plan to start their own business.

European Master in Food Studies is developed in cooperation with the universities of Cork (Ireland), Lund (Sweden) and Agro-Paris Tech (France) as well as with ten large industrial partners. For more information see: www.eurmscfood.nl.

Online Master Food Technology is a part-time and online specialisation focusing on the core of food technology. For more information, read the programme description on page 26, or go to www.wur.eu/omft

Admission requirements

See page 6

Related programmes

MSc Food Quality Management - MSc Food Safety -
MSc Biotechnology - MSc Nutrition and Health -
[online MSC Food Technology.](http://www.wur.eu/omft)



Lisa Huijgen | “Admittedly being an addict to food and everything around it, I could not have chosen a better field of study. During this master program, the topics of lectures, practical courses and group projects are always relatable as you recognize the products, ingredients and challenges every day in the supermarket or on your own plate. To prepare you for a future career, you are trained in tackling research projects from start to finish on your own and in cooperation with students from other disciplines. This gives you a broad basis and the tools to deal with any challenge coming your way!”

MSc Food Quality Management

Ralf Hartemink | Programme Director | +31 (0)317 48 35 58 | food.science@wur.nl | www.wur.eu/mfq

Programme summary

Food quality management assures the health and safety of food and other perishable products (e.g. flowers) and has become increasingly important in today's society. This is due to changing consumer requirements, increasing competition, environmental issues and governmental interests. It has resulted in a turbulent situation on the food market and in the agro-food production chain. The situation is further complicated by the complex characteristics of food and food ingredients, which include aspects such as variability, restricted shelf life and potential safety hazards; as well as many chemical, biochemical, physical and microbiological processes. To face this challenge, continuous improvement in food quality management methods is required wherever knowledge of modern technologies and management methods plays a crucial role.

Quality issues in food and other perishable products are generally tackled using either a technological or a managerial approach. At Wageningen, a concept has been developed that combines both aspects. This 'techno-managerial' approach forms the basis of the Food Quality Management programme. It provides a comprehensive and structured overview of quality management for predicting food systems' behaviour and generating adequate improvements in these systems from a food chain perspective.

The programme teaches you to understand and work together with the different players in the food industry in order to ensure high quality products.

Your future career

Graduates from this programme will be experts in the field of food quality management and can enter careers in food-agribusiness, research and public administration.

Typical positions include:

- Quality assurance manager (e.g. responsible for the quality of the ingredients for a specific product).
- Specialist in food quality logistics.
- Advisor/consultant (e.g. advising companies on certification).
- Researcher (e.g. studying the improvement of existing quality assurance systems in the food industry).

Specialisations

Quality Control and Assurance deals with complex problem solving by the techno-managerial approach, food safety knowledge, quality and safety standards, fraud and authenticity, and food law. You will perform research in topics such as food safety culture, risk-based auditing, food integrity management, effectiveness of food safety management systems (FSMS) in global supply chains, FSMS development and food safety enforcement in emerging countries.

Quality and Food Logistics allows you to investigate, analyse and improve food supply chain management based on surveys, case studies, conceptual frameworks and decision support models. This specialisation provides the knowledge for understanding how complex food supply chains work, with emphasis on product quality, sustainability and technology. You will develop innovative logistics concepts and dedicated decision support models to deal with the complexity in the agri-food sector. You will perform research in topics such as quality controlled logistics, and logistics collaboration concepts.

User-oriented Food Quality studies food quality from the consumer's perspective. Quality systems exist to check and control food quality in the production chain. After the point of sale, however, the consumer is in charge. Consumer practices in combination with use of appliances determine food quality at the moment of consumption. What consumers do and why they do so is important to know. Taking this into account in the food production chain, contributes to an improved quality after the point of sale. Research focuses on how consumers perform food related practices and how companies can anticipate on this.

Quality Management and Entrepreneurship gives insight into developing business in that complex and dynamic environment and taking into account the several and sometimes conflicting demands (on quality, safety, environment-sustainability) posed by consumers, companies (e.g. retailers, producers), governmental agencies and/or NGO's. Research focuses on how food companies deal with such different and dynamic demands in designing a management system, and the influence of stakeholders on prioritizing the demands.

Admission requirements

[See page 6](#)

Related programmes

[MSc Management, Economics and Consumer Studies - MSc Food Technology - MSc Food Safety](#)



Student Andreea Simion | *"Having completed a bachelor's degree in Romania in Food Science, I have decided to continue this path and have some additional managerial competences. Choosing the MSc. Food Quality Management was the best option. I have gained in one year of courses extensive knowledge to prepare me for the 'real life' experience. From Food Quality Management principles courses to microbiology, food safety management, economics and food law, this specialisation opens a lot of doors for the future."*

MSc Molecular Life Sciences

Dr. Wilko van Loon | Programme Director | +31 (0)317 48 52 16 | mml.msc@wur.nl | www.wur.eu/mml

Programme summary

The Molecular Life Sciences programme focuses on molecules and their properties. It seeks to discover relationships between the physical and chemical properties of molecules, particularly the role of complex molecules in living systems. It is an interdisciplinary programme that combines chemistry, physics and biology. The aim of the programme is to enable you to conduct independent research at the interface of chemistry, biology and physics, or in an applied field such as medicine, the environment, food sciences or (bio) nanotechnology. The programme is tailor-made and thesis-oriented, with the thesis being the culmination of the study.

Your future career

By combining the power of chemistry, physics and biology, graduates are able to make a significant contribution to fundamental and/or applied research in fields such as (bio) nanotechnology, biotechnology, environmental research, biomedical research, nutrition and the food sciences. Our graduates enter careers at universities, research institutes and industrial laboratories. Many enter PhD programmes while others become science journalists, managers or consultants in government or industry.

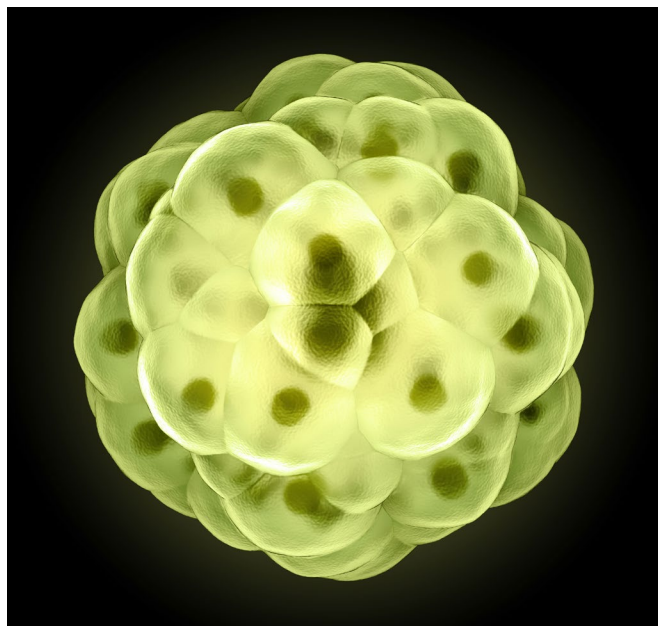
Specialisations

Biological Chemistry

By combining the principles of chemistry, biochemistry, molecular biology, cell biology, microbiology, genetics and bioinformatics, complex biological matters can be studied, such as molecular regulation of growth and cell differentiation, gene control, and the transfer of genetic traits. Furthermore, enzymology is an important area that combines the biological with the chemical to unravel functions and mechanisms of enzymes.

Physical Chemistry

This specialisation uses the most advanced technologies to focus on the chemical and physical properties of molecules and their behaviour in chemical and biochemical processes. The processes in nature are used as models for studying and synthesising new compounds with interesting chemical or physical properties for applications such as LCDs, biosensors or food science. Students can major in the fields of biophysics, organic chemistry or physical chemistry and colloid science.



Biomedical Research

This specialisation equips graduates with key skills in the natural sciences and enables them to use these skills as part of an integrated approach. Many recent breakthroughs in biomedical research have taken place at the interface between chemistry, biology and physics, so it is logical that many of our graduates enter careers in biomedical research. The explicit aim of this specialisation is to prepare students for careers at a medical research institute, academic hospital or a company in the pharmaceutical industry. As a result, students also complete their internships at such locations.

Physical Biology

Students in this specialisation learn to view biomolecules from a physical point of view. They use techniques in biophysics, physical chemistry, micro-spectroscopy and magnetic resonance (MRI) to contribute to areas such as cell-cell communication, transformation of light into chemical energy, and protein interactions. Students can major in fields such as biochemistry, biophysics, microbiology, molecular biology, plant physiology, physical chemistry and colloid science.

Admission requirements

See page 6

Related programmes

MSc Biotechnology - MSc Food Technology - MSc Bioinformatics
- MSc Nutrition and Health - MSc Plant Biotechnology - MSc
Biology.



PhD student Hanna de Jong | *Hanna de Jong graduated in the MSc Molecular Life Sciences with a specialisation in Chemical Biology. After her master she began as a PhD student studying the embryonic development of plants. Using knowledge in chemistry, she designs molecules and tests the effect on the embryonic development of plants. The combination of Chemistry with Biology enables her to do fundamental research and make use of the relevant components in both subjects. "I have been able to gain a lot of experience in the laboratory, which has prepared me greatly for scientific research!"*

MSc Nutrition and Health

Rolf Marteijs MSc | Programme Director | mnh.msc@wur.nl | www.wur.eu/mnh

Programme summary

Nutrition and Health focuses on the role of dietary and lifestyle factors in human health and disease. This role is studied from a biomedical perspective at the individual and population levels. In addition, the mechanisms underlying beneficial and adverse effects are studied at the sub-cellular (DNA), cellular and organ or organism levels. Human nutrition is a multidisciplinary field of expertise. To solve problems in nutrition and health, you must consider chemical and biochemical characteristics, physiological and biomedical aspects, the social and behavioural context of nutrition, and the relationships between these factors. Solving problems in this domain requires multidisciplinary biomedical knowledge and skills as well as an interdisciplinary approach to communication with experts in human nutrition and other fields.

Your future career

Many of our graduates begin working as researchers or PhD students. Another group becomes advisors, trainers or take up other jobs in the private sector. The majority of graduates finds employment at universities (including university medical centres), research institutes (TNO Nutrition or RIVM), in the public sector (national, regional and local governments, Netherlands Nutrition Centre, District Health Authorities) or companies involved with nutrition, pharmacology and toxicology (Unilever, FrieslandCampina, Danone Research). As graduates progress in their careers, they usually advance to a (more) managerial level.

Specialisations

Epidemiology and Public Health Epidemiologists try to determine causal relationships in large groups of people, such as the elderly or people with cardiovascular problems; between food, lifestyle and the development of diseases. Research results act as starting points for health advice and lead to a greater understanding of cause and effect. If you know that certain behaviour leads to a disease, that behaviour can be addressed, and the effectiveness of the efforts to do so can be measured. You will be helping to improve the overall health of people and may be able to prevent food-related diseases from developing.

Online Master The specialisation Nutritional Epidemiology and Public Health is available online and designed for studying part-time. For more information, read the programme description on page 27, or go to www.wur.eu/omnh.

Nutritional Physiology and Health Status In this specialisation, you will study various age groups and situations, such as growth, pregnancy, and food consumption behaviour. You will also review special situations including serious diseases (clinical food), during sports and activity. You may also research the food consumption behaviour and habits of individuals and how you may be able to influence that, for example, through portion sizes. In short, you will review different aspects and will learn what the effects are of food consumption patterns and the physiological processes on the body and what that means for the status of its health and illness.

Molecular Nutrition and Toxicology In this specialisation, you will learn to use molecular and cellular techniques to discover the mechanism driving the relationship between food and health. In toxicology, you will learn to study the possible poisonous effects of substances present in food, such as new ingredients in food products and additives, but also natural substances present in our food. The relationship between food consumption, food and medicines can also be studied and through this research, you will find many new leads to improving our health.

