



Teaching and Examination Regulations (TER)

Faculty of Science

Masterprogramme in Hydrology

Academic year: 2019-2020

- A: Faculty section
- B1: Programme specific section – general provisions
- B2: Programme specific section – content of programme

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Section A: Faculty Section

1. General provisions

Article 1.1 Applicability of the Regulations

<p>1. These Regulations apply to anyone enrolled for the programme, irrespective of the academic year in which the student was first enrolled for the programme. These Regulations apply to the teaching and examinations for the following Master's degree programmes:</p> <ul style="list-style-type: none"> ▪ Artificial Intelligence ▪ Bioinformatics and System Biology ▪ Biomedical Sciences ▪ Biomolecular Sciences ▪ Business Analytics ▪ Computer Science ▪ Drug Discovery and Safety ▪ Earth Sciences ▪ Ecology ▪ Environment and Resource Management ▪ Global Health (research) ▪ Health Sciences ▪ Hydrology ▪ Information Sciences ▪ Management, Policy Analysis and Entrepreneurship in the Health and Life Sciences ▪ Mathematics ▪ Medical Natural Sciences ▪ Neurosciences (research) ▪ Parallel and Distributed Computer Systems ▪ Science Business and Innovation ▪ Stochastics and Financial Mathematics 	<p>Advice OLC, approval FGV (9.38 ub b)</p>
<p>2. These Regulations enter into force with effect from 1 September 2019.</p>	<p>Advice OLC, approval FGV (9.38 ub b)</p>
<p>3. An amendment to the Teaching and Examination Regulations is only permitted to concern an academic year already in progress if this does not demonstrably damage the interests of students.</p>	<p>Advice OLC, approval FGV (9.38 sub b)</p>

Article 1.2 Definitions

The following definitions are used in these Regulations (*in alphabetical order*):

- a. academic year: the period beginning on 1 September and ending on 31 August of the following calendar year;
- b. CvB: the Executive Board of Vrije Universiteit Amsterdam.
- c. Double degree programme: joint programme in the context of cooperation between Vrije Universiteit Amsterdam and the educational institution within and outside the EU, as to gain a double university degree; of the VU and the educational institution concerned; though not being the same as a 'joint degree programme' according to the art. 7.3c WHW';
- d. EC (European Credit): an EC credit with a workload of 28 hours of study;
- e. educational component: a unit of study of the programme within the meaning of the WHW;
- f. examination: the final examination of the Master's programme;
- g. exemption: Exemption from an examination/ practical/ fieldwork based on an earlier successfully completed examination, or knowledge / skills of a similar content, level and scope gained outside higher education;
- h. FGV: Faculty joint assembly – assembly of the faculty student council and faculty staff

- council;
- i. interim examination: an assessment of the student's knowledge, understanding and skills relating to a course component. The assessment is expressed in terms of a final mark. An interim examination may consist of one or more partial examinations. A resit always covers the same material as the original interim examination;
- j. joint degree: a degree awarded by an institution together with one or more institutions in the Netherlands or abroad, after the student has completed a study programme (a degree programme, a major or a specific curriculum within a degree programme) for which the collaborating institutions are jointly responsible;
- k. OLC: programme committee;
- l. period: a part of a semester;
- m. practical exercise: the participation in a practical training or other educational learning activity, aimed at acquiring certain (academic) skills. Examples of practical exercises are:
- o researching and writing a thesis or dissertation
 - o carrying out a research assignment
 - o taking part in fieldwork or an excursion
 - o taking part in another educational learning activity aimed at acquiring specific skills, or
 - o participating in and completing a work placement;
- n. premaster student those who enroll in a premaster programme;
- o. Programme: the totality and cohesion of the course components, teaching activities/methods, contact hours, testing and examination methods and recommended literature;
- p. SAP/SLM: the student information system (*Student Lifecycle Management*);
- q. semester: the first (September - January) or second half (February - August) of an academic year;
- r. study guide: the guide for the study programme that provides further details of the courses, provisions and other information specific to that programme. The Study Guide is available electronically at:
<https://www.vu.nl/studiegids>
- s. subject see 'educational component';
- t. substituting course/educational component see under d (double degree programme). A course obtained at the educational institute, within the context of cooperation, that is mentioned in the diploma supplement as such; not being an 'exemption'.
- u. thesis/ internship work placement a component comprising research into the literature and/or contributing to scientific research, always resulting in a written report;
- v. university: Vrije Universiteit Amsterdam;
- w. WHW: the Dutch Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek*);
- x. workload: the workload of the unit of study to which an interim examination applies, expressed in terms of credits = EC credits (ECTS = European Credit and Transfer Accumulation System). The workload for 1 year (1,680 hours) is 60 EC credits.

The other terms have the meanings ascribed to them by the WHW.

