# TEACHING AND EXAMINATION REGULATIONS (TER)

# (In accordance with article 7.13 of the [Dutch] Higher Education and Research Act) [WHW]

# 2018-2019

# BACHELOR'S DEGREE PROGRAMME APPLIED EARTH SCIENCES

# DELFT UNIVERSITY OF TECHNOLOGY

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## Paragraph 1 - General

### Article 1 – Applicability of the regulations

1. These regulations including the annex apply to the teaching and the examinations of the Bachelor's degree programme in Applied Earth Sciences, hereafter to be referred to as 'the programme'.

2. The teaching and organisation of the programme is the responsibility of the Faculty of Civil Engineering and Geosciences at Delft University of Technology, hereafter to be referred to as 'the faculty'.

### Article 2 – Definitions of terms used

The following concepts apply in this Regulation:

a. 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;

b. programme: the Bachelor's degree programme as stipulated in Article 7.3a Section 1, Subsection b of the Act;

c. 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;

d. cohort: the group of students who have registered for a degree programme for the first time in a given academic year;

e. first academic year: the first period of the programme with a study load of 60 credits, as specified in Article 7.8b subsection 8 of the Act;

f. academic year the period from 1 September till 31 August of the following calendar year

g. subject: a teaching unit within the programme as intended in Article 7.3, subsection 2 and 3 of the Act; a subject can consist of a number of components;

h. practical exercise: a practical exercise as intended in Article 7.13, subsection 2, paragraph d of the Act, taking one of the following:
   • writing a thesis,
   • conducting a project or experimental design,
   • carrying out a project or a design/research assignment,
   • conducting a literature review,
   • 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 enabling participants to attain certain skills;

i. examination: an assessment of the knowledge, insight and skills of a student in relation to a subject, as well as the marking of that assessment by at least one examiner, appointed for that purpose by the Board of Examiners;

j. degree audit: 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. credit: a European Credit (EC) awarded in line with the European Credit Transfer System (ECTS); one credit denotes a study load of 28 hours;

l. working day: Monday to Friday with the exception of recognised national public holidays and the collective closure days;

m. study guide: a digital guide to the programme containing specific information pertaining to the various subjects;

o. negative binding recommendation on continuation of studies: the rejection connected to the recommendation on continuation of studies at the end of the first year of study, 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;

p. bridging programme: a deficiency rectifying programme aimed at moving up to a Master's degree programme, while enrolled in a Bachelor's degree programme, but without obtaining a Bachelor's degree, as stipulated in Article 7.30e or Article 7.57i of the Act;

q. learning management platform: the current learning management platform is Brightspace;

r. annex (former: IR) the appendix which forms part of these Teaching and Examination Regulations;

s. education registration system: the current education registration system is Osiris;
t. programme duration the duration starting from the enrolment of the student up and to including the last examination.

2. The other terms 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 Articles 19, 22 and 25.

## Paragraph 2 - Admission and prior education

### Article 3 – Admission to Bachelor's degree programmes (Art. 7.25 and 7.28 WHW) BoS advisory powers; SC advisory powers 2018-2019 (amendment RIB)[1]

1. 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 on the condition that all of the stated requirements have been met.

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&H profile** [with Mathematics B, Physics and Chemistry]
**E&S profile** [with Mathematics B, Physics and Chemistry]
**C&S profile** [with Mathematics B, Physics and Chemistry]
**N&T profile** [with Mathematics B, Physics and Chemistry]

The following applies as well:
- individuals possessing a pre-university (VWO) certificate with the S&H profile from before 2007 are eligible for direct admission;
- individuals possessing an 'old style' pre-university (VWO) certificate with Mathematics B and Physics in the combination of modules are eligible for direct admission;
- individuals with certificates that do not include the aforementioned modules must rectify these deficiencies before they can be registered and admitted (no later than 31 August).