Sensory Science This specialisation is positioned at the interface of the programmes Food Technology and Nutrition and Health. Sensory scientists deal with the way humans perceive the world and act upon sensory input. They address how sensory systems function, from stimulation and perception to cognition and behaviour. You will work with humans and products in different contexts and study the way in which product properties affect, for example, sensory perception. The study always keeps a link to the application of this knowledge in the fields of human health and the design, production and consumption of attractive healthy foods.

Food Digestion and Health This new specialisation is positioned at the interface of the programmes Food Technology and Nutrition and Health. This specialisation focuses on food on its way in the digestive tract. You will learn how the food matrix is broken down and absorbed. You will get better understanding of the role of various food ingredients on human health. The knowledge on the digestion of food can be applied to design foods with desired properties and functionalities.

Admission requirements

See page 6

Related programmes

MSc Food Safety - MSc Communication, health and Life sciences.



Alumna Pascale Weijzen | *Pascale did a thesis in Epidemiology and Sensory Science. After her graduation, she did a PhD project on the dynamics of food choice and sensory specific satiety. She joined FrieslandCampina afterwards, as a Researcher Sensory & Consumer Science, where she has been responsible for innovation projects aiming at strategies to stimulate healthy food choices. "I really feel I can contribute to both public health and the company's bottom line simultaneously. In this job, I still benefit from the broad nutrition and sensory expertise, the strong academic level of thinking, and the worldwide expert network which I built up during my MSc and PhD degrees."*

MSc Organic Agriculture

Cor Langeveld MSc | Study Advisor | +31 (0)317 48 47 67 | moa.msc@wur.nl | www.wur.eu/moa

Programme summary

This programme has been designed to train students in multiple aspects of organic agriculture and the associated processing and marketing chain. An important goal is to prepare for interdisciplinary teamwork at an academic level. The programme is unique in its combination of detailed consideration of the underlying principles and processes from a natural science perspective with social and economic studies. Creative thinking is required to design new sustainable farming and marketing systems instead of simply optimising existing systems. The programme has an international character that uses case studies and offers project opportunities in both the developed and developing world. The curriculum has been carefully formulated to provide a balance between fundamental and applied science. Various university groups participate including farming systems ecology, soil quality, animal science, entomology, rural sociology, environmental policy, education and economy, making this a well-rounded and holistic programme.

Your future career

Graduates have career opportunities in agribusiness, research, non-governmental organisations and public administration. They often hold jobs such as scientist, consultant, policy maker or quality assurance officer.

Specialisations

Agroecology

Due to concerns on conventional farming practices, food safety issues and pollution, consumers increasingly demand wholesome agricultural products that are produced in a sustainable way. In addition to the demand for organic products by consumers in industrialised countries, there is a need for scientific agroecological farming practices in developing countries and countries in economic distress. In these regions, farmers cannot afford external inputs like pesticides, fertilisers or expensive seeds. Courses focus on: the analysis and design of sustainable organic farming systems; studying the relationship between plant and animal production; soil and landscape; analysing factors affecting plant and animal health; organic product quality. Students learn a systems approach to conduct research projects involving integrated agroecological systems.

Sustainable Food Systems

Improved understanding of global and local agro-food networks is essential to stimulate sustainable production of healthy food



and renewable resources. This specialisation focuses on the social sciences perspective of sustainable systems of food provisioning. In addition, globalisation and sustainability of food production and consumption are addressed. Production, processing and marketing of organic products is increasingly affected by (inter-) national policy and legislation. Insight into these aspects is crucial to expand and develop organic food production networks. Courses focus on: globalisation of food production and consumption; global versus local production; consumer behaviour and marketing; sustainable food networks and value chain analysis; environmental education. Students learn to analyse complex problems at the intersection of organic agriculture and society.

Double Degree Agroecology

The double degree programme combines the strengths of the two cooperating institutes, adding the specialist knowledge in agroecosystems management of FESIA with the expertise in designing and evaluating sustainable food systems and value chains in Wageningen. Students get the opportunity to understand structure and function of complex agroecosystems. They learn to apply systems approaches in studying, designing and evaluating agricultural systems and food production chains, and to develop creative solutions for sustainable farming and marketing of organic products. Action learning and action research through cooperation with farmers, food system professionals and consumers will shorten the distance between practice and theory.

Admission requirements

See page 6

Related programmes

MSc Food Quality Management - MSc Environmental Sciences - MSc Plant Sciences - MSc Animal sciences - MSc Biology - MSc Management, Economics and Consumer Studies - MSc Forest and Nature Conservation.



Ardjan Vermue | “I come from a town near Wageningen, and completed my bachelor at the University College Maastricht (UCM), studying a combination of development studies, economics and sustainable development. After a few years of volunteering and practical work experiences in organic agriculture and agroforestry, I wanted to deepen my knowledge in sustainable agriculture. I couldn't find a better place than Wageningen to study Organic Agriculture with a specialisation in Agroecology. I felt much at home in the international environment of Wageningen, after having lived abroad for over 5 years since I was 16. I've greatly enjoyed the courses and the freedom to develop my own study program in addition.”

MSc Plant Biotechnology

Dr. Anja Kuipers | Programme Director | +31 (0)317 48 28 39 | mpb.msc@wur.nl | www.wur.eu/mpb

Programme summary

Due to rapid technological developments in the genomics, molecular biology and biotechnology, the use of molecular marker technology has accelerated the selection of new plant varieties with many desirable traits. It also facilitates the design, development and management of transgenic plants. At present, plants are increasingly used to produce valuable proteins and secondary metabolites for food and pharmaceutical purposes. New insights into the molecular basis of plant-insect, plant-pathogen and crop-weed relationships enable the development of disease-resistant plants and strategies for integrated pest management. A fundamental approach is combined with the development of tools and technologies to apply in plant breeding, plant pathology, post-harvest quality control, and the production of renewable resources.

Besides covering the technological aspects, Plant Biotechnology also deals with the ethical issues and regulatory aspects, including intellectual property rights.

Your future career

The main career focus of graduates in Plant Biotechnology is in research and development positions at universities, research institutes, and biotech or plant breeding companies. Other job opportunities can be found in the fields of policy, consultancy and communication in agribusiness and both governmental and non-governmental organisations. Over 75% of Plant Biotechnology graduates start their (academic) career with a PhD.

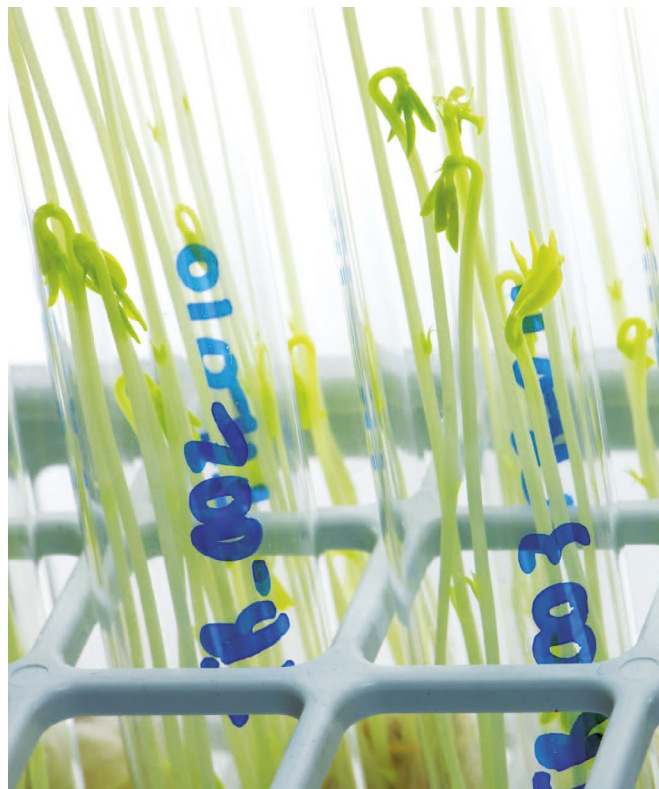
Specialisations

Functional Plant Genomics

Functional genomics aims at understanding the relationship between an organism's genome and its phenotype. The availability of a wide variety of sequenced plant genomes has revolutionised insight into plant genetics. By combining array technology, proteomics, metabolomics and phenomics with bioinformatics, gene expression can be studied to understand the dynamic properties of plants and other organisms.

Plants for Human and Animal Health

Plants are increasingly being used as a safe and inexpensive alternative for the production of valuable proteins and metabolites for food supplements and pharmaceuticals. This specialisation provides a fundamental understanding of how plants can be used for the production of foreign proteins and



metabolites. In addition, biomedical aspects such as immunology and food allergy, as well as nutritional genomics and plant metabolomics, can also be studied.

Molecular Plant Breeding and Pathology

Molecular approaches to analyse and modify qualitative and quantitative traits in crops are highly effective in improving crop yield, food quality, disease resistance and abiotic stress tolerance. Molecular plant breeding focuses on the application of genomics and QTL-mapping to enable marker assisted selection of a trait of interest (e.g. productivity, quality). Molecular plant pathology aims to provide a greater understanding of plant-insect, plant-pathogen and crop-weed interactions in addition to developing new technologies for integrated plant health management. These technologies include improved molecular detection of pathogens and transgene methods to introduce resistance genes into crops.

Admission requirements

See page 6

Related programmes

MSc Biotechnology - MSc Molecular Life Sciences -
MSc Plant Sciences - MSc Nutrition and Health - MSc Bioinformatics
- MSc Biology - MSc Biobased Sciences



Yosapol Harnvanichvech | *"I obtained my bachelor degree in Botany at Kasetsart University, Thailand. Wageningen's quality in higher education and expertise in all fields of plant sciences motivated me to pursue the Master's program in Plant Biotechnology with specialisation in functional plant genomics. The programme structure covers a wide range of topics in plant biotechnology and allows me to design my own solid career. I am currently doing my thesis in the Bioinformatics groups, where we use plant genomic data to study the evolutionary dynamics of secondary metabolites. The results will allow a possibility of plant metabolic engineering approaches in the future."*

MSc Plant Sciences

Dr. Anja Kuipers | Programme Director | +31 (0)317 48 28 39 | mps.msc@wur.nl | www.wur.eu/mps

Programme summary

Plant Sciences deals with crop production ranging from plant breeding to the development of sustainable systems for the production of food, pharmaceuticals and renewable resources. It is linked with a professional sector that is highly important to the world economy. The programme focuses on the principles of plant breeding, agro-ecology and plant pathology and the integration of these disciplines to provide healthy plants for food and non-food applications. Technological aspects of crop production are combined with environmental, quality, socio-economic and logistic aspects. Students learn to apply their knowledge to develop integrated approaches for sustainable plant production.

Your future career

Graduates in Plant Sciences have excellent career prospects and most of them receive job offers before graduation. They are university trained professionals who are able to contribute to the sustainable development of plant production at various integration levels based on their knowledge of fundamental and applied plant sciences and their interdisciplinary approach. Graduates with a research focus are employed at universities, research institutes and plant breeding or agribusiness companies. Other job opportunities are in management, policy, consultancy and communication in agribusiness and (non-) governmental organisations.

Specialisations

Crop Science

Sound knowledge of crop science is essential to develop appropriate cultivation methods for reliable food supply, while considering sustainability and biodiversity. An integrated approach is crucial to studying plant production at various levels (plant, crop, farm, region). This requires a sound understanding of physical, chemical, and physiological aspects of crop growth. Modelling and simulation are used to analyse yield constraints and to improve efficiency.

Greenhouse Horticulture

Greenhouse horticulture is a unique agrosystem that allows significant control of (a-) biotic factors through protected cultivation. The advances in this field are based on technological innovations. This specialisation combines quality of production

with post-harvest physiology and focuses on production, quality and chain management of vegetables and ornamentals.

