

TEACHING AND EXAMINATION REGULATIONS (TER)

IN ACCORDANCE WITH ARTICLE 7.13 OF THE [DUTCH] HIGHER
EDUCATION AND RESEARCH ACT [WHW]

BACHELOR DEGREE PROGRAMME APPLIED EARTH SCIENCES

ANNEX



2022
2023

THESE TEACHING AND EXAMINATION REGULATIONS
APPLY TO ALL STUDENTS OF THE COHORT 2022-2023

TABLE OF CONTENTS TER

Paragraph 1 General	4
Article 1 Applicability of the regulations	4
Article 2 Concepts / Definitions	4
Paragraph 2 Admission and prior education	6
Article 3 Admission to Bachelor degree programme	6
Article 4 University entrance examination [Colloquium Doctum]	7
Paragraph 3 Content and composition of the programme	7
Article 5 Goal of the programme	7
Article 6 Cancelled	8
Article 7 Composition of the programme and degree audits	8
Article 8 Form of the programme	8
Article 9 Language	8
Article 10 Honours Programme	8
Article 11 (Compulsory) participation in the programme	9
Article 12 Programme evaluation	9
Paragraph 4 Registration and withdrawal for courses and examinations	10
Article 12a Cancelled	10
Article 12b Cancelled	10
Article 13 Registration for written examinations	10
Article 14 Registration for other examinations	11
Article 15 Withdrawal from examinations	11
Paragraph 5 Examinations	11
Article 16 Form of the examinations and the manner of testing in general	11
Article 17 Times and number of written examinations	12
Article 18 Oral examinations	12
Article 19 Determination and announcement of results	12
Article 20 Right to inspect the results	13
Article 21 Discussion of the results of examinations	13
Article 22 Period of validity of examinations	13
Article 23 Exemption from an examination or obligation to participate in a practical exercise	14
Article 24 Periods and frequency of degree audits	14
Article 24a Invalidation of examinations	14
Paragraph 6 Studying with a disability	14
Article 25 Adjustments to the benefit of students with disabilities or chronic illnesses	14
Paragraph 7 Study support and (binding) recommendation on the continuation of studies	15
Article 26 Study support and Monitoring of student progress	15
Article 27 (Negative) binding recommendation on the continuation of studies	16
Paragraph 8 Final provisions	17
Article 28 Conflicts with the regulations	17
Article 29 Amendments to the regulations	17
Article 30 Transitional measures	17
Article 31 Announcement	17
Article 32 Entry into force	17
Appendix & Addendum TER BSc AES	18
Appendix to article 2 TER	18
Appendix to article 3 TER (for Bachelor's degree programmes)	19
Appendix to article 5 TER	20
Addendum to Article 3 TER BSc AES	21

TABLE OF CONTENTS ANNEX

Paragraph 1	Study programme	23
Article 1	Composition of the study programme	23
Article 2	Composition of the first year.....	23
Article 3	Composition of major, second and third year.....	23
Article 4	Minor	24
Article 5	Bachelor's Thesis.....	24
Paragraph 2	Admission requirements	24
Article 6	Admission requirements.....	24
Paragraph 3	Education, practicals & examinations	25
Article 7	Type of education.....	25
Article 8	Practicals and examinations	25
Article 9	Frequency, times and sequence of examinations	25
Paragraph 4	Honours Programme	25
Article 10	AES Bachelor Honours Programme.....	25
Paragraph 5	Deviations from the study programme	26
Article 11	Deviations from the study programme	26
Paragraph 6	Transitional measure(s)	26
Article 12	Linear Algebra (AESB1311)	26
Article 13	Grand Challenges and Applied Earth Sciences (AESB1242)	26
Article 14	Rock Mechanics (AESB2341).....	26

Paragraph 1

General

Article 1 Applicability of the regulations

1. These regulations including the programme specific annex, apply to the teaching and the examinations of the Bachelor degree programme in [Applied Earth Sciences](#), hereafter to be referred to as 'the programme'. Paragraphs 1,4,5,6 and 8 of these regulations apply to the minors taught in the aforementioned programme.
2. The programme is provided under the responsibility of the faculty of Civil Engineering and Geosciences of Delft University of Technology, hereinafter referred to as the faculty.

Article 2 Concepts / Definitions

A list of relevant websites can be found in the appendix to this article.

1. The following concepts apply in this Regulation:

a. academic year:	the period from 1 September until 31 August of the following calendar year;
b. Act:	the Higher Education and Scientific Research Act (in Dutch, the WHW), Dutch Bulletin of Acts, Orders and Decrees, number 593 and as amended since;
c. Annex	the appendix which forms part of these Teaching and Examination Regulations;
d. Board of Examiners:	the programme's Board of Examiners, which has been installed in accordance with Article 7.12 of the Act;
e. cohort:	the group of students who have registered for a degree programme for the first time in a given academic year;
f. course (or: 'subject'):	a unit of study within the programme, as stipulated in Article 7.3, Sections 2 and 3 of the Act, with which an examination is associated;
g. credit:	a European Credit (EC) awarded in line with the European Credit Transfer System (ECTS); one credit denotes a study load of 28 hours;
h. (component) partial examination:	the test, in which, in accordance with Article 7.10 of the Act, the Board of Examiners determines whether all examinations in the courses of the degree programme have been successfully completed;
i. degree:	an academic title conferred by universities and colleges as an indication of the completion of a course of study, or as an honorary recognition of achievement;
j. degree audit (or programme):	the evaluation in which, in accordance with Article 7.10 of the Act, the Board of Examiners determines whether all examinations in the subjects of the degree programme have been successfully completed;
k. disability:	all conditions which are (at least for the specified period) chronic or lasting in nature and which form a structural limitation for the student in receiving education and/or sitting examinations or taking part in practicals;
l. education registration system:	the current education registration system is Osiris;
m. examination:	an assessment of the knowledge, insight and skills of a student in relation to a course, as well as the marking of that assessment by at least one examiner, appointed for that purpose by the Board of Examiners;
n. examiner:	the individual who, in line with Article 7.12, Subsection 3 of the Act, has been appointed by the Board of Examiners to set the examinations;
o. institute:	Delft University of Technology;
p. interim examination:	the assessment of the examinee's knowledge, insight and skills and the results of the assessment as referred to in Section 7.10, first subsection of the WHW;
q. first academic year:	the first period of the programme with a study load of 60 credits, as specified in Article 7.8b of subsection 8 of the Act;
r. learning management platform:	the current learning management platform is Brightspace;

