

# **COURSE CATALOGUE**

MASTER DEGREE PROGRAMMES

## **Biology**

with specialization **Behaviour and Neurosciences**

## **Ecology and Evolution**

with Top programme **Evolutionary Biology**

## **Marine Biology**

## **Molecular Biology and Biotechnology**

with Top programme **Biomolecular Sciences**

2009/2010

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# 1 General information

## 1.1 Introduction

This course catalogue contains information for all students within the degree master programmes Biology (with specialization Behaviour & Neurosciences), Ecology & Evolution (with Top programme Evolutionary Biology), Marine Biology and Molecular Biology & Biotechnology( with Top programme Biomolecular Sciences). In principle this catalogue contains information about the programmes, rules, in-house addresses, etc. of importance to students in the year 2009-2010 following the master programme.

Data liable to change during the year, such as lecture and examination schedules, and daily information about study programmes can be found on the programmes 'organization' on Nestor (see section 2.3.3).

The guidelines in this catalogue may not cover the needs for students in special circumstances. In this situation, one can attend the degree programme coordinator.

## 1.2 The programmes -in brief-

The goal of the degree programmes is to prepare students for a career in scientific research or for a career in profit or non-profit organizations in the specific domains of the individual degree programmes. To realise these goals the programmes contain both theoretical and practical modules and a substantial part of the two years is reserved for research. Various research groups are involved in the degree programmes of the School of Life Sciences, the School of Natural Sciences and Technology, the University Medical Center Groningen (UMCG) and associated institutes. Students can focus on fundamental or applied research, or a combination of the two.

The duration of the curriculum is 120 ECTS credit points (ECTS: European Credit Transfer and Accumulation System; 1 ECTS = 28 hours of study). The two-year degree programme can either be totally devoted to research (P variant) or be orientated towards management and policy along with research (M variant). The language of instruction is Dutch for a number of modules in the latter specialization.

A study programme is tailored to and depends on the interests of each student, his or her background and the skills and knowledge necessary to participate in a given research area. A study programme is designed in close cooperation with a so-called mentor. The Board of Examiners has to approve each individual study programme. The structure of the study programme is described in sections 4-7.

The learning outcomes of the master's degree programme are as follows:

Learning Outcome for knowledge and insight.

A master graduate in:

- Biology has detailed knowledge of one or more of the scientific disciplines within the area of biology;
- Ecology & Evolution has detailed knowledge of one or more of the scientific disciplines within the area of Ecology & Evolution with emphasis on evolutionary ecology & genetics, behavioural ecology & ecophysiology, conservation biology, or community ecology;
- Marine Biology has detailed knowledge of one or more of the scientific disciplines within the area of marine biology with emphasis on biological oceanography or coastal marine ecology;

- Molecular biology & Biotechnology has detailed knowledge of one or more of the scientific disciplines within the area of of biomolecular sciences, with emphasis on structural biology, biochemistry, molecular and cellular biology, microbiology, biotechnology or bioinformatics;

Learning Outcomes for academic skills and attitudes

The graduate:

- is capable of designing and conducting scientific research;
- is capable of independently investigating, and critically evaluating, scientific literature;
- is capable of identifying new developments in the relevant disciplines, and to become familiar with these developments;
- is organised and creative in the approach to scientific research and complex problems;
- can participate in, and contribute to, an interdisciplinary team;
- can effectively communicate acquired knowledge, insights and skills to others, both in writing and in oral presentation;
- is aware of the potential societal and ethical implications of scientific research, and is able to critically reflect on his/her actions in this context;
- is prepared for a professional career in science; or (M-variant) is prepared for a professional career in management & policy.

The Top programmes in Evolutionary Biology and Biomolecular Sciences do adhere to the same learning outcomes but students follow a programme that is challenging both in content and time constraints.

### **1.3 How the degree programmes fit in the Faculty**

The Master's degree programmes are part of the Faculty of Mathematics and Natural Sciences (FWN). FWN is one of the largest natural sciences faculties in the Netherlands. The Faculty is divided into schools, research institutes and a graduate school. In general the research institutes are responsible for research, while the schools organize the teaching programmes. A graduate school combines research with the teaching of Master's and PhD students.

The Faculty is managed by a Faculty Board [faculteitsbestuur], which is supported by a Faculty Committee for the departments. This committee steers educational matters relevant to all departments, and is also advised by a Faculty Council, comprising staff and students.

FWN has three teaching schools:

- School of Life Sciences
- School of Natural Sciences and Technology
- School of Computing and Cognition

Biology, Ecology & Evolution, Marine Biology and Molecular Biology & Biotechnology are coordinated by the School of Life sciences. Prof. dr. J.P. Franke is the director of studies of the School.

#### **1.3.1 The School of Life Sciences**

The degree programme staff of the School are drawn from a variety of disciplines from the Faculty of Mathematics and Natural Sciences – biology, chemistry, mathematics, pharmacy and physics – and also from the Faculty of Medical Sciences. The School is responsible for the coordination of several Bachelor's and Master's degree programmes:

## 1 General Information

<b>BACHELOR'S DEGREE PROGRAMMES:</b>	<b>MASTER'S DEGREE PROGRAMMES:</b>
Biology	Behavioural & cognitive neurosciences
Life Science & Technology	Biology*
Pharmaceutical wetenschappen	Biomedical sciences
Pharmacy	Biomedical engineering
	Ecology & evolution*
	Marine biology*
	Medical pharmaceutical sciences
	Molecular biology and biotechnology*
	Pharmacy

The board of the School of Life Sciences is responsible for the content and quality of the study programmes. It is assisted by an advisory organ, the Course Committee, and by staff responsible for its day-to-day procedures. A number of useful contact persons among the staff are listed below.

Postal address of the School of Life Sciences: Biological Center, Kercklaan 30, P.O. BOX 14, 9750 AA Haren

EDUCATION OFFICE	E-MAIL	TELEPHONE (050)	ROOMNR. BC
Student administration office, registration of results, exams VISITING HOURS:10:30-14:00			
G.M.C. Hoekzema	G.M.C.Hoekzema@rug.nl	3632017	6518.0005
J.J.N. Leppink	Bos-lw@rug.nl	3632210	6518.0004
G.M.L. Bonninga-Caron	Bos-lw@rug.nl	3632210	6518.0005
N. Sniijders Vroegop-Rieks	Bos-lw@rug.nl	3632210	6518.0006
Study advisor			
Drs. A.F. Bos	attie.bos@rug.nl	3638764	6518.0008
Degree programme coordinator			
Dr. M. van Rijssel	m.van.rijssel@rug.nl	3632212	6518.0003

The core business of the Education Office is to support the teaching process within the degree programmes. This involves:

- providing information for students and prospective students about the teaching programme
- helping students with study-related problems
- organizing registrations for modules and examinations
- administering examination results
- compiling lecture and examination timetables
- providing information about and organizing periods of study abroad
- formulating and implementing education policy

### **1.3.2 Course committee**

The Course Committee [opleidingscommissie] handles all important matters regarding a degree programme, with the exception of individual problems. This committee directly advises the Faculty Council [faculteitsraad] with regard to the content of the Teaching and Examination Regulations [onderwijs- en examen-regeling; OER]. An additional task of the Committee is the evaluation of modules and the organization of degree programmes. It also advises the director of studies, whether requested or not.

The Course committee consists of six staff members and six students.

Dr. L.P.W.G.M. v.d. Zande is chairman of the Committee. The advisory member is the degree programme coordinator Dr. M. van Rijssel.

### **1.3.3 Board of examiners**

All matters concerning examinations and graduation are dealt with by the Board of Examiners [examencommissie]. Officially, all members of the academic staff sit on this committee. A delegation of staff handles the daily affairs of the Board. Rules and Regulations [Regels en Richtlijnen] is one item within their remit. In addition, the Board has to agree on each individual study programme submitted by the students. It handles all individual student requests and the selection of applicants.

All requests and study proposals for the Board should be submitted to the secretary of the Board, Dr. M. van Rijssel. The chairman of the Board of Examiners is Prof. A.J.W. Scheurink, Prof. J.T.M. Elzenga, Prof. A.G.J. Buma and Dr. T.R. Koiter are members of the Executive Committee of the Board of Examiners.

## **1.4 Student organizations**

### **1.4.1 Students' association GLV IDUN**

GLV IDUN is the association for all students at the School of Life Sciences of the University of Groningen. GLV IDUN was founded in 2006 by students of the School of Life Sciences.

Membership: open to all students of the School of Life Sciences, approx. € 20,- per year

E-mail address: [bestuur@glv-idun.nl](mailto:bestuur@glv-idun.nl)

Visiting addresses: Biological Centre, Kerklaan 30, 9751 NN Haren  
Building 6518-108, De Suite, or on Wednesdays:  
UMCG, A. Deusinglaan 1 Het Huisje (building 3225, 1<sup>st</sup> floor

Telephone: 050 3632074

One of the duties of GLV IDUN is the sale of textbooks. Members get a sixteen percent discount on their books. In addition to the sale of textbooks, GLV IDUN organizes other study-related events: an annual conference and visits to companies during the academic year.

Less serious activities provided by the GLV IDUN include drinks parties and some more athletic activities. The website [www.glv-idun.nl](http://www.glv-idun.nl) provides all the information about activities and events you will need.

## **1.5 Safety and (house) regulations**

### **1.5.1 Buildings**

The teaching and teaching support facilities of the School of Life Sciences are accommodated in a number of buildings;

Haren:

- BC (buildings 6511–6523): Biological Center, Kerklaan 30, P.O. Box 14, 9750 AA Haren; tel. reception: 050 3632021

Groningen:

- ADL1 (buildings 3211–3217/3219): Medische Wetenschappen, Tandheelkunde en Farmacie, Antonius Deusinglaan 1, P.O. Box 196, 9713 AV Groningen; tel. reception 050 3638000
- ADL2 (building 3111): Antonius Deusinglaan 2, 9713 AW Groningen; tel. reception 050 3633270, bgg 050 3638000
- CFM (buildings 5111–5121, 5151): Chemie–Fysica–Milieukunde, Nijenborgh 4, 9747 AG Groningen; tel. reception 050 363 4133.
- Bernoulliborg (gebouw 5161) Nijenborgh 9, 9747 AG Groningen; tel. reception 050 363 6868

For detailed plans of these buildings, see the end of this course catalogue.

### **1.5.2 House rules, regulations**

Staff, students, visiting researchers and visitors are required to obey the facility house rules.

The ADL1 buildings are open Monday to Friday from 8 a.m. to 9 p.m. ADL2 closes at 5.30 p.m. The Biological Centre is open from Monday to Friday between 8 a.m. and 6 p.m.

- Smoking ban. In accordance with Dutch law there is a general ban on smoking in public buildings.
- Mobile phones are not allowed in teaching rooms, libraries, laboratories and rooms with computer facilities.
- It is absolutely forbidden to eat or drink in the laboratories, teaching rooms, libraries and rooms with computer facilities.
- Bikes must be stored in the bicycle racks.
- The university accepts no liability for theft or lost property.

At the start of their Master's degree programme, students will receive the 'Manual Safety, Health and Welfare in the Faculty of Medical Sciences and the Faculty of Mathematics and Natural Sciences'. This manual contains an overview of the rules on safety and the environment, and the so-called house rules. You will be expected to have read these rules, particularly those concerning important matters such as the location of emergency exits, evacuation procedures and the location of the fire extinguishers. The rules on safety and care for the environment must be observed and complied with.

It is absolutely forbidden

- To eat or drink in the laboratories
- To drink from laboratory glasswork
- To store food in laboratory fridges
- To prepare food in laboratory ovens

Before you start working in a laboratory

- Take note of the safety regulations
- Locate the emergency exits and where the escape routes lie
- Locate the fire extinguishers, absorption equipment for chemicals, fire blankets, fire showers, first-aid boxes and eye-wash fountains
- Always wear safety goggles and a cotton laboratory coat

Working in a laboratory without the supervision of a staff member is not permitted!

### **1.5.3 Fire and emergencies**

In case of fire and accidents call **8050**. Clearly explain the situation and location.

### **1.5.4 Insurance**

The University of Groningen is not liable for any costs, medical or otherwise, or for damage caused by students. Therefore, students are required to insure themselves against accidents resulting from their own actions by taking out, for instance, student laboratory accident insurance [studentenlaboratoriumongevallen-verzekering]. The study associations at the School of Life Sciences (see section 1.4) can arrange this for you if you are a member. Foreign students should contact their degree programme coordinator for assistance.

### **1.5.5 Hepatitis B vaccination**

Everyone working in one of the laboratories of the University Medical Center Groningen must be protected against Hepatitis B infection. Since many students from the Biomedical Sciences and Medical Pharmaceutical Sciences Master's programmes will be working in such labs, the School provides the opportunity for students to be vaccinated free of charge. Students who were not vaccinated during their Bachelor's degree should contact the degree programme coordinator for assistance.

### **1.5.6 Computers and RSI**

Students spend a lot of time working at computers and are at risk of developing RSI complaints. RSI is the abbreviation for Repetitive Strain Injury and is a generic term for all conditions involving the neck, shoulders, arms, wrists and hands. These conditions can become chronic and lead to incapacity for work and cause serious limitations to everyday life.

#### **SYMPTOMS**

RSI symptoms can vary from stiffness, pain and tingling sensations, to loss of strength in the above-mentioned body parts. Initially, the symptoms occur only while working at a computer, but at later stages they also occur during rest. Ultimately, the complaints can occur continuously, causing pain during even the simplest of actions or even rendering them completely impossible.

#### **HOW TO PREVENT RSI?**

There is no standard method to prevent RSI. The measures you can take mainly involve relaxation of the muscles and the mind, and stimulation of blood flow. To minimize the risks of developing RSI, five points should be considered, the so-called 5W approach.

#### **WORKLOAD**

- Undertake regular time planning and prevent creating peaks in workload
- If necessary, take a 'study skills' course at the Centre for Study Support and Academic Skills [Bureau Studie Ondersteuning] (tel. (050 363) 5548)
- Realize that your productivity is higher if you take regular breaks than if you work without interruption
- Try to keep things in perspective – it will help you avoid working for too long, stimulate you to take regular breaks and it helps you unwind
- If you do not feel on top of things drop by your study advisor, student counsellor or student psychologist

#### **WORK ORGANIZATION**

- Incorporate as much variation in your work as possible: reading, writing, typing and browsing on the internet. Also alternate easy and difficult tasks
- Use the shortcut keys on your keyboard more often than your mouse
- Take regular breaks
- Alert your tutors if you are allocated too many deadlines or too many writing assignments at the same time

#### **WORKING HOURS**

- Do not work for more than five or six hours on your computer per day. Do not forget to count the hours spent gaming and browsing on the internet. Special software has been developed to remind you to take breaks

## 1 General Information

- Take regular breaks. Take a minimum break of ten minutes every two hours of work at a computer.

### WORKPLACE

- Locate the screen directly in front of you, not too close. Avoid having to work with a turned neck. Ensure the top of the screen is at eye level. Avoid annoying reflections from windows. Use large font sizes, so that you do not have to lean forward to read the letters
- You need a good chair that permits the height of the back and armrests to be adjusted. The back of the chair should mainly provide support to your lower back. Armrests relieve the shoulders. Adjust them so that the upper arms loosely touch them and form a right angle with your forearms
- If necessary, search for more information on the internet on how to equip your workplace
- Report unsatisfactory computer workplaces to the Occupational Health, Safety and Environment Coordinator [Arbo- en milieucoördinator]
- Never work for longer than two hours a day at a laptop. Connect an unattached keyboard and mouse to your laptop, and place the screen at eye level
- Ensure you have a good workplace at home

### WORK POSTURE

- See to it that you are in good physical condition
- Sit upright and make sure that your upper and lower legs are at right angles when your feet are flat on the ground
- Keep your wrists extended when using the keyboard and mouse
- Perform regular physical exercise during work on the computer

### LASTLY

- Drink a lot of water (the resulting visits to the toilet make natural breaks)
- Take early complaints seriously, check the risks applicable to your situation and find a solution. Do not ignore your body's warning signals
- If necessary, visit your family doctor or the physiotherapist at your sports centre
- A lot of information about RSI can be found on the internet
- For further questions or advice, contact the Occupational Health, Safety and Environment Coordinator [Arbo- en milieucoördinator], A.C.D. Weitenberg, tel. (050 363) 4618.

## 1 General Information

## 2 Facilities

### 2.1 Libraries

The mission of the libraries of the University of Groningen is to support and promote academic teaching and research by providing high quality information and information services. The libraries aim to achieve this by adopting a demand-oriented and innovative approach. The libraries of the University of Groningen consist of the University Library (UB) and the Faculty libraries. The UB offers a basic collection for each discipline; the Faculty libraries each have a specialized collection for research and teaching purposes. Interdisciplinary works, bibliographical material and a number of special collections can also be found in the UB.

The combined libraries contain 2.4 million books and journals, more than 1.5 million of which are located in the central UB.

#### 2.1.1 University library

The central University Library (UB) functions as a facility centre for the entire university community – for the Faculty and institutional libraries and library users. The UB offers students many services, including around 1600 study places. Furthermore, the library holds vast collections of reference and teaching material. About thirty percent of this is available in the study halls. The remaining material is kept in closed depots. This material can be accessed via the loans desk.

Practical information:

Address: Broerstraat 4, 9712 CP Groningen  
P.O. Box 559, 9700 AN Groningen

Telephone: Electronic Library (050 363) 5017  
Information Retrieval (050 363) 5030  
Enquiries (050 363) 5020  
Subject enquiries (050 363) 5020  
Guided tours (050 363) 5068  
Loans (050 363) 8034

Fax: (050 363) 4996

Website: [www.rug.nl/bibliotheek](http://www.rug.nl/bibliotheek)

Opening hours: Monday to Friday 8.30 a.m. – 10 p.m.  
Saturday and Sunday 10 a.m. – 5 p.m.

Closed: On public holidays, 30 April, 5 May and [Gronings ontzet],  
the local holiday on 28 August

Copy facilities: Copiers are located on every floor. Copy cards are available from  
the reception

An important facility is the Electronic Library, located on the first floor of the UB. It has over a hundred workstations for consulting catalogues, CD-ROMs and online databases. Word processing and internet access are also provided. Access to these workstations is limited to students and staff members of the University of Groningen.

In addition to the catalogues, the following databases are also important for all students

- Online Contents (a catalogue of journal articles)
- The Dutch Union Catalogue (NCC)
- Picarta (a combination of Online Contents, the Dutch Union Manual and a manual of internet sites)

Furthermore, the University Library provides access to a large number of academic journals online, see

[www.rug.nl/bibliotheek/catalogibestanden/elektijdschr/](http://www.rug.nl/bibliotheek/catalogibestanden/elektijdschr/) .

Access to online journals through the WWW pages of the University of Groningen is for personal study or research only.

Downloading large numbers of articles in a systematic or regular manner is prohibited by the terms of the license agreements that the University is a party to and is therefore strictly forbidden. Abuse may harm your fellow users. Any user who does not comply with these conditions of use may be excluded from access.

Further instructions on the retrieval of information can be found on

[www.rug.nl/bibliotheek/instructies/algInstructies/](http://www.rug.nl/bibliotheek/instructies/algInstructies/) . The 'Catalogue Training Module' teaches you how to use the catalogue; the 'Finding Scientific Information' module provides an introduction to scientific communication, document types and searching literature by subject.

The introductory module 'A window on the world' introduces the library services at the University of Groningen and provides an overview of the facilities and services. This programme consists of texts and short film clips in *streaming video*.

#### ACCESS

You must have a library card in order to be able to borrow publications from the libraries of the University of Groningen. The student ID issued to students of the University doubles as a library card. The loan period for books is four weeks unless stated otherwise. Please return books or request a renewal before the expiry of the loan period. Failure to do so results in a fine and can lead to exclusion from further loans until the fines have been paid and the books returned. Moreover, all other costs incurred in the course of retrieving a book or replacing it will be charged to the borrower.

In general, loans can be renewed online by the user through the Catalogue of the University of Groningen, provided that the loan period has not expired and there are no fines outstanding. Click on *Borrower Info* in the Catalogue.

#### **2.1.2 Libraries of the Faculty of Mathematics and Natural Sciences**

All the books from the Faculty of Mathematics and Natural Sciences (FWN) library collection are listed in the library catalogue (OPAC). FWN library books can be recognized by the following designations:

- Bibl. Biologisch Centrum (Biology library)
- Bibl. Chem.Fys.Milieuk. (CFM library; Chemistry, Physics, Energy & Environmental Studies)
- Bibl. Kapteyn lab. (Astronomy library)
- Bibl. Wisk.Inf.RC (Mathematics and Computing Science library)

These departmental libraries issue lists of new additions.