2. Study programme structure

Article 2.1 Structure of academic year and educational components

1. The study programme will be offered in a year divided into two semesters.	Ordinance CvB, see appendix 3
2. Every semester consists of three consecutive periods of eight, eight and four weeks.	Ordinance CvB, see appendix 3
3. An educational component comprises 6 EC or a multiple thereof.	Ordinance CvB, see appendix 3

4. By way of exception to paragraph 3, Section B may stipulate that a unit of study comprises 3 EC or a multiple thereof. The Faculty Board requests permission from the Executive Board.	Ordinance CvB, see appendix 3
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Article 2.2 Refusal or termination of registration / (iudicium abeundi)

1. Pursuant to the provisions of Article 7.42a of the Act, the Faculty Board or the Examination Board may, in exceptional circumstances, request the Executive Board to terminate or refuse a student's registration on a programme. This may be the case if the student's conduct or statements demonstrate his or her unsuitability to work in the relevant field or discipline, or to take part in the programme's practical training component.	WHW
2. If a student is suspected of being unsuitable as described in paragraph 1, the Examination Board or the Faculty Board will examine the case, and the student will be informed of this immediately. The Examination Board or the Faculty Board will only issue a recommendation after careful consideration of the interests involved and following a hearing with the student concerned.	WHW

3. Assessment and Examination

Article 3.1 Signing up for education and interim examinations

1. Every student must sign up to participate in the educational components of the programme, the examinations and resits. The procedure for signing up is described in an annex to the Student Charter.	Ordinance CvB, see appendix 3
2. Signing up may only take place in the designated periods.	Ordinance CvB, see appendix 3
3. If a student does not pass the examination and the resit of a component, he/ she is obliged to take the whole component again. This rule does not apply to practical exercises and programmes that make use of component marks that retain their validity. For further regulations see Section B of the programme involved.	Advice OLC, approval FGV (7.13 x)

Article 3.2 Type of examination

1. At the student's request, the Examination Board may permit a different form of interim examination than that stipulated in the course catalogue. If applicable, more detailed regulations on this are included in the Rules and Guidelines for the Examination Board.	Advice OLC, Approval FGV (7.13 l)
2. In an educational component is no longer offered in the academic year following its termination, at least one opportunity will be provided to sit the interim examination(s) or parts thereof and a transitional arrangement will be included in the programme-specific section for the subsequent period.	Advice OLC, approval FGV (7.13 j)

Article 3.3 Oral interim examinations

1. An oral assessment is public unless the Examinations Board on request determines otherwise.	Advice OLC; approval FGV (7.13 l and n)
2. An oral examination will be taken in the presence of a second examiner.	Advice OLC, approval FGV (art. 9.38 par. b)

Article 3.4 Determining and announcing results

1. The examiner determines the result of a written interim examination as soon as possible, but at the latest within fifteen working days. By way of departure from that stipulated in the first clause, the marking deadline for theses, internships / work placements and final assignments is no longer than twenty working days. The examiner will then immediately ensure that the marks are registered and also ensures that the student is immediately notified of the mark, taking due account of the applicable confidentiality standards.	Ordinance CvB, see appendix 3
2. a. The examiner determines the result (i.e. mark) of an oral examination as soon as possible, though within one working day, after the examination has finished and informs the student accordingly. The third clause of the first paragraph applies.	Advice OLC; approval FGV (7.13 o)

b. The examiner determines the result of an interim examination no later than five working days before the next (interim) examination will be held.	
3. In the case of alternative forms of oral or written examinations, the Examination Board determines in advance how and by what deadline the student will be informed of the results.	Advice OLC; approval FGV (7.13 o)
4. A student can submit a request for reassessment to the examiner. A request for reassessment does not affect the time period for lodging an appeal.	Advice OLC; approval FGV (9.38 sub b)
5. Together with the result of an examination, the student's attention will also be drawn to their right to inspect the assessed work and have a post-examination discussion as stipulated in Art. 3.9, as well as his/her option to lodge a complaint before the Examination Board, and if necessary, to appeal to the Examinations Appeals Board (in Dutch: COBEX).	

Article 3.5 Examination opportunities

1. a. Per academic year, two opportunities to take examinations per educational component will be offered. b. The options for retaking practical components, work placements and theses are detailed in the relevant work placement manual, teaching regulations or graduation regulations.	Ordinance CvB, see appendix 3
2. The most recent mark will apply in the event of a resit. A retake is allowed for both passed and failed units of study.	Ordinance CvB, see appendix 3
3. The resit for a (partial) interim examination must not take place within ten working days of the announcement of the result of the (partial) examination being resat.	Advice OLC; approval FGV (7.13 j)
4. The Examination Board may allow a student an extra opportunity to sit an examination if that student: a) is lacking only those credits to qualify for his or her degree; b) has failed the examination during all the previously offered attempts, unless participation in an examination was not possible for compelling reasons. The extra opportunity can only be offered if it concerns a written examination, a paper or a take home examination. This provision excludes the practical assignments and the Master's thesis. Requests for an additional examination opportunity must be submitted to the Examination Board no later than 15 July. If necessary, the method of examination may deviate from the provisions in the study guide.	Ordinance CvB, see appendix 3

