



Teaching and Examination Regulations 2018-2019

Appendices Bachelor's degree programme Pharmacy

Appendix I Learning outcomes of the Bachelor's degree programme (Article 3.1.1)

The learning outcomes of the Bachelor's degree programme **Pharmacy** are as follows:

- a. The graduate has a sound grasp of the basic theoretical concepts and practical skills underlying the different disciplines relevant to pharmaceutical science and practice.
- b. The graduate is able to amalgamate knowledge from the different pharmaceutical disciplines to address specific pharmacy-related questions.
- c. The graduate is able, with some degree of independence, to define a scientific question within a field of interest. Moreover, the graduate can propose a solution to the question based on an analysis of the relevant literature, and discuss the implications of this solution for the field.
- d. The graduate can describe fundamental and/ or applied research and recognise critical parameters.
- e. The graduate is able to work individually or in a (multidisciplinary) team on scientific and societally relevant questions related to the field of pharmacy.
- f. The graduate has sufficient problem-solving capabilities to respond adequately to specific pharmaceutical questions.
- g. The graduate is able, with some degree of independence, to report either orally or in writing on scientific and societally relevant topics originating from the different pharmaceutical disciplines.
- h. The graduate has gained sufficient academic skills to enter a relevant Master's degree programme.
- i. The graduate is aware of the societal, ethical and social aspects involved in the fields of pharmacy and the natural sciences, and the corresponding responsibilities of a pharmacist.
- j. The graduate is sufficiently knowledgeable to make an informed choice regarding further education and career options.

Appendix II Majors and Minors of the degree programme (Article 3.7)

The Bachelor's degree programme in Pharmacy comprises:

- a major Pharmacy (165 ECTS) combined with a compulsory deepening minor in Pharmacy (15 ECTS, only accessible for Pharmacy students)
- a major Medical Pharmaceutical Sciences (165 ECTS) with the choice of
 - a) a deepening minor in Pharmacy (15 ECTS, only accessible for Pharmacy students)
 - b) or a minor in Medical Pharmaceutical Sciences (15 ECTS, also accessible for students from other FSE bachelor's degree programmes)



Appendix III Course units in the propaedeutic phase

- **List of course units (Article 4.1.1);**
- **Course units with practical (Article 4.2);**
- **Compulsory order of examinations (Article 9.2)**

Course unit name	ECTS	Practical	Entree requirements
Academic Research & Communication Skills	5	x	-
Molecular Biology of the Cell 1	4	x	-
Molecular Biology of the Cell 2	4	x	-
Genetics	3	x	-
The Cell, a practical approach	3	x	-
Mathematics and Statistics	5		-
Physiology and Pharmacology	5		-
Pharmaceutical Technology and Biopharmacy 1	5		-
Molecules and Reactivity	5		-
Human Physiology and Pathology	8	x	-
Pharmaceutical Analysis A	5	x	-
Receptor Pharmacology	5	-	-
Global Health and Pharmacotherapy	3	x	-



Bijlage IV Studieonderdelen van de post-propedeutische fase

- **Lijst met studieonderdelen; artikel 7.1**
- **Vakken met een of meerdere practica; artikel 7.2**
- **Verplichte volgorde tentamens; artikel 9.2**

vak	vakcode	ECTS	Practicum	Ingangseisen
Bachelorproject	WLFB0811	10	x	Bachelorthesis
Bachelorthesis	WLFB0812	5	x	Alle propedeusevakken, Minimaal 144 ECTS behaald, incl. FaTEM
Beroepsvoorbereiding 2	WLFB1201	1	x	-
Beroepsvoorbereiding 3	WLFB1206	1	x	-
Biostatistiek	WLFB1001	5	x	-
Farmaceutische analyse B	WBFA16000	5	x	Farmaceutische analyse A
Farmaceutische microbiologie	WBFA16001	4	x	Celbiologie 1 en 2, Practicum minimale cel
Farmaceutische technologie en biofarmacie 2	WBFA16002	10	x	Celbiologie 1 en 2, Practicum minimale cel, Farm. analyse A, Farm. technologie en biofarmacie 1, Farm. microbiologie practicum
Farmacie, technologie, ethiek en maatschappij (FaTEM)	WLFB1210	4	x	-
Medicinal Chemistry and Biophysics	WBFA17002	5	-	-
Pharmacoepidemiology	WLFB0804	5	x	-
Farmacokinetiek	WBFA16003	5	x	Practicum minimale cel, Fysiologie en therapie, Practicum anatomie en fysiologie, Humane fysiologie
Pharmacology practical	WLFB0705	5	x	Practicum minimale cel, Fysiologie en therapie, Practicum anatomie en fysiologie, Humane fysiologie, Receptorfarmacologie
Infecties en tumoren; Geneesmiddelen bij	WBFA16009	5	-	-
Metabolisme en Toxicologie	WBFA16004	5	x	Practicum minimale cel, Fysiologie en therapie, Practicum anatomie en fysiologie, Humane fysiologie
Organische chemie practicum	CHWLFB070	5	x	Moleculen en reactiviteit
Organische en Biosynthese	WBFA16005	5	-	-
Receptor pharmacology	WLFB0703	5	-	-
Centraal zenuwstelsel; Geneesmiddelen van het	WLFB0801	5	-	-
Endocrien systeem, TD/TR, en TC; Geneesmiddelen van het	WBFA16006	10	-	-
Farmaceutische analyse C	WBFA16007	10	x	Farmaceutische analyse B
Immunopharmacology	WBFA16008	5	-	-