All the books in the library are grouped according to subject. The classification scheme should be consulted to find the correct subject codes. The local subject codes can also be used as search terms in the library catalogue (decentralized subject code).

The Biology and CFM libraries are arranged identically. All shelf numbers consist of a number followed by a letter. The number indicates the overall subject, while the letter indicates the subject subdivisions.

For example: 027G (027 – Science and Technology research; G – Normative aspects; Ethics)

The key is available in PDF form (in Dutch).

## JOURNALS

The FWN library's journals collection can be divided into printed and electronic full-text journals. All these journals are listed in the library catalogue (OPAC). The printed journals can only be consulted in the library that holds the journal in its collection. Photocopies of articles may be requested via interlibrary loan (ILL). The electronic journals (e-journals) can be consulted anywhere as long as the computer used for access is recognized as a 'University of Groningen machine'. This is usually achieved on the basis of the 'IP address'. When consulting e-journals from locations outside the University (the domain of the University of Groningen), use should be made of the proxy server. The proxy server for the University libraries offers safe, authorized access to the databases and e-journals to which the University subscribes from any computer outside the University domain.

Students can log in with their student account number. Members of staff log in using their personnel registration number.

Please note: For the most up-to-date and complete information on the journals collection (electronic or printed), consult the library catalogue!

### **2.1.3 Library of the University Medical Center Groningen**

Visiting address: University Medical Center Groningen, Hanzeplein 1, 9713 GZ Groningen, UMCG entrance 59, Winkelstraat 1 or Poortweg 12 (Y4202), 4<sup>th</sup> Floor (Telephone: (050 363) 3048 or (050) 361 2596)

Opening hours: Monday – Thursday: 8.30 a.m. – 10 p.m.

Friday: 8.30 a.m. – 5 p.m.

Saturday: 10 a.m. – 4 p.m.

During public holidays the library is closed; during vacations, opening hours may differ.

More information on the Central Medical Library can be found online:

[www.rug.nl/bibliotheek/locaties/bibcmb/](http://www.rug.nl/bibliotheek/locaties/bibcmb/)

## **2.2 Photo copiers and copyshop**

### BIOLOGICAL CENTER

Cards for the photocopiers can be bought at the copy shop (ground floor, building 6518). There are photocopiers in the entrance hall.

The copy shops can deliver the following services

- copies on several media
- A5 booklets, folded and stapled
- many different types of binding

For more information, contact the copy shop

## **2.3 Computer facilities**

### **2.3.1 Personal account**

After enrolment you will receive a student number and a personal computer account. A student account basically consists of several accounts, all accessed with the same login name and password. The accounts provide:

- access to the Faculty Novell servers for the use of computer applications
- access to the internet and for storing data
- an e-mail account
- access to Nestor, the electronic learning environment of the University of Groningen

- access to ProgressWWW, where you can enrol in modules and view your study progress

You need the following to log in: the name or address of the server, a login name and a password. Your login name is made up of your student number preceded by an 's'. Your initial password will be sent in a letter. On

<http://progresswww.nl/wachtwoord> you can change your password.

### **2.3.2 E-mail**

Your e-mail address is the primary means of communication of the University and the Faculty for news and information about your studies. Use a browser (such as Internet Explorer) and go to <https://student.rug.nl/> to access your e-mail. Your e-mail address is both your login name (s[student number]@student.rug.nl) and your name [initials separated by full stops].[infix].[surname]@student.rug.nl.

### **2.3.3 Nestor**

Nestor is the electronic learning environment of the University of Groningen. Lecturers use Nestor to provide information about modules, to set electronic examinations and to exchange documents within their department. Students use Nestor to read announcements, to cooperate with group members and to submit assignments.

Use your student number (s[student number]) to log in. In order to gain access to modules in Nestor, enrol for your modules in ProgressWWW.

The Education Office also uses the Nestor organization *FWN Students Master Biology and Life Science* to communicate with students. Announcements about the degree programme, modules, etc. will be placed on Nestor on a regular basis. Students are urged to check this site regularly

### **2.3.4 ProgressWWW**

ProgressWWW is a web-based application used by the University of Groningen. Students need to enrol for modules and exams well in advance (usually four weeks before the module is scheduled for modules and one week in advance for exams). ProgressWWW also permits you to check your results. ProgressWWW can be found on the desktop of every university computer or on the internet: <http://progresswww.nl/rug/>. More information on how to work with ProgressWWW can be found on the degree programme account on Nestor.

### **2.3.5 Student PCs**

Computer facilities are available to students in all the School of Life Sciences buildings. You can use these PCs to log onto the student network. You will then have access to applications, your own data on the home directory (X:\) and the internet. Some of the rooms are used for practicals and modules, but when these are not scheduled you can use the room for self-study. Printers are also available for students.

### **2.3.6 Usage rules**

Using the University IT facilities implies that you agree to the usage rules for University IT facilities as published on [www.rug.nl/rc/security/aup/](http://www.rug.nl/rc/security/aup/). Users of the university computer systems should be aware they are not the only users of these computers. Many computers are *multi-user* systems, and the

users of these computers belong to a community. Therefore, the ground rule on which this AUP (Acceptable Use Policy) is based is similar to the ground rule on which traffic is based: users of the university computer systems may not endanger these systems, nor may they hinder other users. Some of the implications of this ground rule are that users are not allowed to send unsolicited e-mail or try to obtain or use other users' passwords, either accidentally or 'for fun'.

**Abusing university computer systems may result in disciplinary action!**

**2.3.7 Helpdesk**

Need help to log on for the first time? Have a question? Lost your password? Something not working as it should? Call or visit the helpdesk in building 6523, room 0216, and daily opened from 8:30 till 17:00, tel. 050 3632374, E-mail: [servicedesk.zernike@rug.nl](mailto:servicedesk.zernike@rug.nl).

**2.3.8 Computer center**

The Donald Smits Center for Information Technology (CIT) is the university centre for high quality IT services. To meet this objective the CIT offers many facilities:

- centrally located computers with peripherals and various workstations
- several teaching and practical rooms with almost three hundred PCs (many belonging to the educational cluster, a cooperation between the computer centre and some faculties)
- a service desk with a module counter

More information: [www.rug.nl/cit/](http://www.rug.nl/cit/)

## 2 Facilities

## **3 Study affairs**

### **3.1 Information channels**

#### **NESTOR**

The Education Office maintains Nestorsite (see section 2.3.3.) which contains a wealth of information about teaching and research. The information not only covers the information found in this course catalogue, but also the latest information on examination and module timetables, graduation dates and procedures, etc. Nestor should be checked at least once a week, to avoid missing important events.

#### **E-MAIL**

In some cases messages of importance to students or groups of students, such as requests for enrolment for certain modules or alterations to the timetables are sent to the electronic mailbox of the students concerned. For this reason, students are expected to check their mailbox on a regular basis (at least once a week).

#### **UK (UNIVERSITY NEWSPAPER)**

The Board of the University [College van Bestuur] frequently publishes updates on the central rules and regulations in the UK. These mainly concern tuition fees, scholarships and the graduation fund.

### **3.2 Admission requirements**

Admission requirements for Dutch students for the programmes in Biology, Ecology & Evolution, Marine Biology and Molecular Biology & Biotechnology can be found in chapters 4-7.

You will find admission requirements for the specialization Behavioural and Neurosciences in chapter 4, Biology. For the Top programme Evolutionary Biology these are described in chapter 5, Ecology & Evolution. Admission for the Top programme Biomolecular Sciences is within chapter 7, Molecular Biology & Biotechnology.

Students with a comparable Bachelor's degree from another Dutch or foreign university may also qualify for admission. However, admission is then granted on an individual basis by the Board of Examiners. The Board of Examiners will check that you have the appropriate qualifications. For international students, sufficient proficiency in English (IELTS test score of 6.5 or a TOEFL test score of 580 (paper-based)) is also required. Consult the programme coordinator (international students) or the study advisor (Dutch students) to find out whether you qualify for admission.

#### **3.2.1 Conditional admission**

Students who have almost finished their Bachelor's degree from the University of Groningen and want to apply to one of the Master's programmes may request conditional admission. Candidates have to prove that they have already earned 165 ECTS in one of the required Bachelor's programmes including the Bachelor's project and thesis. The remaining 15 ECTS (post-propaedeutic modules only) must be completed within six months. Requests for conditional admission must be submitted to the degree programme coordinator. Alternatively, the first proposal form for the individual programme serves as request.

### **3.2.2 Bridging programme**

A bridging programme is available for Dutch students with a suitable bachelor degree in Higher Professional Education (HBO) for the degree programme in Molecular Biology & Biotechnology. The study load of this programme consists of 30 ECTS. For more information and assistance with application please contact the study advisor.

### **3.2.3 Deadline for applications**

Dutch students will be freely admitted to the Master's degree programme throughout the year once they have successfully completed a Bachelor's degree programme from the University of Groningen as listed in sections 4-7.

#### **OTHER DUTCH STUDENTS**

The annual application deadline for Dutch students with Bachelor's degrees (University or Higher Professional Education (HBO)) from institutes other than the University of Groningen is 1 June.

#### **INTERNATIONAL STUDENTS**

Applications for admission to the degree programmes and given modules must be submitted to the Admissions Board before 15 April (non EU/EEA students) or 1 June (EU/EEA students). However, students intending to apply for scholarships are advised to submit their applications before 1 December.

More information is available on the internet from:

[www.rug.nl/fwn/informatievoor/internationalstudents/degree/index](http://www.rug.nl/fwn/informatievoor/internationalstudents/degree/index)

## **3.3 Study and finances**

### **3.3.1 Registration and tuition fees**

*Statutory fees* [wettelijk collegegeld] are set by law. All students under the age of 30 at the start of the academic year must pay the statutory fees. Students must also be nationals of a country within the European Economic Area, or be otherwise eligible to receive a government grant from the IBG. Statutory fees for academic year 2009–2010 have been set at **€ 1,620**.

*University fees* [instellingscollegegeld] are set by the University of Groningen. They must be paid by all students who are not required to pay the statutory fees set by law. University fees for academic year 2009–2010 have been set at **€ 2,122**.

*Other fees* Students who register for the degree programmes and who are NOT nationals of a state that is signatory to the EEA Agreement, or non-Dutch nationals qualifying for a student grant on the basis of the Student Finance Act 2000, or recognized by the UAF as student refugees, must pay the institutional tuition fees of **€ 9,400**. Please consult the following webpage for detailed information: [www.rug.nl/studenten/inuitschrijving/collegegeld/tarievenmasters](http://www.rug.nl/studenten/inuitschrijving/collegegeld/tarievenmasters)

The Student Service Desk (also see section 3.8.1) provides information about registration procedures, statutory fees and everything you need to do to ensure that your registration remains valid. They also Desk provide students who have paid their fees and have registered as students at the University of Groningen with student cards.

Regular registration is from 1 September until 31 August

Visiting address: Uurwerkersgang 10, Groningen

Postal address: University of Groningen P.O. Box 72, 9700 AB Groningen  
E-mail: [csb@rug.nl](mailto:csb@rug.nl)  
Telephone: 050 3638004  
Website: [www.rug.nl/hoezithet](http://www.rug.nl/hoezithet) or in English: [www.rug.nl/insandouts](http://www.rug.nl/insandouts)

### **3.3.2 'Studiefinanciering' – IBG grants**

For more information about [studiefinanciering], grants for Dutch students, consult the Informatie Beheer Groep (IBG), Regiokantoor Groningen:  
Visiting address: Kempkersberg 4, 9722 TB Groningen,  
Telephone: (050) 599 7755  
Internet: [www.ib-groep.nl](http://www.ib-groep.nl)

### **3.3.3 Study costs**

The costs of books and materials for study are relatively low. **€ 250,-** each year is usually sufficient for compulsory books, lecture notes, manuals etc. The RUG has a policy on study costs. The policy aims to control costs so that the 'study cost' component does not exceed grant/loan budgets for Dutch students. The amount that students are required to spend on study materials will therefore not exceed the government grant. The standard sum for 2009-2010 is **€ 660,-**. Each course phase has a cost 'ceiling' (standard sum x length of course). Sometimes it is not possible to avoid going beyond the ceiling amount. In such cases it is possible to apply to the Faculty Board for reimbursement of half the extra expenditure on the basis of receipts submitted as proof. Sometimes another arrangement may be possible. Further information can be obtained from the study advisor, from the Student Service Centre and on [www.rug.nl/insandouts](http://www.rug.nl/insandouts).

## **3.4 Examinations and registration of results**

### **3.4.1 Academic year**

Academic year 2009-2010 commences on 31 August 2009 and finishes on 9 July 2010. Resit examinations for students who have missed one or several parts of that year are usually planned for July.

### **3.4.2 Credits and registration**

University degree programmes consist of several modules. Each module is awarded a number of ECTS credit points (ECTS: European Credit Transfer and Accumulation System). ECTS is an EU standardized system for measuring study load as a means of facilitating international mobility. One ECTS credit point represents 28 hours of full-time study (including contact hours, reading, independent study, preparation for exams, etc.). Sixty ECTS credit points represent one year.

In general, each module will be examined either by a written or an oral examination, or by a written assignment or a presentation. The Dutch grading scale ranges from 10 (highest) to 1 (lowest). As an indication, 6 is the minimum pass mark and 10 and marks lower than 3 are highly exceptional. Students will receive an overview of their marks and ECTS (a printout from the ProgressWWW registration system) every year. Should the results be registered inaccurately, students are requested to report this at once to the Student Education office at the Biological centre (section 1.3.1).

### **3.4.3 Registration for modules and examinations**

Many exams require students to enrol at least five working days before the date of the written examination. This can be done using the webpage:

<http://progresswww.nl/rug>. Registration should be completed in time to ensure that examinations proceed smoothly. Examiners need to know the number of participants in advance.

*Note that separate registration for each module is also compulsory (see section 2.3.4).*

Since students often follow modules from other programmes, they are advised to be well informed about the registration procedures of those modules.

### **3.4.4 Grading system and registration of study results**

After an exam is completed the results are processed in the automated results registration system (ProgressWWW). A list of the results achieved can be found on the internet: <http://progresswww.nl/rug>. If an official results transcript is required, a printout can be requested from the Education Office.

Marking follows the standard Dutch system and ranges from 1 (lowest) to 10 (highest):

- 10 outstanding; a remarkable performance; seldom given
- 9 Excellent
- 8 Very good
- 7 good
- 6 satisfactory
- <6 unsatisfactory

An 'unsatisfactory' for an exam or a report serves as a warning sign. A mark below 6 for a module means that this module has to be repeated until a 6.0 or higher is achieved.

The final cumulative mark for the whole programme is the weighted average of the individual marks for each of the elements taken in account the study load.

### **3.4.5 Fraud**

Plagiarism is not accepted at this university or anywhere else in the academic community. In all cases where plagiarism is found or suspected, the examiner will inform the Board of Examiners. If the Board decides that plagiarism has occurred they will impose a sanction in accordance with the 'Rules and Regulations' (see Chapter 9). In general, this will result in the student being excluded from participation in examinations or other forms of testing for the relevant module for the current academic year.

## **3.5 Graduation**

Students may request for graduation once they have passed all the necessary modules with a study load of at least 120 erts. The actual graduation is a mere formality. Students should, however, register well in advance. Graduates will receive a diploma [bul] and a diploma supplement containing an overview of each module and the marks achieved in English.

In general there are six degree certificate ceremonies held annually. A list of ceremony dates is published on:

[www.rug.nl/biologie/informatievoor/studenten/aanvraagexamen](http://www.rug.nl/biologie/informatievoor/studenten/aanvraagexamen).

Normally, the ceremonies take place in the Academy Building, Broerstraat 5. Students who drop out can on request receive a statement of their academic record including the modules passed.

## GRADUATION PROCEDURE

Are you approaching your graduation? There are several administrative matters you must attend to yourself.

You must apply for your degree certificate in order to graduate. Preferably, you do this before you take the last compulsory part of your degree programme, for example before your last exam, or before your final report of your research project is approved. However, you must submit your request within four weeks of receiving your last examination result. If you finish your degree in August, you must submit your request for a final assessment before 15 September. If you do not submit a request for graduation within four weeks of completing the last examined module, the Board of Examiners will officially declare whether and when you graduate. This graduation date will appear on your degree certificate. If this means that your graduation date falls in the next academic year, you may have to reregister and pay tuition fees.

Step by step procedure for graduation:

1. No more than four weeks after completing the last examination module and at least four weeks in advance of the desired date of a graduation ceremony, students must submit a request for graduation via the ProgressWWW see for instructions: [www.rug.nl/biologie/onderwijs/studentenadministratie/AanvrForm](http://www.rug.nl/biologie/onderwijs/studentenadministratie/AanvrForm). At this site you will also find the dates of the ceremony and how to deliver your paperwork.
2. The candidate should provide the following papers:
  - A copy of all reports (research projects and essay).
  - Examination sheets (of results not registered in Progress)
3. You will receive a letter to confirm your graduation
4. During the ceremony you validate your diploma with your autograph
5. Graduation does not mean automatic deregistration. You must deregister yourself! See [www.rug.nl/hoezithet](http://www.rug.nl/hoezithet) (or [www.rug.nl/insandouts](http://www.rug.nl/insandouts))
6. When you deregister, your student grant or loan will not be stopped automatically. You must request the IB-Groep to do this for you. You must also hand in your student travel card. For more information: [www.ib-groep.nl](http://www.ib-groep.nl)

### 3.6 Objection and appeal procedures

Unfortunately, mistakes are sometimes made when applying rules and regulations. This is why the Student Charter (see chapter 9 and [www.rug.nl/studenten/regelingen/studentenstatuut](http://www.rug.nl/studenten/regelingen/studentenstatuut)) includes provisions that ensure the legal protection of the student. If students feel unjustly treated, they can object and lodge an appeal. The following are the appropriate official channels:

- the Board of the University (CvB): for matters relating to that part of the Student Charter which regulates the University as a whole
- Higher Education Appeals Tribunal (CBHO): for matters that have already been the subject of an appeal that the Board of the University has ruled on, against whose decision you wish to appeal
- Board of Appeal for Examinations (CBE): for decisions 'concerning assessment of the knowledge and understanding of a candidate who has been examined in the field concerned or has been examined in any other manner'.

An overview of all categories of objection and appeal procedures is available from the Student Service Desk (section 3.8.1). For advice contact the study advisor (section 3.7.3) or contact the Legal Affairs department (ABJZ), tel. (050 363)

5440. The student portal and the ABJZ web pages also contain a lot of information.

#### COMPLAINTS

Situations can arise where specific regulations of the Student Charter have not been directly violated, but where the student still feels improperly or unjustly treated. In such a case he/she can file a complaint to the following agencies:

- *Decentral* Each of the faculties and schools has its own complaints procedure. The study advisor can offer direct assistance, but she can also forward the case to, for example, the head of the Board of Examiners, a member of the Faculty Board or the Dean
- *Student Service Desk* If a student cannot or does not wish to contact the Faculty or school, the complaint can be discussed with a student counsellor from the Student Service Desk. He/she will act as an ombudsman and mediate, and, if requested, demand to inspect dossiers or contact professionals (section 3.8.1)
- *The confidential advisor of the University* The confidential advisor of the University handles complaints from students feeling discriminated against by fellow students or staff of the University of Groningen (j.m.dam@rug.nl).

### **3.7 Study guidance within the study**

#### **3.7.1 Degree programme coordinator**

The degree programme coordinator supports the teaching process within the programme, is the secretary of the Board of Examiners and advises the Course Committee. Students can address all programme-related questions to the programme coordinator. In general, students contact her for practical advice about the programme of study, mentor or module choice, etc.

Note that the forms for requesting approval for your study plans (see chapter 4-7) should be handed in at the Education office. These will be passed on to the Board of Examiners.

Office Location: 6518 room 3, BC

Telephone: 050 3632212

E-mail: m.van.rijssel@rug.nl

Postal address: School of Life Sciences, Biological Center, Kerklaan 30.  
P.O. Box 14, 9750 AA Groningen

Consulting hours: Mondays and Thursdays between 11 a.m and 12 p.m

#### **3.7.2 Study mentor**

Students choose a study mentor associated with their master. These mentors are assigned by the Board of Examiners to supervise students. The study mentor is an experienced scientist working within the scientific domain of the master programme. The mentor guides the student throughout the whole master programme from the first module through the graduation ceremony. In this way the mentor ensures, in collaboration with the Board of Examiners, that the learning outcomes related to specific knowledge and skills are met.

