

# **Teaching and Examination Regulations**

## **Masterprogramme in Drug Discovery & Safety Faculty of Science**

**Academic year 2018-2019**

B1. programme specific section - general provisions

B2. programme specific section – content of programme

## Index

<b>Section B1: Programme specific – general provisions .....</b>	<b>3</b>
<b>6. General programme information and characteristics.....</b>	<b>3</b>
Article 6.1 Study programme information.....	3
Article 6.2 Teaching formats used and modes of assessment.....	3
Article 6.3 Academic student counselling .....	3
<b>7. Further admission requirements.....</b>	<b>4</b>
Article 7.1 Intake date(s).....	4
Article 7.2 Admission requirements .....	4
Article 7.3 English language requirement for English-language Master's programmes.....	5
<b>8. Interim examinations and results.....</b>	<b>5</b>
Article 8.1 Sequence of interim examinations.....	5
Article 8.2 Validity period for results .....	5
Article 8.3 Degree.....	6
<b>Section B2: Programme specific – content of programme .....</b>	<b>7</b>
<b>9. Programme objectives, specializations and exit qualifications.....</b>	<b>7</b>
Article 9.1 Workload .....	7
Article 9.2 Specializations.....	7
Article 9.3 Programme objective.....	7
Article 9.4 Exit qualifications .....	7
<b>10. Curriculum structure.....</b>	<b>9</b>
Article 10.1 Composition of the programme.....	9
Article 10.2 Compulsory educational components .....	9
Article 10.3 Elective educational components.....	12
Article 10.5 Participation in practical exercise.....	19
<b>11. Evaluation and transitional provisions.....</b>	<b>19</b>
Article 11.1 Evaluation of the education.....	19
Article 11.2 Transitional provisions .....	19
<b>Appendix I Overview of articles that must be included in the OER.....</b>	<b>20</b>
<b>Appendix II.....</b>	<b>21</b>
<b>Appendix III Ordinances VU CvB and Binding Guidelines (richtlijn).....</b>	<b>22</b>

## Section B1: Programme specific – general provisions

### 6. General programme information and characteristics

#### Article 6.1 Study programme information

1a	The programme Drug Discovery & Safety CROHO number 66989 is offered on a full-time basis.	Advice OLC; approval FGV (7.13 i)
1b	For selected students the programme is offered in partnership with the University of Copenhagen and leads to a joint degree.	Advice OLC; approval FGV (9.38 b)
1c	The language of instruction is English	Advice OLC; approval FGV (9.38 b)
2.	<p>A unit of study comprises 6 EC or a multiple thereof. The units listed below have a different size:</p> <p>AM_1180 Clinical Development and Clinical Trials (3 EC)</p> <p>O_MFDIDAC_3 Didactiek 3 (9 EC)</p> <p>O_MLDIDAC_3 Didactiek 3 (9 EC)</p> <p>AM_1179 Epidemiology (3 EC)</p> <p>XM_432517 Ethics and Academic Skills (3 EC)</p> <p>AM_470707 Ethics in Life Sciences (3 EC)</p> <p>O_MFPRAK_2 Praktijk 2 (9 EC)</p> <p>O_MLPRAK_2 Praktijk 2 (9 EC)</p> <p>O_MFPROZ_1 Praktijkonderzoek 1 (3 EC)</p> <p>O_MLPROZ_1 Praktijkonderzoek 1 (3 EC)</p> <p>X_400592 Scientific Writing in English (3 EC)</p> <p>XM_432741 Teaching Assistant (3 EC)</p> <p>X_432625 Tutoring Students (3 EC)</p>	

#### Article 6.2 Teaching formats used and modes of assessment

1.	<p>The degree programme uses the following teaching formats:</p> <ul style="list-style-type: none"> <li>• Lectures</li> <li>• Tutorials</li> <li>• Practical work</li> </ul>	Advice OLC; approval FGV (7.13 x)
2.	<p>The degree programme uses the following modes of assessment:</p> <ul style="list-style-type: none"> <li>• Written examination</li> <li>• Paper</li> <li>• Assignments</li> <li>• Reports</li> </ul>	Advice OLC; approval FGV (7.13 l)

#### Article 6.3 Academic student counselling

1.	<p>The programme offers the following counselling in addition to the student counselling mentioned in Section A:</p> <p>XM_0002 Research Skills and Career Perspectives</p> <p>Academic Advisor</p>	Advice OLC; approval FGV (7.13 u)
----	---	-----------------------------------

## 7. Further admission requirements

### Article 7.1 Intake date(s)

<p>Lid 1 The programme starts on September 1. The programme starts twice a year: on September 1 and on February 1.</p>	<p>Advice OLC; approval FGV (9.38 b)</p>
--	--