Natural Resource Management

The development of sustainable agro-ecosystems requires understanding of the complex relationships between soil health, cultivation practices and nutrient kinetics. Other aspects include the interaction between agriculture and nature, and competing claims on productive land worldwide and climate change. This specialisation provides knowledge and tools to understand the interactions between biotic and abiotic factors in agro-ecosystems to facilitate diverse agricultural demands.

Plant breeding and Genetic Resources

Plant breeding is crucial in the development of varieties that meet current demands regarding yield, disease resistance, quality and sustainable production. This specialisation ranges from molecular genetics to the production level and provides knowledge of the physiology and genetics of cultivated plants. Molecular techniques add to the rapid identification of relevant genes and are essential for accelerating.

Online master

The specialisation Plant Breeding is available online and designed for studying part-time. For more information, read the programme description on page 28, or go to www.wur.eu/omps

Plant Pathology and Entomology

Investments made in crop production need to be protected from losses caused by biotic stress. Integrated pest management provides protection by combining genetic resistance, cultivation practices and biological control. This specialisation focuses on transmission mechanisms, ecology of insects, nematodes and weeds, and epidemiology of fungi and viruses. Knowledge of molecular and ecological bio-interactions establishes the basis for integrated pest management and resistance breeding.

Admission requirements

See page 6

Related programmes

MSc Biosystems Engineering - MSc Biotechnology - MSc Biology
- MSc Forest and Nature Conservation - MSc Organic Agriculture
- MSc Plant Biotechnology - MSc Biobased Sciences -
[online MSc Plant Breeding](#)



Linda Frijters: MPS | “After graduating from my Bachelor Applied Biology at HAS University of Applied Sciences I wanted to obtain more knowledge in subjects regarding phytopathology and a more sustainable way of crop cultivation. Therefore, I decided to apply for the Master Plant Sciences with specialisation Phytopathology and Entomology in Wageningen. I am glad to do my master's here because I appreciate the wide range of courses to choose from, personal contact with professors, my fellow students and the university campus.”

MSc Water Technology

ir. Nelleke van Dorenmalen | Programme Director | +31 (0)58 284 30 00 | nelleke.vandorenmalen@wetsus.nl | www.wetsusacademy.nl

A joint programme offered by Wageningen University & Research, the University of Twente and the University of Groningen.

Programme summary

There are a lot of new and existing global problems related to the availability and quality of water for personal, agricultural and industrial use. And these problems require sustainable solutions with a minimal impact on the environment. Water technology has unfortunately not been a focal point of most academic research and education programmes, despite its enormous importance to society. Instead, the expertise of various research groups is usually concentrated on other processes and in some cases, only later dedicated to water treatment in spin-off projects. New technologies will be necessary to develop new concepts for the treatment of waste water. And also for the production of clean water from alternative sources like salt (sea) water, waste water or humid air in order to minimise the use of precious groundwater. These challenges require academically trained experts who can think out-of-the-box and help to find practical solutions in the near future. A dedicated joint master Water Technology programme has been created to train and educate these experts.

The MSc Water Technology is situated in Leeuwarden, the capital of water technology, and is offered jointly by three Dutch universities: Wageningen University & Research, the University of Twente and the University of Groningen. A combined technological approach, based on state-of-the-art universities in science and technology, will search for solutions to several developments within business and society; with a worldwide impact on the demand for and use of water. This dedicated Master programme with joint degree allows for flexibility and can be adapted to the changing needs of the labour market. Wageningen University & Research offers a strong focus on environmental sciences, the University of Twente on science and technology, and the University of Groningen on fundamental sciences. Students will be educated in the multidisciplinary laboratory of the technological top institute for water technology called Wetsus.

The MSc Water Technology programme specifically targets students interested in beta science and technology. The programme offers a unique combination of scientific insights and

technological applications from the field of biotechnology and chemical engineering. This combined approach for problem solving within the global framework of water problems is an asset to the programme. The programme is a valuable supplement for postgraduate students with a completed bachelor degree in Environmental Engineering, Chemical Engineering and Biotechnology; or in related fields with a strong knowledge of mathematics, physics, chemistry and/or biology, and with affinity of water processes. Students are challenged with examples and case studies of real (research) problems that they might encounter as water professionals.

Students apply for the MSc Water Technology programme at Wageningen University & Research, but will be registered at the other two universities as well. They will have access to the facilities of all three universities. Upon the successful completion of the programme, students receive one joint degree MSc Water Technology issued by all participating universities.

Your future career

This study domain is becoming more and more relevant due to the urgent need for new technologies to combat global water problems. Water technology for public drinking water production and sewage water treatment is a very large market. Furthermore, the largest use of fresh water is for irrigation purposes. The industrial water supply and industrial waste water treatment also represent a significant market. There is no question that businesses involved in water technology will grow tremendously. Besides this, human capital is a basic condition to guarantee the success and continuity of the development of sustainable technologies. In many EU countries, the lack of talented technological professionals is becoming an increasingly limiting factor. The programme prepares students for a professional position in the broad area of water technology. Graduates have good national and international career prospects in business and research.

Admission requirements

See page 6. For more information about the programme outline visit www.wetsusacademy.nl.

Related programmes

[MSc Biotechnology](#) - [MSc Environmental Sciences](#)



Student Stefanie Stubbé | *"Wetsus gave me the opportunity to get personalized education: teachers that take the time for you and fellow students that challenge and collaborate with you at the same time. Water technology is going to be huge in the future; I already experienced that at several companies when I searched for an internship. Although it is sometimes hard work and far away from the "city-life" in the Netherlands; I've never regretted my choice to start this Master!"*

Programme summary

The online master specialisation Food Technology focuses on the core of food technology: ingredient functionality, sustainable food process engineering and product design. The online specialisation is part of the master Food Technology, which is one of the best and most innovative programmes in Europe and worldwide. You will learn how to perform food science research, design food products and improve food production processes. Since the programme includes input from different disciplines: food chemistry, food physics, food microbiology, food process engineering and food quality & design, you will be able to work in different branches of the food industry.

Your future career

As the programme combines input from different disciplines in the field of food technology, you will be able to work in different branches and multi-disciplinary environments. Graduates of the master Food Technology have excellent career opportunities in the food industry, the government, consultancies, universities or research institutes.

Online master

The online master Food Technology is designed as a part-time study, which gives you the flexibility to combine study and your professional career. In the first two years, you will follow a series of courses with a study load of ± 20 hours per week. The programme includes two short stays of two weeks in Wageningen, in order to take part in the necessary lab-practical's. The course work is followed by a tailor-made internship and master thesis. Depending on the effort and time you invest, the programme will take 3-4 years to complete. After successful completion, you will obtain a fully recognised Master of Science degree from Wageningen University & Research.



The courses in this online master programme include courses about ingredient functionality, product design and sustainable food process engineering such as:

- Sustainable food and bioprocessing;
- Enzymology for food and biorefinery;
- Biochemical analysis of foods;
- Food physics;
- Food structuring;
- Product and process design;
- Molecular gastronomy;
- Food ingredient functionality;
- Predicting food quality.

With these courses and the tailor-made thesis and internship, you will be fully prepared for a job as an academically trained food scientist. You will be able to design new food products and innovate production processes.

Admission requirements

Admission requirements page 6, information on tuition fee and admission procedure on page 8

Related programmes

MSc Food Technology - MSc Food Quality Management -
MSc Food Safety - MSc Biotechnology - MSc Nutrition and Health



Harmke Klunder | *"It is rich in proteins, unsaturated fats, vitamins and is available in large quantities all over the world. You may conclude, 'The ideal food ingredient.' However, would you still think it was ideal if you knew it was made from insects? With three other students, we added insects to a third world food product, thereby winning an international competition from the IFT (Institute of Food Technologists). Malnutrition in Africa could be fought by enriching their daily porridge, sorghumpap, with protein-enhanced termites. As food ingredients technologist, it is possible to look beyond the products found on the shelves of the local supermarkets."*

Programme summary

Do you think it is interesting to study the role that nutrition and lifestyle play in the development of diseases? Epidemiologists try to detect these relationships in large groups of people. Epidemiology is the basic science of public health. Research results are the starting points for health advice and lead to a greater understanding of cause and effect. The acquired knowledge can be used in health policymaking and intervention programmes in both developing and developed countries. You will be helping to improve the overall health of people and may be able to prevent food-related diseases from developing.

The online master Nutritional Epidemiology and Public Health addresses the design, implementation, analysis and interpretation of epidemiological research, both interventional and observational. It focuses on the aetiology and prevention of diseases, with specific reference to dietary patterns, nutritional factors and lifestyle. Central issues are assessment of exposure, risk factors of disease, biomarkers for health status and analysis and interpretation of major study designs. Since you need expertise and competences in both nutritional epidemiology and public health to be able to fully understand this domain, the study programme consists of different courses and trainings combining these two fields.

Your future career

Graduates greatly value the research skills they acquired in the programme. After graduation, many of them begin working as researchers or PhD students. Another group becomes advisors, trainers or take up other jobs in the private sector. The majority of graduates finds employment at universities (including university medical centres), research institutes, in the public sector (WHO, NGO's, national health services) and some find employment in companies involved with nutrition and health. Graduates work in both developing and developed countries.

Online master

The online master specialisation is designed for part-time study (20 hrs/week) to combine work and study or in the context of Lifelong learning. A course programme of 2 years will be followed by a tailor-made internship and master thesis. The internship and thesis will together take up either 1 year full-time or 2 years part-time. During the courses, you will



closely collaborate with lecturers, tutors and fellow distance learning students using a virtual learning platform. There are options to organise the academic internship and Master thesis in your own professional context, either part-time or full-time.

The courses in this online master programme include courses about epidemiology, public health, research methods and nutritional physiology such as:

- Descriptive epidemiology and public health;
- Analytical epidemiology and public health;
- Epidemiology and public health policies;
- Nutritional physiology;
- Public health intervention planning;
- Assessment of nutritional status;
- Statistics;
- Integration of evidence;
- Assessment of nutritional status;
- Assessment of dietary intake.

The courses prepare you for the thesis and internship. You decide on a topic for the thesis and internship in close consulting with your study advisor. Typically the topic is about the relation between dietary intake and chronic disease and consequences for public health interventions.

Admission requirements

[Admission requirements page 6](#), [information on tuition fee and admission procedure on page 8](#)

Related programmes

[MSc Nutrition and Health](#)



Alumnus Santiago Rodas | “This master taught me how to use the up-to-date scientific evidence for programme design and implementation. From the courses, I acquired the technical skills to do research and from my thesis and internship at the World Food Programme (WFP) I learned how to put research into practice. Now I work as an international consultant of the Policy, Programme and Innovation Division of the WFP at its headquarters in Rome.”

Programme summary

Plant Breeding plays an important role in the development of plant varieties for food, feed and industrial uses. New varieties have to meet current demands regarding yield, disease resistance, quality characteristics, salt or drought tolerance and suitability for sustainable plant production systems. Plant breeding involves a variety of aspects, ranging from the molecular level to the population level and requires knowledge on the physiology, ecology and genetics of cultivated plants. The use of various molecular techniques contributes enormously to the rapid identification of genes for natural resistance and is essential for accelerating the selection process by marker-assisted breeding.

Your future career

Graduates from the master Plant Sciences have excellent career prospects and most of them receive job offers before graduation. They are university trained professionals who are able to contribute to the sustainable development of plant production at various integration levels based on their knowledge of fundamental and applied plant sciences and their interdisciplinary approach.

Graduates with a research focus are employed at universities, research institutes and plant breeding or agribusiness companies. Other job opportunities are in management, policy, consultancy and communication in agribusiness and (non-) governmental organisations.

Online master

The online master specialisation is designed for part-time study (20 hrs/week) to combine work and study or in the context of Lifelong learning. A course programme of 2 years will be followed by a tailor-made internship and master thesis. The internship and thesis will together take up either 1 year full-time or 2 years part-time. During the courses, you will closely collaborate with lecturers, tutors and fellow distance learning students using a virtual learning platform. The programme includes two mandatory two-week periods in Wageningen, to train essential laboratory skills. There are options to organise the academic internship and master thesis in your own professional context, either part-time or full-time.