Most students will choose a study mentor from the research area in which they intend to perform their first research project. In order to choose students must define their field of interest, then investigate the research group to which the potential supervisor belongs. Read recent scientific articles and get a feel for the area of activity of the group you hope to be a part of.

The mentor is responsible for ensuring the quality of the individual programme and to coach the mentee on career aspirations and on anything that might prevent the mentee from achieving his/her learning objectives. For Top programme students with a scholarship the mentor is also responsible for the evaluation of the student's progress at the end of the first year that forms the basis for the decision on continuation of the scholarship.

The mentors available are listed in chapter 8.3.

#### **3.7.3 Study advisor**

Not all students will reach the end of their degree programmes without encountering problems. Successful study depends on many different factors, and it is therefore understandable that students sometimes need to consult an impartial expert. The task of the study advisor is to assist students in finding solutions to any problems encountered while studying. In practice, this concerns matters like the choice of programme, study pace or an improvement in study methods. Problems of a more general nature (e.g. the financial consequences of study delay) are often dealt with by consulting the university student counsellors. Social matters can also be discussed with the study advisor if students need a confidant for personal problems. In some of these cases the study advisor will recommend the more specialized assistance of, for example, the student psychologists (see section 3.8.2).

The study advisor for the masters at the Biological Centre is Mrs A. F. Bos. In general she has open office hours on Mondays and Thursdays (room 6548.0008 between 11 a.m. and 12:30 p.m. Appointments can be made by phone 050 3638764 or E-mail (attie.bos@rug.nl). In case of absence: tel. 050 3632017 (secretariat).

#### **STUDY DELAY**

If circumstances beyond your control affect your progress during your studies, you may be eligible for financial assistance from the Graduation Fund [Afstudeerfonds]. The conditions are set out in the regulations pertaining to the fund [Afstudeerfondsregeling]. If you experience study delay due to circumstances beyond your control, and IF THE DELAY IS EXPECTED TO AMOUNT TO MORE THAN FOUR WEEKS, YOU MUST REPORT THIS IMMEDIATELY TO THE STUDY ADVISOR. The following can constitute grounds for financial assistance:

- illness
- family circumstances
- a disability (physical limitations)
- pregnancy
- lack of a degree programme that meets objective standards
- loss of certification for your degree programme
- other circumstances of an exceptional nature.

The study advisor will direct you to a student counsellor if your delay amounts to or will be more than 15 ECTS credits. You will have to make an appointment with a student counsellor for a follow-up report yourself.

If during the academic year the delay amounts to more than 15 ECTS after the first report to the study advisor, you must contact a student counsellor immediately, even if you have not been told to by the study advisor.

You must follow the advice of and the agreements made with the study advisor and the student counsellor or you will not be eligible for financial support from the Graduation Fund.

Apply in good time for financial assistance. If you are too late you will not receive any financial compensation.

#### ADAPTATIONS TO TEACHING AND/OR EXAMS

Sometimes personal circumstances necessitate adjustments in teaching or testing. This can occur when students have dyslexia or performance disabilities due to a physical disability, a psychiatric problem or a chronic illness.

Adjustments usually involve:

- making certain facilities available (extra exam time, adapted exam material, etc.) and/or
- permitting departures from the Teaching and Examination Regulations (OER; section 9)
- extracurricular individual examinations
- different exam time or place
- relaxation of study progress rules
- replacement assignment for compulsory lectures or practical modules, etc.

In cooperation with the study advisor, you can examine what is necessary or determine which facilities you can use, which departures from the OER will be requested, whether it will be necessary to adapt your study pace or study planning, etc.

#### **3.7.4 International officer**

Every year many students choose to complete a major part of their studies abroad to add international character to their curriculum. The reasons for spending time studying abroad are diverse and include strengthening your position in the employment market, refining social and cultural skills, following modules not offered in the Netherlands, and so on.

In general, students who wish to study abroad often do their second research project in a different country. Usually this research project is conducted in the laboratory of a colleague of one of the academic staff members of the School. Before leaving, however, be sure that you have authorization from the Board of Examiners!

Students who want to study abroad have to organize many issues themselves, well in advance. Mrs. Bos, our study advisor/international officer, can advise you about grants for living and/or travelling expenses.

In general, students obtain grants from the Socrates/Erasmus Fund or the Marco Polo Fund.

*Socrates/Erasmus* The purpose of the Socrates/Erasmus programme is the advancement of cooperation between European universities. As part of this programme, students may be eligible for additional funding. The duration of an exchange covered by this programme can vary between three months and one year. Almost all postgraduate students can obtain a grant for a period of study of up to one year at one of the universities with which there are postgraduate cooperation agreements.

*Marco Polo* If there are no other grant programmes available, students intending to spend at least three months abroad may be eligible for a grant from the Marco Polo fund. Such grants are jointly subsidised by the Faculty and the University.

More information about grants and other sources of finance can be found at the Information Library for Study and Careers (see section 3.8.1).

### **3.8 Non-degree programme-related support**

#### **3.8.1 Student Service Desk**

Visiting address: Uurwerkersgang 10

Postal address: P.O. Box 72, 9700 AB Groningen, the Netherlands

Opening hours: Monday to Friday: 10 a.m. – 4 p.m.

During vacations there are alternative opening hours. Keep an eye on the announcements in the UK.

E-mail: [csb@rug.nl](mailto:csb@rug.nl)

Website: [www.rug.nl/hoezithet](http://www.rug.nl/hoezithet) or in English: [www.rug.nl/insandouts](http://www.rug.nl/insandouts)

Telephone: 050 363 8004

*Why go to the Student Service Desk?* Students of the University of Groningen can contact the Student Service Desk (CSb) with all kinds of questions. The CSb can assist current students and new students from the Netherlands and abroad, final-year students and graduates. Details of how the CSb can help are provided below. If we are unable to answer your question, we will naturally refer you to the right organization to help you.

*Do you have any questions about anything to do with studying?* The CSb can answer straightforward questions about matters such as study choice, admission, application, registration, reimbursement of tuition fees on deregistration, transfer to another programme or ending your studies altogether, study delay, financial matters and careers. The staff at the CSb can make an appointment for you with a student counsellor if you have a complex or private matter to discuss, or with the Central Student Administration in the event of complicated registration issues. The CSb can also refer you to the Talent & Career Center or sign you up for one of the workshops or job application modules.

*Questions about your choice of programme? Study delay? Complex personal or financial matters?* The student counsellors will be able to provide you with information and individual advice. They specialize in dealing with financial matters, registration and deregistration, study choice, and complaints and appeal procedures. They can also advise students with a performance disability. The student counsellors have information about many facilities and organizations that may be able to help you. In cooperation with the Centre for Study Support and Academic Skills, the counsellors also run a workshop on study choice. In the event of a study delay of more than 15 ECTS credit points, it is essential to make an appointment with a student counsellor in order to qualify for graduation support. Don't delay, arrange it today! More information about study delay can be found on the website: [www.rug.nl/studievertraging](http://www.rug.nl/studievertraging). You can make an appointment with a student counsellor via the Student Service Desk.

*If you need information about degree programmes and/or the job market in the Netherlands and/or abroad.* Feel free to visit the Information Library for Study and Careers (ISB). The ISB is a documentation centre where you can find information on the following subjects: higher education (university and higher professional education) in the Netherlands, study and internships abroad (including how to finance them), careers in the Netherlands and abroad (see also the Talent & Career Center). Career-related information includes job applications, tests, professions, companies and organizations, etc. The information is in the form of brochures, course catalogues, reference works, vacancy bulletins, databases (e.g. Elseviers Fondsendisk) and CD-ROMs (e.g.

Loopbaantraject). A selection of relevant websites is also available. Information Library for Study and Careers, tel. 050 363 4665.

### **3.8.2 Student psychologists**

The Psychological Counselling Service is part of the Student Service Centre of the University of Groningen. The Service has a team of professionally trained and highly experienced male and female psychologists who are experienced in helping people from many different backgrounds and cultures, and with a wide range of personal and academic issues.

Most personal, academic and relationship or identity problems can be eased through counselling. This includes lack of concentration, fear of failure, anxiety, stress, depression, family and/or relationship difficulties as well as addictions, eating disorders or sexual problems. It can also involve adjusting to a new culture or dealing with dilemmas or difficult decisions. All of these problems may be interfering with your studies and life in Groningen.

You do not have to be specific about what is bothering you to make an appointment with a psychological counsellor. An initial assessment is always orientational in nature, with the aim of clarifying the problem and seeing what you want to do about it. Sometimes a single session is enough to set you on the right path; sometimes several sessions will be more helpful. Treatment never lasts longer than ten sessions.

Visiting address: Oude Kijk in 't Jatstraat 41-41a

Opening hours: Monday to Friday: 9 a.m. to 12.30 p.m. and 1.30 p.m. to 4.45 p.m. (Wednesdays from 10.45 a.m.)

Telephone: 050 363 5544

Website: [www.rug.nl/ssc](http://www.rug.nl/ssc)

### **3.8.3 Study Support (SO)**

The Centre for Study Support and Academic Skills [SO, Studie Ondersteuning] is the University's centre of expertise for academic skills. The Centre's aim is to guide University of Groningen students through their studies as smoothly as possible, for example by means of a wide range of study skills courses, training and workshops.

Visiting address: Broerstraat 5, Academiegebouw Tower (2nd floor)

Postal address: P.O. Box 72, 9700 AB Groningen

Telephone: 050 363 5548

E-mail: [y.m.robert@rug.nl](mailto:y.m.robert@rug.nl)

Website: [www.rug.nl/ssc](http://www.rug.nl/ssc)

Open Monday to Friday 9 a.m. to 5 p.m.

### **3.8.4 Looking for your first job?**

If you are about to graduate or have recently graduated, the Talent & Career Center, expertise centre for graduates, can help you to choose a career. The Center organizes courses and free theme workshops (e.g. 'Increase your chances on the job market' and 'About to graduate, what next?'), a careers café and a 'Working on your career' leaflet. Come to us if you need help when orientating yourself to the job market or when preparing job applications! Note that the Talent & Career Center offers special activities for international students in English. You can orientate yourself to the job market by attending themed meetings or the weekly careers office hour. It is also possible to make an individual appointment with one of the career counsellors.

Visiting address: Munnekeholm 2

Postal address: P.O. Box 7117, 9701 JC Groningen  
Telephone: 050 311 1589  
E-mail: [info@talentcareercenter.nl](mailto:info@talentcareercenter.nl)  
Details of all activities can be found on the website: [www.talentcareercenter.nl](http://www.talentcareercenter.nl)

### **3.8.5 International Service Desk (ISD)**

The International Service Desk (ISD) is part of the Office for International Relations [Bureau Internationale Samenwerking, or BIS]. It provides information to foreign students, prospective students and foreign researchers, specifically with regard to study, doing a PhD and temporary residence at the University of Groningen for research or other purposes. The ISD also assists foreign guests staying in Groningen or those responsible for their stay with any queries they may have about issues such as regulations relating to foreigners, study advice, medical care, financial matters, accommodation, and facilities and official organizations within the city. The ISD also organizes and coordinates a number of introductory and social activities jointly with organizations such as Wings, the Global Club and the Foreign Guest Club. In some cases, the ISD is solely responsible for looking after foreign guests – if, for example, they have been invited to Groningen as guests of the Board of the University or have come to the University of Groningen within the framework of a joint project with a developing country.

Postal address: P.O. Box 72, 9700 AB Groningen, the Netherlands  
Visiting address: Broerstraat 5, Groningen  
Telephone: +31 50 363 8181  
Fax: +31 50 363 7100  
E-mail: [isd@rug.nl](mailto:isd@rug.nl)

### **3.9 International Students' association ESN-Groningen**

ESN-Groningen coordinates and stimulates the international activities of the student community in Groningen. It was founded in 1988. ESN-Groningen is part of the Erasmus Student Network (ESN) and works closely with the University of Groningen. One of the functions of ESN-Groningen is to support international students. This includes finding a mentor – a Dutch student who can help with practical matters and aid foreign students in getting to know the city of Groningen and student facilities such as the libraries and the sports centre. Mentors also ensure that the first taste of student life in Groningen is an enjoyable one. During your stay in Groningen, ESN-Groningen will organize various activities to make you feel at home, such as an introductory weekend, a weekly social in the pub Rumba, trips to the island of Schiermonnikoog and to Amsterdam, ice-skating, sailing, theme parties and much more. ESN-Groningen wants you have a great time in Groningen. Every Sunday a small-scale activity such as a dinner or movie is organized in the GSP house, Kraneweg 33. Last but not least, ESN-Groningen publishes a magazine especially for international students, the WaM.

Visiting address: Grote Rozenstraat 23, 9712 TG Groningen  
Telephone: 050 363 7176  
E-mail: [info@esn-groningen.nl](mailto:info@esn-groningen.nl)  
Website: [www.esn-groningen.nl](http://www.esn-groningen.nl)

Walk-in hour every Tuesday and Thursday from 1 to 3 p.m. If you want to be kept informed of all the upcoming events and activities of WINGS, send an e-mail to their e-mail address!

### 3 Study matters

## **4 Master programme Biology**

### **4.1 Admission**

Students will be freely admitted to the degree programme Biology when they have successfully completed a bachelor's degree programme in Biology at the University of Groningen or another Dutch university.

For the specialization Behavioural and Neurosciences:

Bachelor's degree in Biology of the University of Groningen, specialization [Gedrag en Neurowetenschappen]. A Bachelor's degree in Biology or a Bachelor's degree in Life Science & Technology of the University of Groningen with major [Gedrag en Neurowetenschappen].

Students with a comparable bachelor degree from another university may also qualify for admission. However, admission is then granted on an individual basis by the Board of Examiners. The Board of Examiners will check that you have the appropriate qualifications. For international students, sufficient proficiency in English (IELTS test score of 6.5 or a TOEFL test score of 580 (paper-based)) is also required.

Consult the programme coordinator (international students) or the study advisor (Dutch students) to find out whether you qualify for admission.

Before starting with the degree programme, Dutch students with a bachelor degree as mentioned above need to register officially for the degree programme (via [www.studielink.nl](http://www.studielink.nl)). Information concerning (conditional) admission requirements is presented in section 3.2.

Foreign students can apply via the on line application tool (see [www.rug.nl/prospectivestudents/application/howToApplyadmission](http://www.rug.nl/prospectivestudents/application/howToApplyadmission) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl)).

### **4.2 The content of the degree programme of study**

The Master's degree programme in Biology is for students who have a broad interest in Biology and also those who have a specific interest in science at the interface of different Biology domains, such as Ecology, Marine Biology, Biomedical Sciences and Molecular Biology. Within this Master's programme there is a specialization in Behavioural and Neurosciences. Students can focus on fundamental or applied research, or a combination of both. In consultation with a mentor, students design their own study programme tailored to their interests. Each individual programme must be approved by the board of examiners. The learning outcomes of the master's degree programme are described in section 1.2.

### **4.3 The structure of the degree programme of study**

The master's programme is research oriented. It has two variants: a research (P-) variant and a policy & management (M-) variant. In their first year all students conduct a research project. Thereafter, they choose either to continue in the P-variant or to enrol in the M-variant.

The P-variant focuses entirely on research to prepare for a career in academia or other research institutes. The study programme therefore mainly consists of research projects, which focus on learning about conducting research by actually doing it. Students will not only independently perform experiments in the

laboratory or the field, they will also go through the whole process of conducting science developing skills such as searching for and studying scientific literature, formulating hypotheses, designing and performing experiments, and presenting results.

The M-variant comprises one year of research and one year aimed at the development of policy and management-related understanding and skills to prepare for a career in a company, consultancy or policy organization. This variant is especially for students who are not only interested in science but also in the social and commercial aspects of scientific developments and products. Additional training in interactions with other disciplines, communication with non-scientists and general management skills is also part of this variant.

#### **4.3.1 Research variant**

The Research (P) variant mainly consists of independent research, which focuses on learning about conducting research by actually doing it. Students will not only independently conduct experiments in a laboratory, but also gain experience with related issues, such as formulating hypotheses, searching for and studying scientific literature and presenting results.

Requirements for the research variant:

MODULES	CREDITS
colloquium	5 ECTS
electives	≤ 20 ECTS
essay	5 ECTS
optional modules	20 ECTS
research project	40 or ≥ ECTS
research project	30 or ≥ ECTS

Students design their own study programme according to their interest. However, the student must choose a mentor - an assistant professor or professor from the list in chapter 8.3 to advise and discuss the contents of the individual degree programme.

In addition to the above scheme the following rules apply to the programme:

- the first research project (preferably the one  $\geq 40$  EC) must be performed at the School of Life Sciences or (or liaised institutes) under supervision of one of the examiners.
- research projects, colloquium and essay must deal with different research subjects, must be supervised by a different examiner, and be approved of by the Board of Examiners.
- Supervisors of research projects, colloquium, and thesis should be members of the permanent academic staff of the School of Life Sciences. A PhD-student or postdoc may take on the daily supervision, however, the final responsibility lies by permanent staff members (see list in chapter 8).
- The colloquium has an entry requirement. A research project has to be completed.
- Master modules are chosen from the list presented in chapter 8 of this catalogue. Master modules usually serve as preparation for the research projects.
- electives may be:
  - an extension of a research project with 5-20 ECTS. Propositions for extensions of 10-20 EC should be requested before the start of the research project. Arrangements for extensions of 5-10 EC may also be

- made during the midterm assessment,
- extra master modules (chapter 8)
- bachelor modules (not more than 10 ECTS),
- an assignment of 5-20 ECTS (the learning outcomes of each individual assignment must be described using the assignment form additional to the yellow form).

*All elements in the individual programme must be approved of by the Board of Examiners (use the yellow form).*

The assessment framework for colloquium, essay and research projects is set out in the syllabus 'Guidelines for the Master' that will be available at the Education Office.

Specialization: **Behaviour and Neurosciences**

Students generally follow the P-variant scheme and choose their mentor from the list for this specialization.

#### **4.3.2 The Policy & Management variant**

The policy and management (M) variant is the option to choose if students are not only interested in science but also in the social and commercial aspects of biology. This variant will prepare students for a career in a company or policy organization. In addition to gaining scientific knowledge, students will learn effective presentation skills, how to deal with tough deadlines, how to apply for an internship at a company or organization outside the University and how to give and receive feedback.

For details about the M variant (such as timetables, teaching staff and assignments) please consult the BBB café ([www.rug.nl/fwn/mVariant/BBBcafe](http://www.rug.nl/fwn/mVariant/BBBcafe)) and the Nestor website. Interviews with participating students, examples of internships and information about the job market are also available there. For more information, contact the internship coordinator of the M variant.

internship coordinator of the M-variant: Drs A.J. Abma  
tel. 050 363 2263  
[a.j.abma@rug.nl](mailto:a.j.abma@rug.nl)

Requirements for the policy & management variant<sup>1</sup>:

MODULES	CREDITS
colloquium	5 ECTS
electives	≤ 10 ECTS
optional modules	5 ECTS
research project	40 or ≥ ECTS
policy and management internship programme	40 ECTS
module 'Beleid & Bedrijf'	20 ECTS

Like students in the research variant, M-variant students design their own individual study programme in consultation with a mentor (section 3.7.2 and 8). In addition to the above scheme the following rules apply to the programme:

- The research project must be performed at the School of Life Sciences or associated institutes under supervision of one of the examiners.
- The research projects and the colloquium must deal with different research

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<sup>1</sup> In this variant a number of modules are taught in Dutch since most of the topics deal with societal and professional issues in the Netherlands.

subjects, must be supervised by a different examiner and must be approved by the Board of Examiners.

- Supervisors of research projects, the colloquium and the thesis must be members of the permanent academic staff of the School of Life Sciences. A PhD student or postdoc may take on the daily supervision, but ultimate responsibility remains with the permanent staff members (see list in section 8).
- The colloquium has an entry requirement. Before it can be started, at least one research project must have been completed. In addition, before entering the policy and management internship programme a research project has to be completed.
- Optional modules are chosen from the list presented in section 8 of this catalogue. The Board of Examiners may permit the student to select one or more modules within the scientific domain of the degree programme from another master's degree programme (from the University of Groningen or from another university).
- Electives may be:
  - an extension of a research project with 5-10. Arrangements for extensions of 5-10 EC may also be made during the midterm evaluation,
  - extra master modules (section 8),
  - bachelor modules to repair specific deficiencies (not more than 10 ECTS);
  - a research assignment with a study load of 5-10 ECTS. The learning outcomes of each individual assignment must be described using the special assignment form in addition to the yellow form (see section 4.5)

**All elements in the individual programme must be approved of by the Board of Examiners (use the yellow form).** The assessment framework for colloquium, essay and research projects is set out in the syllabus 'Guidelines for the Master's programme' that will be available at the Education Office

#### 4.4 Master modules

Master modules and electives are chosen in consultancy with the mentor. Modules organized by the School of Life Sciences are listed in section 8 of this course catalogue. Up-to-date information about modules will be published on Nestor (*FWN Students Master Biology and Life Science*).