s.	negative binding recommendation	the rejection connected to the recommendation on continuation of studies at the continuation of studies:	the end of the first year of the BSc, as intended in Article 7.8b subsection 3, first sentence; this recommendation cannot be made to a student earlier than towards the end of the first year of enrolment;
t.	practical exercise:	a practical exercise as intended in Article 7.13, subsection 2, paragraph f of the Act, taking one of the following:	<ul style="list-style-type: none"> • writing a thesis; • conducting a project or experimental design; • carrying out a project or a design/ research assignment; • completing an internship; • participating in fieldwork or an excursion; • conducting tests and experiments; or • participating in other educational activities that are considered essential and that are aimed at acquiring particular skills;
u.	programme:	the Bachelor degree programme as stipulated in Article 7.3a Section1, Subsection B of the Act;	
v.	programme duration:	the duration starting from the enrolment of the student up and to including the last examination;	
w.	student:	a person enrolled at Delft University of Technology in order to receive education and take the examinations and the degree audit in the degree programme;	
x.	study guide:	a digital guide to the programme containing specific information pertaining to the various courses;	
y.	teaching period:	half a semester;	
z.	virtual learning environment:	the electronic system designed for the exchanging of teaching information (here: Brightspace);	
aa.	working day:	Monday to Friday with the exception of recognised national public holidays and the collective closure days;	

2. The other concepts in these regulations are used in the sense in which they appear in the Act.
3. In these regulations, the term 'examination' also refers to 'interim examination', with the exception of Article 19, Section 1, first two complete sentences.
4. A written or oral examination may also be taken digitally and/or online. In these regulations the term examination is also taken to mean a digital and/or online examination, unless stated otherwise in these regulations.

Paragraph 2

Admission and prior education

Article 3 Admission to Bachelor degree programme

- Access to education in the Bachelor's degree programme in Applied Earth Sciences is open to individuals possessing a certificate as stipulated in the law and corresponding ministerial regulations with the proper profile or subject, or anyone who meets the stated requirements.

The prior education requirements are elaborated below, by type of certificate.

a. Certificate of pre-university education (VWO; as stipulated in Art. 7.24.1 a or b of the WHW) or a Surinamese diploma for pre-university education (VWO)

S&E profile	[with Mathematics B, Physics and Chemistry]
S&H profile	[with Mathematics B, Physics and Chemistry]
E&S profile	[with Mathematics B, Physics and Chemistry]
C&S profile	[with Mathematics B, Physics, Chemistry and Biology]

The following applies as well:

- individuals possessing a pre-university (VWO) certificate with the S&H profile from before 2007 are admissible;
- individuals possessing an 'old style' pre-university (VWO) certificate with Mathematics B, Physics, Chemistry in their study programme courses are admissible;
- individuals with certificates that do not include the aforementioned courses must rectify these deficiencies before they can be registered and admitted (no later than 31 August).

b. Bachelor's, Master's or Doctoral degree, a certificate of first-year degree audit for higher professional education, or an associate degree obtained at a Dutch institution

The following applies to this category:

- individuals possessing a pre-university (VWO) certificate, as mentioned in Subsection a, are subject to the conditions stated in Subsection a;
- individuals possessing certificates from senior general secondary education (HAVO) or senior secondary vocational education (MBO) must rectify the deficiencies relative to the pre-university (VWO) level subjects Mathematics-B, Physics and Chemistry, Biology before they can register and be admitted (no later than 31 August)
- individuals who have received foreign education prior to the degree or diploma earned at the Dutch institution, must meet the requirements of satisfactory linguistic mastery of Dutch or English, as stated in the appendix. This does not apply to the English-taught bachelor's programmes in Aerospace Engineering, Applied Earth Sciences, Computer Science and Engineering and Nanobiology

c. Foreign degree

A foreign degree (regardless of whether they were earned abroad) or diplomas based on a European or International Baccalaureate programme must be equivalent to the pre-university (VWO) level and contain the subjects Mathematics-B, Physics. This equivalence is determined by the Executive Board.

Individuals in this category must also meet the requirements of satisfactory linguistic mastery of Dutch or English, as stated in the appendix.

- In all non-standard cases, the admissions committee of the Bachelor's degree programme will assess whether their qualifications reflect an adequate level of Mathematics, Physics and Chemistry, and a satisfactory language level.

Article 4

University entrance examination [Colloquium Doctum]

1. The process of conducting the admissions examination, as specified in Article 7.29 Sections 2 and 3 of the WHW, is assigned to the TU Delft University Entrance Examination Committee established for the joint programmes. This committee consists of two members: a lecturer from the Applied Mathematics degree programme and a lecturer from the Applied Physics degree programme.
2. Individuals who have reached the age of 21 years and who would like to be eligible for a university entrance examination must possess the following:
 - 1) a partial pre-university education (VWO) certificate for the subjects Mathematics B, Chemistry and Physics, or a certificate from a continuing education course or a test administered by the institution, and
 - 2) satisfactory communication skills in Dutch. This is also a requirement for degree programmes taught in English.
3. The TU Delft University Entrance Examination Committee assesses whether the candidate possesses the certifications (or partial certifications) mentioned in Section 2. If this is the case, the committee will conduct an interview with the candidate, in which they examine the candidate further and determine whether the candidate has satisfactory communication skills in Dutch.

Paragraph 3

Content and composition of the programme

Article 5

Goal of the programme

The programme is intended to educate students to earn a Bachelor of Science degree in Applied Earth Sciences, providing them with such a level of knowledge, insight and skills in the area of Applied Earth Sciences, that graduates can fulfil positions on the labour market at the Bachelor's level and be eligible for a follow-up programme at the Master level, in any case, the TU Delft Master degree programme in Applied Earth Sciences.