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

The following applies to this category:
- individuals possessing a pre-university (VWO) certificate, as mentioned in section a, are subject to the conditions of the table in section 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 Mathematics-B, Physics and Chemistry before they can register and be admitted (no later than 31 August).

c. Foreign degree

Individuals holding a foreign degree (regardless of whether they were earned abroad) or diplomas based on a European or International Baccalaureate programme must rectify the deficiencies relative to the pre-university (VWO) level (Mathematics-B, Physics and Chemistry) before they can register and be admitted (no later than 31 August).
Individuals in this category must also meet the requirements of satisfactory linguistic mastery of Dutch or English, as stated in the annex. They must rectify any language mastery deficiencies before they can register and be admitted (no later than 31 August).

2. 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.

[1] BoS = Board of Studies; SC = Student Council; FSC = Faculty Student Council

**Article 3a – Criteria for admission to the programme**

In order to be admitted to the programme, the student must satisfy the general relevant criteria set by the Executive Board in the "Policy on fees and enrolment", laid down as Annex 1 of the Student Charter (main part), and clarified in Chapter 2 "Entrance and admission" of the mentioned Student Charter.

**Article 3b – Admission to the bridging programme**

1. In order to be admitted to the bridging programme, the student must satisfy the general relevant criteria set by the Executive Board in the "Policy on fees and enrolment", laid down as Annex 1 of the Student Charter (main part), and clarified in Chapter 2 "Entrance and admission" of the mentioned Student Charter.

2. The criteria mentioned in subsection 1 are elaborated further by the Dean in the annex.

**Article 3c – Completion of bridging programme prior to admission to the degree programme**

1. A student who is enrolled on a Bachelor's degree programme for a bridging programme with the aim of being admitted to the Master's degree programme at TU Delft, must complete this bridging programme within two academic years.

2. After the programme duration of the bridging programme the enrolment of the student will be cancelled. Under exceptional personal circumstances the student can submit a well-founded request for an extension of the programme duration for a period of at most twelve months.

3. The Executive Board will set the fee to be charged, as denoted in Article 7.57i of the Act, for the enrolment as student in a bridging programme and for the extension thereof, as denoted in subsection 2 of this article.

4. A well-founded request for extension must be submitted to the Board of Examiners. The Board of Examiners can decide to grant extension of the programme duration when a student is experiencing or has experienced a study delay due to circumstances that are beyond his control.

**Article 4 – University entrance examination** [Colloquium Doctum] **(Art. 7.29 Section 2 WHW)**
**BoS advisory powers**

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 (Art. 7.13 Section 2, Subsection c WHW)**
**BoS right of approval**

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's level, in any case, the TU Delft Master's 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, focuses 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 in to account in the models and designs.

The TU Delft BSc-programme is a preparatory programme for a MSc specialization, 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 of are given in the following table.

| **Final Attainments BSc AES** | Students with a AES BSc degree from the TU Delft will: |
|---|---|
| **Knowledge and understanding** | • have demonstrated knowledge and understanding of Earth's processes, the fundamental mechanisms underlying these processes, and the resulting patterns and systems;<br>• have demonstrated knowledge and understanding of the basic sciences Mathematics, Physics and Chemistry in the context of AES that builds upon their general secondary education, and is typically at a level that includes some aspects that will be informed by knowledge at the forefront of their field of study with the support of advanced textbooks;<br>• have demonstrated understanding of research in a selected field of AES in complex and uncertain, random contexts, and are able to analyse and develop solutions to problems at the forefront of present-day research and to comment upon these solutions;<br>• be able to give a well-informed overview of the scientific sub-domains within AES and the relationships between its sub-disciplines and fields;<br>• have demonstrated that they can integrate the consequences of the inherent uncertainty, ambiguity and limits of knowledge in the domain of AES in their analysis. |
| **Applying knowledge and understanding** | • Be able to apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study;<br>• be able to correctly apply accepted analysis methods and research techniques in order to solve problems related to relevant grand challenges in AES at the required system level;<br>• be able to gather and interpret relevant data in the field of AES<br>  ○ from literature;<br>  ○ by doing field surveys;<br>  ○ by performing experiments and analyses both in the field as well as in the laboratory;<br>• have the knowledge and skill to use, justify, adjust and assess the value of models for research and problem solving in the field of AES.;<br>• have developed knowledge and skills from other disciplines in order to be able to look beyond the boundaries of Applied Earth Sciences;<br>• be able to initiate and carry out team projects, preferably in a multidisciplinary environment;<br>• be able to contribute to scientific knowledge in one or two sub-disciplines of AES. |
| **Making Judgements** | • be able to develop informed judgements that include reflection on relevant social, scientific or ethical issues;<br>• be able to determine in a critical way the value of arguments, hypotheses, abstract concepts and data, in order to make judgements and contribute to solving complex problems;<br>• be able to assess the relevance of research outcomes for its usefulness within AES;<br>• have the ability to find connections and new points of view in apparently trivial matters;<br>• be aware of the potential ethical, social, environmental, aesthetic and economic consequences of practising their specialisation;<br>• be able to reason logically within and outside the domain of AES, using |