Individual propositions from students will also be considered seriously by the Board of Examiners. Options are open from other departments, other universities in the Netherlands or even abroad.

More extended information about modules within the University of Groningen is found in Ocasys ([www.rug.nl/ocasys](http://www.rug.nl/ocasys)). Ocasys is the course catalogue system of the University. This system contains information about all modules taught in the faculties. The information concerns the modules' contents, their lecturers, the period during which the modules are taught and the compulsory reading lists/literature.

#### 4.5 Study planning and procedures

During the Master's degree programme you must determine for yourself which modules, individual assignments (colloquium and essay) and research projects you plan to do, when and in which order. There are constraints on the content of the programme as described in the previous sections and you have to follow procedures to make sure your programme is approved of, that you are officially registered for modules and programme etc. Take notice of the following:

1. Before starting with the degree programme you need to register officially for the degree programme (section 4.1) and visit the education office to obtain
  - the most recent course catalogue for the degree programme;
  - access to the Nestor organization where much additional information is available.
2. The modular approach allows students to design an individual, coherent study programme tailored to his/her interest. To ensure the coherency of such an individual programme mentors were assigned by the Board of Examiners to supervise students. Mentors advise students on the contents of their individual programme and the choices that they have to make to prepare for a professional career after graduation (section 3.7.2). Therefore, before you start, you will have to choose a study mentor. Most students will choose a mentor from the research area in which they intend to perform their first research project (see section 8). In order to choose, students must define their field of interest, and thereafter, investigate the research group to which a potential supervisor belongs. Read recent scientific articles and get a feel for the area of activity of the group you hope to be a part of.  
You are solely responsible for making a first appointment and maintain contact with your mentor during your master's programme.
3. Before the start of their first study element students are to submit a proposal for the individual study programme to the Board of Examiners using a special proposal form (yellow form). This form can be obtained via the Education office. The form, completed and signed by the mentor, has to be submitted at the Education office.
  - It is not required to submit a complete study programme at the start of your studies. However, hand in a new form for all additions/changes.
  - A copy of approved proposals will be sent to your home address and the mentor.
  - Note that the module Animal and Human experimentation is compulsory for students who will do animal experiments during one of their research projects.
4. Half way the research project the Education office sends a midterm evaluation form to the supervisor of the research project to verify if the project is proceeding according to plan. If you encounter difficulties of any kind don't hesitate to contact the programme coordinator or study advisor in an earlier stage of the project. If there is a need to adjust the study load of the project the midterm evaluation is the one and only moment to arrangements for extensions of 5-10 ECTS.
5. For the final assessment of research projects an assessment form is available. To complete the dossier for the Board of Examiners the original assessment form together with a hard copy version of the report is handed in at the Education office. The final grade will be processed in ProgressWWW only after receiving all the necessary information.
6. For graduation procedures see section 3.5



## **5 Master programme Marine Biology**

### **5.1 Admission**

Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization [Mariene Biologie], or the specialization [Ecologie] plus the modules [Oceanografie] and [Mariene Biologie] 1, are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Marine Biology on that basis.

Holders of a Bachelor's degree in Biology from the University of Groningen with the major [Mariene Biologie] or the major [Ecologie & Evolutie] plus the modules [Biologische oceanografie] and [Mariene biologie] are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Marine Biology on that basis

Students with a comparable bachelor degree from another university may also qualify for admission. However, admission is then granted on an individual basis by the Board of Examiners. The Board of Examiners will check that you have the appropriate qualifications. For international students, a sufficient proficiency in English (IELTS test score of 6.5 or a TOEFL test score of 580 (paper-based)) is also required.

Consult the programme co-ordinator (international students) or the study advisor (Dutch students) to find out whether you qualify for admission.

Before starting with the degree programme, Dutch students with a bachelor degree as mentioned above need to register officially for the degree programme (via [www.studielink.nl](http://www.studielink.nl)). To complete this procedure you need to, pass by the office to obtain a declaration of admission to the final assessment [verklaring toelating afsluitend examen; v.t.a.e.]. Bring a copy of your bachelor's degree with the diploma supplement. If you are there don't forget to ask for:

- the most recent course catalogue of the degree programme,
- access to Nestor organization where much additional information is available.

General information concerning (conditional) admission requirements is presented in section 3.2.

Foreign students can apply via the on line application tool (see [www.rug.nl/prospectivestudents/application/howToApplyadmission](http://www.rug.nl/prospectivestudents/application/howToApplyadmission)) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl).

### **5.2 The content of the degree programme of study**

Marine Biology is an international and highly interdisciplinary field. Students have the opportunity to custom design their study programme, which is strongly research oriented. During the Master's degree programme students have the opportunity to conduct research under the supervision of experienced scientists. Research may be conducted in the field, onboard research vessels and/or in the laboratory. Some examples of laboratory work include studying the influence of ultraviolet radiation on plankton, analysis of dispersal and genetic population structure of seaweeds, seagrasses, fish and invertebrates; or the molecular identification of invasive species. Field work might include studying species interactions across trophic levels in the Wadden Sea or the population dynamics of krill in the Antarctic. Whether you are interested in biological oceanography or coastal marine ecology, there are plenty of opportunities. The learning outcomes of the master's degree programme are described in section 1.2.

### 5.3 The structure of the degree programme of study

The master's programme is research oriented. It has two variants: a research (P-) variant and a policy & management (M-) variant. In their first year all students conduct a research project. Thereafter, they choose either to continue in the P-variant or to enrol in the M-variant.

The P-variant focuses entirely on research to prepare for a career in academia or other research institutes. The study programme therefore mainly consists of research projects, which focus on learning about conducting research by actually doing it. Students will not only independently perform experiments in the laboratory or the field, they will also go through the whole process of conducting science developing skills such as searching for and studying scientific literature, formulating hypotheses, designing and performing experiments, and presenting results.

The M-variant comprises one year of research and one year aimed at the development of policy and management-related understanding and skills to prepare for a career in a company, consultancy or policy organization. This variant is especially for students who are not only interested in science but also in the social and commercial aspects of scientific developments and products. Additional training in interactions with other disciplines, communication with non-scientists and general management skills is also part of this variant.

#### 5.3.1 The research variant

The Research (P) variant mainly consists of independent research, which focuses on learning about conducting research by actually doing it. Students will not only independently conduct experiments in a laboratory, but also gain experience with related issues, such as formulating hypotheses, searching for and studying scientific literature and presenting results.

Requirements for the research variant:

MODULES	CREDITS
colloquium	5 ECTS
electives	≤ 20 ECTS
essay	5 ECTS
optional modules	20 ECTS
research project	40 or ≥ ECTS
research project	30 or ≥ ECTS

Students design their own study programmes according to their interests. However, students must choose a study mentor – an assistant professor or professor from the list in section 8 – to advise them and discuss the contents of their individual study programmes with (section 3.7.2).

In addition to the above scheme the following rules apply to the programme:

- the first research project (preferably the one ≥40 EC) must be performed at the School of Life Sciences, the Royal Netherlands Institute for Sea Research (NIOZ) on Texel, or the Centre for Estuarine and Marine Ecology (NIOO-CEME) in Yerseke, under supervision of one of the examiners.
- The research projects, the colloquium and the essay must deal with different research subjects, must be supervised by a different examiner and must be approved by the Board of Examiners
- Supervisors of research projects, the colloquium, and the essay must be

members of the permanent academic staff of the School of Life Sciences. A PhD student or postdoc may take on the daily supervision, but ultimate responsibility remains with the permanent staff members (see list in section 8).

- The colloquium has an entry requirement. Before it can be started, at least one research project must have been completed. In addition, before starting the second research project, the mark you received for your first project must have been registered in ProgressWWW
- Optional modules are chosen from the list presented in section 8 of this catalogue. The Board of Examiners may permit the student to select one or more modules within the scientific domain of the degree programme from another master's degree programme (from the University of Groningen or from another university).
- electives may be:
  - an extension of a research project with 5-20 ECTS. Propositions for extensions of 10-20 EC must be requested before the start of the research project. Arrangements for extensions of 5-10 EC may also be made during the midterm evaluation,
  - extra master modules (section 8)
  - bachelor modules to repair specific deficiencies (not more than 10 ECTS);
  - a research assignment with a study load of 5-20 ECTS. The learning outcomes of each individual assignment must be described using the special assignment form in addition to the yellow form (see section 5.5)

**All elements in the individual programme must be approved of by the Board of Examiners (use the yellow form).** The assessment framework for colloquium, essay and research projects is set out in the syllabus 'Guidelines for the Master's programme' that will be available at the Education Office.

### **5.3.2 The Policy & Management variant**

For information of the **Policy & Management variant**, see section 4.3.2

### **5.4 Master modules**

Master modules and electives are chosen in consultancy with the mentor. Modules organized by the School of Life Sciences are listed in section 8 of this course catalogue. Up-to-date information about modules will be published on Nestor (*FWN Students Master Biology and Life Science*).

Individual propositions from students will also be considered seriously by the Board of Examiners. Options are open from other departments, other universities in the Netherlands or even abroad.

More extended information about modules within the University of Groningen is found in Ocasys ([www.rug.nl/ocasys](http://www.rug.nl/ocasys)). Ocasys is the course catalogue system of the university. This system contains information about all modules taught in the faculties. The information concerns the modules' contents, their lecturers, the period during which the modules are taught and the compulsory reading lists/literature.

### **5.5 Study planning and procedures**

During the Master's degree programme you must determine for yourself which modules, individual assignments (colloquium and essay) and research projects you plan to do, when and in which order. There are constraints on the content of the programme as described in the previous sections and you have to follow

procedures to make sure your programme is approved of, that you are officially registered for modules and programme etc. Take notice of the following:

1. Before starting with the degree programme you need to register officially for the degree programme (section 5.1) and visit the education office to obtain
  - the most recent course catalogue for the degree programme;
  - access to the Nestor organization where much additional information is available.
2. The modular approach allows students to design an individual, coherent study programme tailored to his/her interest. To ensure the coherency of such an individual programme mentors were assigned by the Board of Examiners to supervise students. Mentors advise students on the contents of their individual programme and the choices that they have to make to prepare for a professional career after graduation (section 3.7.2). Therefore, before you start, you will have to choose a study mentor. Most students will choose a mentor from the research area in which they intend to perform their first research project (see section 8). In order to choose, students must define their field of interest, and thereafter, investigate the research group to which a potential supervisor belongs. Read recent scientific articles and get a feel for the area of activity of the group you hope to be a part of. You are solely responsible for making a first appointment and maintain contact with your mentor during your master's programme.
3. Before the start of their first study element students are to submit a proposal for the individual study programme to the Board of Examiners using a special proposal form (yellow form). This form can be obtained via the Education office. The form, completed and signed by the mentor, has to be submitted at the Education office.
  - It is not required to submit a complete study programme at the start of your studies. However, hand in a new form for all additions/changes.
  - A copy of approved proposals will be sent to your home address and the mentor.
  - Note that the module Animal and Human experimentation is compulsory for students who will do animal experiments during one of their research projects.
4. Half way the research project the Education office sends a midterm evaluation form to the supervisor of the research project to verify if the project is proceeding according to plan. If you encounter difficulties of any kind don't hesitate to contact the programme coordinator or study advisor in an earlier stage of the project. If there is a need to adjust the study load of the project the midterm evaluation is the one and only moment to arrangements for extensions of 5-10 ECTS.
5. For the final assessment of research projects an assessment form is available. To complete the dossier for the Board of Examiners the original assessment form together with a hard copy version of the report is handed in at the Education office. The final grade will be processed in ProgressWWW only after receiving all the necessary information.
6. For graduation procedures see section 3.5.

## **6 Master programme Ecology and Evolution**

### **6.1 Admission**

#### **6.1.1 Regular programme**

Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization [Ecologie] or [Mariene Biologie] are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Ecology & Evolution on that basis.

Holders of a Bachelor's degree in Biology from the University of Groningen with the major [Ecologie & Evolutie] or [Mariene Biologie] are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Ecology & Evolution on that basis.

Students with a comparable bachelor degree from another university may also qualify for admission. However, admission is then granted on an individual basis by the Board of Examiners. The Board of Examiners will check that you have the appropriate qualifications. For international students, a sufficient proficiency in English (IELTS test score of 6.5 or a TOEFL test score of 580 (paper-based)) is also required.

Consult the programme co-ordinator (international students) or the study advisor (Dutch students) to find out whether you qualify for admission.

Before starting with the degree programme, Dutch students with a bachelor degree as mentioned above need to register officially for the degree programme (via [www.studielink.nl](http://www.studielink.nl)). To complete this procedure you need to, pass by the office to obtain a declaration of admission to the final assessment [verklaring toelating afsluitend examen; v.t.a.e.]. Bring a copy of your bachelor's degree with the diploma supplement. If you are there don't forget to ask for:

- the most recent course catalogue of the degree programme,
  - access to Nestor organization where much additional information is available.
- General information concerning (conditional) admission requirements is presented in section 3.2.

Foreign students can apply via the on line application tool (see [www.rug.nl/prospectivestudents/application/howToApplyadmission](http://www.rug.nl/prospectivestudents/application/howToApplyadmission) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl)).

#### **6.1.2 Top programme Evolutionary Biology**

Admission to the Top programme Evolutionary Biology is highly selective. Successful candidates must demonstrate that their motivation and cognitive skills are well above average. Top programme Evolutionary Biology admission requirements comprise:

- 1) a relevant bachelor's degree;
- 2) sufficient knowledge of the English language which can be proved by
  - Cambridge Certificate of Proficiency in English (A, B or C);
  - Cambridge Certificate in Advanced English (A, B or C);
  - an overall score of 6.5 or higher in the International English Language Testing System (Academic version);
  - a score of at least 580 on the paper-based form of the Test of English as a Foreign Language;
  - a score of at least 237 on the computer-based form of the Test of English as a Foreign Language;

- a score of at least 92 on the internet-based form of the Test of English as a Foreign Language.
- 3) sufficient knowledge of the relevant sciences;
- 4) a suitable attitude, motivation and talent to follow the top programme.

Foreign students apply Foreign students can apply via the on line application tool ([www.rug.nl/fwn/onderwijs/masteropleidingen/topmasters/application](http://www.rug.nl/fwn/onderwijs/masteropleidingen/topmasters/application) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl)).

Dutch students deliver the following to the Education office:

- a completed application form;
- a complete curriculum vitae;
- a survey of the study results attained in academic courses so far;
- a letter in which the student states why s/he wants to follow this top programme in particular, what his/her expectations and ambitions are;
- (if desired) results of former research projects, like reports or articles;
- the names of three scientists willing to provide personal information on the applicant;
- (if desired) other documents that the student thinks useful in furthering his/her application.

Excellent MSc students from Ecology & Evolution and Marine Biology may apply during their first year for the Top Programme Evolutionary Biology.

## **6.2 The content of the degree programme of study**

Within the master Ecology and Evolution there are four main fields of interest: *Evolutionary Ecology & Genetics*. A central issue in evolutionary biology concerns the importance of genetic variation: how do genetic variation and natural selection result in reproductive systems, adaptation of organisms to their environment and the emergence of new species? We will try to answer this question by means of an experimental, molecular approach (genomics) and via model-based studies.

*Behavioural Ecology & Ecophysiology*. Both the morphology and physiology of an organism and its behaviour are formed by selection. Behaviour – for example the timing of reproduction, partner choice and time and route of bird migration – and physiology – for example the degree of plasticity to regulate energy use and temperature – are products of evolution. Theoretical models are paired with experimental ones to study these issues, both in the field and in the laboratory. *Conservation Biology*. Small populations are threatened with extinction because their habitat is fragmented. Whether these populations will indeed die out depends on their genetic structure, demography, dynamics of distribution, etc. This type of research is important, for example, for the restoration of nature reserves or the development of sustainable fishery. Examples of research projects include the effects of genetic erosion in fruit flies and the seed dispersal of plants in the Wadden area.

*Community Ecology*. Species and individuals living in the same area interact with each other and with their environment. Processes of physiological adaptations and restrictions, competition, grazing, predation and succession can change a group of individuals into a community. Combining field observations, laboratory experiments and theoretical models can give us a better understanding of the mechanisms that are active in nature. The learning outcomes of the master's degree programme are described in section 1.2.

The Top programme Evolutionary Biology is embedded in the Master's degree programme Ecology & Evolution and explores the interface between ecology and evolution. Students can benefit from a wide spectrum of national and international expertise across the fields of ecology and evolution. The Top programme in Evolutionary Biology adheres to the same learning outcomes as the regular programme (section 1.2) but students follow a programme that is challenging both in content and time constraints.

### **6.3 The structure of the degree programme of study**

The master's programme is research oriented. It has two variants: a research (P-) variant and a policy & management (M-) variant. In their first year all students conduct a research project. Thereafter, they choose either to continue in the P-variant or to enrol in the M-variant.

The P-variant focuses entirely on research to prepare for a career in academia or other research institutes. The study programme therefore mainly consists of research projects, which focus on learning about conducting research by actually doing it. Students will not only independently perform experiments in the laboratory or the field, they will also go through the whole process of conducting science developing skills such as searching for and studying scientific literature, formulating hypotheses, designing and performing experiments, and presenting results.

The M-variant comprises one year of research and one year aimed at the development of policy and management-related understanding and skills to prepare for a career in a company, consultancy or policy organization. This variant is especially for students who are not only interested in science but also in the social and commercial aspects of scientific developments and products. Additional training in interactions with other disciplines, communication with non-scientists and general management skills is also part of this variant.

#### **6.3.1 The research variant**

The Research (P) variant mainly consists of independent research, which focuses on learning about conducting research by actually doing it. Students will not only independently conduct experiments in a laboratory, but also gain experience with related issues, such as formulating hypotheses, searching for and studying scientific literature and presenting results.

Requirements for the research variant:

MODULES	CREDITS
colloquium	5 ECTS
electives	≤ 20 ECTS
essay	5 ECTS
optional modules	20 ECTS
research project	40 or ≥ ECTS
research project	30 or ≥ ECTS

Students design their own study programmes according to their interests. However, students must choose a study mentor – an assistant professor or professor from the list in section 8 – to advise them and discuss the contents of their individual study programmes with (section 3.7.2).

In addition to the above scheme the following rules apply to the programme:

- the first research project (preferably the one  $\geq 40$  EC) must be performed at the School of Life Sciences or associated institutes, under supervision of one of the examiners.
- The research projects, the colloquium and the essay must deal with different research subjects, must be supervised by a different examiner and must be approved by the Board of Examiners
- Supervisors of research projects, the colloquium, and the essay must be members of the permanent academic staff of the School of Life Sciences. A PhD student or postdoc may take on the daily supervision, but ultimate responsibility remains with the permanent staff members (see list in section 8).
- The colloquium has an entry requirement. Before it can be started, at least one research project must have been completed. In addition, before starting the second research project, the mark you received for your first project must have been registered in ProgressWWW
- Optional modules are chosen from the list presented in section 8 of this catalogue. The Board of Examiners may permit the student to select one or more modules within the scientific domain of the degree programme from another master's degree programme (from the University of Groningen or from another university).
- electives may be:
  - an extension of a research project with 5-20 ECTS. Propositions for extensions of 10-20 EC must be requested before the start of the research project. Arrangements for extensions of 5-10 EC may also be made during the midterm evaluation,
  - extra master modules (section 8)
  - bachelor modules to repair specific deficiencies (not more than 10 ECTS);
  - a research assignment with a study load of 5-20 ECTS. The learning outcomes of each individual assignment must be described using the special assignment form in addition to the yellow form (see section 6.5)

**All elements in the individual programme must be approved of by the Board of Examiners (use the yellow form).** The assessment framework for colloquium, essay and research projects is set out in the syllabus 'Guidelines for the Master's programme' that is available from the Education Office.

### **6.3.2 The Policy & Management variant**

For information of the Policy & Management variant, see section 4.3.2

### **6.3.3 Top programme Evolutionary Biology**

Students within the Top programme Evolutionary Biology generally follow the P-variant scheme but have to pass the following Top programme modules which are challenging both in content and time constraints

- Adaptation, Biocomplexity and Conservation; 8 ECTS
- Theoretical Ecology and Evolution; 8 ECTS
- Phylogenetics and Genomics in Ecology; 8 ECTS

In addition to these two seminar series of 2 ECTS each are required. These are chosen from a list of the "current/classic themes" seminar series.