The online master programme includes courses about genetics, plant physiology, genomics and statistics. You will gain the knowledge and skills needed to develop new breeding strategies and new crops with courses like:

- Plant pathology and disease epidemiology;
- Genetics;
- Plant biotechnology;
- Marker assisted selection;
- Breeding for quality, tolerance and resistance;
- Germplasm and seed technology;
- Genomics and bioinformatics;
- Design of plant breeding programs;
- Statistics.

The courses prepare you for the thesis and internship. You decide on a topic for the thesis and internship in close consulting with your study advisor. The thesis and internship prepares you for a future career as a university-trained professional that is able to contribute to the sustainable development of plant production at various integration levels, based on their knowledge of fundamental and applied plant sciences and their interdisciplinary approach.

Admission requirements

Admission requirements page 6, information on tuition fee and admission procedure on page 8

Related programmes

MSc Plant Sciences - MSc Biotechnology - MSc Biology -
MSc Forest and Nature conservation - MSc Plant Biotechnology -
MSc Organic Agriculture



Student Timo Petter | “After 10 years of practical experience in Allium breeding, Timo subscribed to follow courses of the master Plant Breeding and Genetic Resources. His job at Bejo Zaden brought him to many countries where the breeding company has her trial fields, breeding stations and sales representatives. But as a crop research manager he started to feel the need to improve his knowledge of the theoretical side of his profession: “Although I have not finished my masters yet, I use the knowledge that I have gained from the various courses every day! For a plant breeder, I believe that this master is the best educational programme available in the Netherlands.”



Environmental Sciences

MSc Climate Studies

Marjo Lexmond MSc | Study Advisor | +31 (0)317 48 20 23 | mcl.msc@wur.nl | www.wur.eu/mcl

Programme summary

The MSc Climate Studies programme focuses on an improved understanding of climate change across the earth and its impact on ecosystems and society. The debate in science no longer revolves around whether our climate will change, but how it will change, how we can cope with the impact (adaptation), and how we can limit climate change in the long term (mitigation). These issues are important for the entire world and fuel a range of new challenges to natural and social sciences.

Society needs answers to questions such as: How will climate change affect ecosystems and how will these in turn affect the climate system? What will the effect be on the availability of water and food? How will climate change issues set national and international political agendas? How will citizens, consumers, companies and other social actors respond to climate change? What will the economic costs be of the impact and measures related to climate change? And how will these costs be distributed globally? Will new social and economic opportunities emerge in the process of adaptation?

As these changes and challenges become ever more apparent, the demand for scientists who are able to understand and investigate them will rise. Wageningen University & Research has therefore bundled expertise from several disciplines in a Master study programme specifically designed for students who wish to focus on the scientific insights into climate change and its implications for nature and society. Climate Studies does not only cover the most important geophysical and biogeochemical processes involved in climate change (the mechanisms), but it also covers the socio-economic aspects of causes and effects; as well as adaptation and mitigation as the main categories of societal response.

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 environmental and governmental organisations. Applied climate change researchers and experts are sought after by banks, insurance companies, construction and power companies and governments.



Specialisations

Climate Studies is a thesis-oriented programme and offers several possibilities to focus your studies in the field of your interest. You can choose from five specialisations, ranging from a strong natural scientific focus to a more social scientific oriented programme. Within the specialisations different thesis tracks have been identified:

- 1 The Physical Climate System
 - Air Quality and Atmospheric Chemistry
 - Hydrology and Quantitative Water Management
 - Meteorology
- 2 Biogeochemical Cycles
 - Air Quality and Atmospheric Chemistry
 - Soil Chemistry and Chemical Soil Quality
 - Water Systems and Global Change
- 3 Ecological and Agroecological Systems
 - Crop and Weed Ecology
 - Plant Ecology and Nature Conservation
 - Soil Biology and Biological Soil Quality
 - Water Systems and Global Change
- 4 Human-Environment Interactions
 - Environmental Systems Analysis
 - Water Systems and Global Change
- 5 Climate, Society and Economics
 - Environmental Economics and Natural Resources
 - Environmental Policy

Admission requirements

[See page 6](#)

Related programmes

[MSc Environmental Sciences](#) - [MSc Earth and Environment](#).



Alumna Anouk Vlug | *"The MSc Climate Studies gave me the opportunity to design my own study program with the help of the study advisor. During my studies I broadened my knowledge about climate change related issues, while specializing in glaciology. One month after handing in my MSc thesis, I started my ArcTrain PhD at the University of Bremen, on the "Impact of natural climate variability on Canadian Arctic glaciers during the Holocene". For my research I model glaciers in the Canadian Arctic with the Open Global Glacier Model."*

MSc Earth and Environment

Dr. Gerrit Epema | Programme Director | +31 (0)317 48 00 63 | mee.msc@wur.nl | www.wur.eu/mee

Programme summary

Water scarcity, water quality, soil degradation, food supply, loss of biodiversity, vulnerability to severe weather, and at larger scale themes like climate change are just a few examples of key issues that need to be addressed urgently.

As a Wageningen geoscientist, you study our planet including the atmospheric boundary layer (critical zone) at different spatial and temporal scales, where flows of energy and matter determine the conditions for sustaining life. Hence its name: earth and environment.

Your study of soil, water, atmosphere largely focuses on understanding the interdependent physical, chemical and biological processes, and on developing models that describe and predict these processes on relevant scales. You develop scenarios that describe expected changes on various spatial and temporal scales.

You use methods from physics, chemistry, biology and mathematics, you build a quantitative understanding of the composition, structures and processes of the earth and its atmosphere; you learn about its resources and the influence of human activity. Thus, you can have an important role in improving natural resource management and in removing obstacles to sustainable development.

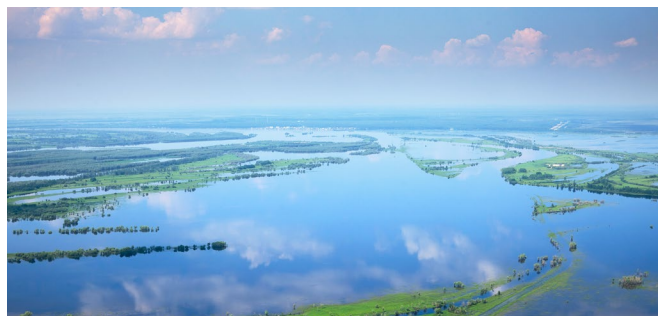
Your future career

The MSc Earth and Environment programme prepares you for excellent career opportunities. Our graduates can be found all over the world, working as meteorologists, hydrologists, water quality scientists or soil scientists, to name but a few disciplines. Others develop their career in research. Graduates are employed at universities, research institutes, consultancies, government or NGOs.

Specialisations

Hydrology and Water Resources

The focus of this specialisation is to study the effects of climate change and other influences on the water balance to support optimal land management when dealing with hydrological extremes like drought, flooding and extreme precipitation. You study catchment-scale hydrological processes through advanced measurement, modelling and assimilation techniques. Also attention is given to flow and transport processes of water



and solutes through and over the soil system, and their effects on crops, vegetation and groundwater.

Meteorology and Air Quality

In this specialisation you learn about physical and chemical processes, the composition of the atmosphere and the exchange between the atmosphere and earth's surface and meteorology. In this way you can contribute to further understanding of atmospheric processes and their relevance for weather and climate.

Biology and Chemistry of Soil and Water

You develop an in-depth understanding of chemical and biological processes and their interactions in soils and natural waters, and their role in the functioning of terrestrial and aquatic ecosystems in a world that faces increasing anthropogenic pressures. You learn how these insights can contribute to develop effective strategies for the preservation and restoration of soil and water quality, biodiversity, and the functioning of natural ecosystems and the services they provide.

Soil Geography and Earth Surface Dynamics

Explore and analyse patterns and processes at the earth surface that define and alter soils and landscapes. By using an integrative approach of laboratory research, fieldwork and modelling, and combining these with biophysical and human elements you gain insight in the past, present and future system dynamics. You learn to develop and apply innovative methods and tools to advance the understanding of the processes that form and alter soils and landscapes, including the interactions between these processes in space and time.

Admission requirements

See page 6

Related programmes

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



Alumnus Nick Gorski |

"I had the opportunity to take classes, do field work and research in other countries. It was an excellent way to put theory into practice."

MSc Environmental Sciences

Leo Bregman | Study Advisor | +31 (0)317 48 88 33 | mes.msc@wur.nl | www.wur.eu/mes

Programme summary

We are facing a future with an increased demand for food, water, energy and other resources, which will have an enormous impact on our already heavily burdened environment. Environmental challenges for the future include using our resources efficiently, minimising our impact on nature, and creating and changing people's awareness and behaviour towards their environment.

The MSc Environmental Sciences programme is designed for students who want to take up this challenge in finding innovative and sustainable approaches to secure and improve the state of the environment. This programme provides insight into the socio-economic causes, the characteristics of pollution and degradation of the natural environment, and their effects on human beings and ecosystems. By taking an interdisciplinary approach, students learn to develop analytical tools and models, environmental technologies, socio-political arrangements and economic instruments to prevent and control environmental problems.

To allow you maximum flexibility in your individual course of study, there are no formal specialisations and compulsory elements are kept at a minimum. This allows you to tailor the programme to your individual needs. Major thesis research can be conducted in one of the ten thesis tracks (major) and each major can be combined with a minor in environmental communication or education.

Your future career

Graduates from this programme are well-equipped to continue their scientific training in a PhD programme or to begin - or continue - a professional career requiring independent scientific performance. Students obtain the knowledge and skills needed to communicate with experts from different disciplines, allowing them to play a key role in complex environmental and sustainability issues. Most graduates enter careers in environmental consultancy, research and management, while others are involved in policy development and higher education.

Thesis tracks

The ten thesis tracks are clustered in 4 groups.

Environmental Quality investigates the physical, chemical and biological processes that influence the quality of the environment and the effects of pollutants on humans and ecosystems. Students can choose the thesis tracks Aquatic Ecology and Water Quality Management, Air Quality and Atmospheric Chemistry, Soil Biology and Biological Soil Quality, Soil Chemistry and Chemical Soil Quality, or Environmental Toxicology.

Human-Environment Interaction studies the natural and social processes involved in environmental issues. It aims to develop integrative tools and methodologies and to apply these in strategic research. Students can choose to develop such an integrated approach via the thesis tracks Environmental Systems Analysis or Water Systems and Global Change.

Environmental Policy and Economics covers the contribution of the social sciences to environmental research. The focus is on the social, political, legal and economic aspects of environmental issues and the goal is to provide students with the skills for studying, formulating and designing innovative forms of national and international environmental governance. You can choose a thesis track in the disciplines of Environmental Policy or Environmental Economics and Natural Resources.

Environmental Technology concentrates on biological, chemical and physical processes for water reuse and the recovery of nutrients, minerals and energy. The aim is to fully understand these processes in order to design and optimise innovative technologies for renewable energy, closing nutrient cycles and solving environmental issues. You can choose any of these topics via the thesis track Environmental Technology.

Admission requirements

See page 6

Related programmes

MSc Climate Studies - MSc Urban Environmental Management - MSc Earth and Environment - MSc Forest and Nature Conservation - MSc Aquaculture and Marine Resource Management.



Alumna Charlotte Van Erp Taalman Kip | *"Upon graduation, Charlotte started working as environmental consultant at MWH Global. Two years later, she continued her career at the water board Hollandse Delta as innovation engineer. She works together with different parties for implementing innovative and sustainable ideas. One project she is involved in focuses on the recovery of valuable compounds in sewage. "It's time to see our sewage not as a dirty waste stream, but as a valuable resource. We should not destroy this potential of sewage. On the contrary, it is our duty to recover and reuse all its valuable components."*

MSc Forest and Nature Conservation

Gijs Elkhuizen | Programme Director | +31 (0)317 48 21 76 | mfn.msc@wur.nl | www.wur.eu/mfn

Programme summary

This programme focuses on policy, sustainable management and conservation of forest and nature; e.g. understanding and predicting the effect of phenomena such as global climate change, deforestation, biodiversity loss, ecotourism, timber production, hunting and animal reintroduction. Insights into all aspects of forest and nature conservation are required to address these issues with emphasis on both ecological and social aspects.