Article 3.6 Marks

1. Marks are given on a scale from 1 to 10 with no more than one decimal point.	Ordinance CvB, see appendix 3																					
2. The final marks are given in whole or half points.	Ordinance CvB, see appendix 3																					
3. Final marks between 5 and 6 will be rounded off to whole marks: up to 5.5 rounded down; from 5.5 rounded up. To pass a course, a 6 or higher is required. In case the examination of a component consists of two or more parts, each of which are graded separately, the (weighted) mean of these marks (meaning: the final mark) must be rounded off using the following table:	Ordinance CvB, see appendix 3																					
<table border="1"> <thead> <tr> <th>From</th> <th>Up to</th> <th>Grade</th> </tr> </thead> <tbody> <tr> <td>1,00</td> <td>1,25</td> <td>1</td> </tr> <tr> <td>1,25</td> <td>1,75</td> <td>1,5</td> </tr> <tr> <td>1,75</td> <td>2,25</td> <td>2,0</td> </tr> <tr> <td>2,25</td> <td>2,75</td> <td>2,5</td> </tr> <tr> <td>2,75</td> <td>3,25</td> <td>3,0</td> </tr> <tr> <td>3,25</td> <td>3,75</td> <td>3,5</td> </tr> </tbody> </table>		From	Up to	Grade	1,00	1,25	1	1,25	1,75	1,5	1,75	2,25	2,0	2,25	2,75	2,5	2,75	3,25	3,0	3,25	3,75	3,5
From	Up to	Grade																				
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3,25	3,75	3,5																				

	3,75	4,25	4,0		
	4,25	4,75	4,5		
	4,75	5,50	5,0		
	5,50	6,25	6,0		
	6,25	6,75	6,5		
	6,75	7,25	7,0		
	7,25	7,75	7,5		
	7,75	8,25	8,0		
	8,25	8,75	8,5		
	8,75	9,25	9,0		
	9,25	9,75	9,5		
	9,75	10,0	10		
4. The Examination Board can allow to use symbols rather than numbers, such as: pass, fail, (un)satisfactory, good, VRS (exemption). In case a student does not take part in any (interim) examination, the examiner will register the mark 'ns' (c.q. no show).					Ordinance CvB, see appendix 3

Article 3.7 Exemption

1. At the written request of the student, the Examination Board may exempt the student from taking one or more examination components, if the student: <ul style="list-style-type: none"> a) has passed a course component of a university or higher professional education programme that is equivalent in terms of content and level; b) has demonstrated through his/her work and/or professional experience that he/she has sufficient knowledge and skills with regard to the relevant course component. The Examination Board will make a decision within six weeks after receiving the request.	Advice OLC; approval FGV (7.13 r)
2. The Master's thesis, the final work placement (c.q. internship) and the final project (c.q. final paper) are excluded from this exemption possibility.	Advice OLC; approval FGV (9.38 sub b)
3. A maximum of 18 EC for a one one-year master programme and 36 EC for a one two-year master programme can be accumulated through granted exemption. The substituting courses (educational components) are not included.	Advice OLC, approval FGV (art. 7.13 par. 2, under r WHW jo art. 9.38 par. b)

Article 3.8 Validity period for results

1. The validity period of interim examinations passed and exemption from interim examinations is unlimited, unless otherwise specified in Section B.	WHW
2. The validity period of a partial examination is limited to the academic year in which it was sat or until the end of the unit of study concerned, as stipulated for the relevant unit of study in Section B.	Advice OLC; approval FGV (9.38 sub b)

Article 3.9 Right of inspection and post-examination discussion

1. For twenty working days after the announcement of the results of a written interim examination, the student can, on request, inspect his or her assessed work, the questions and assignments set in it, as well as the standards applied for marking. The place and time referred to in the previous clause will be announced at the time of the interim examination on VUnet or Canvas.	Advice OLC; approval FGV (7.13 p en q)
2. If a collective post-examination discussion has been organized, individual post-examination discussions will be held only if the student has attended the collective discussion or if the student was unable to attend the collective discussion through no fault of his or her own.	Advice OLC; approval FGV (7.13 q)

3. Students who meet the requirements stipulated in paragraph 1 can submit a request for an individual post-examination discussion to the relevant examiner. The discussion shall take place at a time and location to be determined by the examiner.	Advice OLC; approval FGV (7.13 p en q)
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Article 3.10 Fraud and plagiarism

1. The provisions of the Rules and Guidelines for the Examination Board apply in full.	Ordinance CvB
2. Electronic detection software programmes may be used to detect plagiarism in texts. In submitting a text, the student implicitly consents to the text being saved in the database of the detection programme concerned.	Ordinance CvB