Applied Earth Sciences are concerned with engineering in the context of system Earth. They concern those parts of system Earth that are actively used or strongly affected by society. This includes the upper few kilometres of the geosphere, the atmosphere, and the hydrosphere. The upper kilometres of the Earth's crust host a very large part of society's resources (water, minerals, building materials, hydrocarbons, geothermal energy and space) and they support an increasing amount of human infrastructure.

Natural processes such as tectonics, erosion and sedimentation have a profound impact on the occurrence and distribution of these resources, as well as on engineered structures (tunnels, embankments, excavations, constructions, etc.). The growing human population and its increasing use of Earth's resources is having an increasing impact on the functioning of the system Earth, including climate and ecosystems.

The TU Delft BSc AES has a focus on Engineering within mainly the subsurface domain of system Earth. The students obtain the required knowledge and skills to apply the underlying fundamental sciences in order to utilize the opportunities provided by the sub-surface. The primary earth science for the programme is Geology. In order to provide the graduates with the required engineering and technological skills, the programme includes a thorough training in Physics, Chemistry and Mathematics. All topics are taught in the context of developing solutions to the grand challenges which include (but are not limited to) energy security and energy transition, resource security and environmentally responsible use of the underground space including resource extraction, climate change and climate change adaptation.

Engineering in, and responsible management of this delicate outer shell of the Earth including its ecosystem functions, requires a profound understanding of fundamental processes controlling the phenomena involved and the availability of highly sophisticated tools to image, model and manipulate Earth's atmosphere, surface and subsurface to depths of thousands of meters. Engineering in the context of system Earth also requires sophisticated approaches to take inherent uncertainty because of the limited information available about the sub-surface into account in the models and designs.

The TU Delft BSc-programme is a preparatory programme for a MSc specialisation, primarily in the TU Delft MSc in Applied Earth Sciences, but it gives access to a wide range of other programmes as well. To a lesser degree it also provides entry to the job-market. A graduate with this BSc degree delivers added value as a junior engineer, junior consultant or junior government employee. The BSc-degree provides a good base in learning and practical skills, scientific knowledge and attitude so that graduates are fully prepared to further develop as a professional.

The final attainments are given in the Annex.

Article 6 Cancelled

Not applicable

Article 7 Composition of the programme and degree audits

1. The programme includes the Bachelor's degree audit, with a study load of 180 credits. This includes the first academic year, with a study load of 60 credits, which is concluded with a binding recommendation on the continuation of studies. The second and third academic years have a combined study load of 120 credits. This phase includes a minor with a study load of 30 credits.
2. As a component of the programme, the minor includes the following variants:
 - a. Thematic minor, as approved by the university,
 - b. Self-composed minor, as approved by the Board of Examiners.
3. The Bachelor's degree audit is concluded with a BSc thesis. This BSc thesis demonstrates that the student possesses and is able to apply the knowledge, insight and skills acquired in the degree programme.
4. The degree programme is described in the Annex and study guide, along with the courses and subjects, including the study load, number of contact hours and form of examination of each course, as well as the programming of the examination and the language.
5. The structure and content of the educational programme is elaborated in greater detail in the [study guide](#).

Article 8 Form of the programme

The programme is offered exclusively on a full-time basis.

Article 9 Language

The official language of the educational programme is in English, and the examinations, practical exercises and degree audits are administered in English.

Article 10 Honours Programme

1. Students who have successfully completed the first study year in a single year and have met the criteria referred to in the [Honours Programme](#) will be invited to register for the Bachelor's Honours Programme for outstanding Bachelor's students.
2. Based on the criteria referred to in the Honours Programme, students will be selected and admitted to the Bachelor's Honours Programme by the Honours Programme Committee.

3. The Honours Programme Bachelor comprises at least **20 credits**:
 - a. At least five credits must be completed in the institution-wide component of the Bachelor's Honours Programme, which consists of the following components:
 - » community engagement,
 - » entrepreneurship,
 - » leadership,
 - » development of specific competences.
 - b. At least **15 credits** must be completed in the faculty component of the Bachelor's Honours Programme, the composition of which (including its content and options) is described in the Guidelines Honours Programme CEG and/or in the Annex.
4. All students selected for participation in the Honours Programme must submit their options for approval to the Honours Coordinator.
5. The Board of Examiners will be responsible for assessing whether all the requirements of the Honours Programme have been met.
6. Any student who has successfully completed the Honours Programme will be awarded a certificate signed by the chair of the Board of Examiners and the Rector Magnificus.

Article 11 **(Compulsory) participation in the programme**

1. All students are expected to participate actively in the programme for which they are registered.
2. If necessary, there will be an obligation to participate in practical exercises, with a view to admission to the related examination. The Board of Examiners may grant an exemption from this obligation, with or without imposing a substitute requirement.
3. Any supplementary obligations are described by component in the course description in the **study guide**.

9

Article 12 **Programme evaluation**

1. The Director of Studies is responsible for the evaluation of the education.
2. The manner in which the education in the programme is evaluated is documented in the faculty's Quality Assurance Manual, which is submitted to the Faculty Student Council and the Board of Studies.
3. The Director of Studies informs the Board of Studies concerning the outcomes of the evaluation, the intended adjustments based on these outcomes and the effects of the actual adjustments.