The MSc Forest and Nature Conservation represents an integrated approach to natural resource management that can be applied to diverse terrestrial ecosystems at different scales, and in varying political and social contexts.

A tailor-made structure, an outstanding research environment and three comprehensive specialisations contribute to making the programme challenging for undergraduates from both the natural and social sciences.

Your future career

The programme prepares you for Dutch as well as European and non-European jobs. Career possibilities include positions at research institutes and universities, NGO's, government ministries and local authorities.

Positions are also available at state and private forestry and nature conservation services, and environmental assessment agencies. Examples include the European Forest Institute, Birdlife International, and landscape and animal protection organisations such as RAVON or WWF. In the private sector, graduates find jobs at engineering and consultancy bodies, such as Royal Haskoning, the National Fund for Rural Areas or forestry companies.

Graduates often begin their career by carrying out research, computer analysis and modelling of ecological systems, working in knowledge transfer or preparing policy documents. Eventually, their careers usually shift towards advisory work, consultancies, research coordination and project management

Specialisations

Policy and Society

Within this specialisation the scientific focus is on the social context of forest and nature conservation. Issues in the field of



economics, public administration, communication and strategic planning are addressed in order to conserve and manage forests and natural areas in a sustainable way. Examples of research topics are: recreation, communities and natural resources, deforestation, forest governance, sustainable forestry and certification schemes.

Management

This specialisation aims to design and assess realistic and feasible management options for forests and natural areas. The approach is based on specific knowledge and understanding of wildlife management, management of forests and other terrestrial vegetation. The management of forest and nature areas is addressed from both an ecological and a social perspective. Issues that are addressed are wildlife management, vegetation and systems ecology, natural resource and, forest management and social-economic influences on nature management.

Ecology

The emphasis is on understanding the ecological processes that form the basis for the structure, composition and functioning of forests and natural areas. You can specialise in tropical forestry, landscape ecology, animal ecology, forest resource management, plant ecology, biodiversity conservation or (tropical) nature conservation.

Admission requirements

See page 6

Related programmes

MSc Animal Sciences - MSc Biology - MSc Development and Rural Innovation - MSc Landscape Architecture and Planning - MSc International Development Studies - MSc Aquaculture and Marine Resource management.



Alumnus Wouter Wubben |

"When I just started working I could directly apply the ecological knowledge from my master."

MSc Geo-Information Science

Ing. Willy ten Haaf | Study Advisor | +31 (0)317 48 18 65 | mgi.msc@wur.nl | www.wur.eu/mgi

Programme summary

The two-year Geo-information Science Master programme at Wageningen University & Research is about generating and using geo-information to solve complex problems in domains like environmental sciences, food and agricultural sciences, (geo)-information sciences and social sciences.

You learn how to use GIS and remote sensing techniques to solve complex problems like flooding, food security, climate change impact, renewable energy, urbanization, the flow of tourists or the migration of wild animals. And these are just some examples of the broad number of topics you can address within the programme.

Acquire, store, analyse, solve

During your study, you take courses on the acquisition, storage, analysis and visualisation of spatial data. You learn to recognise, describe and analyse problems in relevant environmental and social application fields; this includes training in the development of Geo-IT solutions for complex problems.

You also learn about the technical and organisational context of geo-information in institutes and companies: how to communicate well, keep abreast of GI scientific and technical developments and how to apply these developments in specific fields. Depending on your background, research topics and previous education, you can also choose relevant courses in application domains or geo-informatics.

The Wageningen Approach.

The programme offers a blend of geo-information science methods, technologies and applications. The combined use of earth observation techniques (remote sensing) and geographic information systems for problem-solving within the environmental and social disciplines is a unique feature of the Wageningen Approach.

The programme is open to students with a background in environmental sciences, food and agricultural sciences, (geo)-information sciences and social sciences. Some basic GIS and remote sensing knowledge and skills is highly recommended.

Your future career

Geo-information has become increasingly important to society as the number of applications continue to rise. Geo-information provides the data we need to manage both the natural and social environment. It is indispensable for a broad range of



domains like spatial planning, water management, nature conservation, environment management, agriculture, energy supply, food production and security, disaster management, traffic and safety.

Graduates in Geo-Information Science have excellent career prospects; most have job offers before they graduate. Our graduates are employed as consultant, project leader or geo-engineer for global consultancy companies like Royal HaskoningDHV, Arcadis and SWECO, small companies and governments and NGO's. Others work in research, either in PhD programmes or for research institutes all over the world.

Specialisations

The Geo-Information Science programme is an intensive programme offering students opportunities to specialise by taking advanced courses in GIS and/or Remote Sensing, taking advanced courses in geo-information technology and by selecting courses in a range of application fields in the Wageningen domain.

Furthermore, you develop your GIS profile by completing a Master's research thesis in one of the following research fields:

- Sensing and measuring
- Modelling and visualisation
- Integrated land monitoring
- Human-space interactions
- Empowering and engaging communities

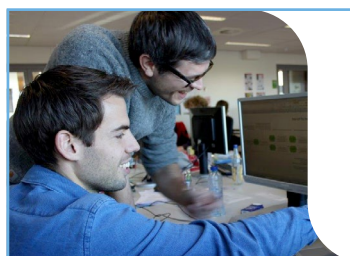
Your choice of internship location is another factor in developing your profile and specialisation.

Admission requirements

[See page 6](#)

Related programmes

[MSc Geographical Information Management and Applications](#)



Alumnus Sander van der Drift |

"With GIS techniques I visualised the way tourists move through Amsterdam by using data from Social Media."

MSc Geographical Information Management and Applications

Joint programme offered by Utrecht University, Delft University of Technology, University of Twente and Wageningen University.
dr.ir. Marjolein Spaans | Programme Director | +31 (0)15 278 29 87 | M.Spaans@tudelft.nl | www.msc-gima.nl

A Joint programme offered by four renowned universities in the Netherlands: Utrecht University, Delft University of Technology, University of Twente and Wageningen University & Research.

Programme summary

The MSc Geographical Information Management and Applications (GIMA) offers a challenging programme in the domain of geo-information. It will help you to develop your knowledge and skills on the theoretical, methodological, technological, and organisational principles of working with geographical information (GI), together with the use of GI-technology in spatial applications, geo-information management and geo-information applications. As a future geo-information specialist, you have to address a wide number of fundamental issues in today's society such as why geographical information is needed and how can it be used to solve problems in the broadest variety of application fields as in flood risk management, spatial planning, location-based services, orientation and navigation, location of sales outlets, spatial aspects of crime, dealing with natural hazards and humanitarian disasters.

Features of the programme

The programme is registered in CROHO as MSc Geographical Sciences at Utrecht University, code 60732.

As a student, you have access to the large pool of experts from all four universities. You can choose between a full-time (two years) or part-time (four years) programme.

The GIMA programme is offered as a blended learning programme with four contact periods of two weeks, one at each of the four participating universities. In between the contact weeks students study on distance.

Your future career

Graduates have excellent career prospects. The demand for managers and application specialists in geo-information in the professional market is constantly increasing. Our alumni are employed in both the private and public sector (by companies, consultancies, government organisations and research institutes) as managers, specialists and researchers. Examples in the private sector are energy or utility companies, geo-marketing companies or consulting firms. Examples in the public sector are research institutes, municipalities and other governmental services like RWS and Kadaster.



Applications

Application for MSc GIMA proceeds through Utrecht University. For Dutch and EU/EFTA candidates the application deadline is 1 June 2018 for the programme that starts in September 2018. For non-EU/EFTA candidates the application deadline is 1 April 2018. All information about application and admission requirements can be found at the GIMA website www.msc-gima.nl and on www.uu.nl.

Admission requirements

You are eligible to be admitted to the GIMA programme, if you have:

- Already obtained a Dutch or foreign university Bachelor degree or equivalent in a discipline related to geographical information management and applications
- Academic and research skills on par with those expected at the level of a university Bachelor degree
- Basic computer skills
- English language proficiency (see for details www.msc-gima.nl)

Selection of course participants will also be based on:

- Study progress and results obtained in previous (post-secondary) education (e.g. based on GPA)
- Practical experience in the geo-information field will be an advantage
- Motivation and talent

We are looking for students who are:

- Self-disciplined and show initiative
- Independent thinkers but can also be team players
- Interested in both geo-information science and project-management

Related programmes

[MSc Geo-information Science](#)



Alumna Carline Amsing | *"For me GIMA combines the best of both worlds. It offers in-depth modules to develop your technical GIS skills but also offers modules in which you study and apply project management skills. The final thesis and internship allow you to choose those topics you are specifically interested in. I did my internship at Kadaster International which allowed me to apply my spatial knowledge in an international cadastral setting. Because of GIMA I learned to work independently which turns out to be a great asset. In the future I hope to further develop and apply my GIS and project management skills and therewith contribute for a small bit to the betterment of the world."*

MSc International Land and Water Management

Ir Erik Heijmans | Programme Director | +31 (0)317 48 27 70 | erik.heijmans@wur.nl | www.wur.eu/mil

Programme summary

The MSc International Land and Water Management focuses on the scientific analysis of the physical, environmental, technical and socio-economic aspects of land and water management and their mutual interactions. Students obtain further insight into the development of land and water management, take a scientific approach to various research paradigms and adopt a problem-oriented, interdisciplinary attitude towards land and water management and rural development issues. Graduates will not only be able to study these issues, but also design and propose sustainable solutions to land and water management problems.

Your future career

Graduates find jobs in a wide range of fields including design and implementation, policy making, project management and research and education. Many find a PhD position at universities worldwide. Others are employed by international organisations such as the Food and Agricultural Organisation of the UN (FAO), the International Water Management Institute (IWMI), or NGOs involved in international or national development. Graduates also work for ministries, water boards and other governmental organisations in the field of international cooperation, such as the Dutch DGIS and the German GIZ, while others find jobs in private or public institutes in their home countries. For graduates interested in design and implementation, there are multiple job opportunities at international consultancies, including Dutch firms, such as Arcadis, Sweco, Antea Group, Euroconsult Mott MacDonald and Royal Haskoning DHV.

Specialisations

Sustainable Land Management

This specialisation deals with the processes, drivers and consequences of land degradation as well as with interventions and conservation practices for sustainable land management. By providing in-depth knowledge and developing skills in physical and socio-economic aspects, this specialisation prepares students for both research and development jobs. Topics covered range from erosion processes and modelling to impact assessment and strategies, from field scale to watershed and beyond.



Irrigation and Water Management

Students in this specialisation acquire extensive knowledge on water usage in agriculture. Irrigation - from the farm level to the watershed level - is the main focus. Topics include irrigation of agricultural land, design of irrigation systems, water justice, distribution issues, equity and gender discussion, improving the social and technical performance of existing farm irrigation systems and practices, and irrigation in its wider water management context.

Adaptive Water Management

Increasing human induced pressure on water cycles in combination with growing demands on water resources asks for careful management of water systems. Students in this specialisation acquire knowledge, skills and capacity to analyse future-oriented issues in water management and to propose and critically assess management strategies and innovations.

Admission requirements

See page 6

Related programmes

MSc Earth and Environment - MSc International Development Studies - MSc Development and Rural Innovation - MSc Geo-information Science - MSc Climate Studies - MSc Landscape Architecture and Planning - MSc Forest and Nature Conservation.