4. Academic student counselling and study progress

Article 4.1 Administration of study progress and academic student counselling

1. The faculty board is responsible for the correct registration of the students' study results. After the assessment of an educational component has been registered, every student has the right to inspect the result for that component and also has a list of the results achieved at his or her disposal in VUnet.	Advice OLC; approval FGV (7.13 u)
2. Enrolled students are eligible for academic student counselling. Academic student counselling is in any case provided by: <ol style="list-style-type: none"> The Student General Counselling Service Student psychologists Faculty academic advisors 	Advice OLC; approval FGV (7.13 u)

Article 4.2 Adaptations for students with a disability

1. A student with a disability can, at the moment of submission to VUnet, or at a later instance, submit a request to qualify for special adaptations with regard to teaching, practical training and interim examinations. These adaptations will accommodate the student's individual disability as much as possible, but may not alter the quality or degree of difficulty of a unit of study or an examination. In all cases, the student must fulfil the exit qualifications for the study programme.	Advice OLC; approval FGV (7.13 m)
2. The request referred to in the first paragraph must be accompanied by a statement from a doctor or psychologist. If possible, an estimate should be given of the potential impact on the student's study progress. In case of a chronic disability a single (one time) request suffices.	Advice OLC; approval FGV (7.13 m)
3. Students who have been diagnosed with dyslexia must provide a statement from a BIG, NIP or NVO registered professional who is qualified to conduct psychological evaluation.	Advice OLC; approval FGV (7.13 m)
4. The faculty board, or on behalf of the faculty board, the educational director, or the programme director, decides on the adaptations concerning the teaching facilities and logistics. The Examination Board will rule on requests for adaptations with regard to examinations.	Advice OLC; approval FGV (7.13 m)
5. In the event of a positive decision in response to a request as referred to in paragraph 1, the student will make an appointment with the study adviser to discuss the details of the provisions.	Advice OLC; approval FGV (7.13 m)
6. A request for adaptations will be refused if it would place a disproportionate burden on the organization or the resources of the faculty or university were it upheld.	Advice OLC; approval FGV (7.13 m)
7. If the disability justifies an extension of the interim examination time, the Examination Board will grant permission testifying to this entitlement to an extension. If a disability justifies other measures to be taken, the Examination Board will advise the Faculty Board on the necessary measures to be taken.	Advice OLC; approval FGV (7.13 m)
8. The decision as referred to in paragraph 7, is valid for a maximum period of one year with the exception for the chronic diseases and disabilities.	Advice OLC; approval FGV (7.13 m)

5. Hardship clause

Article 5.1 Hardship clause

In instances not regulated by the Teaching and Examination Regulations or in the event of demonstrable extreme unreasonableness and unfairness, the faculty board responsible for the study programme will decide, unless the matter concerned is the responsibility of the Examinations Board.	Advice OLC; approval FGV (9.38 sub b)
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Article 5.2. Publication

1. The faculty board will ensure the appropriate publication of these Regulations and any amendments to them.	WHW
2. The Teaching and Examination Regulations will be posted in the study guide or on VUnet.	WHW

Approved by authorized representative advisory body FGOV of the Faculty of Science on 3 September 2019.

Adopted by the Faculty Board on 30 August 2019.

Section B1: Programme specific – general provisions

6. General programme information and characteristics

Article 6.1 Study programme information

1. The programme M Hydrology CROHO number 60807 is offered on a full-time basis.	Advice OLC; approval FGV (7.13 i)
2. The language of instruction is English.	Advice OLC; approval FGV (9.38 sub b)

Article 6.1a. Deviant size of educational component

By way of derogation from art. 2.1 par. 3, the units listed below have deviant size of: - Scientific Writing in English (AM_471023 3EC).	Approval OLC (art. 7.13 lid 2, under e), approval CvB
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Article 6.2 Teaching formats used and modes of assessment

1. The degree programme uses the following teaching formats: <ul style="list-style-type: none"> • Lectures; • Computer labs; • Practical assignments; • Excursions; • Fieldwork. <p>Specific teaching formats per course are detailed in the study guide.</p>	Advice OLC; approval FGV (7.13 x)
2. The degree programme uses the following modes of assessment: <ul style="list-style-type: none"> • Written examination; • Paper/report/essay; • Presentation (poster, PowerPoint); • Practical assignments; • Fieldwork execution. <p>The modes of assessment used per educational component are specified in the study guide.</p>	Advice OLC; approval FGV (7.13 l)

7. Further admission requirements

Article 7.1 Intake date(s)

1. The programme starts on September 1.	Advice OLC; approval FGV (9.38 sub b)
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Article 7.2 Admission requirements