### Article 7.2 Admission requirements

<p>1.</p> <p>A). Applicants will be admitted to the Master's degree programme if they hold a letter of acceptance from the (Admission Committee or) Examination Board, issued by or on behalf of the Faculty Board because the applicant has demonstrated to meet the knowledge, insight and skills requirements of the final level of attainment in an appropriate university Bachelor's degree programme. The criteria concerning knowledge, insight and skills are specified in paragraph 2.</p> <p>B). Examples of appropriate university Bachelor's degree programmes:</p> <ul style="list-style-type: none"> <li>• a Bachelor's degree in Pharmaceutical Sciences from a Dutch university;</li> <li>• a Bachelor's degree in Chemistry, provided it meets the prior education requirements, to be assessed by the Examination Board; (any deficiencies will need to be addressed prior to or during the Master's programme);</li> <li>• a Bachelor's degree in Medical Natural Sciences, provided it meets the prior education requirements, to be assessed by the Examination Board; (any deficiencies will need to be addressed prior to or during the Master's programme);</li> <li>• a Bachelor's degree from a relevant programme at a university of applied sciences (HBO), provided it meets the prior education requirements, to be assessed by the Examination Board; (any deficiencies will need to be addressed prior to or during the Master's programme);</li> <li>• a Bachelor's degree in Pharmaceutical Sciences or equivalent from a foreign university, provided it meets the prior education requirements, to be assessed by the Examination Board; (any deficiencies will need to be addressed prior to or during the Master's programme);</li> <li>• a command of English equivalent to final-examination university entry level (VWO level under the Dutch school system).</li> </ul> <p>C). Since the Master's degree programme consists of distinct specializations, the Examination Board will assess whether the applicant meets the applicable requirements for a specialization. Admission to one specialization does not automatically imply admission to other specializations. When a candidate wants to switch, a new assessment will be necessary.</p> <p>D). Those not yet in possession of a Bachelor's degree, but who meet the admission requirements with regard to knowledge, insight and skills specified in paragraph 2, may on request be granted conditional admission to the associated Master's programme, insofar as failure to grant admission would result in undue unfairness.</p> <p>E). The letter of acceptance relates exclusively to the academic year following the academic year in which the application for the letter of acceptance was submitted, unless the Executive Board decides otherwise.</p>	<p>Partly legal provision &amp; ordinance CvB, see appendix 3. Admission requirements excepted from participation in WHW</p>
<p>2. The Admissions Board will investigate whether the applicant meets the admission requirements.</p>	<p>Legal provision</p>

<p>3. In addition to the requirements referred to in the first paragraph, the Admissions Board can also assess requests for admission in terms of (at least two of) the following criteria:</p> <ul style="list-style-type: none"> <li>a. talent and motivation;</li> <li>b. level of relevant knowledge and understanding;</li> <li>c. proficiency in methods and techniques;</li> <li>d. academic attitude and critical thinking;</li> <li>e. proficiency in the language(s) of instruction</li> </ul>	<p>Partly legal provision &amp; ordinance CvB, see appendix 3. Admission requirements excepted from participation in WHW</p>
--	--

### Article 7.3 English language requirement for English-language Master's programmes

<p>1. The proficiency requirement in English as the language of instruction can be met if no longer than two years before the start of the programme, the applicant has successfully completed one of the following examinations with at least the scores indicated:</p> <ul style="list-style-type: none"> <li>- IELTS: 6.5</li> <li>- TOEFL paper based test: 580</li> <li>- TOEFL internet based test: 92</li> <li>- Cambridge Advanced English: A, B or C.</li> </ul> <p>2. An exemption from the English language proficiency requirement in paragraph 1 will be granted to those who have passed the final Dutch secondary school examination in English at pre-university level (VWO) and those who, no more than two years prior to commencement of the programme:</p> <ul style="list-style-type: none"> <li>- met the requirements of the VU test in English language proficiency TOEFL ITP, with at least the scores specified in paragraph 1, or</li> <li>- had previous education in secondary or tertiary education in an English-speaking country as listed on the VU website, or</li> <li>- have an English-language 'international baccalaureate' diploma</li> </ul>	<p>National code of conduct International students</p>
---	--

## 8. Interim examinations and results

### Article 8.1 Sequence of interim examinations

<p>1. Students may participate in interim examinations [or practical exercises] of the components below only if they have passed the interim examination or examinations for the components mentioned hereinafter:</p>	<p>Advice OLC; approval FGV (7.13 h, s &amp; t)</p>
<p>A major or minor internship after obtaining 18 EC or more</p>	
<p>A major or minor internship after passing a course specified by the examination board</p>	

### Article 8.2 Validity period for results

<p>The validity period of the interim examinations and exemptions from interim examinations below, is not limited.</p>	<p>Advice OLC; approval FGV (7.13 k)</p>
<p>1. A student may request the Examination Board to extend the validity of an exam. If the exam shows that a student's knowledge is insufficient or outdated, or if the student's</p>	<p>Legal provision</p>

skills and insights evaluated in the exam are demonstrably outdated, the Examination Board may impose a supplementary examination, impose a replacement examination or refuse to extend the period of validity.	
2. In situations where a limited period of validity applies, the period of validity of examinations may be extended in the event of extenuating circumstances as stipulated in WHW Article 7.51, paragraph 2, with at least the period of allocated financial assistance specified in WHW Article 7.15, paragraph 1.	Legal provision

#### Article 8.3 Degree

Degree Students who have successfully completed their Master's final Examination are awarded a Master of Science degree. The degree awarded is stated on the diploma. If it is a joint degree, this will also be stated on the diploma.	Legal provision
---	-----------------

## **Section B2: Programme specific – content of programme**

### **9. Programme objectives, specializations and exit qualifications**

#### **Article 9.1 Workload**

1. The programme has a workload of 120 EC	Advice OLC; (7.13 a)
---	-------------------------

#### **Article 9.2 Specializations**

<p>The programme has the following variants:</p> <ul style="list-style-type: none"> <li>• Research variant (R-variant): Drug Discovery and Target Finding</li> <li>• Research variant (R-variant): Drug Design and Synthesis</li> <li>• Research variant (R-variant): Drug Disposition and Safety Assessment</li> <li>• Research variant (R-variant): Computational Medicinal Chemistry and Toxicology</li> <li>• Research variant (R-variant): Biomarkers and Clinical Chemical Analysis</li> <li>• Society oriented variant for natural and life sciences (S-variant)</li> <li>• Communication variant (C-variant)</li> <li>• Education variant (E-variant)</li> </ul>	Advice OLC; (7.13 a)
--	-------------------------

#### **Article 9.3 Programme objective**

The programme aims to impart sufficient knowledge, skills and insight within the field of Drug Discovery & Safety, and any related disciplines, to be able to operate as an independent professional at an academic level, and to be a suitable candidate for a subsequent course of study leading to a career in research or development. Another aim of the programme is to develop students' understanding of the relationships between academic disciplines, as well as their sense of social responsibility.	Advice OLC; (7.13 a)
---	-------------------------