The essay in this case is a literature study written in the form of a review article or a research proposal.

Because of the 28 ECTS obligatory modules the study load of the electives is  $\leq 12$  ECTS which can be used for modules, research or individual assignments

The assessment framework for colloquium, essay and research projects is more elaborate than the one used in the regular masters and is set out in the syllabus 'Guidelines for the Top programme Evolutionary Biology' that will be given to you at the start of the programme

#### **6.4 Master modules**

Master modules and electives are chosen in consultancy with the mentor. Modules organized by the School of Life Sciences are listed in section 8 of this course catalogue. Up-to-date information about modules will be published on Nestor (FWN Students Master Biology and Life Science).

Individual propositions from students will also be considered seriously by the Board of Examiners. Options are open from other departments, other universities in the Netherlands or even abroad.

More extended information about modules within the University of Groningen is found in Ocasys ([www.rug.nl/ocasys](http://www.rug.nl/ocasys)). Ocasys is the course catalogue system of the university. This system contains information about all modules taught in the faculties. The information concerns the modules' contents, their lecturers, the period during which the modules are taught and the compulsory reading lists/literature.

#### **6.5 Study planning and procedures**

During the Master's degree programme you must determine for yourself which modules, individual assignments (colloquium and essay) and research projects you plan to do, when and in which order. There are constraints on the content of the programme as described in the previous sections and you have to follow procedures to make sure your programme is approved of, that you are officially registered for modules and programme etc. Take notice of the following:

1. Before starting with the degree programme you need to register officially for the degree programme (section 6.1) and visit the education office to obtain
  - the most recent course catalogue for the degree programme;
  - access to the Nestor organization where much additional information is available.
2. The modular approach allows students to design an individual, coherent study programme tailored to his/her interest. To ensure the coherency of such an individual programme mentors were assigned by the Board of Examiners to supervise students. Mentors advise students on the contents of their individual programme and the choices that they have to make to prepare for a professional career after graduation.  
Top programme students choose their mentor at the end of the first semester during which they have plenty of time to get to know the mentors. (During the first semester the degree programme coordinator will be the one to turn to when you have questions about the programme). Students in the regular programme already have to choose a mentor before they start.  
Most students will choose a mentor from the research area in which they intend to perform their first research project (see section 8). In order to choose, students must define their field of interest, and thereafter, investigate the research group to which a potential supervisor belongs. Read recent scientific articles and get a feel for the area of activity of the group you hope to be a part of.

You are solely responsible for making a first appointment and maintain contact with your mentor during your master's programme.

3. Before the start of their first study element students are to submit a proposal for the individual study programme to the Board of Examiners using a special proposal form (yellow form). This form can be obtained via the Education office. The form, completed and signed by the mentor, has to be submitted at the Education office.
  - It is not required to submit a complete study programme at the start of your studies. However, hand in a new form for all additions/changes.
  - A copy of approved proposals will be sent to your home address and the mentor.
  - Note that the module Animal and Human experimentation is compulsory for students who will do animal experiments during one of their research projects.
4. Half way the research project the Education office sends a midterm evaluation form to the supervisor of the research project to verify if the project is proceeding according to plan. If you encounter difficulties of any kind don't hesitate to contact the programme coordinator or study advisor in an earlier stage of the project. If there is a need to adjust the study load of the project the midterm evaluation is the one and only moment to arrangements for extensions of 5-10 ECTS.
5. For the final assessment of research projects an assessment form is available. To complete the dossier for the Board of Examiners the original assessment form together with a hard copy version of the report is handed in at the Education office. The final grade will be processed in ProgressWWW only after receiving all the necessary information.
6. For graduation procedures see section 3.5

## 7 Master programme Molecular Biology and Biotechnology

### 7.1 Admission

#### 7.1.1 Regular programme

- Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization [Moleculaire Biologie] or [Biotechnologie], specialization [Medische biologie] plus the modules [Algemene chemie] and [Bioinformatica] are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Molecular Biology & Biotechnology on that basis. Holders of a Bachelor's degree in Biology or a Bachelor's degree in Life Science & Technology from the University of Groningen with the major [Moleculaire Levenswetenschappen], major [Biomedische wetenschappen] or the combination of the major [Gedrag en Neurowetenschappen] and the minor [Moleculaire Levenswetenschappen], are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Molecular Biology and Biotechnology on that basis.
- Holders of a Bachelor's degree in Chemistry with specialization Biochemistry or Biophysical Chemistry are admitted to this master's programme.
- Holders of the Bachelor's degree in Life Science and Technology, specialization Genomics & Proteomics or Molecular Medical Cell biology are admitted into this master's programme

Students with a comparable bachelor degree from another university may also qualify for admission. However, admission is then granted on an individual basis by the Board of Examiners. The Board of Examiners will check that you have the appropriate qualifications. For international students, a sufficient proficiency in English (IELTS test score of 6.5 or a TOEFL test score of 580 (paper-based)) is also required.

Consult the programme co-ordinator (international students) or the study advisor (Dutch students) to find out whether you qualify for admission.

Before starting with the degree programme, Dutch students with a bachelor degree as mentioned above need to register officially for the degree programme (via [www.studielink.nl](http://www.studielink.nl)). To complete this procedure you need to, pass by the office to obtain a declaration of admission to the final assessment [verklaring toelating afsluitend examen; v.t.a.e.]. Bring a copy of your bachelor's degree with the diploma supplement. If you are there don't forget to ask for:

- the most recent course catalogue of the degree programme,
- access to the Nestor organization where much additional information is available.

General information concerning (conditional) admission requirements is presented in section 3.2.

Foreign students can apply via the on line application tool (see [www.rug.nl/prospectivestudents/application/howToApplyadmission](http://www.rug.nl/prospectivestudents/application/howToApplyadmission) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl)).

#### 7.1.2 Top programme Biomolecular Sciences

Admission to the Top programme Biomolecular Sciences is highly selective. Successful candidates must demonstrate that their motivation and cognitive skills are well above average. Top programme Biomolecular Sciences admission

requirements comprise:

- 1) a relevant bachelor's degree;
- 2) sufficient knowledge of the English language which can be proved by
  - Cambridge Certificate of Proficiency in English (A, B or C);
  - Cambridge Certificate in Advanced English (A, B or C);
  - an overall score of 6.5 or higher in the International English Language Testing System (Academic version);
  - a score of at least 580 on the paper-based form of the Test of English as a Foreign Language;
  - a score of at least 237 on the computer-based form of the Test of English as a Foreign Language;
  - a score of at least 92 on the internet-based form of the Test of English as a Foreign Language.
- 3) sufficient knowledge of the relevant sciences;
- 4) a suitable attitude, motivation and talent to follow the top programme.

Foreign students apply Foreign students can apply via the on line application tool ([www.rug.nl/fwn/onderwijs/masteropleidingen/topmasters/application](http://www.rug.nl/fwn/onderwijs/masteropleidingen/topmasters/application) or contact the admission office at [admissions@rug.nl](mailto:admissions@rug.nl)).

Dutch students deliver the following to the Education office:

- a completed application form;
- a complete curriculum vitae;
- a survey of the study results attained in academic courses so far;
- a letter in which the student states why s/he wants to follow this top programme in particular, what his/her expectations and ambitions are;
- (if desired) results of former research projects, like reports or articles;
- the names of three scientists willing to provide personal information on the applicant;
- (if desired) other documents that the student thinks useful in furthering his/her application.

Excellent MSc students from Molecular Biology & Biotechnology may apply during their first year for the Top Programme Biomolecular Sciences.

## **7.2 The content of the degree programme of study**

Research within the master Molecular Biology and Biotechnology is in the field of biomolecular sciences, with a strong focus on proteins. The aim is to fully understand regulation, the structure and dynamics of proteins in relation to their function and activity in living cells and to obtain an understanding of the fundamental properties of proteins and microorganisms that are relevant for application in health and bio(nano)-technology. Through Synthetic Biology, this fundamental knowledge is combined with that of other disciplines to design and develop novel functional biological and semi-artificial systems. The research is primarily fundamental and curiosity-driven; it is often multidisciplinary and collaborative with specialization in the following key areas:

- Systems biology of microorganisms
- Molecular cell biology
- Membrane proteins
- Structure-function relationship of proteins
- Microbial biotechnology and biocatalysis
- Chemical and synthetic biology

Within these six key research themes, various research questions address processes that relate to human health and disease development. These include:

- i) research on peroxisome homeostasis with the aim of understanding the biogenesis, ageing and turnover of peroxisomes in yeasts, being a suitable model for peroxisome-related diseases,
- ii) the analysis of stem cell differentiation and programmed cell death in relation to cancer research and tissue regeneration,
- iii) the production and modification of (synthetic) antibiotics with respect to demand for new antibiotics, and
- iv) the study on proteins involved in drug resistance, virulence and microbial infections.

The learning outcomes of the master's degree programme are described in section 1.2.

The Top programme Biomolecular Sciences is embedded in the Master's degree programme Molecular Biology & Biotechnology and explores the same key research themes. During the Top programme in Biomolecular Sciences, students acquire top quality research competences in such a way that they become highly attractive for a research career in the area of Biomolecular Sciences and often will continue this by subsequently starting PhD research. The Top programmes Biomolecular Sciences do adhere to the same learning outcomes as the regular programme (section 1.2) but students follow a programme that is challenging both in content and time constraints.

### **7.3 The structure of the degree programme of study**

The master's programme is research oriented. It has two variants: a research (P-) variant and a policy & management (M-) variant. In their first year all students conduct a research project. Thereafter, they choose either to continue in the P-variant or to enrol in the M-variant.

The P-variant focuses entirely on research to prepare for a career in academia or other research institutes. The study programme therefore mainly consists of research projects, which focus on learning about conducting research by actually doing it. Students will not only independently perform experiments in the laboratory or the field, they will also go through the whole process of conducting science developing skills such as searching for and studying scientific literature, formulating hypotheses, designing and performing experiments, and presenting results.

The M-variant comprises one year of research and one year aimed at the development of policy and management-related understanding and skills to prepare for a career in a company, consultancy or policy organization. This variant is especially for students who are not only interested in science but also in the social and commercial aspects of scientific developments and products. Additional training in interactions with other disciplines, communication with non-scientists and general management skills is also part of this variant.

#### **7.3.1 The research variant**

The Research (P) variant mainly consists of independent research, which focuses on learning about conducting research by actually doing it. Students will not only independently conduct experiments in a laboratory, but also gain experience with related issues, such as formulating hypotheses, searching for and studying

scientific literature and presenting results.

Requirements for the research variant:

MODULES	CREDITS
colloquium	5 ECTS
electives	≤ 20 ECTS
essay	5 ECTS
optional modules	20 ECTS
research project	40 or ≥ ECTS
research project	30 or ≥ ECTS

Students design their own study programmes according to their interests.

However, students must choose a study mentor – an assistant professor or professor from the list in section 8 – to advise them and discuss the contents of their individual study programmes with (section 3.7.2).

In addition to the above scheme the following rules apply to the programme:

- the first research project (preferably the one ≥40 EC) must be performed at the School of Life Sciences, School of Natural Sciences & Technology or the University Medical Center Groningen under supervision of one of the examiners.
- The research projects, the colloquium and the essay must deal with different research subjects, must be supervised by a different examiner and must be approved by the Board of Examiners
- Supervisors of research projects, the colloquium, and the essay must be members of the permanent academic staff of the School of Life Sciences. A PhD student or postdoc may take on the daily supervision, but ultimate responsibility remains with the permanent staff members (see list in section 8).
- The colloquium has an entry requirement. Before it can be started, at least one research project must have been completed. In addition, before starting the second research project, the mark you received for your first project must have been registered in ProgressWWW
- Optional modules are chosen from the list presented in section 8 of this catalogue. The Board of Examiners may permit the student to select one or more modules within the scientific domain of the degree programme from another master's degree programme (from the University of Groningen or from another university).
- electives may be:
  - an extension of a research project with 5-20 ECTS. Propositions for extensions of 10-20 EC must be requested before the start of the research project. Arrangements for extensions of 5-10 EC may also be made during the midterm evaluation,
  - extra master modules (section 8)
  - bachelor modules to repair specific deficiencies (not more than 10 ECTS);
  - a research assignment with a study load of 5-20 ECTS. The learning outcomes of each individual assignment must be described using the special assignment form in addition to the yellow form (see section 5.5)

**All elements in the individual programme must be approved of by the Board of Examiners (use the yellow form).** The assessment framework for colloquium, essay and research projects is set out in the syllabus 'Guidelines for the Master' programme' that is available from the Education Office.

### **7.3.2 The Policy & Management variant**

For information of the Policy & Management variant, see section 4.3.2

### **7.3.2 Top programme Biomolecular Sciences**

Students within the Top programme Biomolecular sciences generally follow the P-variant scheme but have to pass the following Top programme modules which are challenging both in content and time constraints

- GBB Introduction + Introduction to membrane proteins and Bioinformatics; 2 ECTS
- Advances in signal transduction; 5 ECTS
- Genomics and proteomics; 5 ECTS
- Organelle biogenesis and assembly of membrane protein complexes; 5 ECTS
- Modelling and molecular dynamics of membranes and proteins ; 5 ECTS
- Catalysis and engineering of (membrane) proteins; 5 ECTS
- Advanced protein crystallography; 5 ECTS

The essay in this case is a literature study written in the form of a research proposal.

Because of the 32 ECTS obligatory modules the study load of the electives is ≤8 ECTS which can be used for modules, research or individual assignments

The assessment framework for colloquium, essay and research projects is more elaborate from the one used in the regular masters and is set out in the syllabus 'Guidelines for the Top programme Biomolecular Sciences that will given to you at the start of the programme.

## **7.4 Master modules**

Master modules and electives are chosen in consultancy with the mentor. Modules organized by the School of Life Sciences are listed in section 8 of this course catalogue. Up-to-date information about modules will be published on Nestor (*FWN Students Master Biology and Life Science*).

Individual propositions from students will also be considered seriously by the Board of Examiners. Options are open from other departments, other universities in the Netherlands or even abroad.

More extended information about modules within the University of Groningen is found in Ocasys ([www.rug.nl/ocasys](http://www.rug.nl/ocasys)). Ocasys is the course catalogue system of the university. This system contains information about all modules taught in the faculties. The information concerns the modules' contents, their lecturers, the period during which the modules are taught and the compulsory reading lists/literature.

## **7.5 Study planning and procedures**

During the Master's degree programme you must determine for yourself which modules, individual assignments (colloquium and essay) and research projects you plan to do, when and in which order. There are constraints on the content of the programme as described in the previous sections and you have to follow procedures to make sure your programme is approved of, that you are officially registered for modules and programme etc. Take notice of the following:

1. Before starting with the degree programme you need to register officially for the degree programme (section 7.1) and visit the education office to obtain
  - the most recent course catalogue for the degree programme;
  - access to the Nestor organization where much additional information is available.

2. The modular approach allows students to design an individual, coherent study programme tailored to his/her interest. To ensure the coherency of such an individual programme mentors were assigned by the Board of Examiners to supervise students. Mentors advise students on the contents of their individual programme and the choices that they have to make to prepare for a professional career after graduation (section 3.7.2).  
Top programme students choose their mentor at the end of the first semester during which they have plenty of time to get to know the mentors. (During the first semester the degree programme coordinator will be the one to turn to when you have questions about the programme). Students in the regular programme already have to choose a mentor before they start.  
Most students will choose a mentor from the research area in which they intend to perform their first research project (see section 8). In order to choose, students must define their field of interest, and thereafter, investigate the research group to which a potential supervisor belongs. Read recent scientific articles and get a feel for the area of activity of the group you hope to be a part of.  
You are solely responsible for making a first appointment and maintain contact with your mentor during your master's programme.
3. Before the start of their first study element students are to submit a proposal for the individual study programme to the Board of Examiners using a special proposal form (yellow form). This form can be obtained via the Education office. The form, completed and signed by the mentor, has to be submitted at the Education office.
  - It is not required to submit a complete study programme at the start of your studies. However, hand in a new form for all additions/changes.
  - A copy of approved proposals will be sent to your home address and the mentor.
  - Note that the module Animal and Human experimentation is compulsory for students who will do animal experiments during one of their research projects.
4. Half way the research project the Education office sends a midterm evaluation form to the supervisor of the research project to verify if the project is proceeding according to plan. If you encounter difficulties of any kind don't hesitate to contact the programme coordinator or study advisor in an earlier stage of the project. If there is a need to adjust the study load of the project the midterm evaluation is the one and only moment to arrangements for extensions of 5-10 ECTS.
5. For the final assessment of research projects an assessment form is available. To complete the dossier for the Board of Examiners the original assessment form together with a hard copy version of the report is handed in at the Education office. The final grade will be processed in ProgressWWW only after receiving all the necessary information.
6. For graduation procedures see section 3.5

## 8 Modules and Mentors

### 8.1 Study methods

**Lectures** Theoretical parts of the programmes usually are treated in lectures. Theory is explained and illustrated with applications.

**Tutorials** [werkcolleges] In many cases lectures will be complemented with tutorials or exercise classes. Small groups of students make exercises or discuss difficulties under the direction of a lecturer.

**Practicals** Practical are an important part of the studies. The practicals are composed of experiments lasting one or more days or they are complete projects, depending on the phase of the studies.

**Research project** Research projects are a part of the study in which experimental and/or theoretical and/or descriptive scientific research is carried out at the university, a company or a government organization. Each research project should be concluded by a written report and an oral presentation for the research group.

A research project comprises at least 30 EC (including report, talk, discussion, etc.) and should be carried out under daily supervision of a permanent academic staff member of the school of life sciences or associated institutes. Depending on the chosen variant, a second research project, can be part of the programme. The second research project should treat a different subject and should be guided by a different supervisor. Guidelines for research projects and the assessments are on Nestor.

**Internship** An internship (traineeship) is an essential part of the Policy & Management variant. The goal of the traineeship is to learn the organization and methods of a company or public authority, where results of medical pharmaceutical oriented researches are put into practice. An assignment will be done in such an organization and is always accompanied by an external guide. However, the final responsibility lies by an academic staff member of the school of life sciences.

**Colloquium and essay** The Master's degree programme is concluded with a colloquium and an essay. A relative short time (3.5 weeks) is available to study a certain aspect of the scientific domain of the masters programme is treated thoroughly. The results of the literature research are written down in an essay (thesis) or presented in a talk (colloquium). It is important that the subjects do not have overlap with the research projects. Guidelines for colloquium and essay are on Nestor. For Top programmes there are different guidelines for assessment.

### 8.2 Master modules

Master modules are chosen in consultancy with a mentor (section 3.7.2). Master modules usually serve as preparation for the research projects. However, student can freely choose from the list presented here. Up-to-date information about modules will be published on Nestor.

The following list presents optional modules and electives@. The column on the right indicates the master's programmes for which the modules were developed in particular. B: Biology, BN: specialization Behaviour and Neurosciences in the

master's programme Biology, EE: Ecology and Evolution, MB: Marine Biology, MBB: Molecular Biology and Biotechnology. (w.t. = working title)

*@The list below differs slightly from the one in the rules and regulations in section 9. Some working titles were adjusted and decisions made by the board of examiners were implemented. These changes are in italics. Unless indicated otherwise modules may be part of your programme either as "optional modules" or as "electives".*

**General modules within the school of Life Sciences:**

Module	ECTS	entry requirements	examination	practical	programme
Animal and human experimentation: Design, Practice and Ethics	5	-	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB
Orientation on International Scientific Careers	5	-	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB
Radioisotopes in experimental biology	5	-	laboratory skills, written exam	x	B, BN, EE, MB, MBB
Advanced statistics (w.t.)	5	*	written exam	x	B, BN, EE, MB, MBB
Programming C++	5	-	assignment	x	B, BN, EE, MB, MBB

**Modules organised by the research institute CEES:**

Module	ECTS	entry requirements	examination	practical	programme
Current themes seminar series	2	-	assignments	x	B, EE, MB
Groningen lectures in theoretical biology	2-6		Written report		B, BN, EE, MB
<i>CEES lectures</i>	2	-	<i>participation</i>		<i>B, EE, MB</i>
Mathematical models in ecology and evolution	6	*	Written exam		B, BN, EE, MB
Selforganisation, cognition and Social Systems	5	*	assignments	x	B, EE, MB,
Ecosystems Mediterranean rocky shores (w.t.)	5	*	Assignments	x	MB
<i>The function of marine biodiversity</i> (Marine community ecology)	5		Assignments	x	B, EE, MB

\*For entry requirements see module description in Ocasys

<sup>a</sup> These modules are instructed in Dutch.