1. Admission to the Master's programme is possible for an applicant who has obtained a Bachelor's degree obtained at an institution of academic higher education, which demonstrates the following knowledge, understanding and skills: <ol style="list-style-type: none"> knowledge: exact sciences (mathematics, physics and chemistry) and earth sciences (BSc geology, physical geography); understanding: common processes in exact, earth or environmental sciences; skills: general academic skills, such as: analytical and critical thinking; English language skills; scientific writing skills as demonstrated by a BSc thesis. 	Partly legal provision & ordinance CvB, see appendix 3. Admission requirements excepted from participation in WHW
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<p>Specifically, any individual who has obtained a Bachelor's degree in academic higher education on one of the degree programmes meets the requirements referred to above in this paragraph:</p> <ol style="list-style-type: none"> Earth sciences / physical geography (VU University, Utrecht University); Earth sciences / physical geography of a recognized academic institution with upper second-class honours and above, or GPA higher than 3.07; Earth and Economy (VU University) when including at least two quantitative courses in the final, such as: Wis- en Natuurkunde (AB_450073), Inleiding in de anorganische geochemie (AB_450336), Geofysica en computermodellering (AB_1173), Methoden en technieken voor economisch onderzoek (AB_450346). Whether specific other courses (i.e. from other universities) are eligible for this criterion will be judged by the Admission Board; Future Planet Studies BSc (UvA) with a major in earth sciences / physical geography, including at least two quantitative courses in the final year; Civil engineering, Environmental Engineering or Water Management (higher vocational education – HBO) after successfully completing a self- study module on earth sciences; Students who hold an equivalent BSc qualification, with upper second-class honours and above or GPA higher than 3.07, from an institution outside of the Netherlands may be admitted to the Master Hydrology at the VU University Amsterdam on the basis of a decision to that effect taken by the Admission Board of the Master. The Board will determine whether the foreign qualification is sufficiently relevant to warrant admission to the Master Hydrology. The Admission Board may make additional demands of the student before granting admission to the Master. 	
<p>2. The Admissions Board will investigate whether the applicant meets the admission requirements. If the interested person only partially meets the criteria above the Board may make additional demands of the student before granting admission to the Master.</p>	Legal provision

Article 7.3 Pre-Master's programme

<p>1. a) Students with a Bachelor's degree of a university of applied science (HBO) in a field that corresponds to a sufficient extent with the subject area covered by the Master's programme, <i>but does not fall under point 1e of article 7.2</i>, can request admission to the pre-Master's programme.</p> <p>b) Students with a Bachelor's degree from an institution of academic higher education in a field that does not sufficiently corresponds with the subject area covered by the Master's programme can request admission to the pre-Master's programme.</p>	Advice OLC; approval FGV (9.38 sub b)
<p>2. The pre-Master's programme comprises [30] EC and is made up of components from the Bachelor programs at VU Amsterdam. The specific set of courses will be tailor-made for the student depending on his/her background in consultation with the MSc coordinator. Under exceptional circumstances, additional components can be required for the student to be fulfilled if the background of the student in question requires so.</p>	Advice OLC; approval FGV (9.38 sub b)
<p>3. A successfully completed pre-Master's programme serves as proof of admission to the specified Master's programme in the subsequent academic year.</p>	Legal provision
<p>4. A candidate can only participate in one pre-Master's programme at the Vrije Universiteit.</p>	Ordinance CvB, see appendix 3

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> <ul style="list-style-type: none"> - Field Course Hydrology (AM_1169) after passing at least two of the courses Catchment Response Analysis (AM_450003); Groundwater Processes (AM_1164); Water Quality (AM_1166); and Ecohydrology (AM_450014) before April 1 of the year in which the field course is organized. - Master Thesis Hydrology after passing registration of at least 36 EC of the master programme concerned. 	<p>Advice OLC; approval FGV (7.13 h, s & t)</p>
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Article 8.2 Validity period for results

<p>See Article 3.8 of the Teaching and Examination Regulations, section A. No further specific provisions.</p>	<p>Advice OLC; approval FGV (7.13 k)</p>
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Article 8.3 Maximum Exemption(s)

<p>A maximum of 36 EC of the curriculum can be accumulated through granted exemptions, based on previous results within other master's programmes.</p>	<p>Advice OLC, approval FGV (7.13 par. 2, under r jo art. 9.38 sub b)</p>
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Article 8.4 Degree

<p>Degree Students who have successfully completed their Master's final Examination are awarded a Master of Science degree (MSc). The degree awarded is stated on the diploma.</p>	<p>Legal provision, WHW</p>
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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)
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Article 9.2 Specializations

The programme has no pre-specified specializations.	Advice OLC; (7.13 a)
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Article 9.3 Programme objective