#### **Article 9.4 Exit qualifications**

<p>1. The Master of Science in Drug Discovery &amp; Safety</p> <ul style="list-style-type: none"> <li>• has a sound theoretical and practical understanding of the modern pharmaceutical sciences (including the requisite knowledge of other disciplines)</li> <li>• has a thorough knowledge of theoretical and experimental methods, as well as research experience in at least one sub-field of pharmaceutical sciences</li> <li>• is capable, within a reasonable period of time, of becoming conversant in other sub-fields of the discipline</li> <li>• is capable of formulating a work plan for research within the pharmaceutical sciences, on the basis of a realistic research question</li> <li>• is capable of analyzing and formulating research results, and of drawing conclusions from them</li> <li>• is capable of writing a report or an academic paper for publication in an international journal, and of participating in a discussion on a topic related to the field of study in question</li> <li>• is capable of studying the professional literature (including international publications) in relevant sub-fields, and of making use of the discussions and results found there</li> <li>• is capable of applying knowledge of the pharmaceutical sciences within a wider, multidisciplinary context</li> </ul>	Approval OLC (7.13 c)
---	--------------------------

<ul style="list-style-type: none"> <li>• is capable of dealing with the safety and environmental aspects of the pharmaceutical sciences</li> <li>• is capable of taking on posts for which knowledge and research skills in the field of the pharmaceutical sciences are required</li> <li>• has sufficient knowledge of and insight into the social role of the pharmaceutical sciences to decide on a responsible choice of profession and professional practice</li> <li>• is capable of cooperating with others, of imparting knowledge to others, and of delivering a lecture both to specialists and to a wider audience</li> </ul> <p>The programme emphasizes:</p> <ul style="list-style-type: none"> <li>• the student's personal development;</li> <li>• promoting the student's sense of social responsibility;</li> <li>• promoting the student's communication skills and academic literacy in Dutch or in English.</li> </ul>	
<p>2. Without prejudice to the provisions of paragraph 1, a graduate of the different variants will have the following knowledge and understanding</p> <p>R-variant</p> <p>The graduate:</p> <ul style="list-style-type: none"> <li>• is capable of independently designing, conducting and assessing experiments and the associated controls within a given period of time;</li> <li>• is capable of contextualizing the results and conclusions obtained, within the framework of results obtained by others;</li> <li>• is capable of formulating a perspective on the development of scientific research within the field in question;</li> <li>• is capable of quantitatively and qualitatively analyzing chemical processes, of entering the data into existing models (or models yet to be developed), and of presenting the results at various levels of abstraction;</li> <li>• must possess insight into the role of the pharmaceutical sciences in a sustainable society.</li> </ul> <p>C variant</p> <p>The graduate can:</p> <ul style="list-style-type: none"> <li>• independently acquire new knowledge of the subject in the area of communication and can apply this in appropriate professional situations;</li> <li>• impart any knowledge and insights obtained, verbally and in writing to wider audiences.</li> </ul> <p>E variant</p> <p>The graduate can:</p> <ul style="list-style-type: none"> <li>• independently acquire new knowledge of the subject in the area of education, and can apply this in appropriate professional situations;</li> </ul>	Approval OLC (7.13 b)



<ul style="list-style-type: none"> <li>impart any knowledge and insights obtained, verbally and in writing in appropriate educational settings.</li> </ul> <p>S variant</p> <p>The graduate can:</p> <ul style="list-style-type: none"> <li>develop a perspective on the contributions that scientific knowledge and methods can potentially make to social problems related to the field in question;</li> <li>distil a research question from this perspective that is geared towards solutions;</li> <li>implement such questions in the form of targeted research;</li> <li>interpret and present data obtained from analyses conducted at different scales and different levels of abstraction;</li> <li>cooperate with others in the context of a multidisciplinary project team.</li> </ul>	
--	--

## 10. Curriculum structure

### Article 10.1 Composition of the programme

1. The programme comprises at least a package of compulsory components and an individual Master's thesis and academic internship.	Ordinance CvB, see appendix 3
2. Additionally the programme can offer: <ul style="list-style-type: none"> <li>- Practical exercises</li> <li>- Minor</li> <li>- Electives</li> </ul>	Advice OLC; (7.13 a)
3. Educational components are categorized as specialized (400), research oriented (500) and highly specialized (600) level.	Ordinance CvB, see appendix 3

### Article 10.2 Compulsory educational components

*A detailed description per educational component can be found in the Study Guide.*

Educational component	course code	nr of EC	level	Advice OLC; (7.13 a)
<b>Communication variant:</b>				
Research methods for analyzing problems	AM_1182	6	400	
Science and Communication	AM_470587	6	500	
Research skills and career perspectives	XM_0002	0	400	
<b>Education variant:</b>				
Peergroup 1	O_MLPEERGR_1	0	400	
Didactiek 1	O_MLDIDAC_1 or _MFDIDAC_1	6	400	
Praktijk 1	O_MLPRAK_1or O_MFPRAK_1	6	400	
Praktijkonderzoek 1	O_MLPROZ_1 or	3	400	