Alumna Mieke Hulshof | *"I work for Acacia Water, a Dutch consultancy company providing groundwater and integrated water management services. The diversity of projects, in the Netherlands and abroad, makes my work fascinating. For instance, I coordinate the activities for a project in Uganda, during which we develop plans for sustainable water management in two river basins. Apart from doing research and organising training workshops, I put much effort in stakeholder communication. Engaging the support of all users is crucial in achieving better water practices; that's one of the useful insights I derived from my Master International Land & Water Management."*

MSc Landscape Architecture and Planning

Hetty van der Stoep | Study Advisor | +31 (0)317 48 35 32 | mlp.msc@wur.nl | www.wur.eu/mlp

Programme summary

As a master's student studying Landscape Architecture and Planning at Wageningen, you learn to understand and generate the complex relationships between people, nature and landscape. You use your planning and design knowledge to manage interventions that lead to the creation of new or revitalized landscapes. You integrate innovative concepts and approaches derived from the creative arts and the natural and social sciences, using state-of-the-art technology.

In your role of landscape architect and spatial planner, you contribute to improving the quality of design and decision-making on landscape interventions and reflect on the effects of these interventions. You take a leading role as a manager or coordinator navigating between the changing needs of the main actors: citizens, governments and private institutions.

Your future career

Once you graduate with an MSc in Landscape Architecture and Planning, you are well-prepared for a career as a landscape architect, spatial planning consultant, project manager, policy adviser and academic or applied researcher. Many of our alumni hold senior positions at consultancy and engineering companies, planning and design bureaus, district water boards, government agencies and universities. A number work for large multinationals, while others have set up their own company or are employed by small and medium sized enterprises. Doing a PhD programme, either here in Wageningen or at other universities around the world, is also a possibility. We offer you an extensive and well-developed network to move your career forward.

Specialisations

Landscapes are our living environment. Natural landscapes are often beautiful in themselves, however most of those we now live in are the result of our complex interaction with the natural world. The new generation of landscape architects and spatial planners understand the challenges we face when shaping and creating the landscapes that form a key component of our living environment. Your goal is to study and design sustainable solutions for important landscape challenges, such as climate change, energy needs, health, food security and urbanisation. The programme offers two specialisations: landscape architecture and spatial planning.



Landscape Architecture

Your primary focus as a Wageningen landscape architect is the design and construction of metropolitan landscapes situated in estuaries and deltas worldwide. Your goal is to create sustainable designs based on a thorough investigation of the ecological, behavioural and aesthetical disciplines.

Spatial Planning

As a spatial planner you develop scenarios for future landscape transformation and evaluate the effectiveness of these scenarios for many different stakeholders. You study planning processes and generate and organise the theoretical and practical knowledge needed for spatial interventions.

Admission requirements

See page 6

Related programmes

MSc Urban Environmental Management – MSc Metropolitan Analysis, Design & Engineering, MSc International Land and Water Management – MSc Development and Rural Innovation – MSc Geo-information Science – MSc Forest and Nature Conservation



Student Tom van Heeswijk | *investigated how solar energy can be implemented to design an energy neutral residential area in Amsterdam (Zeeburgereiland). He did this by asking people why they like or dislike renewable energy and what factors would make this kind of energy more likeable. "I have always wondered why projects like solar PV parks are not always wanted or even being resisted", van Heeswijk states. Therefore support from the people involved is vital; they should have a positive feeling towards renewable energy. Van Heeswijk found out that the visual appearance is very important: for instance solar trees were received much more positive than solar parks.*

MSc Leisure, Tourism and Environment

Study Advisor | +31 (0)317 48 43 84 | mle.msc@wur.nl | www.wur.eu/mle

Programme summary

Increasing numbers of people around the world are spending a growing proportion of their time and money on tourism related activities. The economic, social and environmental impact of tourism has grown dramatically in recent years, and this is expected to continue in the near future.

The effects of Tourism

What motivates tourists to visit remote destinations? How does this travel affect local cultures and economies? And how do issues on sustainability, authenticity, identity and commercialisation fit into the picture? During the two-year MSc programme Leisure, Tourism and Environment you learn the complexities behind the transformation of certain locations into tourism environments.

Fast growing and dynamic field

By joining the MSc Leisure, Tourism and Environment programme, you study the underlying issues of a fast growing tourism industry. You look at tourism from a historical and philosophical perspective, focus on sustainable development, learn about social and cultural theory and how to apply these using advanced research methods and analysis techniques. The MSc studies the role of governmental, business and 'third sector' organisations in searching for innovative and more sustainable approaches to tourism development. It's an extremely international programme; faculty members from many parts of the world come to Wageningen and give lectures, bringing together a wide range of academic experiences.

Your future career

Depending on your career ambitions you can choose for a consultancy, a research or an entrepreneurial project during the academic master cluster of this program. The skills that you acquire here are of use in designing a career which builds on the knowledge and experience you gained in your personalised MSc.

Many of our alumni can be found all over the world, working for government agencies and NGO's in the field of policy development and implementation. Others work for consultancy agencies, research institutes or network organisations that link tourism organisations with conservation institutes, or private business with government organisations and communities. If you have academic ambitions in the field of tourism, you can enter a PhD programme, either here at Wageningen or with other universities around the world. We offer you an extensive and well-developed network to move your career forward.



Thematic Trajectories

We provide four thematic trajectories. These trajectories support students in preparing their final thesis projects with regards to:

Tourism & Development focuses on tourism's potential for socio-economic, socio-cultural and environmental development. It deals with tourism's relation to landscape, poverty, nature conservation, global environmental change, culture, health(care), urban and regional development.

Tourism & Natural Resource Governance focuses on the dynamic interplay between tourism and natural resources, at related processes of environmental governance, and the contemporary theoretical and methodological approaches that assist in understanding and analysing these dynamics.

Tourism & Global Mobilities focuses on transnational movements of people, materials, capital and information. The diversity of tourism and travel related mobilities become discussed alongside questions of immobility and exclusion, migration, transportation, mobility rights, crises and risks as well as virtual connectivity.

Tourism, Experiences & Place-making focuses on the nature of the tourist experience, its relation to motivations for travel, and the ways destinations can create memorable experiences that satisfy the complex desires of tourists.

Admission requirements

See page 6

Related programmes

MSc International Development Studies - MSc Management, Economics and Consumer Studies - MSc Development and Rural Innovation - MSc Communication, Health and Life Sciences



Alumna Ana Raguz (Croatia) | *"I adored and enjoyed working on my MSc Leisure, Tourism and Environment! It has given me an amazing diversity of personal experiences, broadening my horizons by working in teams with people from many cultures and disciplines. The programme is well designed; I could immediately put theory into practice, and I developed an ability to think critically, inspiring me for creative action. At some point, the right people started appearing, people I could really trust and get along with, and we worked hard together. I was able to take my new start-ups a major step forward."*

MSc Metropolitan Analysis, Design and Engineering

Erik Heijmans | Programme Director | +31 (0)317 48 27 70 | erik.heijmans@wur.nl | www.wur.eu/mma

Maurice Hartevelt | Programme Director | +31 (0)15 27 819 96 | m.g.a.d.hartevelt@tudelft.nl | www.ams-institute.org

MSc MADE is a joint degree programme, offered by Wageningen University & Research and Delft University of Technology, participating in the Amsterdam Institute for Advanced Metropolitan Solutions (AMS), together with the Massachusetts Institute of Technology (MIT) in Boston.

Programme summary

In a fast urbanising world, cities and metropolitan regions increasingly face challenges of sustainability and quality of life. These challenges put at risk issues of mobility and logistics, water and waste management, energy and food security, health and well-being. Hence, present-day cities are in need of technically trained academic professionals who can inter- and transdisciplinarily develop and implement sustainable solutions. The new MSc study programme Metropolitan Analysis, Design and Engineering (MSc MADE) provides students with the theoretical basis and practical skills to gain a better understanding of the complexities and challenges of metropolitan areas. Innovative technologies will be used – enabling the use of data at a larger scale than ever before – as well as novel design methods and management strategies. Research and education activities of the MSc programme interlink abstract theories and people's real lives in metropolitan areas, such as Amsterdam, using the latter as a living laboratory to implement and test socio-spatial technical innovations.

Future career

As a MSc MADE graduate you will be employable as an entrepreneur, for instance as initiator of a start-up business, as consultant, project manager, researcher or policy maker in the field of metropolitan solutions. Besides using your specific expertise, you are also able to create synergy between specialists from other disciplinary backgrounds, with policy makers, business, civil society and citizens. You will be an innovator at the domains of the AMS Institute: aiming for a circular city, safeguarding the vital city and improving the connected city.

Curriculum

The two-year MSc programme Metropolitan Analysis, Design and Engineering is student-centred, entrepreneurial and operates in the socio-spatial-political context of Amsterdam. The programme offers a combination of in situ and online education,



a thorough training in academic skills and project work, connected to the inter- and transdisciplinary research portfolio of the two partner universities, the AMS Institute and industrial and societal partners.

The city of Amsterdam and the Amsterdam Institute for Advanced Metropolitan Solutions are host to the core mandatory courses at the start and the end of the first year of the master programme. In addition, tailor-made, self-designed tracks in Wageningen or/and Delft facilitate specialisation.

In the second year of the programme, thesis and graduation projects are carried out. The living laboratory of Amsterdam supports cooperation with one of the private or public partners in the metropolitan region. A more individual entrepreneurial project is also possible. The second year ends with the professional profile course, during which you can prepare for your career by developing plans and proposals for a PhD project, a start-up business, a policy arrangement or management plan all involving and aiming at metropolitan solutions.

Admission requirements

See page 6

Related programmes

MSc Geo-information Science - MSc Landscape Architecture and Planning - MSc Urban Environmental Management - MSc Environmental Sciences - MSc International Land and Water Management - MSc Earth & Environment - MSc Nutrition and Health - MSc Food Quality Management.



Students Mart Reiling and Thijs Dolders | *"In our MSc thesis research we tried to understand how people use public space by analysing 110.000 running activities from mobile running applications Strava and Runkeeper. In combination with the results of a survey, we will define spatial requirements that runners have at different locations. These data will be used for the spatial planning and design interventions that should make Amsterdam a healthy urban environment, starting by providing a more runner friendly city. What's more, as our research reveals bottlenecks for pedestrians and cyclists as well, these problems could be solved simultaneously."*

MSc Urban Environmental Management

Suzane Tuju MSc | Study Advisor | +31 (0)317 48 20 98 | mue.msc@wur.nl | www.wur.eu/mue

Programme summary

The world we live in is becoming increasingly urbanised. Over the past century, a great population shift has occurred from rural to urban areas. Cities now hold half of the world's population and it is estimated that three out of every five people will live in an urban environment by 2030. This development calls for measures to control the environmental impacts of urbanisation, such as growing traffic, increasing waste emissions, deteriorating air and water quality, and rising energy and resource consumption.

Of particular concern are the speed and scale of urbanisation in the developing world as many Asian, African and Latin-American cities are not yet equipped to providing adequate housing and basic urban services. Inadequate water supply, poor sanitation, waste collection and waste management systems are the cause of serious urban pollution and health hazards. Sustainable management of the urban environment has become one of the major challenges for the future of our global population. The MSc Urban Environmental Management programme aims to equip its students with the outlook, concepts and tools to manage this urban environment.

The programme brings together four essential perspectives on the urban environment:

- Environmental quality and health
- Environmental infrastructure and technology
- Spatial planning
- Governance

Besides understanding theories and views from several disciplines, urban environmental management requires technical and managerial competencies and skills for its implementation. Consequently, the programme offers a balanced curriculum of theory, tools and application. It emphasises the development of an interdisciplinary outlook, critical-thinking, analytical problem solving and practical decision making skills through a combination of teamwork, practical simulation exercises, field trips and an individual research project. The internship programme offers a valuable opportunity to gain practical experience in a country and organisation as desired.

Your future career

Graduates from the MSc Urban Environmental Management are well-equipped with the skills and knowledge to continue their academic training as a PhD student or to begin careers as a



researcher, adviser or consultant. They often work in areas like the utilities services, the manufacturing industries, or in governmental organisations.