<p>The MSc Hydrology Programme aims to achieve that the graduate should:</p> <ol style="list-style-type: none"> Have an integrated view of the various components of the hydrological system and its relation to and impacts on the functioning of society and its economic activities; Have specific and fundamental theoretical and practical knowledge of the functioning of hydrological systems and hydrological processes over a broad spectrum of spatial and temporal scales, including climate change; Be experienced in carrying out research independently. This experience is gradually developed by confrontation with research in field courses and through interaction with active researchers and subsequently through active participation in a research project, in a manner that enables the student to consciously decide whether he/she prefers to continue his/her studies in order to obtain a PhD degree or to take up a position outside the academic world; Function in his/her discipline at an academic level, both mentally and in daily practice; the MSc Hydrology Programme stimulates the social and personal development of the student by motivating consciousness, independence, communicative behavior and co-operation; Have insight into the broad historical, philosophical and social context of the discipline and aspects concerning the intellectual integrity and moral and ethical dimensions of scientific research and its applications; Be able to start and successfully complete a PhD project or to successfully compete in the international labor market for positions at an academic level with government or government-related institutions, private companies, or elsewhere. 	Advice OLC; (7.13 a)
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Article 9.4 Exit qualifications

1. At all events, a graduate of the study programme will have the following attainment levels in relation to Dublin descriptors:	Approval OLC (7.13 c)						
<table border="1"> <thead> <tr> <th>Dublin Descriptor</th> <th>Final Attainment Level</th> </tr> </thead> <tbody> <tr> <td>A. Knowledge and insight</td> <td><i>The graduate has profound knowledge of and insight in:</i></td> </tr> <tr> <td>A1: The graduate has specialized theoretical and practical knowledge of the chemical processes and interactions; science of hydrology</td> <td>... the hydrological cycle, with all its components (e.g. atmosphere, soil, streams, etc.), relevant physical and practical ... the interaction between the hydrological system and the socio-economic system related to the use of water resources and impacts/risks of natural hazards;</td> </tr> </tbody> </table>	Dublin Descriptor	Final Attainment Level	A. Knowledge and insight	<i>The graduate has profound knowledge of and insight in:</i>	A1: The graduate has specialized theoretical and practical knowledge of the chemical processes and interactions; science of hydrology	... the hydrological cycle, with all its components (e.g. atmosphere, soil, streams, etc.), relevant physical and practical ... the interaction between the hydrological system and the socio-economic system related to the use of water resources and impacts/risks of natural hazards;	
Dublin Descriptor	Final Attainment Level						
A. Knowledge and insight	<i>The graduate has profound knowledge of and insight in:</i>						
A1: The graduate has specialized theoretical and practical knowledge of the chemical processes and interactions; science of hydrology	... the hydrological cycle, with all its components (e.g. atmosphere, soil, streams, etc.), relevant physical and practical ... the interaction between the hydrological system and the socio-economic system related to the use of water resources and impacts/risks of natural hazards;						

	<p>... mathematics, physics, chemistry, terminology and methodology needed to conduct modern hydrological and related socio- economic research;</p> <p>... computer modelling techniques used in modern hydrological and related socio-economic research.</p> <p>... the impact of global change (e.g. land use and climate change) on the hydrological system and society;</p> <p>... relevant measurement techniques (related to field research, remote sensing and surveying) to solve hydrological and related socio-economic issues.</p>	
B. Application of knowledge and insight	<i>The graduate is able to:</i>	
B1: The graduate is experienced in carrying out research	<p>... formulate a problem based on raw data and/or data from literature and design a scientific approach for investigating and solving the problem;</p> <p>... set up and execute a scientific experiment/research by selecting and applying the appropriate techniques to collect, process and analyze data (from the field, laboratory, dataset);</p> <p>... develop conceptual and numerical models suited for testing hypotheses;</p> <p>... programme, validate and calibrate hydrological and risk models;</p>	
B2: The graduate is able to apply scientific knowledge to problems raised in society	<p>... think in temporal and spatial dimensions and apply hydrological knowledge to solve problems related to water in our society;</p> <p>... use quantitative methods to integrate knowledge of hydrology and society in order to study their relation and be able to evaluate impacts of hydrology on society and vice versa.</p>	
C. Critical judgement	<i>The graduate can:</i>	
C1: The graduate is able to judge (own) information	<p>... understand professional literature and judge its quality and usefulness for own research;</p> <p>... understand the limitations of data, models, instruments and measurement techniques and how to take these into account for critically evaluating measurements;</p>	
C2: The graduate is able to think within a multidisciplinary framework	<p>... think in a multidisciplinary way and recognize the importance of (sub)disciplines and connect different types of factual information;</p> <p>... understand a subject area's limits, i.e. realize that for some issues other expertise should be brought in and there is a need for interdisciplinary co-operation;</p>	
C3: The graduate has an understanding of his/her stronger and weaker points	<p>... understand his/her personal stronger and weaker points, affinities, development potential and preferences in personal relation to the discipline chosen and the related professional potential.</p>	
D. Communication	<i>The graduate is able to:</i>	

D1: The graduate is able to transfer knowledge and skills related to his/her subject area to other persons and is able to adequately reply to questions and problems specialists posed within society	... to clearly present information (on data, method, analysis, findings) both written and orally to a public of specialists; ... actively and constructively participate in discussions on hydrological issues; ... to convey scientific findings to a public of non-specialists (i.e. colleagues from different disciplines, stakeholders, general public).	
E. Learning Skills	<i>The graduate is able to:</i>	
E1: The graduate has developed learning skills that enable him/her to educate and develop him/herself further in a specific subject area	... get acquainted with subject areas related to hydrology and link this to his/her hydrological knowledge; ... recognize the local reality of complex hydrological and issues (i.e. livelihoods, cultural and gender aspects); ... independently collect, analyze and summarize information on hydrological subjects to extend his/her current knowledge;	
E2: The graduate functions in his/her discipline at an academic level, both mentally and in daily practice	... compete in the international market for positions related to hydrology in academia, government, non-government organizations, private organizations, or elsewhere.	