	O_MFPROZ_1				
Didactiek 2	O_MLDIDAC_2 or O_MFDIDAC_2	6	400		
Praktijk 2	O_MLPRAK_2 or _MFPRAK_2	9	400		
Didactiek 3	O_MFDIDAC_3 or O_MLDIDAC_3	9	400		
Praktijk 3	O_MFPRAK_3 or O_MLPRAK_3	15	400		
Praktijkonderzoek 2	O_MFPROZ_2 or O_MLPROZ_2	6	400		
Peergroup 2	O_MLPEERGR_2	0	400		
Research skills and career perspectives	XM_0002	0	400		
<b>Research variant DDTF</b>					
<i>Colloquium &amp; Literature Thesis (Choose 1 of 2 – 12 EC required)</i>					
Colloquium & Literature Thesis Medicinal Chemistry	XM_0032	12	600		
Colloquium & Literature Thesis Organic Chemistry ( <i>Subject: Structural Chemical Biology</i> )	XM_0034	12	600		
High-Throughput Screening	X_435047	6	500		
Signal Transduction in Health and Disease	X_432535	6	500		
ADMET	X_432721	6	400	42-60	
Chemical Biology	X_432538	6	400		
Drug Action	X_432724	6	400		
Project Computational Design and Synthesis of Drugs	X_432734	6	400		
Research skills and career perspectives	XM_0002	0	400		
<b>Research variant DDSA</b>					
Colloquium & Literature Thesis Molecular & Computational Toxicology	XM_0033	12	600		
Drug-induced Stress and Cellular Response	X_432536	6	500		
Advanced Course on DDSA	X_435681	6	500		
ADMET	X_432721	6	400		
Chemical Biology	X_432538	6	400		
Drug Action	X_432724	6	400		
Project Computational Design and Synthesis of Drugs	X_432734	6	400		
Research skills and career perspectives	XM_0002	0	400		
<b>Research variant CMCT</b>					
Comp.-Aided Drug Design and Virtual Scr.	X_432673	6	400		
Biomolecular Simulation in MC&T	X_432664	6	400		
ADMET	X_432721	6	400		
Chemical Biology	X_432538	6	400		

Drug Action	X_432724	6	400
Project Computational Design and Synthesis of Drugs	X_432734	6	400
Research skills and career perspectives	XM_0002	0	400
<i>Colloquium &amp; Literature Thesis (Choose 1 of 3 – 12 EC required)</i>			
Colloquium & Literature Thesis Molecular & Computational Toxicology	XM_0033	12	600
Colloquium & Literature Thesis Medicinal Chemistry	XM_0032	12	600
Colloquium & Literature Thesis Theoretical Chemistry	XM_0036	12	600
<b>Research variant DD&amp;S</b>			
Physical-Organic Chemistry	X_435663	6	400
Synthetic Approaches in Medicinal Chemistry	X_435685	6	500
ADMET	X_432721	6	400
Chemical Biology*	X_432538	6	400
Drug Action	X_432724	6	400
Project Computational Design and Synthesis of Drugs	X_432734	6	400
Research skills and career perspectives	XM_0002	0	400
<i>*Chemical Biology is not compulsory for students following the DD&amp;S track who will do the double degree programme.</i>			
<i>Colloquium &amp; Literature Thesis (Choose 1 of 4 – 12 EC required)</i>			
Colloquium & Literature Thesis Medicinal Chemistry	XM_0032	12	600
Colloquium & Literature Thesis Organic Chemistry	XM_0034	12	600
Colloquium & Literature Thesis Radiopharmaceutical Chemistry	XM_0035	12	600
Colloquium & Literature Thesis Molecular & Computational Toxicology	XM_0033	12	600
<b>Research variant BCCA</b>			
Bio-analysis & Clinical Diagnostics	X_432765	6	400
ADMET	X_432721	6	400
Chemical Biology	X_432538	6	400
Drug Action	X_432724	6	400
Project Computational Design and Synthesis of Drugs	X_432734	6	400
Research skills and career perspectives	XM_0002	0	400
<i>Colloquium &amp; Literature Thesis (Choose 1 of 2 – 12 EC required)</i>			
Colloquium & Literature Thesis Bioanalytical Chemistry	XM_0030	12	600
Colloquium & Literature Thesis	XM_0031	12	600

Environmental Bioanalysis			
<b>Social variant</b>			
Internship Societal Specialisation	AM_471147	30	600
Analysis of Governmental Policy	AM_470571	6	500
Research methods for analyzing problems	AM_1182	6	400
Communication, Org. and Management	AM_470572	6	500
Research skills and career perspectives	XM_0002	0	400

### Article 10.3 Elective educational components

1. The student can take one or more of the following electives without prior consent from the Examination Board:				Advice OLC; (7.13 a)
Name of educational component	course code	nr of EC	level	
<b>Communication variant, Social variant &amp; Education variant</b>				
<i>Specialization courses (30 EC required)</i>				
ADMET	X_432721	6	400	
Chemical Biology	X_432538	6	400	
Physical-Organic Chemistry	X_435663	6	400	
Computational-Aided Drug Design and Virtual Screening	X_432673	6	400	
Drug-induced Stress and Cellular Response	X_432536	6	500	
Mass Spectrometry	X_435604	6	400	
Signal Transduction in Health and Disease	X_432535	6	500	
Synthetic Approaches in Medicinal Chemistry	X_435685	6	500	
Drug Action	X_432724	6	400	
Project Computational Design and Synthesis of Drugs	X_432734	6	400	
Biomolecular Simulation in Medicinal Chemistry & Toxicology	X_432664	6	400	
<i>Literature and colloquium DDTF (Compulsory for DDTF C, E or S-variant, choose 1 of 2, 6 EC required)</i>				
Colloquium & Literature Thesis Medicinal Chemistry (C,E,S)	XM_0018	6	600	
Colloquium & Literature Thesis Organic Chemistry ( <i>Structural Chemical Biology thesis</i> ) (C,E,S)	XM_0020	6	600	
<i>Literature and colloquium DDSA (Compulsory for DDSA C-, E- or S-variant, 6 EC required)</i>				
Colloquium & Literature Thesis Molecular & Computational Toxicology (C,E,S)	XM_0019	6	600	
<i>Literature and colloquium CMCT (Compulsory for CMCT C, E or S, choose 1 of 3, 6 EC required)</i>				
Colloquium & Literature Thesis Molecular & Computational Toxicology (C,E,S)	XM_0019	6	600	
Colloquium & Literature Thesis Medicinal Chemistry (C,E,S)	XM_0018	6	600	
Colloquium & Literature Thesis Theoretical	XM_0022	6	600	