Thesis tracks

Students can conduct their major thesis research within seven thesis tracks:

- Environmental economics
- Environmental policy
- Environmental systems analysis
- Geo-information science
- Management studies
- Land use planning
- Urban systems engineering

Experimental thesis research will usually be part of ongoing research programmes of chair groups or research institutes of Wageningen University & Research. Otherwise, thesis topics originate from the student's own research interests or from discussions with potential supervisors.

Admission requirements

See page 6

Related programmes

[MSc Environmental Sciences](#) - [MSc International Development Studies](#) - [MSc Landscape Architecture and Planning](#).



Alumnus Indra Firmansyah | *"The MSc Urban Environmental Management helped me a lot in acquiring knowledge of both environmental technology and management. After my graduation, I returned to my home country Indonesia where I worked for the firm Royal HaskoningDHV on urban sanitation development. Recently, I started a PhD at Wageningen University & Research on closing nutrient cycles by reusing treated domestic waste (water) in agriculture and aquaculture, taking the island St. Eustatius as a case study. This research requires combining the expertise of spatial planning, new sanitation, agriculture and aquaculture."*

Social Sciences

A woman with blonde hair in a ponytail, wearing a light-colored hooded jacket and cargo pants, walks away from the camera on a wet city street. She is surrounded by a crowd of people, some of whom are blurred in the background. The street is wet, reflecting the ambient light. The text 'Social Sciences' is overlaid on the left side of the image in a large, white, sans-serif font. A thin white circle is drawn around the woman and the text.

MSc Communication, Health and Life Sciences

Gerry van Nieuwenhoven | Programme Director | +31 (0)317 48 46 07 | mch.msc@wur.nl | www.wur.eu/mch

Programme summary

The programme trains academics who are able to understand, facilitate and drive societal change in complex societal settings related to life science or health issues. Students learn to understand the role of communication in addressing complex social challenges and opportunities regarding life science and health issues from various perspectives. You learn to translate these issues for diverse audiences and to build bridges between science and society, science and health professionals, experts and citizens, different professions, or between established and merging interests.

Your future career

The master programme aims to deliver professionals who understand complex processes of communication and change, and are able to apply these insights to enhance societal problem-solving and innovation in areas related to life science or health issues.

Career prospects of Communication and Innovation

There is a need for communication professionals who are specialised in the field of health, food production, water management or viable environments. Graduates of this master specialisation work for governments, consultant agencies, non-profit organisations, media companies or at knowledge institutes.

Career prospects of Health and Society

Graduates of this specialisation work for governments, health care institutes or arbo services. They work for national or international organisations, such as the Red Cross, Oxfam Novib, or patient associations, research institutes, insurers or health promoting institutes.

Specialisations

Communication and Innovation

Students learn to analyse and strategically apply communication to deal with current societal issues, problems and challenges in life science domains such as nature conservation, nutrition and health, water management, environment and food production. Our students are trained to adopt an integrative approach that involves social science and technical innovations, fulfilling an intermediary role to enhance multidisciplinary and interactive cooperation.



Communication is a basic element of change. Complex processes of change involve different perspectives and perceptions of the various people involved. Societal processes such as climate change, poverty, disease or ecological degradation require appropriate solutions that integrate insights from all kinds of disciplines and stakeholders. Opportunities for enhancing mutual understanding and collaboration between science disciplines and society are explored. Special attention is paid to everyday life situations and how people actively deal with common issues related to the domains of the life sciences.

Health and Society

Students learn about behavioural, social and environmental aspects of health, illness and quality of life, as well as the consequences of the health status for both the individual and society. This includes acquiring an understanding of causes of health and illness, and of opportunities for the improvement of individual and population health. Special attention is paid to the integrated role of care and prevention in health protection, disease prevention and health promotion, and to the design, implementation and evaluation of health promotion programmes.

The specialisation is based on social sciences with a focus on sociology, communication sciences and health promotion, including relevant insights from public administration and economics. Moreover, it contains aspects from the life sciences domain.

Admission requirements

[See page 6](#)

Related programmes

[MSc International Development Studies](#)
[MSc Development and Rural Innovation](#)
[MSc Management, Economics and Consumer Studies](#)



Alumna Ileen Kok | *"During my master I focused on courses in food and environment. At the moment I work as a trainee at the unit Strategic Advice, Alliance & Start-ups of the communication agency Schuttelaar & Partners. We work on campaigns, create start ups and we stimulate corporation between stakeholders. We do this to inform and activate consumers to create a more sustainable and healthier world."*

MSc Development and Rural Innovation

Marleen van Maanen-Nooij MSc | Study Advisor | +31 (0)317 48 27 72 | mdr.msc@wur.nl | www.wur.eu/mdr

Programme summary

This programme is a social science programme tailored for students with a technical, life science or relevant management background with an interest in international development problems. Innovations in the field of agriculture, food and natural resource management have a dual nature. They consist of new technological practices as well as new socio-organisational arrangements between different societal actors. Dealing with the links between technological developments and societies in which these are introduced and used, requires a fundamental understanding of socio-technical innovation and change processes. In other words, you will be challenged to combine your previously acquired competences with new social science competences in order to make innovations work.

Offering a variety of disciplinary and problem-oriented courses, the programme is taught in an interactive style where learning from each other is emphasised. Working in small international groups contributes significantly to this mutual learning process. The programme is highly thesis-oriented. The subject matter and methodology courses serve primarily as preparation for an empirical research project. This entails writing a research proposal, conducting the research and completing a thesis, thus offering you the opportunity to apply your newly acquired insights in a field situation. International students often apply this knowledge in their home country on a topic relevant to their professional interests and preferences. Others choose a relevant topic in their field of interest in various countries around the world, including the Netherlands.

Your future career

The programme lays the foundations for a variety of career opportunities, usually oriented towards societal problem solving and innovation. You can become a researcher or a knowledge broker who ensures a good fit between client demands and research formulation. You might take on the role of process facilitator or communication specialist in a non-governmental organisation, the public sector or the private industry. A career as a policymaker or consultant in various (inter)national organisations is another option. Organisations where graduates work include: UNDP, Women for Water, UTZ Certified, UNICEF, Fairfood International, Worldbank, Red Cross.

Study Tracks

Communication and Innovation Studies

In this track, you study communication among stakeholders and disciplines in the context of societal problem solving and change. Special attention is given to the role of communication, knowledge, interpretation and innovation support strategies in bringing about organisational, policy or technological change in societal domains such as sustainable agriculture, health, environment, multifunctional land use and international development.

Technology and Development

The goal of this track is to understand how science and technology interact with international development problems, such as food security, adaptation to climate change and social justice. The approach involves analysis of how technology both mediates and is constituted through social relations and institutional arrangements between various actors including farmers, scientists and policymakers. Most social problems that we face today involve science and technology, either as a cause or as a cure.

Sociology of Development and Change

This track focuses on the understanding of rural development problems worldwide from sociological and anthropological perspectives. Particular attention is paid to how local people themselves deal with problems. Field-based studies are the basis for critical reflection on theories of development and social change. Themes addressed include food security, livelihoods in the context of globalisation, poverty and environmental degradation, property rights, conflict and policy.

Admission requirements

See page 6. If you have a social sciences background, read more about the MSc International Development Studies on page 44.

Related programmes

MSc International Development Studies - MSc Communication, Health and Life Sciences - MSc Management, Economics and Consumer Studies - MSc International Land and Water Management - MSc Environmental Sciences.



Alumnus Ben Corrigan | *After studying physical geography, Ben joined the social science master Development and Rural Innovation. In his job as programme manager for the German Red Cross in Haiti, he works on food security and providing basic services such as water and sanitation to remote communities. "One of my responsibilities is to ensure that technical staff integrate social dimensions into their work and build real partnerships with stakeholders in the field. As a Development and Rural Innovation graduate, I am well prepared for this kind of job and feel confident in it. This programme is a gateway to a great career if you like to work in the development sector or continue in academia."*

MSc International Development Studies

Mrs. Sudha Loman | Study Advisor | +31 (0)317 48 46 37 | mid.msc@wur.nl | www.wur.eu/mid

Programme summary

This programme deals with worldwide processes of development and change related to livelihoods, agro-food networks and the environment in a dynamic international context. Special attention is given to exclusion processes, equity, unequal access to resources and sustainability.

Social, economic, political, and environmental change is studied from various perspectives and at different levels. You develop a critical understanding of recent development theories, learn to conduct research, and acquire skills to translate research findings into recommendations for policies and intervention strategies. You learn to include the diverging views of various stakeholders and to work in multidisciplinary teams.

Your future career

Graduates are employed in various (inter-)national organisations as programme/project coordinator, consultant, advisor, policymaker, researcher or trainer. You could work, for example, as a policymaker in a government institute, as a programme coordinator in an international non-governmental or intergovernmental organisation, as an advisor in a private company, or as a researcher or lecturer at a university or research institute. Examples of organisations include: FAO, World Bank, European Union, UTZ Certified, Oxfam Novib, Rabobank Foundation, CARE, Sustainalytics and UNICEF.

Specialisations

Sociology of Development

This specialisation addresses social transformation processes from sociological and anthropological perspectives with special attention to differential responses to change and the shifting dynamics of power relations at different socio-spatial levels. It focuses on the life worlds, ideologies and organisational strategies of a variety of social actors. You explore themes such as social unrest, the way people cope with conflicts and disasters, migration, refugees, poverty, food security and sovereignty, property rights, and access to resources crucial to livelihoods in rural and urban settings.

Economics of Development

This specialisation approaches the domain of the programme with analytical frameworks from several branches of applied economics, such as development economics, resource

economics and new institutional economics. You focus both on behaviour of individuals, groups of individuals and institutions, and on consequences of this behaviour for development at regional, national and international levels. Themes studied include the global food crisis, sustainable use of natural resources, rural-urban income disparities, poverty and the role of institutions.

Inclusive Innovation, Communication and Development

This specialisation examines the role of knowledge, expertise and communication in sustainable development. Science, technology and communication have a bright and a dark side. They can remedy poverty, disease and environmental degradation, but may also worsen underdevelopment and inequality. To understand such dynamics, you apply perspectives from Science, Technology and Innovation Studies and Communication Sciences. You focus on how and why people, views and values become included or excluded in social and technical change, and on strategies for the democratisation of science, technology and communication for development.

Politics and Governance of Development

This specialisation focuses on the dynamics of political and governance processes in international development. The first major theme is about politics and reform of international arenas (UN, bilateral, private) addressing food insecurity, resource conflicts, climate change, human rights violations and their interrelations. The second major theme is about different powers of state and non-state actors in shaping property and access to resources. To address these themes, you use perspectives from international relations, public policy, governance studies, political anthropology and legal pluralism.

Admission requirements

See page 6 If you have a background in a technical or life sciences field and an interest in development studies, read more about the MSc Development and Rural Innovation on page 43.

Related programmes

MSc Development and Rural Innovation - MSc Communication, Health and Life Sciences - MSc International Land and Water Management - MSc Leisure, Tourism and Environment - MSc Management, Economics and Consumer Studies



Alumnus Luckmore Jalisi | *"I have really benefitted from what I learnt during my studies. This master has opened doors for me." Luckmore did the specialisation Sociology of Development and conducted both his internship and thesis research in a refugee camp in Uganda. These experiences were important in getting him a job as Youth and Governance Advisor at ActionAid to support post-conflict development work in Liberia. Now he is Programme Manager at Oxfam for the Tat Lan Programme in Myanmar, that aims to improve livelihoods in cyclone affected communities. "I draw on the knowledge and skills acquired in Wageningen and my classmates remain valuable contacts in my network."*

Programme summary

Management, Economics and Consumer Studies deals with the interrelationships between consumers, supply chain, producers, and society-at-large. During the programme, you will study the dynamics in the agro-food chain involving suppliers, producers, logistics, retailers and consumers; focusing on how they affect each other and how they affect, and are affected by, the economy and society.