Appendix V Entry Requirements (Section 2)

A. Deficient VWO-diploma

1. The following requirements apply to the entrance examination as defined in Article 7.28.3 of the Act:

Bacheloropleiding <i>Bachelor's degree programme</i>	N+T	N+G	E+M	C+M
Biologie <i>Biology</i>	Biologie	Natuurkunde	Wiskunde A of B Natuurkunde Scheikunde Biologie	Wiskunde A of B Natuurkunde Scheikunde Biologie
Farmacie <i>Pharmacy</i>	V	Natuurkunde	Natuurkunde Scheikunde	Wiskunde A of B Natuurkunde Scheikunde
Life Science and Technology Scheikunde <i>Chemistry</i>	V	Wiskunde B Natuurkunde	Wiskunde B Natuurkunde Scheikunde	Wiskunde B Natuurkunde Scheikunde
Scheikundige Technologie <i>Chemical Engineering</i>				
Informatica <i>Computing Science</i>	V	Wiskunde B	Wiskunde B	Wiskunde B
Technische Bedrijfskunde <i>Industrial Engineering and Management Science</i>				
(Technische) Wiskunde <i>(Applied) Mathematics</i>				
Kunstmatige Intelligentie <i>Artificial Intelligence</i>	V	V	V	Wiskunde A of B
(Technische) Natuurkunde <i>(Applied) Physics</i>	V	Wiskunde B Natuurkunde	Wiskunde B Natuurkunde	Wiskunde B Natuurkunde
Sterrenkunde <i>Astronomy</i>				

2. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.

B. HBO (university of applied science) propaedeutic certificate, other universities

1. The following requirements apply to the entrance examination as defined in Article 7.28.3 of the Act:

Bachelor's degree programme	Subjects at VWO (pre-university) level
B Biology	wia or wib + na+sk+bio
B Pharmacy	wia or wib + na+sk
B Life Science and Technology	wib+na+sk
B Computing Science	wib
B Artificial Intelligence	wia or wib
B Physics	wib+na
B Chemistry	wib+na+sk
B Astronomy	wib+na
B Mathematics	wib
B Chemical Engineering	wib+na+sk
B Industrial Engineering and Management Science	wib
B Applied Physics	wib+na
B Applied Mathematics	wib

wia = Mathematics A; wib = Mathematics B; na = Physics; sk = Chemistry; bio = Biology



3. In addition, candidates are required to be competent in English:
- | | |
|---|--|
| IELTS (Academic) | 6.5 - no less than 6.0 on each section |
| TOEFL IBT (internet-based test) | 92 - no less than 21 on each section |
| TOEFL CBT (computer-based test) | 237 - no less than 21 on each section |
| TOEFL PBT (paper-based test) | 580 - no less than 55 on each section |
| Cambridge English | CAE or CPE Certificate |
| English language test - University of Groningen Language Centre | Minimum section scores C2 or C1 (one B2 allowed) |

4. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.

C. Foreign qualifications (EEA)

1. Any certificate that grants access to a university in a European country will also grant access to Dutch universities.

2. In the entrance examination, as referred to in art. 7.28, paragraph 3 of the Act, per country and educational institution specific training conditions are mentioned. These are standardized. The entrance examination is, in accordance with the Admissions Board Bachelor's programmes FSE, carried out by the Admissions Office. If for a specific diploma no standardisation has taken place then the requirements as formulated for candidates with a HBO (university of applied science) propaedeutic certificate will apply to these candidates in the entrance examination as defined in Article 7.28.3 of the Act (see A).