Chemistry (C,E,S)			
<i>Literature and colloquium DD&amp;S (Compulsory for DD&amp;S C, E or S-variant, choose 1 of 4, 6 EC required)</i>			
Colloquium & Literature Thesis Medicinal Chemistry (C,E,S)	XM_0018	6	600
Colloquium & Literature Thesis Molecular & Computational Toxicology (C,E,S)	XM_0019	6	600
Colloquium & Literature Thesis Organic Chemistry (C,E,S)	XM_0021	6	600
Colloquium & Literature Thesis Radiopharmaceutical Chemistry (C,E,S)	XM_0022	6	600
<i>Literature and colloquium BCCA (Compulsory for BCCA C, E or S-variant, choose 1 of 2, 6 EC required)</i>			
Colloquium & Literature Thesis Bioanalytical Chemistry (C,E,S)	XM_0016	6	600
Colloquium & Literature Thesis Environmental Bioanalysis (C,E,S)	XM_0017	6	600
<i>Research project DDTF (Compulsory for DDTF C-, E- or S-variant, choose 1 of 2, 24 EC required)</i>			
Major research project Medicinal Chemistry (C,E,S)	XM_0025	24-36	600
Major research project Organic Chemistry (Structural Chemical Biology project) (C,E,S)	XM_0027	24-36	600
<i>Research project DDSA (Compulsory for DDSA C-, E- or S-variant, 24 EC required)</i>			
Major research project Molecular & Computational Toxicology (C,E,S)	XM_0026	24-36	600
<i>Research project CMCT (Compulsory for CMCT C-, E- or S-variant, choose 1 of 3, 24 EC required)</i>			
Major research project Molecular & Computational Toxicology (C,E,S)	XM_0026	24-36	600
Major research project Medicinal Chemistry (C,E,S)	XM_0025	24-36	600
Major research project Theoretical Chemistry (C,E,S)	XM_0029	24-36	600
<i>Research project DD&amp;S (Compulsory for DD&amp;S C-, E- or S-variant, choose 1 of 2, 24 EC required)</i>			
Major research project Medicinal Chemistry (C,E,S)	XM_0025	24-36	600
Major research project Molecular & Computational Toxicology (C,E,S)	XM_0026	24-36	600
Major Research project Organic Chemistry (C,E,S)	XM_0027	24-36	600
Major Research project Radiopharmaceutical Chemistry (C,E,S)	XM_0028	24-36	600
<i>Research project BCCA (Compulsory for BCCA C-, E- or S-variant, choose 1 of 4, 24 EC required)</i>			
Major research project Bioanalytical	XM_0023	24-36	600

Chemistry (C,E,S)			
Major research project Environmental Bioanalysis (C,E,S)	XM_0024	24-36	600
<i>Internship communication: compulsory for Communication variant, choose one (30 EC required)</i>			
Reflective Practice Int. SC. Comm.	AM_1163	30	600
Research Internship Science Comm.	AM_1162	30	600
<i>Recommended choice (Communication variant)</i>			
Communication, Org. and Management	AM_470572	6	500
Science in Dialogue	AM_1002	6	500
Science Journalism	AM_471014	6	500
Science Museology	AM_470590	6	500
<i>Recommended optional courses social variant (12 EC required)</i>			
Societal entrepreneurship H&L sciences	AM_470575	6	500
Business management	AM_470584	6	500
Policy, Politics and Participation	AM_470589	6	500
Clinical Development and Clinical Trials	AM_1180	3	500
Epidemiology	AM_1179	3	500
<b>Research variant</b>			
<i>Ethics and academic skills (6 EC required)</i>			
Ethics and Academic Skills	XM_432517	3	400
Ethics and Academic Skills	XM_437556	6	400
Teaching Assistant	XM_432741	3	400
Teaching Assistant	XM_432742	6	400
Managing science and technology	AM_470586	6	600
Research methods for analyzing problems	AM_1182	6	400
Science and Communication	AM_470587	6	500
Societal entrepreneurship H&L sciences	AM_470575	6	500
Business management	AM_470584	6	500
Communication, Org. and Management	AM_470572	6	500
Science in Dialogue	AM_1002	6	500
Science Journalism	AM_471014	6	500
Tutoring Students	X_432625	3	400
Scientific Writing in English	X_400592	3	400
Clinical Development and Clinical Trials	AM_1180	3	500
Epidemiology	AM_1179	3	500
Ethics in life sciences	AM_470707	3	400
<i>Research project DDTF (Compulsory for DDTF, choose 1 of 2, 42 EC required)</i>			
Major Research Project Medicinal Chemistry	XM_0039	42-60	600
Major Research Project Organic Chemistry (Structural Chemical Biology project)	XM_0041	42-60	600
<i>Research project DD&amp;SA (Compulsory for DD&amp;SA, 42 EC required)</i>			
Major Research Project Molecular &	XM_0040	42-60	600

Computational Toxicology			
<i>Research project CMCT (Compulsory for CMCT, choose 1 of 3, 42 EC required)</i>			
Major Research Project Molecular & Computational Toxicology	XM_0040	42-60	600
Major Research Project Medicinal Chemistry	XM_0039	42-60	600
Major Research Project Theoretical Chemistry	XM_0043	42-60	600
<i>Research project DD&amp;S (Compulsory for DD&amp;S, choose 1 of 2, 42 EC required)</i>			
Major Research Project Medicinal Chemistry	XM_0039	42-60	600
Major Research Project Molecular & Computational Toxicology	XM_0040	42-60	600
Major Research Project Organic Chemistry	XM_0041	42-60	600
Major Research Project Radiopharmaceutical Chemistry	XM_0042	42-60	600
<i>Research project BCCA (Compulsory for BCCA, choose 1 of 2, 42 EC required)</i>			
Major Research Project Bioanalytical Chemistry	XM_0037	42-60	600
Major Research Project Environmental Bioanalysis	XM_0038	42-60	600
<i>Recommended optional courses DDTF (24 EC required)</i>			
Supramolecular Chemistry and Nanomat.	XMU_435653	6	400
Computer-Aided Drug Design and Virtual Screening	X_432673	6	400
Drug-induced Stress and Cellular Response	X_432536	6	500
Mass Spectrometry	X_435604	6	400
Advanced Computational Chemistry	XMU_0014	6	500
Molecular Computational Chemistry	X_435666	6	400
Protein Analysis	X_435045	6	500
Advanced Course on DDSA	X_435681	6	500
Biomolecular Simulation in Medicinal Chemistry & Toxicology	X_432664	6	400
Applied Theoretical Chemistry	XM_432501	12	500
Minor Research Project Bioanalytical Chemistry	XM_0044	18-36	500
Minor Research Project Environmental Bioanalysis	XM_0045	18-36	500
Minor Research Project Medicinal Chemistry	XM_0046	18-36	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18-36	500
Minor Research Project Organic Chemistry	XM_0048	18-36	500
Minor Research Project Radiopharmaceutical Chemistry	XM_0049	18-36	500
Minor Research Project Theoretical Chemistry	XM_0050	18-36	500
<i>Recommended optional courses DDSA (24 EC required)</i>			