The programme covers managerial, economic, information technology, marketing and consumer behaviour, operational research, sociological and environmental aspects – internal and external – of households and businesses in the Netherlands, Europe and the rest of the world, in both developed and developing countries.

Your future career

Graduates have career prospects as managers, consultants, marketeers, entrepreneurs, researchers, project leaders and policy makers in the public or private sector. Career opportunities are found within financial institutions, marketing agencies or in the field of consumer affairs. Also, alumni work as policy makers in government agencies or non-profit organisations, in development and innovation in life science related businesses or organisations.

Specialisations

Business studies includes several options. You can investigate and analyse the strategies and operations of companies in production and distribution networks as well as the dynamic decision-making processes involved in supply chains. Alternatively, you may choose to focus on the various aspects of marketing and consumer behaviour in business, agribusiness and the food industry. It is also possible to acquire expertise in business economics, information technology, operations research (logistics), or facility management.

Consumer Studies allows you to study the behaviour, lifestyles and consumption patterns of consumers and households. Students will acquire insight into the economic and sociological aspects of consumers and households, and the factors determining consumption behaviour and patterns. Alternatively, the role of communication between the various actors in the food chain or consumer technology and product use can be studied.



Economics and Governance focuses on general economics. Students analyse the economic behaviour of various participants in the agricultural sector and rural areas in developed countries or study the pivotal role of agricultural and rural development in low-income countries. You can also specialize in Public Administration and Policy if you are interested in the governance of complex problems in domains of sustainable agriculture, climate change or water management. If students are more interested in environmental issues, they can focus on the economic or policy aspects of national and international environmental problems or the processes of environmentally-induced social change in modern industrial and developing societies.

Management in Life Sciences is especially designed for students with a life science background. Students learn to integrate technical and managerial knowledge. Examples of how this interaction can be of optimal use are complex innovation processes in production, logistics or market development. These processes have a high technological character in which innovation plays a central role and for which good communication and managerial skills are necessary. Two different themes can be studied within this specialisation: Management of Innovations and Management of Business and Supply Chains.

Admission requirements

See page 6

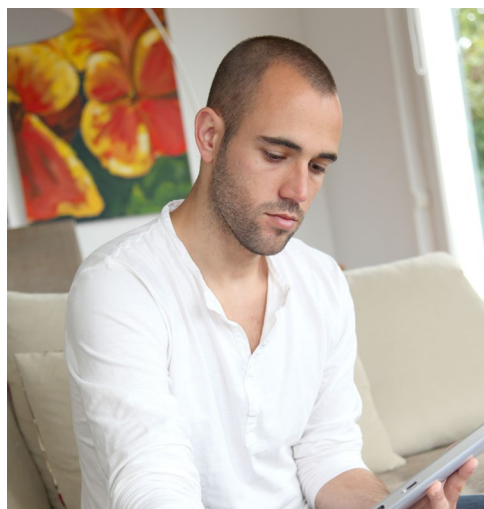
Related programmes

[MSc International Development Studies](#) - [MSc Food Quality Management](#) - [MSc Communication, Health and Life Sciences](#) - [MSc Development and Rural Innovation](#).



Alumnus Bart Zwartjes | *"Innovate a new chips flavour, assist in expanding an encyclopaedia made by consumers (Wikipedia), or write a review of a purchased product. These are just a few examples of co-creating as a consumer. Co-creation is a joint effort by company and consumer and companies have a lot to gain by this. Namely, 50-70% of all product innovations fail at market entry. Co-creation allows companies to offer products and services that meet consumer needs better. After graduation Bart started working as a consultant for Cap-Gemini, advising businesses on how to make successful use of co-creation".*

Also at Wageningen University & Research



MOOCs for credits

Students that are enrolled at Wageningen University & Research may choose to include a MOOC of Wageningen in their study programme. These are offered as free choice courses and can be found in the study handbook.

Future plans

We're continuously developing new online courses. Currently we are bundling more courses around topics such as nutrition and sustainability. For the most up-to-date information, please visit www.wur.eu/moocs

MOOCs

Did you know that Wageningen University & Research offers several free online courses? These Massive Open and Online Courses (MOOCs) are free of charge and anyone can participate. It is a great way to familiarise yourself with some of the teachers and courses of Wageningen University & Research.

Available MOOCs:

- Introduction to animal behaviour
- Sustainable urban development
- Sustainable soil management
- Biobased economy
- Entrepreneurship for engineers

Xseries

Xseries are a number of bundled courses that provide you with a deeper understanding of a topic. All MOOCs that are included in a Xseries can also be taken as stand-alone courses. The following courses are available:

• **Nutrition: healthy food for better living**

You are what you eat! Learn how your diet impacts your health.

Includes:

- Macronutrients and overnutrition
- Micronutrients and malnutrition
- Food safety

• **Sustainable food security**

How can we sustainably feed an increasingly growing world population.

Includes :

- Crop production
- The value of systems thinking
- Food access

International Joint and Double Degree programmes

Wageningen University & Research offers, in collaboration with European partner universities, several possibilities to do your MSc programme partly in Wageningen and partly at an other university. It is a great opportunity to gain international and intercultural experience.

At the moment we offer joint programmes in the field of:

- Agricultural development
- Agroecology
- Animal management
- Animal nutrition and feeding
- Food studies
- Consumer studies

The list of international joint programmes is change every now and then.

For the most up-to-date information, please visit:

www.wur.eu/jointprogrammes

What's the difference?

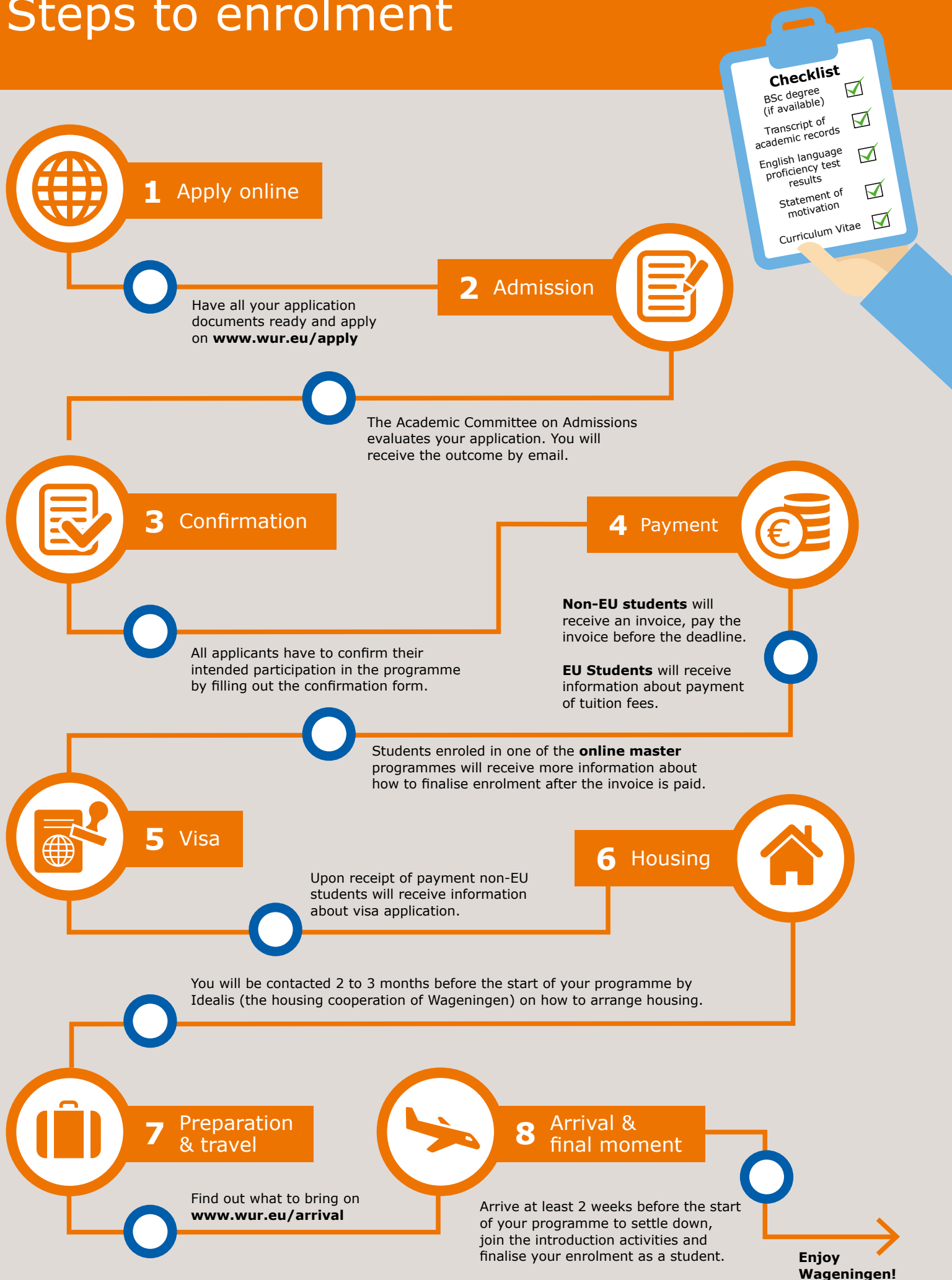
The difference between a regular Master programme at Wageningen University & Research and a joint programme or double degree is that a part of the study programme is taken at a partner university abroad. When you study for a Double Degree you will even receive two diploma's when you graduate!



Location of Wageningen



Steps to enrolment



Meet us



On campus



Master Open Days

During the orientation days you will visit the university's campus, meet students and speak with study advisors from each programme. These open days will take place on:

- **14 December 2017**
- **13 April 2018**

Be a student for a day

Would you like to know more about a particular master programme? Experience the study programme yourself and walk along with a current student of the programme of your interest.

In your country



Contact a representative

Wageningen University & Research has representatives all over the world to answer your questions. They speak your language and know the university and the Netherlands well. Go to **www.wur.eu/representatives** and contact the representative now.

Education fairs

Representatives of Wageningen University & Research give presentations and attend many education fairs and universities worldwide.

For a complete overview of where you can meet us on campus and in your country, please visit **www.wur.eu/meetus**.

Online



Online open days

Would you like to know more about our master programmes and get a feeling of what it's like to study in Wageningen? Join the online open day and meet our students, watch our videos and ask all your questions.

Visit **www.wur.eu/ood** for more information.

The online open days will take place on:

- **23 November 2017**
- **29 March 2018**

Skype chat session

During a chat session on Skype you can ask all your personal questions to one of our recruitment officers. Please fill out the form on **www.wur.eu/meetus** to register for an online meeting.

Student coaches

Student coaches know from personal experience how difficult it can be to choose a master programme, as they are students themselves. They can help you with all your questions about the possibilities after your Bachelor studies. You can find the student coaches at **www.wur.eu/studentcoach**.

Worldwide webinars

Online presentations about some of our master programmes are organised, completely free of charge and accessible from all around the world on mobile devices and computers with internet access. Find out more about our webinars by visiting **www.wur.eu/webinars**.

Social Media

For more information about studying at Wageningen University & Research, news and student activities, you can follow us on social media:

www.facebook.com/wur

www.twitter.com/wur

www.instagram.com/uniwageningen

www.youtube.com/wageningenuniversity



www.facebook.com/wur



www.twitter.com/wur



www.instagram.com/uniwageningen



www.youtube.com/wageningenuniversity

Publication date August 2017. Although this brochure has been compiled with the greatest care, no rights may be derived from any of the contents, since changes may occur. For the most up-to-date information, please visit: **www.wur.eu/master**

Student Information Desk

+31 (0)317 48 48 48

study@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



Wageningen online education

Besides offering online Master of Science programmes, Wageningen University & Research is offering many interesting free online courses (MOOCs) on education platform **edX.org**. Start your journey to Wageningen online by following an online course. For more information, go to **www.wur.eu/moocs**.