Paragraph 4

Registration and withdrawal for courses and examinations

Article 12a Cancelled

Not applicable

Article 12b Cancelled

Not applicable

Article 13 Registration for written examinations

1. Registration to participate in a written examination, including a written examination that is taken online, remotely from the university, is compulsory and is done by entering the requested data into the education registration system (Osiris) no later than 14 calendar days before the examination. Students receive examination tickets by email as confirmation of their registration.
2. Students may submit a request to register for an examination after the deadline mentioned in subsection 1 has passed but no later than 6 calendar days before the examination in question, in Osiris by being placed on a waiting list. The request will be honoured providing that places are available in the room or rooms where the examination is scheduled to take place. The student will receive an exam ticket by email as confirmation.
3. In the event of circumstances beyond a student's control resulting in the student being unable to register for an examination, the Board of Examiners may nevertheless permit the student to participate in the examination.
4. Students who have not registered for the examination and are therefore not included on the list of examinees can report on the day of the examination to the invigilator beginning 15 minutes before the start of the examination until the actual start. They will be admitted to the examination room, in the order that they reported to the invigilator, 30 minutes after the start of the examination, if sufficient places are available. The loss of 30 minutes of examination time cannot be compensated. Students who have been granted late access to the examination will be added to the list of examinees. The student participates in the examination subject to the validation of entitlement to participate in the examination.
5. In the situation described in the previous section, if it is found that a student was not entitled to participate in the examination, the examination work will be deemed invalid, it will not be marked and it will not count towards a result. The student may subsequently submit an appeal to the Board of Examiners, accompanied by reasons, requesting that the examination work that has been deemed invalid be declared valid and to have it assessed. The Board of Examiners will approve the request only in case of extenuating circumstances.
6. Sections 2 and 4 of this article do not apply to a written examination that is taken online, remotely from the university.
6. If unforeseen circumstances or measures make it necessary to change the form or manner of taking the examination, the Board of Examiners may determine a different registration period in favour of the student.

Article 14 Registration for other examinations

1. Registration for participation in an examination other than a written examination is compulsory, and is possible up to 14 calendar days before the examination take place in the manner that is stated in the study guide for the relevant examination. If unforeseen circumstances or measures make it necessary to change the form or manner of taking the examination, the provisions stated in the study guide apply in full unless the Dean decides to deviate from the manner or term of registration prescribed in the study guide.
2. In special cases, the **Board of Examiners** may deviate from the registration term stated in Section 1, but only in favour of the student.
3. Students who have not registered on time will not be allowed to participate in the examination. The Board of Examiners can nevertheless admit a student to the examination, but only in case of special circumstances.
4. In the event of unauthorised participation in an examination, the Board of Examiners may declare the result invalid.

Article 15 Withdrawal from examinations

1. Students can withdraw from an examination through the education registration system (Osiris) up to three calendar days before the examination.
2. Any student who has withdrawn from an examination should re-register on a subsequent occasion, in accordance with the provisions of Articles 13 and 14

Paragraph 5

Examinations

Article 16 Form of the examinations and the manner of testing in general

1. Examinations (oral, written or otherwise) are taken in the manner described in the appendix. In the event of unforeseen circumstances or measures, the Board of Examiners may determine that the manner prescribed may be deviated from. If an examination is taken using online proctoring, this takes place in accordance with the "TU Delft Online Proctored Examination Regulation".
2. The study guide contains a description of the moments at which and the numbers of times that examinations can be taken, along with their frequency, without prejudice to the provisions of these regulations concerning written and oral examinations, as described in Article 17.
3. A student may participate in an examination for a course no more than twice in one academic year, with the understanding that registration for an examination without timely withdrawal counts as participation.
4. In special cases, the Board of Examiners may deviate from the provisions of the above sections 1 to 3 in favour of the student.
5. Well before a written examination, the examiner will give the students the opportunity to familiarise themselves with representative sample questions and the criteria by which they will be assessed. The teacher or examiner will provide accompanying guidelines for the way in which the sample questions are answered.

Article 17 Times and number of written examinations

1. Two opportunities to take written examinations will be offered each academic year. The previous provision applies equally to examinations other than written examinations, unless this cannot be reasonably demanded of the programme. The times in which the examinations can be taken are:
 - » At the end of the teaching period in which the course is taught, **and**
 - » in the fifth week or at the end of the next teaching period or during the summer resit period according to the TU Delft academic calendar.
2. An annual timetable is issued detailing when examinations may be taken, and it is published before the start of the relevant teaching period.
3. Contrary to the provisions in Section 1, the opportunity to take the examination for a course that is not taught in a certain academic year must be given at least once in that year.
4. Contrary to the provisions of Section 1, two opportunities to sit an examination will be offered for discontinued courses in the academic year following the year in which the course was last taught. Both opportunities are in the academic year following the one in which the course was last taught.
5. In exceptional cases, the Board of Examiners may permit more than two opportunities in a year for certain examinations.

Article 18 Oral examinations

1. For oral examinations, no more than one student shall be tested at a time, unless determined otherwise by the Board of Examiners.
2. Oral examinations shall not be public, unless the Board of Examiners has decided otherwise. In deviation from this first clause, a final presentation is given publicly except in special cases in which the Board of Examiners has decided otherwise, whether or not at the request of the student.
3. The oral examination is administered by at least two examiners. In the event of unforeseen circumstances or measures, the Board of Examiners may allow the oral examination to be administered by a single examiner, provided the student consents to an audio and/or video recording with sound of the oral examination.

Article 19 Determination and announcement of results

1. The examiner determines the result of a written examination as quickly as possible but by no later than 15 working days after the examination. The results of written interim examinations shall be announced no later than five working days before the next written interim examination.
2. The examiner determines the result of an oral examination as quickly as possible but no later than 15 working days after it is administered. The student is issued with a written statement of this result.
3. The examiner records the results of the assessment of a practical exercise as quickly as possible, but no later than 15 working days after the completion of the practical exercise at the designated time. In the education registration system (Osiris), the result will be dated on the date of completion of the practical exercise. With regard to a series of practical exercises in which the knowledge acquired in a previous practical exercise is important to the subsequent practical exercise, the result of the previous practical exercise shall be announced before the subsequent practical exercise. If this is not possible, the examiner shall schedule a timely discussion of the previous practical exercise.
4. The examiner is responsible for the registration and publication of the results in the education registration system (Osiris), with observance of the student's privacy. When the result of an examination is announced, the student is informed about the right of perusal as stipulated in Article 20 as well as about the possibility of appealing to the Examinations Appeals Board.

5. Contrary to the previous provisions, results for examinations administered in the last regular examination, as well as for resits from the first year of the BSc taken during the resit period, shall be determined, registered and published within five working days of the week following the week in which the examination was taken.
6. If special circumstances prevent the examiner from registering the results on time, the examiner will report this to the Board of Examiners, accompanied by reasons, and notify the students and student administration as quickly as possible.