Supramolecular Chemistry and Nanomat.	XMU_435653	6	400
Computer-Aided Drug Design and Virtual Screening	X_432673	6	400
Signal Transduction in Health and Disease	X_432535	6	500
Advanced Computational Chemistry	XMU_0014	6	500
Molecular Computational Chemistry	X_435666	6	400
Biomolecular Simulation in Medicinal Chemistry & Toxicology	X_432664	6	400
Applied Theoretical Chemistry	XM_432501	12	500
Minor Research Project Bioanalytical Chemistry	XM_0044	18-36	500
Minor Research Project Environmental Bioanalysis	XM_0045	18-36	500
Minor Research Project Medicinal Chemistry	XM_0046	18-36	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18-36	500
Minor Research Project Organic Chemistry	XM_0048	18-36	500
Minor Research Project Radiopharmaceutical Chemistry	XM_0049	18-36	500
Minor Research Project Theoretical Chemistry	XM_0050	18-36	500
<i>Recommended optional courses CMCT (24 EC required)</i>			
Supramolecular Chemistry and Nanomat.	XMU_435653	6	400
Drug-induced Stress and Cellular Response	X_432536	6	500
Signal Transduction in Health and Disease	X_432535	6	500
Advanced Computational Chemistry	XMU_0014	6	500
Chemical Bonding in Kohn-Sham DFTD	XMU_0013	6	500
Molecular Computational Chemistry	X_435666	6	400
Applied Theoretical Chemistry	XM_432501	12	500
Density Functional Theory for Chemists	XM_435112	12	500
Minor Research Project Bioanalytical Chemistry	XM_0044	18-36	500
Minor Research Project Environmental Bioanalysis	XM_0045	18-36	500
Minor Research Project Medicinal Chemistry	XM_0046	18-36	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18-36	500
Minor Research Project Organic Chemistry	XM_0048	18-36	500
Minor Research Project Radiopharmaceutical Chemistry	XM_0049	18-36	500
Minor Research Project Theoretical Chemistry	XM_0050	18-36	500
<i>Recommended optional courses DD&amp;S (24 EC required)</i>			
Computer-Aided Drug Design and Virtual Screening	X_432673	6	400
Drug-induced Stress and Cellular Response	X_432536	6	500
Signal Transduction in Health and Disease	X_432535	6	500
Molecular Computational Chemistry	X_435666	6	400



Biomolecular Simulation in Medicinal Chemistry & Toxicology	X_432664	6	400
Minor Research Project Bioanalytical Chemistry	XM_0044	18-36	500
Minor Research Project Environmental Bioanalysis	XM_0045	18-36	500
Minor Research Project Medicinal Chemistry	XM_0046	18-36	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18-36	500
Minor Research Project Organic Chemistry	XM_0048	18-36	500
Minor Research Project Radiopharmaceutical Chemistry	XM_0049	18-36	500
Minor Research Project Theoretical Chemistry	XM_0050	18-36	500
<i>Recommended optional courses BCCA (24 EC required)</i>			
Minor Research Project Bioanalytical Chemistry	XM_0044	18-36	500
Minor Research Project Environmental Bioanalysis	XM_0045	18-36	500
Minor Research Project Medicinal Chemistry	XM_0046	18-36	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18-36	500
Minor Research Project Organic Chemistry	XM_0048	18-36	500
Minor Research Project Radiopharmaceutical Chemistry	XM_0049	18-36	500
Minor Research Project Theoretical Chemistry	XM_0050	18-36	500
Computer-Aided Drug Design and Virtual Screening	X_432673	6	400
Drug-induced Stress and Cellular Response	X_432536	6	500
Signal Transduction in Health and Disease	X_432535	6	500
Molecular Computational Chemistry	X_435666	6	400
Biomolecular Simulation in Medicinal Chemistry & Toxicology	X_432664	6	400
High-Throughput Screening	X_435047	6	500
Mass Spectrometry	X_435604	6	400
Protein Analysis	X_435045	6	500
<b>Double degree</b>			
<i>Optional courses (18 EC required)</i>			
Minor Research Project Bioanalytical Chemistry	XM_0044	18	500
Minor Research Project Environmental Bioanalysis	XM_0045	18	500
Minor Research Project Medicinal Chemistry	XM_0046	18	500
Minor Research Project Molecular & Computational Toxicology	XM_0047	18	500
Minor Research Project Organic Chemistry	XM_0048	18	500
Minor Research Project Radiopharmaceutical	XM_0049	18	500