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 or academic internship.	Ordinance CvB, see appendix 3
2. Additionally the programme offers elective courses.	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)
Catchment Response Analysis	AM_450003	6	400	
Ecohydrology	AM_450014	6	400	
Climate Hydrological Processes	AM_1196	6	400	
Water Quality	AM_1166	6	400	
Integrated Modeling in Hydrology	AM_1165	6	400	
Water Economics	AM_1167	6	400	
Groundwater Processes	AM_1164	6	400	
Measuring Techniques in Hydrology	AM_1168	6	400	
Field Course Hydrology	AM_1169	12	500	
Master Thesis Hydrology	AM_1170	36	600	

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	
Advanced Groundwater Processes	AM_1171	6	500	
Water Governance	AM_1192	6	400	
Advanced Spatial Analyses	AM_1197	6	500	
Water Risks	AM_1210	6	500	
Climate Modelling	AM_450004	6	400	
Reflection Seismic for Geologists	AM_450170	6	400	
Global Biogeochemical Cycles	AM_450332	6	400	
Project Environmental Impact Assessment	AM_450406	6	400	
Geothermal Energy	AM_450409	6	500	
Biological Oceanography	AMU_0021	6	500	
Scientific Writing in English	AM_471023	3	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. It is advised to first contact the MSc coordinator to gauge the suitability of the course for the MSc Hydrology programme.				Advice OLC; (7.13 a)

Article 10.4 Practical exercise

The following components can be considered as practical exercises:				Approval OLC (7.13 d)
Name of educational component	course code	nr of EC	level	
Measuring Techniques in Hydrology (<i>Field Work part</i>)	AM_1168	6	400	
Field Course Hydrology	AM_1169	12	500	

Article 10.5 Participation in practical training and tutorials

1. 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 or she must repeat the practical training, or the Examinations Board may have one or more supplementary assignments issued.	Approval OLC (7.13 d)
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11. Evaluation and transitional provisions**Article 11.1 Evaluation of the education**

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)
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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:		Advice OLC (7.13 a)
1. Compulsory components		
a. No compulsory components have been replaced in 2017-2018, 2018-2019, 2019-2020		
The compulsory component below has been replaced in 2016-2017		
New component	Former component	
AM_1196 Climate Hydrological Processes (6EC)	AM_450021 Unsaturated Zone Hydrological Processes (6 EC)	

From 1 September 2016, students obtain the new course, unless they passed the former course.

The compulsory components below have been replaced in 2015-2016

New component	Former component
AM_1166 Water Quality (6)	AM_450052 Hydrochemistry (6EC)
AM_1168 Measuring techniques in Hydrology (6)	AM_450126 Field Course Netherlands (3 EC)
AM_1165 Integrated Modelling in Hydrology (6)	AM_450145 Environmental Remote Sensing (6 EC)
AM_1169 Field Course Hydrology (12 EC)	AM_1013 Field Course Hydrology Portugal (15 EC)
AM_1171 Advanced Groundwater Processes (6)	AM_450008 Groundwater Flow Modelling (6 EC) and/or AM_450131 Transport Processes in Groundwater
AM_1164 Groundwater Processes (6 EC)	AM_450009 Groundwater Hydraulics (6 EC)
AM_1170 Master Thesis Hydrology	AM_1104 Master Thesis Hydrology (27 EC)

From 1 September 2015, students obtain the new course, unless they passed the former course.

The compulsory components below have been replaced in 2012-2013

New component	Former component
AM_1104 Master Thesis Hydrology (27 EC)	AM_450122 Master Thesis Ecohydrology O Variant (27 EC) AM_450123 Master Thesis Ecohydrology Traineeship M Variant (27 EC) AM_450124 Master Thesis Hydrogeology O Variant (27 EC) AM_450125 Master Thesis Hydrogeology

From 1 September 2012 students obtain the new thesis, unless they passed the former.

The compulsory components below have been replaced in 2011-2012

New component	Former component
AM_1012 Hydrological Systems and Water Management (3 EC)	AM_450057 Regional Hydrogeology and Groundwater Management (6 EC)
AM_1013 Field Course Hydrology	AM_450173 Field Course Hydrology Portugal (12

From 1 September 2011 students obtain the new course, unless they passed the former course.