**Modules organised by the research institute CBN:**

Module	ECTS	entry requirements	examination	practical	programme
Advanced imaging techniques (w.t.)	5	*	written exam, oral presentation	x	B, BN
Neurodegenerative diseases	5	*	written exam, oral presentation	x	B, BN
Behavioural pharmacology	5	-	written exam, oral presentation	x	B, BN
<i>Introduction to the Behavioural and Cognitive Neurosciences</i> (Introduction BCN)	4	-	written reports	x	B, BN
Current themes in inflammation and cancer	5	immunologie I	written exam, oral presentation	x	B, BN, MBB
Advanced metabolism & nutrition (w.t.)	5	metabolisme & voeding	written exam, assignment	x	B, BN
Nutrigenomics research	5	metabolisme & voeding	written exam, assignment	x	B
Current themes in healthy aging	5	-	written reports, oral presentation	x	B, BN, MBB
<i>Stem cells &amp; regenerative medicine</i> (Stem cells & tissue engineering)	5	regenerative medicine or moleculaire biologie & medische biologie, or immunologie I	written report oral presentation,	x	B, MBB
Immunology: from bed side to bench and back (w.t.)	5	immunologie I+II	written exam, oral presentation, report	x	B

\*For entry requirements see module description in Ocasys

<sup>a</sup> These modules are instructed in Dutch.

**Modules organised by the research institute GBB:**

Module	ECTS	entry requirements	examination	practical	programme
Advanced protein crystallography	5	-	Written exam, oral presentation	x	B, MBB
Protein crystallography 2	5	-	Written exam	X	B, MBB
Multidimensional NMR 2	5	-	Written exam, oral presentation	x	B, MBB
Electron microscopy of biological macromolecules	5	-	Written exam, oral presentation	x	B, MBB
DNA microarray analysis oral presentation	5	*	Written exam,	x	B, BN, EE, MB, MBB
Introduction to membrane proteins and Bioinformatics	2	*	Written exam, oral presentation	x	B, MBB
Advances in signal transduction	5	*	Written exam, oral presentation	x	B, MBB
Advanced genomics and proteomics	5	*	Written exam, oral presentation	x	B, MBB
Organelle and membrane biogenesis	5	*	Written exam, oral presentation	x	B, MBB
Molecular Dynamics and modeling of Membranes and Proteins	5	*	Written exam, oral presentation	x	B, MBB
Protein and Enzyme Engineering by Mutagenesis and Directed Evolution	5	*	Written exam, oral presentation	x	B, MBB
Biocatalysis & green chemistry	5	*	Written exam, assignments		B, MBB
Topics in Enzymology	5	-	Written exam	x	B, BMS, MBB, MPS

**Modules organised by Sciences and Society:**

Module	ECTS	entry requirements	examination	practical	programme
<i>Beleid &amp; Bedrijf<sup>a</sup></i>	10,20	-	assignments	x	B, BN, EE, MB, MBB
<i>Stagetraject bedrijf en beleid<sup>a</sup></i>	40	<i>Beleid &amp; Bedrijf<sup>a</sup></i>	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB

\*For entry requirements see module description in Ocasys

<sup>a</sup> These modules are instructed in Dutch.

**Modules organised by Education and Communication<sup>2</sup>:**

Module	ECTS	entry requirements	examination	practical	programme
Communiceren en presenteren (compres)	5	-	assignments	x	B, BN, EE, MB, MBB
Ontwerpen	10	*	assignments	x	B, BN, EE, MB, MBB
Wetenschap media en publiek	10	*	assignments	x	B, BN, EE, MB, MBB
Inleiding onderzoeksmethoden	5	*	assignments	x	B, BN, EE, MB, MBB

**Modules organised by Energy and Environmental sciences:**

Module	ECTS	entry requirements	examination	practical	programme
Introduction energy and environmental studies I	5	-	assignments	x	B, EE, MB
Resources and sustainable development	15	*	assignments	x	B, EE, MB

**8.3 List of Mentors:****Behaviour and Neurosciences**

Beersma, Prof. D.G.M.	Chronobiology
Dijk, Prof. G. van	Neuroendocrinology
Groothuis, Prof. A.G.G.	Behavioural Biology
Koolhaas, Prof. J.M.	Behavioural Physiology
Luiten, Prof. P.G.M.	Molecular Neurobiology
Scheurink, Prof. A.J.W.	Neuroendocrinology
Zee, Prof. E.A. van der	Molecular Neurobiology

**Ecology and Evolution**

Beukeboom, Prof. L.W.	Evolutionary Genetics
Bijlsma, Prof. R.	Theoretical Biology
Elsas, Prof. J.D.	Microbial Ecology
Elzenga, Prof. J.T.M.	Plant Physiology
Hemelrijk, Prof. C.K.	Theoretical Biology
Kok, Dr. L.J. de	Plant Physiology
Komdeur, Prof. J.	Animal Ecology
Olf, Prof. H.	Community & Conservation ecology
Piersma, Prof. J.	Animal Ecology
Pen, Prof. I.R.	Theoretical Biology
Tinbergen, Prof. J.M.	Animal Ecology
Weissing, Prof. F.J.	Theoretical Biology

### Marine Biology

Baar, Prof. H.J.W. de	Ocean Ecosystems
Buma, Prof. A.G.J.	Ocean Ecosystems
Stam, Prof. W.T.	Marine Benthic Ecology & Evolution
Stamhuis, Prof. Dr. E.J.	Ocean Ecosystems
Olsen, Prof. J.L.	Marine Benthic Ecology and Evolution

### Molecular biology & Biotechnology

Dijkhuizen, Prof. L.	Microbial Physiology
Dijkstra, Prof. B.W.	X-ray Crystallography
Driessen, Prof. A.J.M.	Molecular Microbiology
Eggen, Dr. B.J.L.	Developmental Genetics
Fraaije, Prof. M.W.	Biotechnology
Haastert, Prof. P.J.M. van	Cell Biology
Jansen, Prof. R.C.	Bioinformatics
Klei, Prof. I.J. van der	Molecular Cell Biology
Kok, Prof. J.	Molecular Genetics
Kuipers, Prof. O.P.	Molecular Genetics
Linskens, Dr. M.H.K.	Cell Biology/ Isotope Laboratory
Poolman, Prof. B.	Enzymology

## 8.4 list of permanent staff and member of the Board of Examiners

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**Centre for Ecological and Evolutionary Studies (CEES)**

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## 9 Regulations

### Introduction

Dutch university education is governed by national law and local rules and regulations.

The most important of the local rules and regulations is the Teaching and Examinations Regulations [Onderwijs- en examenregeling, abbreviated OER].

The master programmes are recorded in the Official Registry CROHO (*Centraal Register Opleidingen Hoger Onderwijs*). The registration numbers are:.

Biology (Biologie)	66860
Ecology & Evolution (Ecologie & Evolutie):	60365
Marine Biology (Mariene Biologie):	60609
Molecular Biology & Biotechnology:	60612

The study load of the programmes is expressed using the European Credit Transfer System (ECTS), a way of measuring and comparing learning achievements used throughout the European Union.

### 9.1 Teaching and Examination Regulations 2009 – 2010 [OER]

#### Contents

1. General provisions
2. Structure of the degree programme
3. Examinations and final assessment in the degree programme
4. Selection procedure
5. Tutoring
6. Final provisions

#### Section 1 General provisions

##### **Article 1.1 Applicability**

These Regulations apply to the modules and final assessment of the Master's degree programmes in Biology, Ecology and Evolution, Marine Biology, Molecular Biology and Biotechnology, either one hereinafter referred to as 'the degree programme'. The degree programmes are organised by the Faculty of Mathematics and Natural Sciences of the University of Groningen.

##### **Article 1.2 Definitions**

The following definitions apply to these Regulations:

- a. the Act: *Wet op het Hoger Onderwijs en Wetenschappelijk onderzoek* [Higher Education and Research Act].
- b. student: a person enrolled at the university for the purpose of taking modules and/or examinations and the final assessment leading to the conferral of a university degree.
- c. module: a teaching unit or other part of the degree programme within the meaning of the Act.
- d. practical: a practical exercise, as referred to in Art. 7.13 of the Act, in one of the following forms:
  - research or assignments
  - participation in a field trip or excursion
  - participation in a project
  - completion of an internship or traineeship
  - participation in another educational activity designed to teach certain skills

## 9.1 Teaching and Examination Regulations

- a written report of a research project
  - a written final degree project
  - a written thesis, paper or draft.
- e. final assessment: the final assessment of the degree programme.
- f. ECTS: credits in accordance with the European Credit Transfer and Accumulation System (1 ECTS equals 28 hours of study).
- g. semester: part of the academic year, either commencing on 1 September and ending on a date to be determined by the Executive Board on or around 31 January, or commencing on the aforementioned date determined by the Executive Board and ending on 31 August.
- h. course catalogue: a document containing information about the degree programme and relevant regulations applicable to students.
- i. colloquium: lecture about a discipline related subject based on scientific literature
- j. HBO-applicant: a student with a bachelor degree in Applied Sciences.

The other definitions shall have the meaning that the Act ascribes to them.

### **Article 1.3 Aim of the degree programme**

The teaching outcomes of the master's degree programme are set out in Appendix A..

### **Article 1.4 Type of degree programme**

The degree programme is full-time.

### **Article 1.5 Teaching language**

The degree programme is taught in English, except for the M-variant "Science, Business and Policy" which is partly taught in Dutch.

## **Section 2 Structure of the degree programme**

### **Article 2.1 Study load**

1. The degree programme has a study load of 120 ECTS.
2. The study load of a module is expressed in whole ECTS.

### **Article 2.2 Specializations and Top programmes**

*Appendix B sets out the specializations of the degree programme.*

### **Article 2.3 Content of the degree programme**

*Appendix C sets out the (compulsory) parts of the degree programme and specializations, including the load of study, the entry requirements, the form of examinations and whether a practical is included.*

### **Article 2.4 Optional modules**

1. *Appendix D sets out the optional modules of the degree programme and specializations, including the load of study, the entry requirements, the form of examinations and whether a practical is included.*
2. The Board of Examiners may permit the student to select one or more modules from another master's degree programme (from the University of Groningen or from another university).

### **Section 3 Examinations and final assessment in the degree programme**

#### **Article 3.1. General**

1. *Examinations, both interim and final, provide the student with the information he needs to assess whether he has achieved or will achieve the required learning goals. This will help him with his further participation in the degree programme in question.*
2. *Assessment is expressed in whole and half numbers greater than or equal to 1 or smaller than or equal to 10, or by the qualifications 'pass' (v) or 'fail'(o). A teaching unit or module is passed when a mark higher or equal to 6 is achieved or when the qualification 'pass' (V) is awarded. The mark 5,5 is not awarded.*

#### **Article 3.2 Compulsory order of examinations**

The entry requirements and the compulsory order of examinations are listed in the Appendix E.

#### **Article 3.3 Form of Examinations**

1. The form of the examinations for the modules listed in Article 2.3 and 2.4 are set out in the Appendix C and D.
2. At the student's request, the Board of Examiners may allow an examination to be taken in a form different from that covered by Article 3.3.1.
3. Students with a functional disorder will be given the opportunity to take examinations in a form that will compensate as far as possible for their individual handicap. If necessary, the Board of Examiners will seek expert advice on this matter. Applications for an adjusted exam should be at least one month before

#### **Article 3.4 Oral Examinations**

1. Unless the Board of Examiners decides otherwise, an oral examination may only be taken by one student at a time.
2. On request of the examiner or the student a neutral third party may be asked to attend an oral examination.

#### **Article 3.5 Examination of practical modules**

1. For practical modules, active and visible participation in the research training as well as the approval of a (research) report written by the student are required for passing the examination.
2. The assessment of internal practical modules and the written report of such modules will be conducted by one staff member.
3. The assessment of an external research training project will be conducted by an internal examiner and an external supervisor.

#### **Article 3.6 Frequency and Examination Periods**

1. There will be an opportunity to sit the examinations for the modules listed in Article 2.3 two times each year.
2. A module will be regularly examined in the current year if a module was not offered.
3. A module will be regularly examined in the current year after the module was offered for the last time.
4. An exam for a practical is given once a year.

#### **Article 3.7 Assessing the Final Degree Project**

The assessment of a *final degree project (thesis or research projects/internships)* takes place within a general assessment framework. The supervisors (at least two) who have been appointed as examiners by the Board of Examiners will determine the mark together. If necessary, they will consult an external supervisor.

**Article 3.8 Marking of Examinations and Publication of Grades**

1. After an oral examination, the examiner will assess the examination immediately and provide the student with a signed exam sheet.
2. Examination results must be made known to the student no later than 10 working days after the date on which the examination was taken.
3. If an examination is taken in a form other than oral or written, the Board of Examiners will determine in advance how and when the student will receive written confirmation of the result.
4. The examiner will mark a written examination and provide the Education and Examinations Office with the necessary details for registration in the student administration.
5. A printout of individual student results is a valid confirmation of these results if authorized by or on behalf of the Board of Examiners. This printout can be asked for at the Education and Examinations Office.

**Article 3.9 Validity**

1. Examinations that have been passed remain valid indefinitely.
2. Contrary to the provision of Article 3.9.1, the Board of Examiners may decide to require a student to take a supplementary or substitute examination for a module taken more than six years previously before allowing that student to progress to the final assessment.

**Article 3.10 Right of Inspection**

1. On request, a student has the right to inspect his marked work during a period of six weeks after the results of a written examination have been made known.  
At the student's request a copy of his work is provided against costprice.
2. Within the time frame stipulated in Article 3.10.1, the student may request that he be allowed to peruse the examination paper and the assessment criteria.
3. The Board of Examiners may determine that this inspection or perusal will take place at a certain place and time. This inspection and perusal may be organized collectively. If the person concerned can show that he was prevented by force majeure from attending at the indicated place and time, he will be offered another opportunity.

**Article 3.11 Exemptions**

At the student's request, the Board of Examiners, having discussed the matter with the examiner in question, may grant exemption from an examination on condition that the student:

- a. has completed part of a university or higher vocational course that is equivalent in content and level
- b. can demonstrate by work and/or work experience that he has sufficient knowledge and skills in respect of the module in question.

**Article 3.12 Final Assessment**

1. Students who have passed all examinations for a degree programme, including all optional modules, or have satisfied the requirements for all parts of the programme approved by the Board of Examiners, must apply for the certificate no later than four weeks after doing so.  
The examination date entered on the certificate by the Board of Examiners is the date on which the student is deemed by the Board to have satisfied the final examination requirements.
2. If the student applies for the certificate after the period specified in article 3.12.1, the examination date entered on the certificate shall be the date on which the student is

deemed by the Board of Examiners to have satisfied all the examination requirements, even if the date on which the Board takes this decision is in a subsequent academic year and the student is required to register for that year.

3. The Board of Examiners shall determine the final assessment after the student has presented proof that he has passed all the examinations of the degree programme.
4. Before the final assessment can be determined, the Board of Examiners may itself decide to test the student's knowledge of one or more modules or aspects of the degree programme, if and in as much as the grades for these modules provide a reason for doing so.
5. Students are deemed to have passed the final assessment if they have obtained a sufficient grade for each module (see Article 3.1.2).

### **Article 3.13 Degree**

1. A student who has satisfied all the requirements of the final assessment shall be awarded the degree of "Master of Science".
2. The degree awarded shall be registered on the final certificate.
3. The variant (P or M), specialization or Top programme will be registered on the diploma supplement.

## **Section 4 Selection procedure**

### **Article 4.1 Previous education**

1. The admission to the degree programme is set out in appendix F.
2. Holders of a Dutch or foreign Bachelor's or Master's degree with equivalent learning outcomes as the Bachelor's degree programmes referred to in article 4.1.1 will also be admitted to the degree programme.
3. Students with Bachelor's degrees other than those referred to in article 4.1.1 will be admitted at the discretion of the Admissions Board. Admission will be considered if:
  - a) the previous qualification is equivalent to the Bachelor's degree programme requested in article 4.1.1;
  - b) the applicant has sufficient proficiency in the English language to participate in the programme (IELTS test score of 6.5, TOEFL-score of 580 (paper-based), 237 (computer-based) or 92 (internet -based) or equivalent).
4. The Board of Examiners can decide on an individual basis that one or more optional modules that are not in the curriculum of the applicant are mandatory modules of the Master's of Science curriculum.
5. Admission within the meaning of article 4.1.1, 4.1.2 and 4.1.3 entitles students to register for the degree programme.

### **Article 4.2 Admission to different specializations**

The admission to different specializations is set out in appendix F.

### **Article 4.3 Admission of HBO applicants**

1. Applicants with a relevant HBO bachelor's degree programme will be admitted to the degree programme after having passed a bridging programme of 30 ECTS.
2. Within the bridging programme the candidate is allowed to resit an exam only once, the one immediately after the first exam.

### **Article 4.4 Admissions Board**

1. Admission to the degree programme and the various modules is assigned to the Admissions Board of the degree programme. This Board consists of:
  - a member, also the chairperson, selected from the professors who will teach the degree programme

- two members selected from the other academic staff who will teach the degree programme.
- 2. The study advisor for the degree programme will be an advisory member and also secretary, (or a similar faculty employee).
- 3. The members of the Admission Board are appointed by the Board of Examiners.

### **Article 4.5 Applications procedure**

1. The application deadlines for admission to the degree programme and given modules are set out in Appendix G. The application must be submitted to the Admissions Board.
2. Only in exceptional cases will the Admissions Board consider an application submitted after the date stated in Article 4.5.1.
3. The Admissions Board will make a decision before 1 June or 1 July respectively. The written admissions declaration will include information for the student about the possibility of an appeal to the Committee of Appeal for the Final Assessments.

### **Article 4.6 Conditional admission**

1. At the request of a candidate who is preparing for the final examination for the Bachelor's degree programme listed in Article 4.1.1, the Admissions Board may admit the student to the degree programme on condition that:
  - 1) the student has passed the first year (propaedeutic examination)
  - 2) the deficiency in the bachelor's programme doesn't exceed 15 ECTS.  
Modules consisting of only practicals and the final bachelor's degree project may not be part of this 15 ECTS deficiency.
2. Conditional admission must be converted into admission as laid down in Article 4.1 within six months. In the case one or more modules cannot be re-examined in the first semester the conditional admission must be converted within a year.

## **Section 5 Tutoring**

### **Article 5.1 Study progress administration**

1. The Faculty Board is responsible for the registration of the individual results of students.
2. The Faculty Board will provide each student with a certified overview of his results at least once a year.

### **Article 5.2 Tutoring**

1. Within the framework of the admissions procedure, the Faculty Board is responsible for making an appointment with the student to discuss the individual degree programme he will follow.
2. The Faculty Board is responsible for providing the student with a course catalogue at the start of his degree programme.
3. The Faculty Board will ensure that the student has sufficient supervision during his degree programme, and will pay particular attention to possible changes deemed necessary to ensure the chosen programme is compatible either with conducting academic research or exercising a profession outside the university.

## **Section 6 Final Provisions**

### **Article 6.1 Amendments**

1. Any amendments to these Regulations will, after discussions with the Faculty Council and course committee, be confirmed by the Faculty Board in a separate decree.
2. An amendment to these Regulations shall not apply to the current academic year, unless it may reasonably be assumed that the amendment will not harm the interests of students.

3. In addition, an amendment may not influence the following to the detriment of students:
  - an approval issued within the meaning of Article 2.3
  - any other decision taken within the meaning of these Regulations concerning a student.

**Article 6.2 Publication**

1. The Faculty Board shall duly publish these Regulations, any rules and guidelines formulated by the Board of Examiners, and any amendments to these documents.
2. Copies of the documents referred to in Article 6.2.1 are available from the Faculty office.

**Article 6.3 Appeal procedure and unexpected events**

1. Appeals against decisions made by an examiner or a Board of Examiners may be filed with the Board of Appeal for Examinations. Copies of the appeal procedure are available from the Student Service Desk.
2. In exceptional cases or cases not covered by these regulations, the Board of Examiners shall have the final say.

**Article 6.4 Date of Commencement**

These Regulations shall take effect on 1 September 2009.