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|---|---|
| | both "why" and "what-if" reasoning approaches;<br>• be able to critically reflect (with support) on one's own thinking, decisions, and actions and thus adjust these if necessary;<br>• be able to critically reflect (with support) on AES issues and their relation to other disciplines and the social environment. |
| **Learning focus** | • have developed those learning skills that are necessary to continue to undertake further studies with a high degree of autonomy;<br>• have the learning skills and attitude to independently add to, and refine their knowledge in order to increase their level of performance in the context of their further professional and/or academic career;<br>• be able to apply the methods and techniques that they have learned in order to practise, strengthen, extend their knowledge and understanding;<br>• be capable of structuring and redefining ill-structured problems and are able to ask adequate questions in doing so. |
| **Communication** | • be able to communicate information, ideas, problems and solutions both to specialists and lay audiences in an international environment both in oral and written form;<br>• be able to actively participate in the societal debate on the factual and ethical aspects related to the field of AES. |

**Article 6 –** *Not applicable*

## Article 7 – Composition of the programme and degree audits

**(Art. 7.13 Section 2, Subsections a, e and g of the WHW); BoS advisory powers (a); right of approval (e and g)**

(Art. 7.13 Section 2, Subsection x WHW; FSC right of approval, BoS advisory powers

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, along with the subjects, including the study load, number of contact hours and form of examination of each subject, as well as the programming of the examination and the language.
5. The actual design of the education is elaborated in greater detail in the study guide.

## Article 8 – Form of the programme (Art. (7.13 Section 2, Subsection i WHW)

**FSC right of approval, BoS advisory powers**

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

**Article 9 – Language**
**FSC right of approval, BoS advisory powers**

1. The teaching is in English, and the examinations are administered in English.

2. When teaching is provided in English, the Board of Examiners may permit a student to take examinations in Dutch, if it can be demonstrated that this would be to the benefit of the student.

**Article 10 – Honours Programme**
**FSC right of approval, BoS advisory powers**

1. Students who have successfully completed the first study year in a single year and who meet 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 Bachelor's Honours Programme, students will be selected and admitted to the Bachelor's Honours Programme by the Director of Studies or an Honours coordinator or Honours committee established by the Director of Studies.

3. The Honours Programme Bachelor comprises at least 20 credits:
   a. At least 5 credits must be completed in the TU Delft-wide component of the Bachelor's Honours Programme, which consists of the following parts:
      - a generic programme
      - social involvement
      - entrepreneurship
      - development of specific skills.
   b. At least 15 credits must be completed in the faculty component of the Bachelor's Honours Programme, the composition which (including its content and options) is described in the Honours Programme.

4. All students selected for participation in the Honours Programme Bachelor must submit their options for the faculty component to the Director of Studies, the Honours coordinator or Honours committee for approval.

5. The Board of Examiners will be responsible for assessing whether all the requirements of the Honours Programme Bachelor have been met.