Chemistry			
Minor Research Project Theoretical Chemistry	XM_0050	18	500
Bio-analysis & Clinical Diagnostics	X_432765	6	400
Physical-Organic Chemistry	X_435663	6	400
Computer-Aided Drug Design and Virtual Screening	X_432673	6	400
Drug-induced Stress and Cellular Response	X_432536	6	500
Signal Transduction in Health and Disease	X_432535	6	500
Synthetic Approaches in Medicinal Chemistry	X_435685	6	500
Advanced Course on DDSA	X_435681	6	500
Biomolecular Simulation in MC&T	X_432664	6	400
<i>Colloquium &amp; Literature Thesis (choose 1 out of 7) – 12 EC required</i>			
Colloquium & Literature Thesis Bioanalytical Chemistry	XM_0030	12	600
Colloquium & Literature Thesis Medicinal Chemistry	XM_0032	12	600
Colloquium & Literature Thesis Molecular & Computational Toxicology	XM_0033	12	600
Colloquium & Literature Thesis Organic Chemistry	XM_0034	12	600
Colloquium & Literature Thesis Radiopharmaceutical Chemistry	XM_0035	12	600
Colloquium & Literature Thesis Theoretical Chemistry	XM_0036	12	600
Colloquium & Literature Thesis Environmental Bioanalysis	XM_0031	12	600
<i>Ethics and Academic skills (6 EC required)</i>			
Ethics and Academic Skills	XM_432517	3	400
Ethics and Academic Skills	XM_437556	6	400
Teaching Assistant	XM_432741	3	400
Teaching Assistant	XM_432742	6	400
Managing science and technology	AM_470586	6	600
Research methods for analyzing problems	AM_1182	6	400
Science and Communication	AM_470587	6	500
Societal entrepreneurship H&L sciences	AM_470575	6	500
Business management	AM_470584	6	500
Communication, Org. and Management	AM_470572	6	500
Science in Dialogue	AM_1002	6	500
Science Journalism	AM_471014	6	500
Tutoring Students	X_432625	3	400
Scientific Writing in English	X_400592	3	400
Clinical Development and Clinical Trials	AM_1180	3	500
Epidemiology	AM_1179	3	500
Ethics in life sciences	AM_470707	3	400
<b>Deficiency course</b>			

Principles of Pharmaceutical Sc./ PharCH	X_435675	6	400	
2. If the student wishes to take a different educational component than listed, advance permission must be obtained in writing from the Examinations Board.				Advice OLC; (7.13 a)

#### Article 10.5 Participation in practical exercise

In the case of a practical training, the student must attend at least 100 % of the practical sessions. Should the student attend less than 100 %, he/she must repeat the practical training, or the Examinations Board may have one or more supplementary assignments issued.	Approval OLC (7.13 d)
---	-----------------------

### 11. Evaluation and transitional provisions

#### Article 11.1 Evaluation of the education

1. The education provided in this programme is evaluated in accordance with the (attached) evaluation plan. The faculty evaluation plan offers the framework.	Approval OLC (7.13 a1)
---	------------------------

#### Article 11.2 Transitional provisions

By way of departure from the Teaching and Examination Regulations currently in force, the following transitional provisions apply for students who started the programme under a previous set of Teaching and Examination Regulations: <i>Not applicable</i>	Advice OLC (7.13 a)
---	---------------------

Advice and approval by the Programme Committee, on (date) April 25<sup>th</sup> 2018

Approved by the Faculty Joint Assembly, on (date) June 26<sup>th</sup> 2018

Adopted by the board of the Faculty of Bèta sciences on June 26<sup>th</sup> 2018

**Appendix I****Overview of articles that must be included in the OER**

*Based on Section 7.13, paragraph 2, of the WHW and other Sections of the Act.*

## Section A: Faculty section

<b>2. Study programme structure</b>	
Article 2.1 Structure of academic year and educational components	7.13 paragraph 2 sub e
<b>3. Assessment and Examination</b>	
Article 3.2 Type of examination	7.13 paragraph 2 sub h, l, j
Article 3.3 Oral interim examinations	7.13 paragraph 2 sub l, n
Article 3.4 Determining and announcing results	7.13 paragraph 2 sub o
Article 3.5 Examination opportunities	7.13 paragraph 2 sub h, j
Article 3.7 Exemption	7.13 paragraph 2 sub r
Article 3.8 Validity period for results	7.13 paragraph 2 sub k
Article 3.9 Right of inspection and post-examination discussion	7.13 paragraph 2 sub p, q
<b>4. Academic student counselling and study progress</b>	
Article 4.1 Administration of study progress and academic student counselling	7.13 paragraph 2 sub u
Article 4.2 Adaptations for students with a disability	7.13 paragraph 2 sub m

## Section B1: Programme specific – general provisions

<b>6. General programme information and characteristics</b>	
Article 6.1 Study programme information	7.13 paragraph 2 sub i, r
Article 6.2 Teaching formats used and modes of assessment	7.13 paragraph 2 sub l, x
[option:] Article 6.3 Academic student counselling	7.13 paragraph 2 sub u
<b>7. Further admission requirements</b>	
Article 7.2 Admission requirements	7.30b paragraph 2
<b>8. Interim examinations and results</b>	
Article 8.1 Sequence of interim examinations	7.13 paragraph 2 sub h, s, t
[option 1:] Article 8.2 Validity period for results	7.13 paragraph 2 sub k
[option 2:] Article 8.2 Validity period for results	7.13 paragraph 2 sub k

## Section B2: Programme specific – content of programme

<b>9. Programme objectives, specializations and exit qualifications</b>	
Article 9.1 Workload	7.13 paragraph 2 sub g
Article 9.2 Specializations	7.13 paragraph 2 sub a
Article 9.3 Programme objective	7.13 paragraph 2 sub a
Article 9.4 Exit qualifications	7.13 paragraph 2 sub b, c
<b>10. Curriculum structure</b>	
Article 10.1 Composition of the programme	7.13 paragraph 2 sub a
Article 10.2 Compulsory educational components	7.13 paragraph 2 sub a
[Optional] Article 10.3 Elective educational components	7.13 paragraph 2 sub a
[Optional] Article 10.4 Practical exercise	7.13 paragraph 2 sub d
Article 10.5 Participation in practical exercise	7.13 paragraph 2 sub d
<b>11. Evaluation and transitional provisions</b>	
Article 11.1 Evaluation of the education	7.13 paragraph 2 sub a1
Article 11.2 Transitional provisions	7.13 paragraph 2 sub a