For students who started their programme before academic year 2015-2016, the courses below are not compulsory:

- AM_1167 Water Economics (6 EC)

For students who started their programme before academic year 2012-2013 the courses below are not compulsory:

- AM_450008 Groundwater Flow Modelling (6 EC)
- AM_450145 Environmental Remote Sensing (6 EC)
- AM_450131 Transport Processes in Groundwater (6 EC)

Students that have already successfully completed the course(s) before 1 September 2012 can use this as (an) elective (free optional) course(s)

<p>For students who started their programme before academic year 2011-2012 the courses below are not compulsory:</p> <ul style="list-style-type: none"> - AM_450014 Ecohydrology (6 EC) - XX04 Hydrological Systems and Water Management (6 EC) <p>Student that have already successfully completed the course(s) before 1 September 2011 can use this as (an) elective (free optional) course(s)</p> <p>2. Elective components</p> <p>a. The courses below are no longer available in the programme but are still elective (free optional) components for students who started their programme before academic year 2019-2020 and have passed the courses' examinations:</p> <p><i>Courses excluded as elective since academic year 2019-2020</i></p> <ul style="list-style-type: none"> - AM_450132 Geomicrobiology (6 EC) - AM_1124 Climate Systems (6 EC) <p><i>Courses excluded as elective since academic year 2018-2019</i></p> <ul style="list-style-type: none"> - AM_1054 Applied Water Science (6 EC; not given by UvA anymore) <p><i>Courses excluded as elective since academic year 2017-2018</i></p> <ul style="list-style-type: none"> - AM_1196 Climate Hydrological Processes (6 EC; now compulsory) - AM_468023 Water management (6 EC) - AM_450188 Climate and Policy (6 EC) <p><i>Courses ended in academic year 2015-2016</i></p> <ul style="list-style-type: none"> - -AM_450021 Unsaturated Zone Hydrological Processes (6 EC) <p><i>Courses ended in academic year 2014-2015</i></p> <ul style="list-style-type: none"> - AM_450008 Groundwater Flow Modelling (6 EC) - AM_450131 Transport Processes in Groundwater (6 EC) - AM_1012 Hydrological Systems and Water Management (3 EC) - AM_450148 Isotope Hydrology (3 EC) - AM_450145 Environmental Remote Sensing (6 EC) - AM_450204 Applied Geophysics in Hydrology(3 EC) <p><i>Courses ended in academic year 2013-2014</i></p> <ul style="list-style-type: none"> - AM_450137 Aquatic Ecology (6 EC) - AM_1015 Sustainable Land Management (6 EC) - AM_450185 Modern Climate Systems (3 EC) - AM_450313 Modern Geo-ecosystems (3 EC) <p><i>Courses ended in academic year 2012-2013</i></p> <ul style="list-style-type: none"> - None <p><i>Courses ended in academic year 2011-2012</i></p> <ul style="list-style-type: none"> - AM_450135 Thematic Research Project Ecohydrology (12 EC) - AM_450129 Thematic Research Project Hydrogeology (12 EC) - AM_450133 Contaminant Hydrogeology (6 EC) <p><i>Courses ended in academic year 2010-2011</i></p> <ul style="list-style-type: none"> - AM_450060 Soil Vegetation Atmosphere Exchange (6 EC) 	
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Advice and approval by the Programme Committee of M Hydrology, on 3 June 2019.

Approved by the Faculty Joint Assembly, on 3 September 2019.

Adopted by the board of the Faculty of Science, on 30 August 2019.

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 B1: Programme specific – general provisions

6. General programme information and characteristics	
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
7. Further admission requirements	
Article 7.2 Admission requirements	7.30b paragraph 2
8. Interim examinations and results	
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

9. Programme objectives, specializations and exit qualifications	
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
10. Curriculum structure	
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 training and tutorials	7.13 paragraph 2 sub d
11. Evaluation and transitional provisions	
Article 11.1 Evaluation of the education	7.13 paragraph 2 sub a l
Article 11.2 Transitional provisions	7.13 paragraph 2 sub a

Appendix II Overview of rights to prior consultation (advice) and rights to approve OLC and FGV

(Dutch only)

Onderwerpen Onderwijs – en Examenregeling (OER) 7.13 paragraaf 2 WHW	FGV		OplC	
	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 artikelen 7.8b, zesde lid, en 7.9, vijfde lid (BSA)				
g. ten aanzien van welke masteropleidingen toepassing is gegeven aan artikel 7.4a, achtste lid (verhoogde studielast)				
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 artikel 7.9b, plaatsvindt (excellentietaject binnen een opleiding)				
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 artikel 7.13 lid 2 WHW

Appendix III Ordinances VU CvB and Binding Guidelines (richtlijn)

Section B1, article:	Concerns:	CvB ordinance / guideline
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
Section B1, article:	Concerns:	CvB ordinance / guideline
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