6. Any student who has successfully completed the Bachelor's 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 (Art. 7.13 Section 2, Subsection t WHW)**
**FSC right of approval, BoS advisory powers**

1. All students are expected to participate actively in the subjects 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, without prejudice to the authority of the Board of Examiners to 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 (Annex).

**Article 12 – Programme evaluation (Art. 7.13 Section 2, Subsection a1 WHW)**
**BoS right of approval**

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 a separate document, that is presented 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 for and withdrawal from examinations

### Article 13 – Registration for written examinations
**FSC right of approval; BoS advisory powers**

1. Registration to participate in a written examination is compulsory and is done by entering the requested data into Osiris no later than 14 calendar days before the examination. Students receive examination tickets by email as confirmation of their registration.

2. Students who have not registered within the term specified in Section 1 may request registration for that examination after this term until no later than three calendar days before the examination by entering the requested data into Osiris. The request will be honoured providing that places are available in the room or rooms where the examination is scheduled to take place. Students receive examination tickets by email as confirmation of their registration.

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.

### Article 14 –Registration for other examinations
**FSC right of approval; BoS advisory powers**

1. Registration for participation in an examination other than a written examination is compulsory, and it is done in the manner and within the term that is stated in the study guide, on Brightspace, or in the Annex of the TER for the relevant examination.

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 may 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
**FSC right of approval; BoS advisory powers**

1. Students can withdraw from an examination through 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 (Art. 7.13 Section 2, Subsections h and l WHW)
**FSC right of approval, BoS advisory powers**

1. Examinations (oral, written or otherwise) are taken in the manner described in the annex.

2. The annex 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.

3. A student may participate in an examination for a subject no more than twice in one academic year.

4. In special cases, the Board of Examiners will deviate from the provisions of this Article in favour of the student.

### Article 17 – Times and number of written examinations (Art. 7.13 Section 2, Subsection j WHW)
**FSC right of approval, BoS advisory powers**

1. Two opportunities to take written examinations will be offered each academic year:
   - the first opportunity is during or at the end of the teaching period in which the subject is taught,
   - the second opportunity is at the end of the next teaching period, or during the resit period in the months July and August.

   Students will have one opportunity each year to take skills tests in practicals and projects, with the exception of the Bachelor's Final Project.

2. The number of times in which examinations are held is laid down in the Annex. A timetable of all the opportunities for sitting written examinations is drawn up on an annual basis and distributed before the start of the relevant semester.

3. If there is no indication as to the number of times a particular examination can be taken in any one academic year because it relates to a subject not taught by the programme itself, the relevant stipulations in the Teaching and Examination Regulations of the other programme will apply. The Board of Examiners reserves the right to make decisions that deviate from the norm regarding this matter.

4. Contrary to the provisions of section 1, there will be at least one chance in a year to sit examinations relating to subjects not taught in a specific academic year.

5. In exceptional cases, the Board of Examiners may permit more than two opportunities in a year for certain examinations.

### Article 18 – Oral examinations (Art. 7.13 Section 2, Subsection n WHW)
**FSC right of approval, BoS advisory powers**

1. For oral examinations, no more than one student shall be tested at a time, unless determined otherwise by the examiner.

2. Oral examinations shall be public, except in special cases in which the Board of Examiners has decided otherwise, or if the student has filed an objection to the publicity of the examination.

3. In principle, the oral examination is administered in general by one examiner and, at the request of the student, by two. A request to this end has to be submitted to lecturer at least seven (7) days before the exam.

4. Prior to an oral examination, the examiner must ask the student to provide proof of identity.

**Article 19 – Determination and announcement of results (Art. 7.13 Section 2, Subsection o WHW)**
**FSC right of approval, BoS advisory powers**

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 immediately after it is administered and issues the student 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 in principle no later than 15 working days after the completion of the practical exercise at the designated time. In 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 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 achieved in the resit period in August shall be registered and published no later than the last working day of the week following the examination week in August.