**Appendix II**

## Table of right of advice and right of approval by the OLC and FGV

*(translation to English at a later stage)*

<b>Onderwerpen Onderwijs – en Examenregeling (OER) 7.13</b> <b>paragraaf 2 WHW</b>	FGV		OpIC	
	I	A	I	A
a. de inhoud van de opleiding en van de daaraan verbonden examens				
a1. de wijze waarop het onderwijs in de desbetreffende opleiding wordt geëvalueerd				
b. de inhoud van de afstudeerrichtingen binnen een opleiding				
c. de kwaliteiten op het gebied van kennis, inzicht en vaardigheden die een student zich bij beëindiging van de opleiding moet hebben verworven				
d. waar nodig, de inrichting van praktische oefeningen				
e. de studielast van de opleiding en van elk van de daarvan deel uitmakende onderwijseenheden				
f. de nadere regels, bedoeld in de Articleen 7.8b, zesde paragraaf, en 7.9, vijfde paragraaf (BSA)				
g. ten aanzien van welke masteropleidingen toepassing is gegeven aan Article 7.4a, achtste paragraaf ( <i>verhoogde studielast</i> )				
h. het aantal en de volgtijdelijkheid van de tentamens alsmede de momenten waarop deze afgelegd kunnen worden				
i. de voltijdse, deeltijdse of duale inrichting van de opleiding				
j. waar nodig, de volgorde waarin, de tijdvakken waarbinnen en het aantal malen per studiejaar dat de gelegenheid wordt geboden tot het afleggen van de tentamens en examens				
k. waar nodig, de geldigheidsduur van met goed gevolg afgelegde tentamens, behoudens de bevoegdheid van de examencommissie die geldigheidsduur te verlengen				
l. of de tentamens mondeling, schriftelijk of op een andere wijze worden afgelegd, behoudens de bevoegdheid van de examencommissie in bijzondere gevallen anders te bepalen				
m. de wijze waarop studenten met een handicap of chronische ziekte redelijkerwijs in de gelegenheid worden gesteld de tentamens af te leggen				
n. de openbaarheid van mondeling af te nemen tentamens, behoudens de bevoegdheid van de examencommissie in bijzondere gevallen anders te bepalen				
o. de termijn waarbinnen de uitslag van een tentamen bekend wordt gemaakt alsmede of en op welke wijze van deze termijn kan worden afgeweken				
p. de wijze waarop en de termijn gedurende welke degene die een schriftelijk tentamen heeft afgelegd, inzage verkrijgt in zijn beoordeelde werk				
q. de wijze waarop en de termijn gedurende welke kennis genomen kan worden van vragen en opdrachten, gesteld of gegeven in het kader van een schriftelijk afgenomen tentamen en van de normen aan de hand waarvan de beoordeling heeft plaatsgevonden				
r. de gronden waarop de examencommissie voor eerder met goed gevolg afgelegde tentamens of examens in het hoger onderwijs, dan wel voor buiten het hoger onderwijs opgedane kennis of vaardigheden, vrijstelling kan verlenen van het afleggen van een of meer tentamens				
s. waar nodig, dat het met goed gevolg afgelegd hebben van tentamens voorwaarde is voor de toelating tot het afleggen van andere tentamens				
t. waar nodig, de verplichting tot het deelnemen aan praktische oefeningen met het oog op de toelating tot het afleggen van het desbetreffende tentamen, behoudens de bevoegdheid van de examencommissie vrijstelling van die verplichting te verlenen, al dan niet onder oplegging van vervangende eisen				
u. de bewaking van studievoortgang en de individuele studiebegeleiding				
v. indien van toepassing: de wijze waarop de selectie van studenten voor een speciaal traject binnen een opleiding, bedoeld in Article 7.9b, plaatsvindt ( <i>excellentietaject binnen een opleiding</i> )				
x. de feitelijke vormgeving van het onderwijs				
<i>alle overige onderwerpen die in de OER zijn geregeld maar die niet als zodanig zijn genoemd in art. 7.13 WHW onder a t/m x.</i>				

*De lettering komt overeen met de lettering van Article 7.13 paragraaf 2 WHW*

**Appendix III****Ordinances VU CvB and Binding Guidelines (richtlijn)**

<b>Section A, article:</b>	<b>Concerns:</b>	<b>CvB ordinance / guideline</b>
2.1.1, 2.1.2	Year planning two semesters 8-8-4 (uniforme jaarkalender VU-UvA)	29-9-2008 (period 2009-2015) 22-05-2014 (periode 2016-2025)
2.1.3, 2.1.4	Educational components	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017
3.1	Compulsory signing up	CvB ordinance 30-09-2010, prior consent USR.
3.4.1	Determination and publication of the results (1) Grading deadline exams 10 workdays (2) Theses 20 workdays	(1) Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017 (2) Quality demand 11 from the VU assessment policy, CvB ordinance 15-05-2012
3.5.1	Two possibilities to take examinations per year	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017
3.5.2	Retake: most recent grade is valid. A pass can be retaken	Taken from the UvA guidelines, as part of the harmonization, CvB ordinance 24-02-2014
3.5.4	Extra retake last year	Included in (prior) model OER 16-17 following a request from committee O&O and adopted by CvB op 27-10-2015
3.6	Grades	CvB ordinance 30-09-2010, with University council's consent. As a result of harmonization UvA, the guideline: 5.5 is a pass, has been added. CvB ordinance 24-02-2014.
<b>Section B1, article:</b>	<b>Concerns:</b>	<b>CvB ordinance / guideline</b>
7.2.1	Admission criteria; at least WO Bachelor's degree	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017
7.2.3	Additional admission criteria; type of criteria	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017
<b>Section B1, article:</b>	<b>Concerns:</b>	<b>CvB ordinance / guideline</b>
10.1	Composition programme	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017
10.2	Categorization of components	Richtlijn Bachelor en Masteronderwijs, revised on 6 June 2017