Article 20 Right to inspect the results

1. Upon request, students will have the right to inspect their assessed work during a period of at least 20 working days after the announcement of the results of a written examination or the assessment of a practical exercise. During the inspection of the assessed work, it is not permitted to copy the underlying examination questions in any way. Students intending to appeal against the assessment of their work will be issued with a copy of the assessed work.
2. During the period mentioned in Section 1, all students who have participated in the examination can become acquainted with the questions and assignments of the relevant examination, as well as with the standards that form the basis of the assessment.
3. The examiner can determine that the inspection or cognizance intended in Sections 1 and 2 will take place at a pre-established place and at a pre-established time.
4. Students proving that they were unable to appear at such an established place and time because of circumstances outside of their control will be offered another possibility, if possible within the period mentioned in Section 1. The place and times mentioned in the first sentence will be made known in good time.

Article 21 Discussion of the results of examinations

1. Students who have taken a written examination or who have received the assessment of a practical exercise can ask the relevant examiner for a discussion of the results during a period of 20 working days after the announcement of the results. The discussion will take place within a reasonable period, at a place and time to be determined by the examiner.
2. At the request of the student or at the initiative of the examiner, a discussion justifying the assessment will take place between the examiner and the student as soon as possible after the announcement of the result of an oral examination. During the discussion of the assessed work it is not permitted to copy the underlying examination questions in any way.
3. If a collective discussion is organised by the examiner, students may submit requests as referred to in section 1 only if they have been present at the collective discussion and have motivated their requests, or if they were unable to be present at the collective discussion because of circumstances outside their control.
4. The Board of Examiners may allow deviation from the provisions in Sections 2 and 3.

Article 22 Period of validity of examinations

1. The period of validity of the results of an examination is indefinite. The Dean can restrict the period of validity of a successfully completed examination only if the knowledge or insight that was examined has become outdated or if the skills that were examined have become outdated.
2. In cases involving a limited period of validity based on the first section, the period of validity shall be extended at least by the duration of the acknowledged delay in studies, based on the TU Delft Profiling Fund Scheme.

3. In individual cases involving special circumstances, the Board of Examiners can extend periods of validity that have been limited based on the first section or further extend periods of validity that have been extended based on the second section.
4. If a course consists of interim examinations, the period of validity of the interim examination for which no credits are assigned shall be restricted to [period].

Article 23 Exemption from an examination or obligation to participate in a practical exercise

1. After having obtained recommendations from the relevant examiner, the Board of Examiners may grant exemptions to students:
 - a. who have successfully completed an examination or degree audit in a system of higher education within or outside the Netherlands that corresponds to the examination for which the exemption has been requested in terms of content and level, or
 - b. who demonstrate that they possess sufficient knowledge and skills that have been acquired outside the system of higher education.
2. After having obtained recommendations from the relevant examiner, the Board of Examiners may grant exemption from the requirement to participate in a practical exercise with a view to admission to the related examination, possibly subject to alternative requirements.

Article 24 Periods and frequency of degree audits

In principle, the opportunity to take the Bachelor's degree audit will be offered once each month. The dates for the meetings of the Board of Examiners shall be published before the beginning of the academic year.

Article 24a Invalidation of examinations

The Board of Examiners is authorised to declare invalid an examination or an examination component, if a correct assessment of the knowledge, insight and skills of the student has been proved reasonably impossible, based on the examination of that component. The Board of Examiners may draw up further rules for this.

Paragraph 6

Studying with a disability

Article 25 Adjustments to the benefit of students with disabilities or chronic illnesses

1. Upon a written and substantiated request to that effect, students with disabilities or chronic illnesses may be eligible for adjustments in teaching and examinations. These adjustments are coordinated to the situations of the students as much as possible, but they may not alter the quality or level of difficulty of a course or the study programme. Facilities to be provided may include modifications to the form or duration of examinations and/or practical exercises to suit individual situations or the provision of practical aids.
2. Requests as mentioned in Section 1 must be accompanied by a recent statement from a physician or psychologist or, in cases involving dyslexia, from a testing office registered with BIG, NIP or NVO. If possible, this statement should include an estimate of the extent to which the condition is impeding the student's academic progress.

3. Decisions concerning requests for adjustments relating to educational facilities are taken by the Dean or by the Director of Studies on the Dean's behalf. Decisions concerning adjustments relating to examinations are taken by the Board of Examiners or by the academic counsellor on behalf of the Board of Examiners.
4. Adjustments to examinations can involve the following or other matters:
 - » manner (e.g. replacing a written test with an oral test or vice versa, testing the required material in the form of interim examinations or granting exemptions to the attendance requirement);
 - » timing (e.g. additional time for an examination, wider spreading of examinations across the examination period, granting exemptions to admission requirements or extending the period within which a component must be completed);
 - » aids permitted during testing (e.g. English-Dutch dictionaries for students with dyslexia);
 - » location (taking the examination in a separate, low-stimulus space).
5. Adjustments in educational facilities could include:
 - » providing modified furniture in teaching and examination spaces;
 - » providing special equipment (e.g. magnification or Braille equipment for students with visual impairments and blindness or loop systems and individual equipment for students with hearing impairments and deafness);
 - » providing more accessible course material;
 - » providing special computer facilities (e.g. speech-recognition or speech-synthesising software);
 - » providing a rest area.

Paragraph 7

Study support and (binding) recommendation on the continuation of studies

Article 26 Study support and Monitoring of student progress

1. The Dean is responsible for providing individual study supervision to students registered for the degree programme, partly for their orientation towards potential study options within and outside the degree programme. The Dean will also ensure that effective support and supervision is provided to students in making choices related to their studies
2. The examination and study programme applying to each student is documented in the education registration system (Osiris).
3. The Student Administration is responsible for ensuring that all students are able to review and check their results in the education registration system (Osiris).
4. In order to comply with the provisions of Article 26 section 1, every student receives supervision from a (student) mentor in the first year. The Director of Education draws up specific regulations for supervision by a qualified mentor.
5. The mentor explains how the Faculty expects students to conduct themselves, and explains the conduct that students can expect from each other in an academic and personal context.