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 (Art. 7.13 Section 2, Subsection p WHW)**
**FSC right of approval, BoS advisory powers**

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. 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 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 (Art. 7.13 Section 2, Subsection q WHW)**
**FSC right of approval, BoS advisory powers**

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.

3. If a collective discussion is organised by the examiner, students may submit requests as referred to in the last section 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 (Art. 7.13 Section 2, Subsection k, Art. 7.10, Section 4 WHW).**
**FS Council right of approval, BoS advisory powers**

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. The provisions of section 1 likewise apply to component examinations, unless the validity of the component examination is linked to a time period in the study guide.

**Article 23 – Exemption from an examination or obligation to participate in a practical exercise (Art. 7.13 Section 2, Subsection r WHW)**
**FSC right of approval, BoS advisory powers**

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 (Art. 7.13 Section 2 WHW)**
**FSC right of approval, BoS advisory powers**

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.

## Paragraph 6 - Studying with a disability

**Article 25 – Adjustments to the benefit of students with disabilities or chronic illnesses (Art. 7.13 Section 2, Subsection m WHW)**
**FSC right of approval, BoS advisory powers**

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 subject 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.

4. Adjustments to examinations can involve the following or other matters:
   - form (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, or a change to the distribution 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 (Art. 7.13 Section 2, Subsection u WHW)
**FSC right of approval, BoS advisory powers**

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. He 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 Osiris.

3. The Student Administration is responsible for ensuring that all students are able to review and check their results in the Osiris student-information system.

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. To this end, the mentor issues the student with a Code of Conduct and asks him or her to sign it.

### Article 27 – (Negative) binding recommendation on the continuation of studies (Art. 7.13 Section 2 Subsection f, 7.8b WHW)
**BoS advisory powers**

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 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, although they 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 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.

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.

**Article 30 – Transitional regulations**

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 TER of the cohort involved.

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 subject within a degree programme is cancelled, four opportunities for taking the examination in this subject shall be offered after it has been taught for the last time: the examination at the end of the teaching of the subject, 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 come into force on 1 September 2018.

**Adopted by the Dean of the faculty on 24 July 2018.**

## ANNEX to Art. 3 of the Model TER (for Bachelor's degree programmes)

Language level for individuals holding a foreign degree (c)

**ONLY FOR BACHELOR'S DEGREE PROGRAMMES TAUGHT IN ENGLISH**

- The English language, through the successful completion of one of the following tests:
  - A TOEFL iBT (Test of English as a Foreign Language internet-Based Test), with an overall band score of at least 70 and a minimum score of 21 for each section, or
  - an IELTS (Academic version) with an overall band score of at least 5.5, or
  - a proof of completion of the Cambridge Certificate of Proficiency in English (CPE) or Certificate in Advanced English (CAE), both of the University of Cambridge.
    Certificates older than two years shall not be accepted.

*People's Republic of China nationals:*
*For visa purposes you will need a Nuffic certificate as proof of English language proficiency, to be obtained by passing the aforementioned TOEFL or IELTS test.*

The following candidates shall be exempted from the requirement to pass an English language test:
- Nationals from the USA, UK, Ireland, Australia, New Zealand and Canada
- Applicants with an International Baccalaureate, European Baccalaureate diploma, or European secondary school diploma (pre-university certificate) considered equivalent to the Dutch pre-university education, with English as a final examination subject. Please note that a 'pass' (sufficient score) for English is required on the secondary school certificate.