*As decreed by the Faculty Board on 11 July 2009*

**Appendix A. Teaching outcomes of the degree programme (art. 1.3)**

**The graduate:**

- 1A (Biology) has detailed knowledge of one or more of the scientific disciplines within the area of biology
  - 1B (Ecology & Evolution) has detailed knowledge of one or more of the scientific disciplines within the area of Ecology & Evolution with emphasis on evolutionary ecology & genetics, behavioural ecology & ecophysiology, conservation biology, or community ecology
  - 1C (Marine Biology) has detailed knowledge of one or more of the scientific disciplines within the area of marine biology with emphasis on biological oceanography or coastal marine ecology
  - 1D (Molecular Biology & Biotechnology) has detailed knowledge of one or more of the scientific disciplines within the area of of biomolecular sciences, with emphasis on structural biology, biochemistry, molecular and cellular biology, microbiology, biotechnology or bioinformatics
- 2 is capable of designing and conducting scientific research
  - 3 is capable of independently investigating, and critically evaluating, scientific literature
  - 4 is capable of identifying new developments in the relevant disciplines, and to become familiar with these developments
  - 5 is organised and creative in the approach to scientific research and complex problems
  - 6 can participate in, and contribute to, a multidisciplinary team
  - 7 can effectively communicate acquired knowledge, insights and skills to others, both in writing and in oral presentation

- 8 is aware of the potential societal and ethical implications of scientific research, and is able to critically reflect on his/her actions in this context
- 9 is prepared for a professional career, either in science or in management & policy

### Appendix B. Specializations of the degree programme (art. 2.2)

1. Within the degree programmes, the student chooses one of the following profiles:
  - a. degree profile P-variant, "PhD-variant", which provides training as a researcher
  - b. degree profile, M-variant, "Management and policy-variant " which prepares for professions that require the application of knowledge of the scientific domains of the degree programs in a societal, political and/or commercial context.
2. Within the degree programme Biology students can follow the specialization Behavioural and Neurosciences, which prepares for conducting research in this field of biology.

Within the degree programme Ecology & Evolution qualified students can follow the Top programme Evolutionary Biology, an intensified programme which prepares for conducting top quality research in this field of ecology.

Within the degree programme Molecular Biology & Biotechnology qualified students can follow the Top programme Biomolecular Sciences, an intensified programme which prepares for conducting top quality research in this field of molecular biology and biotechnology

### Appendix C. Content of the degree programme (art. 2.3)

#### 1. The degree programmes consist of either the P- or the M-variant programme:

##### ***P-variant***

Module	ECTS	entry requirements	examination	practical
research project (RP)*	40 or ≥	-	technical and/or laboratory skills, written report, oral presentation	x
research project (RP)*	30 or ≥	-	technical and/or laboratory skills, written report, oral presentation	x
colloquium	5	RP	oral presentation	x
essay	5	-	written report	x
optional modules	20	see appendix D	see appendix D	see app. D
electives**	≤20	see appendix D	see appendix D	see app. D

**M-variant**

Module	ECTS	entry requirements	examination	practical
research project (RP)*	40 or ≥	-	technical and/or laboratory skills, written report, oral presentation	x
optional modules	5	see appendix D	see appendix D	see app. D
colloquium	5	RP	oral presentation	x
<i>Stagetraject bedrijf en beleid</i>	40	RP	performance, written report, reflection report	x
Module <i>Beleid &amp; Bedrijf</i>	20	-	assignment, exam	x
electives**	≤ 10	see appendix D	see appendix D	see app. D

**2. In addition to the above scheme to following rules apply to all programmes:**

- The student chooses a mentor - an assistant professor or professor from the list of each Master programme- to advise and discuss the contents of the individual degree programme before approval of the Board of Examiners.
- \* the first research project must be performed at the School of Life Sciences (or liaised institutes) under supervision of one of the examiners.
- \*\* The student may choose to use 5, - 20 ECTS to extend a research project, attend master modules (appendix D), attend bachelor modules (no more than 10 ECTS), or perform a research assignment of 5, 10, 15 or 20 ECTS. During the mid term assessment one may extend the research project with only 5-10 ECTS.
- Research projects, colloquium and essay must deal with different subjects, be supervised by a different examiner, and be approved of by the Board of Examiners.

**3. Additional requirements for the specialization Behavioural and Neurosciences (Master Biology)**

Students within the specialization Behavioural and Neurosciences generally follow the P-variant scheme and choose their mentor from the list for this specialization.

**4. Additional requirements for the Top programme Evolutionary Biology (Master Ecology and Evolution)****4.1 Students within the Top programme Evolutionary Biology generally follow the P-variant scheme but have to pass the following Top programme modules\*:**

- \* These modules are challenging both in content and time constraints
  - Adaptation, biocomplexity and conservation; 8 ECTS
  - Theoretical ecology and evolution; 8 ECTS
  - Phylogenetics and genomics in ecology; 8 ECTS

4.2. Two seminar series of 2 ECTS each are required. These are chosen from a list of the "current/classic themes" seminar series.

- 4.3 The essay in this case is a literature study written in the form of a review article or a research proposal.
- 4.4 The study load of the electives is  $\leq 12$  ECTS which can be used for modules, research or individual assignments
5. **Additional requirements for the Top programme *Biomolecular Sciences***  
(Master Molecular Biology and Biotechnology)

**5.1 Students within the Top programme Biomolecular Sciences generally follow the P-variant scheme but have to pass the following Top programme modules\*:**

- \* These modules are challenging both in content and time constraints
1. Introduction to membrane proteins and bioinformatics; 2 ECTS
  2. Advances in signal transduction; 5 ECTS
  3. Advanced genomics and proteomics; 5 ECTS
  4. Organelle and membrane biogenesis; 5 ECTS
  5. Molecular Dynamics and modeling of Membranes and Proteins ; 5 ECTS
  6. Protein and Enzyme Engineering by Mutagenesis and Directed Evolution; 5 ECTS
  7. Advanced protein crystallography; 5 ECTS
- 5.2 Literature study written in the form of a research proposal; 5 ECTS.
- 5.3 The study load of the electives is  $\leq 8$  ECTS which can be used for modules, research or individual assignments

**Appendix D. Optional modules (art. 2.4) plus**

**Appendix E. Entry requirements and compulsory order of examinations (art. 3.2)**

The following list presents optional modules. The column on the right indicates the master programmes for which the modules were developed in particular. **B: Biology, BN: specialization Behaviour and Neurosciences in the study programme Biology, EE: Ecology and Evolution, MB: Marine Biology, MBB: Molecular Biology and Biotechnology.** (w.t. = working title)

***General modules within the school of Life Sciences:***

Module	ECTS	entry requirements	examination	practical	programme
Animal and human experimentation: Design, Practice and Ethics	5	-	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB
Orientation on International Scientific Careers	5	-	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB
Radioisotopes in experimental biology	5	-	laboratory skills, written exam	x	B, BN, EE, MB, MBB
Advanced statistics (w.t.)	5	*	written exam	x	B, BN, EE, MB, MBB
Programming C++	5	-	assignment	x	B, BN, EE, MB, MBB

**Modules organised by the research institute CBN:**

Module	ECTS	entry requirements	examination	practical	programme
Advanced imaging techniques (w.t.)	5	*	written exam, oral presentation	x	B, BN
Neurodegenerative diseases	5	*	written exam, oral presentation	x	B, BN
Behavioural pharmacology	5	-	written exam, oral presentation	x	B, BN
<i>Introduction to the Behavioural and Cognitive Neurosciences</i> (Introduction BCN)	4	-	written reports	x	B, BN
Current themes in inflammation and cancer	5	immunologie I	written exam, oral presentation	x	B, BN, MBB
Advanced metabolism & nutrition (w.t.)	5	metabolisme & voeding	written exam, assignment	x	B, BN
Nutrigenomics research	5	metabolisme & voeding	written exam, assignment	x	B
Current themes in healthy aging	5	-	written reports, oral presentation	x	B, BN, MBB
<i>Stem cells &amp; regenerative medicine</i> (Stem cells & tissue engineering)	5	regenerative medicine or moleculaire biologie & medische biologie, or immunologie I	written report oral presentation,	x	B, MBB
Immunology: from bed side to bench and back (w.t.)	5	immunologie I+II	written exam, oral presentation, report	x	B

**Modules organised by the research institute CEES:**

Module	ECTS	entry requirements	examination	practical	programme
Current themes seminar series	2	-	assignments	x	B, EE, MB
Groningen lectures in theoretical biology	2-6		Written report		B, BN, EE, MB
<i>CEES lectures</i>	2	-	<i>participation</i>		B, EE, MB
Mathematical models in ecology and evolution	6	*	Witten exam		B, BN, EE, MB
Selforganisation, cognition and Social Systems	5	*	assignments	x	B, EE, MB,
Ecosystems Mediterranean rocky shores (w.t.)	5	*	Assignments	x	MB
<i>The function of marine biodiversity</i> (Marine community ecology)	5		Assignments	x	B, EE, MB

**Modules organised by the research institute GBB:**

Module	ECTS	entry requirements	examination	practical	programme
Advanced protein crystallography	5	-	Written exam, oral presentation	x	B, MBB
Protein crystallography 2	5	-	Written exam	X	B, MBB
Multidimensional NMR 2	5	-	Written exam, oral presentation	x	B, MBB
Electron microscopy of biological macromolecules	5	-	Written exam, oral presentation	x	B, MBB
DNA microarray analysis oral presentation	5	*	Written exam,	x	B, BN, EE, MB, MBB
Introduction to membrane proteins and Bioinformatics	2	*	Written exam, oral presentation	x	B, MBB
Advances in signal transduction	5	*	Written exam, oral presentation	x	B, MBB
Advanced genomics and proteomics	5	*	Written exam, oral presentation	x	B, MBB
Organelle and membrane biogenesis	5	*	Written exam, oral presentation	x	B, MBB
Molecular Dynamics and modeling of Membranes and Proteins	5	*	Written exam, oral presentation	x	B, MBB
Protein and Enzyme Engineering by Mutagenesis and Directed Evolution	5	*	Written exam, oral presentation	x	B, MBB
Biocatalysis & green chemistry	5	*	Written exam, assignments		B, MBB
Topics in Enzymology	5	-	Written exam	x	B, BMS, MBB, MPS

**Modules organised by Sciences and Society:**

Module	ECTS	entry requirements	examination	practical	programme
<i>Beleid &amp; Bedrijf<sup>9</sup></i>	10,20	-	assignments	x	B, BN, EE, MB, MBB
<i>Stagetraject bedrijf en beleid<sup>9</sup></i>	40	<i>Beleid &amp; Bedrijf<sup>9</sup></i>	laboratory skills, written report, oral presentation	x	B, BN, EE, MB, MBB

**Modules organised by Education and Communication<sup>a</sup>:**

Module	ECTS	entry requirements	examination	practical	programme
Communiceren en presenteren (compres)	5	-	assignments	x	B, BN, EE, MB, MBB
Ontwerpen	10	*	assignments	x	B, BN, EE, MB, MBB
Wetenschap media en publiek	10	*	assignments	x	B, BN, EE, MB, MBB
Inleiding onderzoeksmethoden	5	*	assignments	x	B, BN, EE, MB, MBB

**Modules organised by Energy and Environmental sciences:**

Module	ECTS	entry requirements	examination	practical	programme
Introduction energy and environmental studies I	5	-	assignments	x	B, EE, MB
Resources and sustainable development	15	*	assignments	x	B, EE, MB

\*For entry requirements see module description in Ocasys

<sup>a</sup> These modules are instructed in Dutch.

**Appendix F. Admission to the degree programme and different specializations (art. 4.1.1 + art. 4.2)****Requirements for admission to the master's degree in Biology**

Holders of a Bachelor's degree in Biology from the University of Groningen are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Biology on that basis.

**1. Requirements for admission to the master's degree in Ecology and Evolution**

Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization *Ecologie* or *Mariene Biologie* are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Ecology & Evolution on that basis.

Holders of a Bachelor's degree in Biology from the University of Groningen with the major *Ecologie & Evolutie* or *Mariene Biologie* are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Ecology & Evolution on that basis.

**2. Requirements for admission to the master's degree in Marine Biology**

Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization *Mariene Biologie*, or the specialization *Ecologie* plus the modules *Oceanografie* and *Mariene Biologie 1*, are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in *Marine Biology* on that basis.

Holders of a Bachelor's degree in Biology from the University of Groningen with the major *Mariene Biologie* or the major *Ecologie & Evolutie* plus the modules *Biologische oceanografie* and *Mariene biologie* are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Marine Biology on that basis.

### **3. Requirements for admission to the master's degree in Molecular Biology and Biotechnology**

- Holders of a Bachelor's degree in Biology from the University of Groningen with the specialization *Moleculaire Biologie* of *Biotechnologie*, specialization *Medische biologie* plus the modules *Algemene chemie* and *Bioinformatica* are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Molecular Biology & Biotechnology on that basis. Holders of a Bachelor's degree in Biology or a Bachelor's degree in Life Science & Technology from the University of Groningen with the major *Moleculaire Levenswetenschappen*, major *Biomedische wetenschappen* or the combination of the major *Gedrag en Neurowetenschappen* and the minor *Moleculaire Levenswetenschappen*, are considered to have sufficient knowledge and skills and will be admitted to the Master's degree programme in Molecular Biology and Biotechnology on that basis.
- Holders of a Bachelor's degree in Chemistry with specialization *Biochemie* or *Biophysical Chemistry* are admitted to this master's programme.
- Holders of the Bachelor's degree in Life Science and Technology, specialization *Genomics and Proteomics* or *Molecular Medical Cell biology* are admitted into this master's programme.

### **4. Admission requirements to specializations and Top programmes**

In addition to the provisions in 4, the following admission requirements apply to the specialization or Top programmes:

1. Master *Biology*, specialization *Behavioural and Neurosciences*: a Bachelor's degree in Biology of the University of Groningen, specialization *Gedrag en Neurowetenschappen*. A Bachelor's degree in Biology or a Bachelor's degree in Life Science & Technology of the University of Groningen with major *Gedrag en Neurowetenschappen*.
2. Master *Ecology and Evolution*, Top programme *Evolutionary Biology*: a relevant Bachelor's degree and an individual selection procedure (see below). Excellent MSc students from Ecology & Evolution and Marine Biology may apply during their first year for the Top Programme Evolutionary Biology.
3. Master *Molecular Biology and Biotechnology*, Top programme *Biomolecular Sciences*: a relevant Bachelor's degree and an individual selection procedure (see below). Excellent MSc students from Molecular Biology & Biotechnology may apply during their first year for the Top Programme Biomolecular Sciences

### **6. Applications procedure for a Top programme (art. 4.2)**

1. Students in possession of an admission permit can be admitted to the top programme.
2. Students who meet the requirements are provided with an admission permit by the Admission Board.
3. An admission permit is only valid for the academic year following the academic year in which the permit is granted.
4. There may be other conditions attached to the admission permit. The requirements must be met before the top programme has started.
5. The admission requirements comprise:
  - a relevant bachelor's degree;
  - sufficient knowledge of the English language;
  - sufficient knowledge of the relevant sciences;

- a suitable attitude, motivation and talent to follow the Top programme.
6. The Board of Examiners establishes an Admissions Board that judges the student's fulfilment of the requirements. This Board consists of three members of the top programme's Board of Examiners, completed by a university employee. One of the members is appointed as chairperson.
  7. The decisions of the Admissions Board can be appealed to at the Board of Appeal for Examinations.
  8. Students apply to the admission procedure by sending in the following documents:
    - a completed application form;
    - a complete curriculum vitae;
    - a survey of the study results attained in academic courses so far;
    - a letter in which the student states why s/he wants to follow this top programme in particular, what his/her expectations and ambitions are;
    - (if desired) results of former research projects, like reports or articles;
    - the names of three scientists willing to provide personal information on the applicant;
    - (if desired) other documents that the student thinks useful in furthering his/her application.

These documents are to be sent to the Faculty of Mathematics and Natural Sciences by the 1<sup>th</sup> of February for non-EER\* students and by the 15<sup>th</sup> of April for EER students (and EEA-students that do not apply for a University of Groningen Talent Grant) preceding the start of the top programme.

\*European Economic Area: all EU countries + Norway, Switzerland, Liechtenstein and Iceland.

9. Sufficient knowledge of the English language can be proved by
  - Cambridge Certificate of Proficiency in English (A, B or C);
  - Cambridge Certificate in Advanced English (A, B or C);
  - an overall score of 6.5 or higher in the International English Language Testing System (Academic version);
  - a score of at least 580 on the paper-based form of the Test of English as a Foreign Language;
  - a score of at least 237 on the computer-based form of the Test of English as a Foreign Language;
  - a score of at least 92 on the internet-based form of the Test of English as a Foreign Language.

An original certificate of the test, not older than two years, needs to be sent in.

The Admissions Board may accept other proofs of knowledge of the English language that guarantee a comparable level of knowledge of English.

10. The applicants will be informed in writing about the decision on their admission within 3 weeks after the deadline for submission. This may be a tentative decision, conditional on further information to be supplied by the candidate.

### **Appendix G Application deadlines for admission (art. 4.5)**

Deadline of Application	Non-EU students	EU students
Biomolecular Sciences (Top programme)	February 1 <sup>st</sup> 2009	April 15 <sup>th</sup> 2009
Evolutionary Biology (Top programme)	February 1 <sup>st</sup> 2009	February 1 <sup>st</sup> 2009
Remaining FMNS Masters	April 15 <sup>th</sup> 2009	June 1 <sup>st</sup> 2009

## 9.2 Rules and Regulations

### Rules and regulations for the School of Life Sciences, and the Master's degree programme Behavioural & Cognitive Neurosciences, with effect from 1 September 2009

Rules and Regulations as referred to in Article 7.12.4 of the Higher Education and Research Act (WHW) for the degree programmes:

#### **CROHO Biologie and Life Science & Technology Board of Examiners**

code

56860	BSc Biologie
56286	BSc Life Science & Technology
66860	MSc Biology
60365	MSc Ecology and Evolution
60609	MSc Marine Biology
60612	MSc Molecular Biology and Biotechnology

#### **Farmacie Board of Examiners**

56989	BSc Pharmaceutical Sciences
56157	BSc Pharmacie
66157	MSc Pharmacy

#### **Biomedical and Medical Pharmaceutical Sciences Board of Examiners**

60611	MSc Medical Pharmaceutical Sciences
66990	MSc Biomedical Sciences

#### **Biomedical Engineering Board of Examiners**

60621	MSc Biomedical Engineering
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#### **Behavioural & Cognitive Neurosciences Board of Examiners**

60615	RM Behavioural and Cognitive Neurosciences
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The Boards of Examiners for the degree programmes, having regard to Article 7.12.4 of the WHW, have decided to set the following rules and regulations for the degree programmes:

#### **Article 1 Definitions**

The following definitions apply to these Rules and Regulations:

- OER: the Teaching and Examination Regulations for the degree programme listed in the introduction, most recently updated on 4 June 2009
- Examinee: a person taking an examination or final assessment
- Examination: an assessment of the knowledge and/or skill of the examinee concerning a certain module in the degree programme
- Student: a person who has registered for the degree programme
- Final assessment: the final assessment for the degree programme
- Mentor: a lecturer who has been allocated the task by the Board of Examiners. A mentor assists students with choosing an individual programme in the Master's degree phase.

#### **Article 2 Administrative Duties of the Board of Examiners**

- 2.1. The Board of Examiners will appoint from its members a board of at least three members, who will be charged with the administrative duties of the Board of Examiners.

- 2.2. The administrative duties include:
  - a. decisions concerning approval of teaching units as referred to in Article 7.3.c of the WHW
  - b. decisions concerning regulations that at the request of the student may deviate from the current provisions
  - c. decisions concerning exemptions
  - d. preparations to determine the results of final assessments
  - e. determining measures in the event of an infringement of the order during an examination within the meaning of Article 10 or in the event of fraud within the meaning of Article 17.
- 2.3. This committee is responsible to the Board of Examiners.

### **Article 3 Taking examinations**

- 3.1. The Board of Examiners will appoint one or more examiners before any examination is taken.
- 3.2. Every examination will be a survey by the examiner of the knowledge, understanding and skills of the student, as well as an assessment of the results of that survey.
- 3.3. In the event that one and the same examination is held and assessed by more than one examiner, whether or not at the same time, the relevant Board of Examiners will ensure that the examiners all use the same assessment criteria. To this end, the assessment criteria will be set out in writing by the relevant examiners in advance. If necessary, the Board of Examiners will appoint one of the examiners to be the main examiner.
- 3.4. The examiner will ascertain whether the conditions for taking the examination have been met.

### **Article 4 Number of examinees at an oral examination**

With the permission of the examinees, an examiner may decide that a certain examination will be an oral examination.