3. In addition, candidates are required to be competent in English:
- | | |
|---|--|
| IELTS (Academic) | 6.5 - no less than 6.0 on each section |
| TOEFL IBT (internet-based test) | 92 - no less than 21 on each section |
| TOEFL CBT (computer-based test) | 237 - no less than 21 on each section |
| TOEFL PBT (paper-based test) | 580 - no less than 55 on each section |
| Cambridge English | CAE or CPE Certificate |
| English language test - University of Groningen Language Centre | Minimum section scores C2 or C1 (one B2 allowed) |

4. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.

D. German diploma

1. A Zeugnis der Allgemeinen Hochschulreife ('Abitur') is required.
2. The following requirements apply to the entrance examination as defined in Article 7.29 of the Act:

Degree Programme	
B Biology	wi (LK or GK) na (LK or GK) sk (LK or GK) bio (LK or GK) (at least one subject at Leistungskursniveau)



B Pharmacy B Life Science and Technology	wi (LK or GK) na (LK or GK) sk (LK or GK) (at least one subject at Leistungskursniveau)
---	--

LK = Leistungskursniveau; GK is Grundkursniveau followed for 13 or 12 years (in case the gymnasium counts 12 years).

3. In addition, candidates are required to be competent in English:

IELTS (Academic)	6.5 - no less than 6.0 on each section
TOEFL IBT (internet-based test)	92 - no less than 21 on each section
TOEFL CBT (computer-based test)	237 - no less than 21 on each section
TOEFL PBT (paper-based test)	580 - no less than 55 on each section
Cambridge English	CAE or CPE Certificate
English language test - University of Groningen Language Centre	Minimum section scores C2 or C1 (one B2 allowed)

4. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.

E. Foreign qualifications (non-EEA)

1. A non-European certificate that according to NUFFIC and/or NARIC standards is equivalent to a Dutch VWO certificate will grant access to university in the Netherlands.

2. In the entrance examination, as referred to in art. 7.28, paragraph 3 of the Act, per country and educational institution specific training conditions are mentioned. These are standardized. The entrance examination is, in accordance with the Admissions Board Bachelor's programmes FSE, carried out by the Admissions Office. If for a specific diploma no standardisation has taken place then the requirements as formulated for candidates with a HBO (university of applied science) propaedeutic certificate will apply to these candidates in the entrance examination as defined in Article 7.28.3 of the Act (see A).

3. In addition, candidates are required to be competent in English:

IELTS (Academic)	6.5 - no less than 6.0 on each section
TOEFL IBT (internet-based test)	92 - no less than 21 on each section
TOEFL CBT (computer-based test)	237 - no less than 21 on each section
TOEFL PBT (paper-based test)	580 - no less than 55 on each section
Cambridge English	CAE or CPE Certificate
English language test - University of Groningen Language Centre	Minimum section scores C2 or C1 (one B2 allowed)

4. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.



F. Entrance examination (Colloquium Doctum)

1. The following requirements apply to the entrance examination as defined in Article 7.29 of the Act:

Degree programme	Nature and Health VWO level	or	Nature and Technology VWO level
B Biology	en, wia or b, sk, bio, na		en, wib, na, sk, bio
B Pharmacy	en, wia or b, sk, bio, na		en, wib, na, sk
B Life Science and Technology	en, wib, sk, bio, na		en, wib, na, sk

en = English; wia = Mathematics A; wib = Mathematics B; na = Physics; sk = Chemistry; bio = Biology

2. In addition, candidates are required to be competent in English:

IELTS (Academic)	6.5 - no less than 6.0 on each section
TOEFL IBT (internet-based test)	92 - no less than 21 on each section
TOEFL CBT (computer-based test)	237 - no less than 21 on each section
TOEFL PBT (paper-based test)	580 - no less than 55 on each section
Cambridge English	CAE or CPE Certificate
English language test - University of Groningen Language Centre	Minimum section scores C2 or C1 (one B2 allowed)

3. The Admissions Board Bachelor's programmes FSE will determine whether deficiencies have been compensated satisfactorily.

Appendix VI Clustering of Bachelor's degree programmes (Article 5.3.4, Article 5.6.1)

Degree programme CROHO code	Name of degree programme	Clustered with CROHO code	Name of degree programme
56286	B Life Science and Technology	56860	B Biology
56860	B Biology	56157	B Pharmacy
56157	B Pharmacy	56286	B Life Science and Technology
56980	B Mathematics	56157	B Pharmacy
56965	B Applied Mathematics	56860	B Biology
50206	B Physics	56286	B Life Science and Technology
56962	B Applied Physics	56965	B Applied Mathematics
56965	B Applied Mathematics	50206	B Physics
50206	B Physics	56962	B Applied Physics
56962	B Applied Physics	50205	B Astronomy
56980	B Mathematics	56980	B Mathematics
50205	B Astronomy	50206	B Physics
56965	B Applied Mathematics	56962	B Applied Physics
56980	B Mathematics	50205	B Astronomy
50206	B Physics	56965	B Applied Mathematics
56962	B Applied Physics	56980	B Mathematics
50205	B Astronomy	50206	B Physics
56965	B Applied Mathematics	50205	B Astronomy
56980	B Mathematics	56965	B Applied Mathematics
50206	B Physics	56980	B Mathematics