TU Delft Delft University of Technology

## Format Onderwijsprogramma

Academisch jaar

| Faculteit | | CiTG | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Opleiding: | BSc Applied Earth Sciences | opleidingsdirecteur: | prof.dr.ir. T.J. Reinsvaara | | | | | | | | | | | |
| Ac. jaar: | 2018-2019 | contactpersoon EB SA faculteit: | W.H. Geldof | | | | | | | | | | | |
| Geldig voor cohort(en) : | 2018-2019 | | | | | | | | | | | | | |

| Vakcode<br>toelichting of suggestie voor invullen | Vaknaam | Vaknaam Engels<br>indien vak in NL gegeven wordt en de vaknaam in het NL is, van belang voor diplomasupplement | ECTS | Taal<br>[NL/EN] | Start onderwijs<br>x000 etc. of weeknummers academische jaarkalender | Onderwijsperiode(n)<br>x000 etc. of weeknummers academische jaarkalender | Tentamenperiode<br>x000 etc. of weeknummers academische jaarkalender, t voor eerste gelegenheid; h voor herkansing | Verantwoordelijk docent<br>(tevens de voorgestelde examinator (formeel besluit bij examencommissie)) (NB: een vak kan meerdere examinatoren hebben, hier alleen de eindverantwoordelijke docent invullen) | Opnemen in Brightspace<br>jahee | Tentamenvorm<br>schriftelijk, mondeling, anders, nl.., (vormen kan ook combinatie van vormen zijn | praktische oefening<br>ormat vak ook praktische oefening, zo ja, vorm invullen en of deelname verplicht is | Ingangseis<br>vakcode opnemen van ander vak, indien dit ingangseis is voor dit vak |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1st year** | | | | | | | | | | | | |
| AESB1120-15 | Principles of Chemistry & Thermodynamics | | 5 | EN | 2 | 2 | 2,3 | Esch, J.H. van | | written | | |
| AESB1130 | Geology 1 basics | | 5 | EN | 1 | 1 | 1,2 | Bertotti, G. | | written | | |
| AESB1210-15 | Mathematics 2 | | 5 | EN | 3 | 3 | 3,4 | Verheij, J.A. | | written | | |
| AESB1211 | Mathematics 1 | | 6 | EN | 1 | 1,2 | 1,2,3 | Vinegrijk, T. | | written | | |
| AESB1212 | Probability and Statistics | | 4 | EN | 1 | 1,2 | 2,3 | Stihl, J. | | written | | |
| AESB1220 | Geology 2: North West Europe | | 5 | EN | 3 | 3 | 3,4 | Blom, J.C. | | written | | |
| AESB1141 | Grand Challenges and Applied Earth Sciences | | 10 | EN | 1 | 1,2 | 2,3 | Barnhoorn, A. | | report, written | | |
| AESB1320-17 | Mechanics | | 5 | EN | 3 | 3 | 3,4 | Rva, R.E.M. | | written | | |
| AESB1420-17 | Electricity and Magnetism | | 5 | EN | 4 | 4 | 4,5 | Russchenberg, H. | | written | | |
| AESB1430-14 | Geology 3: geological systems and excursion | | 5 | EN | 4 | 4 | 4,5 | Bertotti, G. | | combination: written, report | excursion | |
| AESB1940 | Methodology of Geophysics and Remote Sensing | | 5 | EN | 4 | 4 | 4,5 | Drijkoningen, G.G. | | combination | | |
| | | | | | | | | | | | | |
| **2nd year** | | | | | | | | | | | | |
| AESB2210 | Mathematics 4 | | 5 | EN | 1 | 1 | 1,2 | Hensbergen, A.T. | | written | | |
| AESB2150 | Instrumentation & Signals with Matlab | | 5 | EN | 1 | 1 | during period 1 and integral resit in 2 | Lopez Dekker, F. | | written, assignment | | |
| AESB2160-18 | Geophysical Methods for Subsurface Characterization | | 5 | EN | 1 | 1 | 1,2 | Drijkoningen, G.G. | | written, report | | |
| AESB2220-18 | Mathematics 5 | | 5 | EN | 2 | 2 | 2,3 | Oorlen, D.den | | written, assignment | | |
| AESB2220-18 | Chemical Thermodynamics | | 5 | EN | 2 | 2 | 2,3 | Smith, W.A. | | written | | |