### **Article 5 Language of the degree programme**

- 5.1. The Bachelor's and Master's degree examinations in Pharmacy (written and oral) will be in Dutch. If requested in good time, the examiner and the examinees may decide together that the examination will be in English. In this case, the examinee may choose whether to answer the questions in Dutch or in English.
- 5.2. In the Master's degree programmes, with the exception of Pharmacy, the examinations will be in English, unless the Board of Examiners or the examiner considers it to be necessary or desirable for them to be in a different language.
- 5.3. A request by an examinee to take the written examinations referred to in Article 5.1 in English must be sent to the lecturer at least five working days before the date of the examination.

### **Article 6 Examination Frequency and Times**

- 6.1. Written examinations will be taken at times that shall be determined at least 1 month before the start of the relevant examination period, in consultation with the relevant examiners and bearing in mind the provisions of the OER.
- 6.2. When determining the times as referred to in Article 6.1, as far as possible no examinations will be planned concurrently.
- 6.3. Changes to the time referred to in Article 6.1 may only occur in the event of force majeure and with the approval of the examiner and all the students involved.

- 6.4. Oral examinations will be taken at a time determined by the examiner or examiners, if possible after discussion with the examinee.
- 6.5. The provisions of Article 6.4 will also apply as far as possible to examinations to be taken other than in written or oral form.
- 6.6. There will be a maximum of 3 resits opportunities for a module.
- 6.7. If the permitted number of resits still do not result in a pass, the student has to write a motivated request to the Board of Examiners for another resit of the module. The Board of Examiners decides on the conditions, form and moment of the next resit.

### **Article 7 Registration**

- 7.1. Participation in a written examination may only take place after proper and timely registration via the web application ProGRESS.
- 7.2. Timely registration is a digital registration via ProGRESS at least 3 working days before the time when the examination in question will be held. In exceptional circumstances, the Board of Examiners may permit a late registration.
- 7.3. Participation in a module may only take place after proper and timely registration.
- 7.4. Timely registration is considered to be registration at least 1 month before the time when the relevant module will be given. In exceptional circumstances, the Board of Examiners may permit a late registration.
- 7.5. Registration for a module offered by the school of Life Sciences obliges the registered person to appear for the first session of the module.
- 7.6. A final assessment may only take place after proper registration in person with the student administration office at least 20 working days before the relevant session of the Board of Examiners. In exceptional circumstances, the Board of Examiners may permit a late registration.
- 7.7. The Faculty Office or the administration office will ensure that the examinee will receive an invitation to the final assessment at least 1 week before the date on which it is set.

### **Article 8 Withdrawal**

- 8.1. If the examinee does not take the examination at the time for which he or she has registered, or withdraws less than 3 working days before that time, the examination opportunity will be deemed to have been taken.
- 8.2. If the examinee does not participate in modules at the time for which he or she has registered, or withdraws less than a month before that time, then he or she may be denied access to other modules.
- 8.3. In cases of force majeure, the Board of Examiners will decide.

### **Article 9 Request for exemption**

- 9.1. Requests for exemption, stating reasons, must be submitted to the Board of Examiners in writing 2 months before the start of the module in question.
- 9.2. The Board of Examiners may decide to consult the relevant examiners before making a decision about the request.
- 9.3. The Board of Examiners will make its decision within a month of receipt of the request. The person making the request will be informed of the decision immediately.
- 9.4. Students who experience problems with their conscience in practicals during the propaedeutic phase where dissection/tests on animals are conducted may qualify for an alternative. The Board of Examiners, after consultation with the student, will suggest an alternative.

### **Article 10 Order during examinations**

- 10.1. The Board of Examiners will ensure that invigilators are appointed to supervise written examinations; they will ensure that the examination proceeds in good order. The Board of Examiners may delegate this responsibility to the relevant examiner.
- 10.2. Examinees must identify themselves by means of their student card at the request or behest of the Board of Examiners.
- 10.3. Examinees must obey the directions of the Board of Examiners or the examiner which will be published before the start of the final assessment or the examination, as well as directions given during or immediately after the examination.
- 10.4. If an examinee ignores one or more of the directions referred to in Article 10.3, then he or she may be excluded from further participation in the examination in question by the Board of Examiners or the examiner. Exclusion means that no result will be given for that examination. Before the Board of Examiners or the examiner makes a decision to exclude a student, they will allow the examinee to put his or her case.
- 10.5. The duration of every examination is such that the examinee may reasonably have enough time to answer the questions.
- 10.6. The examinee may remove the examination questions after the examination, unless the Board of Examiners or someone on their behalf has stated otherwise, or if the nature of the examination questions makes this impossible.

### **Article 11 Questions and assignments**

- 11.1. The scope of an examination paper shall not exceed the content of the sources upon which the paper is based. These sources as well as the amount of material will be made public in general terms before the start of the module that will prepare for the examination. The precise content of the examination subjects shall be published not later than one month before the examination.
- 11.2. Once the teaching for a particular examination starts, the examiner will publish the guidelines for the use of calculators, literature and other resources.
- 11.3. The questions and assignments that comprise the examination will be divided as evenly as possible over the sources.
- 11.4. The examination will be representative of the learning objectives with regard to content and form.
- 11.5. The questions and assignments in the examination will be clear and unambiguous and contain sufficient indications of the detail required in the answers.
- 11.6. In good time before the examination is sat, the Board of Examiners or the examiner will announce the type of examination in line with the provisions of Article 5.3 of the OER for the Bachelor's and Master's degree programmes.
- 11.7. In good time before the examination is sat, the Board of Examiners or the examiner will arrange a mock examination to familiarize the examinees with the type of examination.

### **Article 12 Assessment**

- 12.1. Assessment is expressed in whole and half numbers greater than or equal to 1 or smaller than or equal to 10, or by the qualifications 'Pass' (V) or 'Fail' (O). The mark 5.5 is not awarded.
- 12.2. A teaching unit or module is passed when a mark higher or equal to 5.5 is achieved or when the qualification 'Pass' (V) is awarded.
- 12.3. The final assessment of the propaedeutic/ Bachelor's/ Master's phase is deemed to have been passed when all the relevant module examinations have been passed.
- 12.4. Exemption from an examination or a practical is considered to be the equivalent of a Pass (V) and will be indicated by VR.

- 12.5. As far as possible, the assessment of written examinations will occur in line with criteria set in advance, and adapted if necessary as a result of matters that may arise during the correction process.
- 12.6. The means of assessment shall be such that the examinee can check how the results of his or her examination have been arrived at.
- 12.7. The Board of Examiners will announce in advance those cases in which it will conduct an enquiry as referred to in Article 5.10.5 (Bachelor's OER) or Article 3.11a.2 (Master's OER).

### **Article 13 Post mortem**

- 13.1. As soon as possible after publication of the results of an oral examination, there will be a discussion of the results between the examiner and the examinee, either on request or at the initiative of the examiner. The results will then be explained. 13.2. An examinee can request a post mortem with the relevant examiner concerning the results of an examination other than an oral examination within six weeks of the day of the publication of the results. The post mortem will take place at a time and a place determined by the examiner.
- 13.3. If the Board of Examiners arranges a collective post mortem for an examination, then an examinee may submit a request as defined in Article 19.2 if he or she attended the collective post mortem and motivates the request, or if he or she is unable to attend the collective post mortem due to force majeure.
- 13.4. The provisions in Article 13.3 also apply if the Board of Examiners or the examiner enable the examinee to compare his or her solutions with model answers.
- 13.5. The Board of Examiners or the examiner may permit exceptions to the provisions of Article 13.2 and 13.3.

### **Article 14 Standards**

The Board of Examiners or the examiners when making their decisions must adhere to the following standards:

- a. the preservation of the quality and selection criteria of each examination
- b. effectiveness criteria, concentrating on:
  - the limiting of time lost by students who are progressing well with their studies
  - timely termination of the degree programme by students who are unlikely to pass the exams
- c. protect students who want to do too much from themselves
- d. be understanding towards students who, through no fault of their own, have suffered study delay.

### **Article 15 Determining the result of the final assessment**

- 15.1. Subject to the provisions of Article 12 (Master's OER), the Board of Examiners will determine the result of the final assessment by a simple majority of votes.
- 15.2. If there is not a majority, then the examinee will be failed.

### **Article 16 Judicium (grade descriptor)**

- 16.1 The result of a final assessment can be qualified by the *judicium* Cum Laude (with distinction). When determining the *judicium*, the Board of Examiners is mainly guided by the total of the marks earned (G) on the individual examinations. The total result G is determined by averaging the marks of all the parts of the final assessment, bearing in mind the study load of each examination part. The total result G is not rounded off.  
Cum Laude (with distinction) is awarded when  $G > 8$  and no mark is less than 7.0.  
If the relevant Board of Examiners has appointed mentors, the *judicium* Cum Laude

will only be awarded to the final assessment of a Master's degree on the advice of the mentor.

- 16.2 The Board of Examiners will decide by a simple majority of votes.
- 16.3 The Board of Examiners may decide to award a *judicium* outside these criteria. In cases it considers to be borderline, the Board of Examiners may deviate from the provisions of Article 16.1 by taking not only the G average but also other matters into consideration, for example:
  - a. the originality of the thesis
  - b. the number of resits for examinations
  - c. the study pace
  - d. the results for examinations that were assessed by means other than a mark
  - e. the possibility of compensating for a mark lower than 7 by other positive factors
  - f. the results achieved for modules that do not form part of the student's examination programme as listed in Articles 7, 9 or 10 of the Teaching and Examination Regulations (OER).
- 16.4. At least three members of the Board of Examiners must participate in the decision-making process.
- 16.5. If the result of the *judicium* is Cum Laude, this will be stated on the Degree Certificate.

### **Article 17 Fraud**

- 17.1. Fraud is an act or omission by the examinee designed to partly or wholly hinder the forming of a correct assessment of his or her knowledge, understanding and skills. Examples of fraud include:
  - cheating during examinations, including digitally
  - plagiarism (this includes the use of internet files without stating the source)
  - freewheeling with fellow students during group assignments and practicals
  - copying the reports or practical reports of fellow students
  - falsifying the results of experiments.
- 17.2. In the event of fraud during an examination, the Board of Examiners can ban the examinee from further participation in the relevant exam for a period of up to a year.
- 17.3. The decision to ban will be taken on the basis of the written report of the invigilator concerning the fraud discovered or suspected by him or her.
- 17.4. In cases requiring swift action, the Board of Examiners may decide to impose a provisional ban based on a verbal report by the invigilator. He or she will ensure that this report is committed to writing immediately after the examination and a copy provided to the examinee.
- 17.5. The examinee can request that the Board of Examiners annul the ban. He or she must include a copy of the report referred to in Article 17.4 with the request and, if desired, a written commentary thereon.
- 17.6. Before the Board of Examiners decides on the request as defined in Article 17.5, it will give the examinee the opportunity to put his or her case.
- 17.7. A ban means that no result will be recorded for the examination referred to in Article 17.2.

### **Article 19 Approval procedure**

- 19.1 A request for approval of an individual study programme choice or one that deviates from the standard programme must be submitted by the examinee to the Board of Examiners at least one month before registering for the relevant module or modules.

19.2. A decision to deny approval by the Board of Examiners will be supported by reasons. The Board of Examiners will make its decision within 1 month of receipt of the request.

### **Article 20 Right of appeal**

It is possible to appeal against decisions made by the Board or Examiners or the examiners to the Board of Appeal for the Examinations within the meaning of Article 7.60 of the WHW.

### **Article 21 Amendments to the Rules and Regulations**

No amendments shall be made that have an effect on the current academic year, unless the interests of students would otherwise be harmed.

### **Article 22 Implementation**

These Rules and Regulations replace all previous Rules and Regulations.

## **9.3 University-wide regulations for Academic year 2009-2010**

### THE STUDENT CHARTER

The Student Charter provides an overview of the rights and obligations of both students and the University. It is based on national legislation, particularly the Higher Education and Research Act (WHW), supplemented by regulations that are specific to the University of Groningen. These latter regulations are set out in the appendices to the university-wide section of the Student Charter.

The Charter has been divided into two sections. The university-wide section describes the rights and obligations that apply to the university as a whole, such as registration and protection of rights. This section can be found on the University of Groningen website ([www.rug.nl/studenten/](http://www.rug.nl/studenten/) > Legal position > Students' charter).

The university-wide section of the Student Charter does not literally quote the articles from acts and regulations but describes them as clearly as possible. The various topics are accompanied by links to the relevant articles of the act or regulation in question.

The programme-specific sections describe the rights and obligations that apply to specific programmes, such as examinations and ECTS credit points, and which differ from one programme to another, as well as from one faculty to another. You can consult the programme-specific section at the faculty Education Offices and in the faculty Course Catalogues.

### APPLICABILITY

The Student Charter applies to academic year 2009-2010. The university-wide section of the Student Charter is approved annually by the Board of the University and endorsed by the University Council. In the event that the Charter challenges or contradicts any legal regulations, these legal regulations will take priority.

### PUBLICATION

A CD-ROM containing the Student Charter will be sent to the home addresses of students who register for a degree programme at the University of Groningen for the first time. All

other students will receive a letter informing them where they can consult the Student Charter. It is also available on the internet.

N.B. Due to a proposal to make amendments to the WHW, a number of provisions in the Student Charter may change on 1 September 2009 if these affect students' legal position. These amendments will be announced via the University of Groningen website as well as the 'Extra' page and the RUG Announcements in the UK.

#### THE IMPORTANCE OF THE STUDENT CHARTER

All students are expected to be familiar with the contents of the Student Charter. Not complying with the rules in the Charter may affect your rights, for example the right to financial support from the Graduation Fund.

Some of these regulations may not be as hard and fast as they sound. Rules and regulations are by definition general in character, and this Student Charter is no exception. This means that the applicability of these regulations in concrete situations and individual instances is not always a predictable and straightforward matter. Moreover, rules and regulations are never static but always subject to revision. Students who have registered for the first time this year may find that the regulations that apply to them are different to those for students who have reregistered. Make sure you are provided with the right information by your faculty and/or the Student Service Centre (SSC) and read the Student Charter carefully!

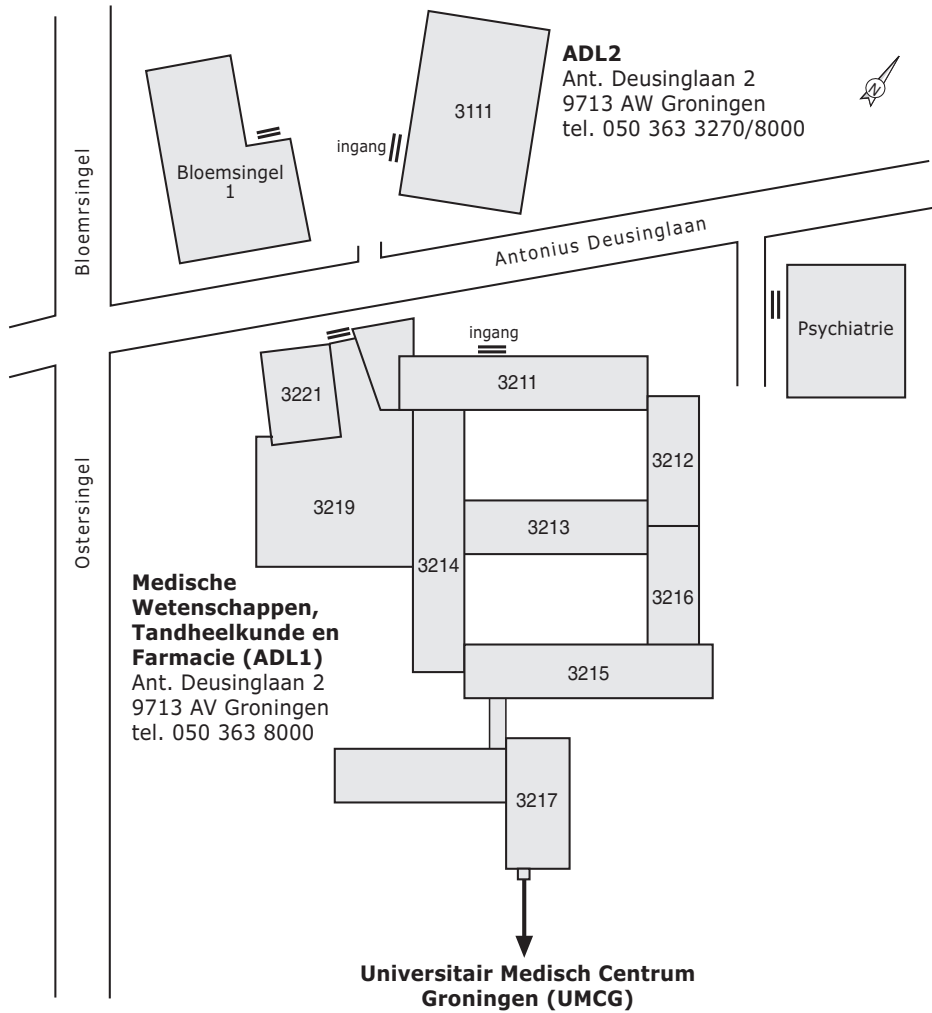
#### TOPICS COVERED BY THE STUDENT CHARTER

The university-wide part of the Student Charter contains further information about student rights and obligations with regard to the following topics:

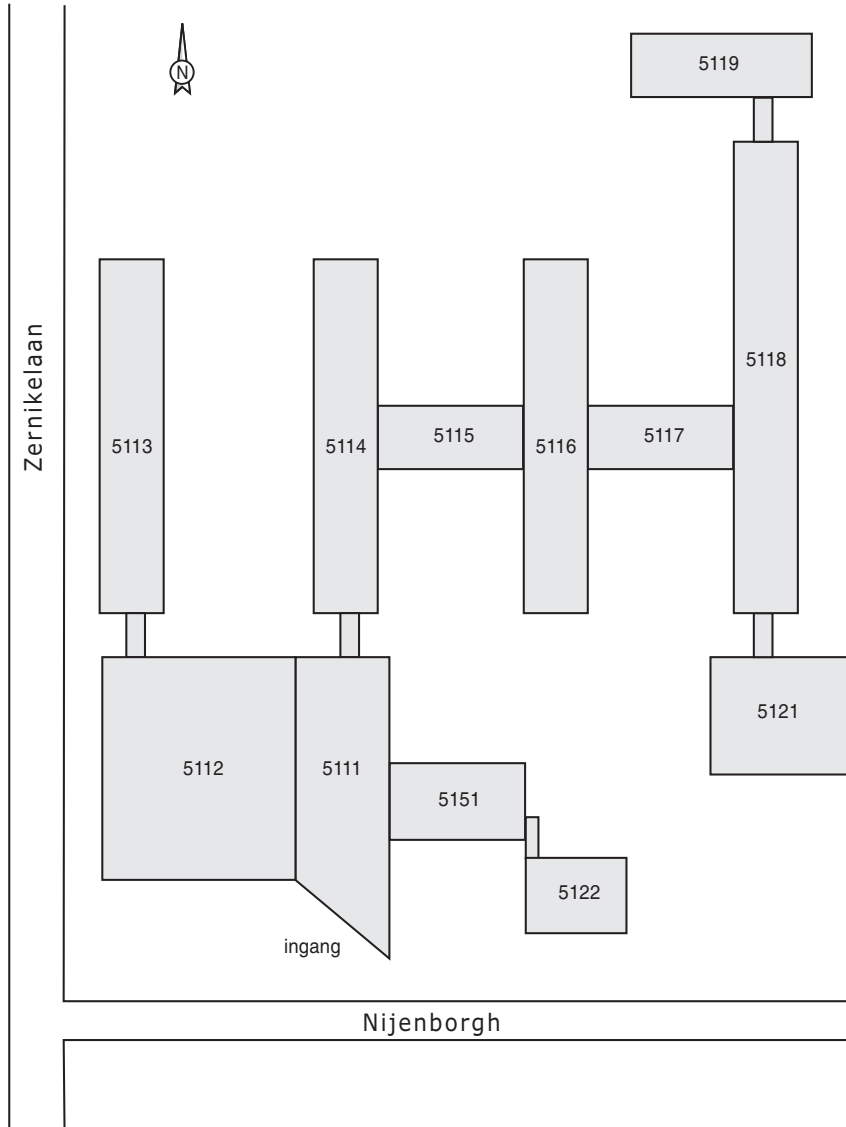
- eligibility and admission requirements for university degree programmes
- registration and deregistration, payment of tuition fees
- teaching
- examinations and final assessments
- financial support in the event of force majeure or extraordinary circumstances
- participation
- rules of conduct
- protection of rights, complaints, objections and appeal procedures.

# 10 Maps

## Deusinglaan complex



## Chemie-Fysica-Milieukunde



### Chemie-Fysica-Milieukunde

Nijenborgh 4  
9747 AG Groningen  
tel. 050 363 4133

**Biological center**