Article 27 (Negative) binding recommendation on the continuation of studies

1. No later than the end of the first year of enrolment for the degree programme, all students who have not terminated their enrolment before 1 February of that academic year will be issued a recommendation by the Dean concerning the continuation of their studies within or outside the Bachelor's degree programme. The Dean will issue every student enrolled for the first time in the first study year of the degree programme with the following:
 - » a preliminary recommendation (which also serves as a warning) in March;
 - » a proposed binding recommendation on the continuation of studies in early August or a definitive positive recommendation on the continuation of studies;
 - » a definitive (positive or negative) binding recommendation on the continuation of studies no later than 31 August.
2. Any student who has secured fewer than 45 credits by the end of the first year of study (date of final results: 31 August) will be issued with a negative binding recommendation on the continuation of studies. This student's enrolment will be terminated with effect from the first of the month following the date of the decision in which the recommendation was included, but no earlier than 1 September of the year following the first year of study.
3. Students who have been granted exemptions for more than 15 credits in their first academic year that do not apply to the standard of 45 credits, based on Section 6 of this Article, shall not be required to earn 45 credits in the first year, but are required to have completed the entire first academic year.
4. For programmes offered jointly with another institution, the required standard will be determined in consultation with the institution in question.
5. Termination of enrolment, as stipulated in the first section, leads to exclusion from the programme for four academic years after the academic year for which the recommendation was issued.
6. The 45 credits originate from the programme for the first year of study in the degree programme in which the student is enrolled.
7. If the student has been awarded exemptions, they may be counted towards the required standard of 45 credits if the activity on the basis of which the exemption was awarded took place in the same academic year as the year for which the binding recommendation on the continuation of studies was issued. The exemptions may not be counted if the activity, on the basis of which the exemption was awarded, took place prior to the academic year for which the binding recommendation on the continuation of studies was issued.
8. If the Dean judges that a student was unable to achieve the required standard of 45 credits as a result of personal circumstances, the Dean will permit said student either to achieve the standard of 45 credits from the programme for the first year of study in the degree programme in which the student is enrolled in a subsequent academic year, with credits secured in the first year of study not counting towards this, or to complete the first year of study in its entirety.
9. If the Dean judges that enrolment after 1 October has had such an influence that a student was unable to achieve the required standard of 45 credits, the Dean will permit said student either to achieve the standard of 45 credits from the programme for the first year of study in the degree programme in which the student is enrolled in the following academic year, with credits secured in the first year of study not counting towards this, or to complete the first year of study in its entirety.

Paragraph 8

Final provisions

Article 28 Conflicts with the regulations

In the case of conflict between provisions in the study guide or other document concerning the relevant teaching and examination education and study programme and these regulations, the provisions of these regulations shall take precedence.

Article 29 Amendments to the regulations

1. Amendments to these regulations are adopted separately by the Dean.
2. Amendments that are applicable to the current academic year will be made only if they would not reasonably damage the interests of students.
3. Amendments to these regulations may not lead to disadvantageous changes to any decisions that have been made with regard to individual students.
4. In the event of unforeseen circumstances or measures, the Dean may decide to deviate from these regulations, including the actual form of the education and any compulsory attendance requirements. This also means that the provisions in the study guide may be deviated from

Article 30 Transitional measures

1. If the composition of the degree programme undergoes substantive changes, transitional measures will be established and published through the Dean. Transitional measures can be found in the Annex to the TER.
2. These transitional measures shall include at least the following:
 - a. an arrangement regarding exemptions that may be obtained based on examinations that have already been passed;
 - b. the period during which the transitional arrangement shall be valid.
3. Students shall follow the degree programme as it applied or applies during the first academic year of their enrolment, unless components of the programme are no longer offered. In such cases, students must transfer according to the applicable transitional measures. Deviations require the approval of the Board of Examiners. Before submitting a request to this end, the student must have first obtained recommendations from an academic counsellor.
4. If a course within a degree programme is cancelled, four additional opportunities for taking the examination in this course shall be offered after it has been taught for the last time: the examination at the end of the teaching of the course, a resit in the same academic year and two resits in the following academic year.

Article 31 Announcement

1. The Dean is responsible for ensuring a suitable announcement of these regulations and any amendments to them.
2. In any case, the Teaching and Examination Regulations are to be posted on the programme's website.

Article 32 Entry into force

These regulations shall enter into force on 1 September 2022.

Appendix & Addendum TER BSc AES

Appendix to article 2 TER

Student portal with links to relevant regulations, e.g.

- Student Charter,
- privacy statement online proctoring,
- Code of Ethics,
- Online Proctored Examination Regulation etc.
 - » <https://www.tudelft.nl/en/student>

Rules & Regulations of the Board of Examiners

- » <https://www.tudelft.nl/studenten/faculteiten/citg-studentenportal/onderwijs/onderwijsinformatie/educational-rules-and-regulations/>

Board of Examiners general website

- » <https://www.tudelft.nl/studenten/faculteiten/citg-studentenportal/organisatie/board-of-examiners-ceg/>

Wet op het hoger onderwijs en wetenschappelijk onderzoek (WHW)

- » <https://wetten.overheid.nl/BWBR0005682/2019-02-01>

Examination Appeals Board

- » <https://www.tudelft.nl/en/student/legal-position/central-complaints-desk-for-students/objections-and-appeals>

Studying with a disability

- » <https://www.tudelft.nl/en/student/counselling/studying-with-a-disability>

Appendix to article 3 TER (for Bachelor's degree programmes)

Language level for individuals holding a foreign degree (c)

ONLY FOR BACHELOR'S DEGREE PROGRAMMES TAUGHT IN DUTCH

The Dutch language:

By successfully passing a Dutch examination at the following level:

- GCE A Level
- Algemeen Secundair Onderwijs (ASO)
- European Baccalaureate (EB)
- Suriname VWO
- International baccalaureate (IB)
- Baccalaureate Series S

By successfully completing:

- The complete Dutch course from the TU Delft Centre for Languages and Academic Skills; or
- The NT2-II certificate and the professional language course of the TU Delft Centre for Languages and Academic Skills.