| AESB2230 | Sedimentology & Reservoir Geology | | 5 | EN | 2 | 2 | 2,3 | Abels, HA. | | written, assignment | | completed AESB1130 and AESB1230, Geology 1 and 2 |
| AESB2330 | Physical Transport Phenomena | | 5 | EN | 3 | 3 | 3,4 | Rossen, W.R. | | written | | |
| AESB2331 | Soil Mechanics | | 5 | EN | 3 | 3 | 3,4 | Hicks, M.A. | | written | | |
| AESB2341 | Rock mechanics and rock engineering | | 5 | EN | 3 | 3 | 3,4 | Dieudonné, A.A.M. | | written | | |
| AESB2450 | Geological Fieldwork: Data Acquisition | | 5 | EN | 4 | 4 | 4 | Blom, J.C. | | report | | completed AESB2230, Sedimentology and Reservoir Geology |
| AESB2451 | Geological Fieldwork: Data Integration | | 5 | EN | 4 | 4 | 4 | Blom, J.C. | | report | | completed AESB2450, Geological Fieldwork: Data Acquisition and is following or has completed AESB2440 Geostatistics and Remote Sensing |
| AESB2440 | Geostatistics & Remote Sensing | | 5 | EN | 4 | 4 | 4,5 | Lindenbergh, R.C. | | written, assignment | | |
| | | | | | | | | | | | | |
| **3nd year** | | | | | | | | | | | | |
| xx | Minor | | 30 | | 1 | 1,2 | | | | | | |
| CITBAESB3000 | Vrije minor project | | 10 | | | | | Ertsen, M.W. | | | | |
| CITBAESB3005 | Vrije minor project | | 15 | | | | | Ertsen, M.W. | | | | |
| | | | | | | | | | | | | |
| AESB3340 | Mechanics and Transport by Flow in Porous Media | | 5 | EN | 3 | 3 | 3,4 | Zitha, P.L.J. | | written, portfolio | | |
| AESB3341-18 | Petrophysics & Image Analysis | | 5 | EN | 3 | 3 | 3,4 | Wolf, K-H.A.A. | | written, assignment | | |
| AESB3342 | Extractive Metallurgy and Physical Processing | | 5 | EN | 3 | 3 | 3,4 | Voncken, J.H.L. | | written, assignment | | |
| AESB3400 | Bachelor Thesis | | 10 | EN | 4 | 4 | 4 | Wolf, K-H.A.A. | | report and oral | | all the first year subjects with a total study load of 60 credits and successfully taken subjects with a total study load of 80 credits from the second and third year. Students are permitted to start the Bachelor's Thesis pending the results of examinations in the previous quartile. If it emerges after the marking period of 20 working days that the student does not meet the admission requirements, he or she will be removed from the Bachelor's Thesis with immediate effect. |
| AESB3940 | Field Exploration Project | | 5 | EN | 4 | 4 | 4 | Abels, HA. | | oral | | completed AESB1130, Geology 1, AESB1240-14, Introduction to Minerals, Mining & Geo-Engineering, AESB1440, Introduction to Geophysics & Remote Sensing, AESB2140, Geophysical methods for subsurface characterization, AESB2220-18, Chemical Thermodynamics, AESB2440, Geostatistics and Remote Sensing, AESB2340 Extraction of Resources and has followed: AESB3340, Mechanics and Transport by Flows in Porous Media, AES3341, Petrophysics and Image Analysis, AESB3342, Extractive Metallurgy and physical Processing |
| | | | | | | | | | | | | |
| **Honours Programme** | | | 60 | | | | | | | | | |
| Parts: | | | | | | | | | | | | |
| Minor + BSc Thesis that meet the specifications of the Honours Programme | | | 40 | | | | | | | | | |
| additional subjects alongside the study programme, parts: | | | 20 | | | | | | | | | |
| CIT3151-2 | CEG research subject | | 4 | | | | | | | | | |
| CIT3152 | student's own project subject | | 6 | | | | | | | | | |
| CIT3150 | third-year subject | | 5 | | | | | | | | | |
| subjects from the institution-wide part of the Bachelor Honours Programme | | | 5 | | | | | | | | | |