**rijksuniversiteit
 groningen**

50205

B Astronomy

56962

B Applied Physics

56965

B Applied Mathematics

50206

B Physics

56980

B Mathematics

56857

B Chemistry

56960

B Chemical Engineering

56960

B Chemical Engineering

56857

B Chemistry



Appendix VII Admission to the post-propaedeutic phase (Article 6.1.1)

The following candidates will be admitted to the post-propaedeutic phase:

1. de bezitter van het propedeutisch getuigschrift van de opleiding;
2. de bezitter van het propedeutisch getuigschrift van
 - de bacheloropleiding Biofarmaceutische Wetenschappen in Leiden

Appendix VIII Contact hours propaedeutic phase (Article 3.6)

Bachelor jaar 1	
Type of contact	Number of contact hours per year *
Lectures	278
Tutorials	93
Practical (including computer practical)	220
Study support/ Mentor groups	10
Internship support and guidance	-
Examinations	36

* As the Programme Committee first has to give input to the course units, then to the schedule and Ocasys texts, it is not possible to present details about the proposed course units at this stage. However, the number of lectures will be increased and the amount of practical will be decreased a little compared to 2017-2018.



Appendix IX University Minors of the faculty of Science and Engineering (Article 8.5.1)

1. Neurosciences Minor (taught in English):

- Neuroscience (15 ECTS)
- Behavioural Neuroscience (15 ECTS)

Future Planet Innovation (taught in English):

- Global Challenges (10 ECTS)
- Sustainability in perspective (5 ECTS)
- Sustainable contributions to society (15 ECTS)

Astronomy through Space and Time Minor (taught in English):

- The Evolving Universe (5 ECTS)
- Cosmic Origins (5 ECTS)
- Astrobiology (5 ECTS)

Einstein's physics: Space-time and parallel worlds (taught in English):

- Einstein's Universe
- Quantum World
- Building blocks of matter

2. The Programme Committee for the Bachelor's degree programmes in Biology and Life Science & Technology also has authority in the field of the Minor "Neurosciences" and/or its course units.

The Programme Committee for the Master's degree programme in Energy & Environmental Sciences also has authority in the field of the Minor "Future Planet Innovation" and/or its course units.

The Programme Committee for the Bachelor's degree programme in Astronomy also has authority in the field of the Minor "Astronomy through Space and Time" and/or its course units.

The Programme Committee for the Bachelor's degree programmes in Physics and Applied Physics also has authority in the field of the Minor "Einstein's physics: Space-time and parallel worlds" and/or its course units.

3. The Board of Examiners for the Bachelor's degree programmes in Biology and Life Science & Technology and the Master's degree programmes in Biology, Ecology & Evolution, Marine Biology and Molecular Biology & Biotechnology also has authority in the field of the Neurosciences Minor and/or its course units.

The Board of Examiners for the Master's degree programme in Energy & Environmental Sciences also has authority in the field of the "Future Planet Innovation" Minor and/or its course units.

The Board of Examiners for the Bachelor's degree programme in Astronomy also has authority in the field of the Astronomy through Space and Time Minor and/or its course units.



The Board of Examiners for the Bachelor's degree programmes in Physics and Applied Physics also has authority in the field of the Physics Minor "Einstein's physics: Space-time and parallel worlds" and/or its course units.

4. These Teaching and Examination Regulations also apply in their entirety to the Minors in Neurosciences, Future Planet Innovation, Astronomy through Space and Time and Einstein's physics: Space-time and parallel worlds and/or their course units.

Appendix X Transitional arrangement (Article 12.1)

For cohort 2017-2018 and earlier

Course unit	May be replaced with	Reason
Celbiologie 1	Molecular Biology of the Cell 1	Curriculum change in 2018-2019: first course is no longer offered, second course in new curriculum
Celbiologie 2	Molecular Biology of the Cell 2	idem
Beroepsvoorbereiding 1 Eerstejaars Symposium Farmacie in Perspectief	Academic Research & Communication Skills	idem
Practicum Minimale Cel	The Cell, a practical approach	idem
Practicum Anatomie en Fysiologie	Human Physiology and Pathology (practical part)	idem
Humane Fysiologie Pathologie	Human Physiology and Pathology	idem