The English language:

By successfully completing one of the following tests:

- TOEFL iBT with an overall band score of 70
- IELTS (academic version) with an overall band score of 5.5
- Cambridge Assessment English:
 - » B2 First (formerly known as Cambridge English)

Certificates more than two years old will not be accepted.

The following candidates are exempted from the English language test requirement:

- Students who hold the nationality of one of the following countries: USA, UK, Ireland, Australia, New Zealand or Canada;
- Students who hold a secondary school diploma from one of the above countries;
- Students who possess an International Baccalaureate or European Baccalaureate diploma
- Students who possess a Suriname VWO diploma or European secondary school diploma (pre-university certificate) equivalent to Dutch VWO level, with English as a final school-leaving examination subject. A pass must have been achieved for English on the school-leaving diploma;

19

ONLY FOR BACHELOR'S DEGREE PROGRAMMES TAUGHT IN ENGLISH

By successfully passing one of the following tests:

- TOEFL iBT with an overall band score of 90
- IELTS (academic version) with an overall band score of 6.5
- Cambridge Assessment English:
 - » C1 Advanced (Certificate of Advanced English) with an overall score of at least 176.
 - » C2 Proficiency (Certificate of Proficiency in English) with an overall score of at least 180.

Certificates more than two years old will not be accepted.

- Students who hold the nationality of one of the following countries: USA, UK, Ireland, Australia, New Zealand or Canada;
- Students who hold a secondary school diploma from one of the above countries;
- Students who possess an International Baccalaureate or European Baccalaureate diploma
- Students who possess a Suriname VWO diploma or European secondary school diploma (pre-university certificate) equivalent to Dutch VWO level, with English as a final school-leaving examination subject. A pass must have been achieved for English on the school-leaving diploma;

Appendix to article 5 TER

Intended learning outcomes BSc Applied Earth Sciences (AES)

The BSc programme of Applied Earth Sciences at TU Delft concerns the part of the Earth system that interacts strongly with society, namely the upper crust from a few kilometres depth up to the lower atmosphere. Graduates of this programme will help to develop scientific approaches and engineering solutions to understand, monitor, and predict processes within the Earth system and to help utilize Earth's finite natural resources (including energy, materials, air, water, surface, and subsurface space) in a responsible and sustainable way.

Students with an AES BSc degree from the TU Delft are able to:

1. apply the relevant principles and field applications of Earth Sciences, Mathematics, Physics, and Chemistry in the context of Earth system processes.
2. explain, develop, and analyse engineering solutions for responsible utilization of the Earth System.
3. independently solve complex AES related problems in a structured manner.
4. conduct scientific research, based on a question from science or practice, including data collection, data interpretation, and report on it in a way that fulfils scientific criteria.
5. use, justify, adjust, and assess models for research and problem solving in the field of AES.
6. evaluate and reflect on relevant social, scientific, ethical, environmental, and economic consequences of an AES problem.
7. develop and apply a critical attitude, including logical reasoning, on AES related research, literature, engineering solutions, and on the consequences one's own thinking, decisions and actions.
8. communicate effectively with experts and lay audiences, both orally and in writing.
9. work effectively in a team to solve an AES problem.
10. give and receive constructive feedback and process it.

Addendum to Article 3 TER BSc AES

Addendum - Article 3 - Admission to Bachelor's degree programmes - is supplemented with Sections 3a and 3b, and reads:

VO => bachelor programme

- 3a. For the 2021-2022 academic year, in addition to Section 1 of this article, students referred to in Subsection a of this Section may be admitted conditionally provided that, before 1 January 2022, they:
- » have successfully completed the NT2-II language exam, or
 - » have passed the state examination in Dutch as a second language or have otherwise demonstrated that they meet the required language level, and
 - » have eliminated any other deficiencies by taking one or more state exams.

If, on 1 January 2022, they do not meet the conditions for admission referred to in Subsection 1a of this article, they will be unenrolled from the degree programme.

HBO propedeuse => bachelor programme

- 3b. For the 2021-2022 academic year, in addition to Section 1 of this article, students referred to in Subsection b of this Section may be admitted conditionally provided that they:
- » By 1 August 2021 at the latest, TU Delft has received a completion recommendation from their HBO (University of Applied Sciences) showing that it is likely they will successfully complete the relevant first year before 1 January 2022, and
 - » on the basis of which the degree programme has made a positive assessment.

If, on 1 January 2022, students have not met the admission requirements referred to in Section 1b of this article, they will be unenrolled from the degree programme.



ANNEX

**BACHELOR DEGREE PROGRAMME
APPLIED EARTH SCIENCES**

2022
2023

Paragraph 1

Study programme

Article 1 Composition of the study programme

The composition of the study programme can be found in the TEACHING AND EXAMINATION REGULATIONS BSc AES 2022-2023.

Article 2 Composition of the first year

First year

Code	Subject	EC
AESB1130-21	Geology 1: Basics	5
AESB1211	Mathematics 1	6
AESB1411	Linear Algebra	5
AESB1243	Grand Challenges and Applied Earth Sciences	9
AESB1320-17	Mechanics	5
AESB1120-15	Principles of Chemistry & Thermodynamics	5
AESB1213	Probability and Statistics	5
AESB1230	Geology 2: North West Europe	5
AESB1420-17	Electricity & Magnetism	5
AESB1430-14	Geology 3: Geological Systems and excursion	5
AESB1440-21	Methodology of Geophysics and Remote Sensing	5

Article 3 Composition of major, second and third year

Second year

Code	Subject	EC
AESB2110-21	Mathematics 4	5
AESB2122	Systems and Signals with Python	5
AESB2140-21	Geophysical Methods for Subsurface Characterization	5
AESB2210-18	Mathematics 5	5
AESB2220-20	Chemical Thermodynamics	5
AESB2230	Sedimentology and Reservoir Geology	5
AESB2320	Physical Transport Phenomena	5
AESB2330	Soil Mechanics	5
AESB2342	Rock Mechanics	5
AESB2430	Geological Fieldwork Data Acquisition	5
AESB2431	Geological Fieldwork Data Integration	5
AESB2440	Geostatistics and Remote Sensing	5

Third year

Code	Subject	EC
n/a	Minor	30
AESB3340	Mechanics and Transport by flow in Porous Media	5
AESB3341-18	Petrophysics and Image Analysis	5
AESB3343	Mineral Resource Geology and Modelling	5
AESB3400	Bachelor Thesis	10
AESB3440	Field Exploration Project	5

Article 4 Minor

1. For the minor of 30 credits, students can choose as indicated below:

- a. Minor TU Delft, Leiden University and Erasmus University Rotterdam.

One of the minors offered at TU Delft, University of Leiden or Erasmus University Rotterdam that does not include any overlap with the content of the subjects included in the major of the degree programme. Only the minors offered by the said universities that are intended for students taking the Bachelor's degree programme in Applied Earth Sciences, are allowed. In case the chosen minor does not comprise 30 credits, the student should take additional related subjects to complete the minor, or – if the chosen minor comprised 15 credits – could take a second minor of **15 credits**. In case the entire minor of 30 credits is not made up of authorised minors from the said universities, the student has to follow the procedure for free minors, mentioned below. Students are required to register for the minor according to the procedure described in the concerned study guide for minors.

- b. All **30 credit** minors from a NVAO accredited university¹ outside the LDE-corporation are accepted, with the requirement that the content of the minor does not include any overlap with the content of the subjects included in the major of the degree programme. The student has to follow the procedure for free minors, mentioned below.

- c. **Free minor**

A cohesive group of subjects of sufficient academic quality comprising **30 credits** in total that do not include any overlap with the content of the subjects included in the major of the degree programme. A free minor may not include subjects from a Master's degree programme at TU Delft. In order to qualify for a free minor, the student must apply **in advance** for approval from the minor coordinator by submitting a motivated request.

- d. **Minor abroad**

A cohesive group of subjects of sufficient academic quality comprising **30 credits** in total that do not include any significant overlap with the content of the subjects included in the major of the degree programme. For a minor abroad the student must follow the procedure for the free minor, as well as the instructions in the exchange manual of the academic year in which the student wants to go abroad.

2. The minor is timetabled in the first semester of the third year.

Article 5 Bachelor's Thesis

1. The Bachelor's phase is completed with an individual Bachelor's Thesis, demonstrating that the student is proficient in and can apply the knowledge and skills acquired in the degree programme. The Bachelor's Thesis is made up of a research project comprising 10 credits.
2. Articles 23, 24 and 25 of the Rules and Guidelines for the Board of Examiners BSc include further stipulations concerning the Bachelor's Thesis.

Paragraph 2

Admission requirements

Article 6 Admission requirements

The admission requirements for AES Bachelor's courses can be found in the study guide.

¹ A NVAO accredited university must be a member of the VSNU. A minor from a HBO university is not permitted.

Paragraph 3

Education, practicals & examinations

Article 7 Type of education

The education is provided in the form of lectures and/or practicals as described in the study guide.

Article 8 Practicals and examinations

1. Unless otherwise specified by the corresponding course description in the study guide, the following rules apply with respect to improving an unsatisfactory result for a project or practical:
 - a. If the result of a practical exercise is less than satisfactory, i.e. if the practical exercise is assessed with a grade 5.5 or lower (rounded off to halves), the grade for the practical exercise may be improved during the next teaching period, through one of the following options depending on the grade obtained:
 - » Grade 5.0 or higher: The student may submit an addendum to the original submission;
 - » Grade lower than 5.0: The student must redo the practical exercise completely, i.e. based on a new case or a new set of input parameters.
 - b. The maximum grade that can be obtained by improving an unsatisfactory result for a project or a practical is a grade 6.0.

Article 9 Frequency, times and sequence of examinations

Frequency, times and sequence of examinations are described in the [TEACHING AND EXAMINATION REGULATIONS BSc AES 2021-2022](#).

Paragraph 4

Honours Programme

Article 10 AES Bachelor Honours Programme

1. The 20 credits of the Honours Programme AES that are completed as extra courses in addition to the examination programme, consisting of interfaculty part and faculty part, are completed as follows:
 - a. Interfaculty part of the Honours Programme: at least 5 ECTS credits: detailed information can be found in the portal of the [Honours Programme](#).
 - b. Faculty part including:
 - I. CiTG research module, CTB3431-19: 5 credits
 - II. Module own project, CT3432: 6 credits. Students design their own programme of at least 6 credits to be completed within the faculty (organised) component of the Honours Programme. The programme proposal they submit should show coherence within a specific theme. The requirements are described in the [Guidelines Honours Programme](#), CEG.
 - III. Module third year, CTB3430-19: 4 credits
2. Students who are selected for the Honours Programme confirm their participation by sending a motivation letter and a proposal for the programme to the Honours Programme coordinator.
3. The programme proposal that the student has submitted to the Honours coordinator has to be approved by the Honours Programme Committee, established by the Director of Education. For more information about application please check the [Guidelines Honours Programme Masters](#), CEG.
4. The assessment of the various components of the programme is carried out by the examiner concerned, who must be a TU Delft academic staff member. In special cases, a deviation from this requirement is permitted (Art 5.3 R&G).

Paragraph 5

Deviations from the study programme

Article 11 Deviations from the study programme

The Board of Examiners can permit deviations from the study programme.

Paragraph 6

Transitional measure(s)

Transitional measures for students of cohort 2020-2021 and before.

Article 12 Linear Algebra (AESB1311)

- » Two resits will be offered for AESB1311 in 2022-2023. These resists will take place at the same time as the final exam and resit of AESB1411.
- » If students do not pass the course after these two resits, they will have to do the AESB1411 course.

Article 13 Grand Challenges and Applied Earth Sciences (AESB1242)

- » Two resits will be offered for AESB1242 in 2022-2023. These resists will take place at the same time as the final exam and resit of AESB1243.
- » If students do not pass the course after these two resits, they will have to do the AESB1243 course.

Article 14 Rock Mechanics (AESB2341)

- » Two resits will be offered for AESB2341 in 2022-2023. These resists will take place at the same time as the final exam and resit of AESB2342.
- » The resit for the debate part will be a 4-page essay on a topic to be agreed upon with the responsible instructor.
- » If students do not pass the course after these two resits, they will have to do the AESB2342 course.

