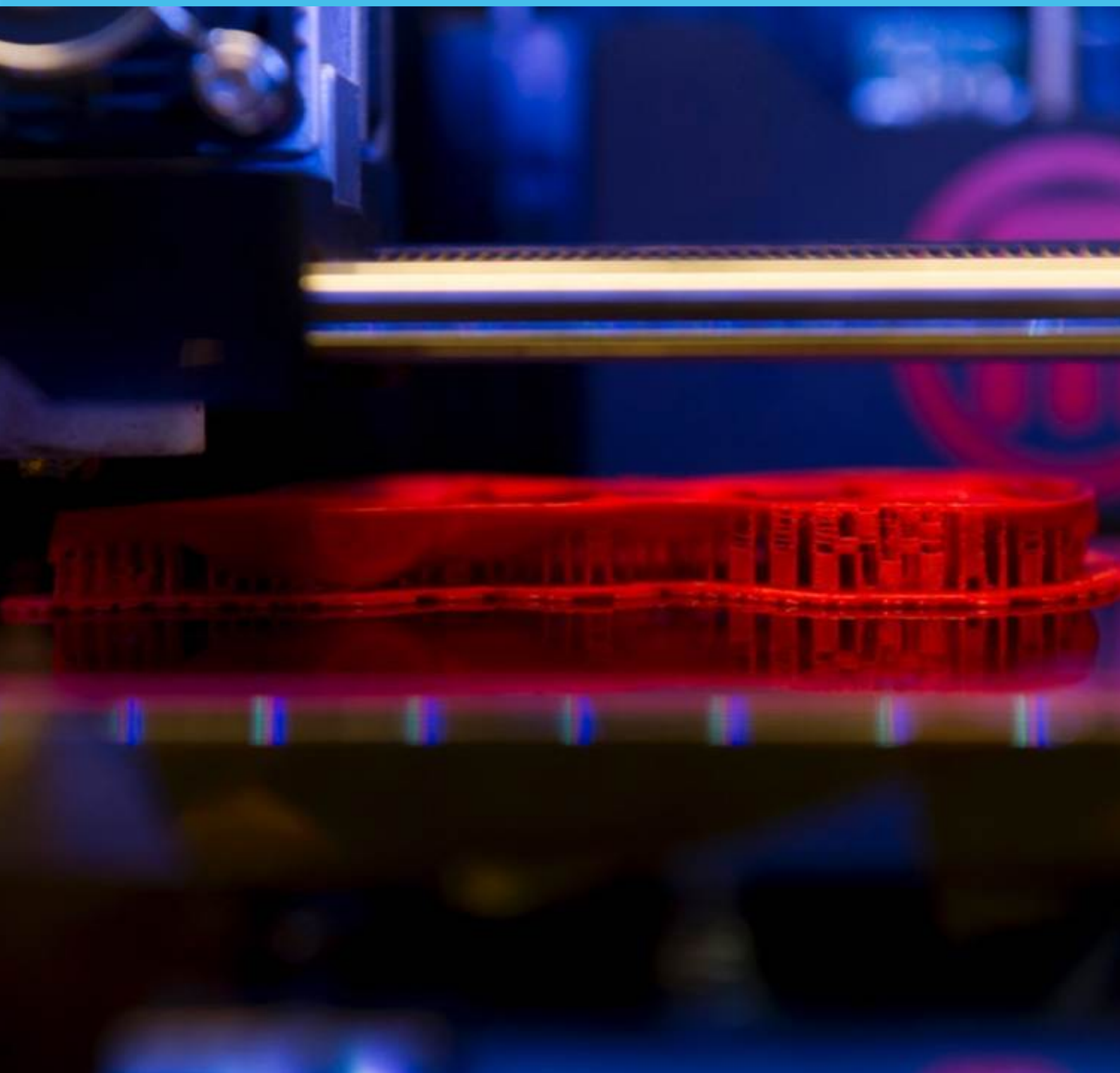


Regulation Selection Criteria and Procedure  
BSc Computer Science and Engineering  
Academic year 2019/2020



## Preamble

The dean of the faculty of Electrical Engineering, Mathematics and Computer Science, having regard to Article 3 of the [TU Delft Selection and Placement Regulations](#) and after having received advice from the Faculty Student Council on 10 September 2018, establishes the following regulation selection criteria and procedure for the Bachelor of Science programme Computer Science and Engineering 2019-2020.

## 1. General regulations

- 1.1. The execution of this regulation is appointed to the Committee Selection Computer Science and Engineering, hereafter referred to as the Committee.
- 1.2. The Executive Board of the TU Delft has set the maximum amount of students for the academic year 2019-2020 at 500, taking into account Article 9, Clause 3 of the TU Delft Selection and Placement Regulations.
- 1.3. The Committee will, in accordance with the GDPR, only communicate about the participation of a candidate with that particular candidate. Only in exceptional cases, like severe personal circumstances, will communication be allowed with parents and/or legal guardians.
- 1.4. Candidates who have been diagnosed with a learning disability and/or are experiencing extenuating circumstances can request extra time for the Cognitive Skills Tests, by contacting [selection-bsc-cse@tudelft.nl](mailto:selection-bsc-cse@tudelft.nl). Requests need to be supported with documentation (e.g. medical or psychological statement) and should be submitted before the deadline of January 15<sup>th</sup>. As this concerns privileged information, these requests will be handled by the academic counsellors, who can consult the Committee if necessary.
- 1.5. All dates are listed as dd/mm/yyyy. Times in this regulation are in Central European Time (CET), Dutch local time.

## 2. Participating in the matching and selection procedure

- 2.1. A candidate can only participate in the matching and selection procedure with a valid and fully *completed* registration request for the programme Computer Science and Engineering, via the Dutch national enrolment system for higher education entitled Studielink, before the deadline of January 15<sup>th</sup>.
- 2.2. Candidates with a non-Dutch education diploma (≠VWO)<sup>1</sup>, must also register in Osiris ([osiaan.tudelft.nl](https://osiaan.tudelft.nl)) *and* submit a *complete* application package before the deadline of January 15<sup>th</sup> to enable them to participate in the matching and selection procedure.
- 2.3. Participating in the matching and selection procedure or receiving a ranking number, does *not* automatically mean that a candidate meets the stated educational prerequisites for admission. Verifying entry requirements, such as prior education, is outside the scope of the

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<sup>1</sup> Candidates should have a [secondary school diploma equivalent](#) to the Dutch pre-University diploma (=VWO)

Departmental Regulation Selection Criteria and Procedure as well as the selection and matching procedure. Information about the entry requirements can be found on the admissions pages of the [TU Delft website](https://www.tudelft.nl/admissions).

- 2.4. A candidate can only participate once per academic year. The results of the matching and selection procedure are only valid for that particular matching and selection procedure which selects candidates for the upcoming academic year.
- 2.5. A candidate may participate up to three times in the matching and selection procedure of the BSc programme Computer Science and Engineering. An active request for enrolment in Studielink after January 15<sup>th</sup> will count as a selection opportunity, even if a candidate does *not* participate *nor* completes the matching and selection procedure.
- 2.6. Candidates who have previously been enrolled in the Computer Science and Engineering programme, but who have discontinued their studies due to a negative BSA are only allowed to re-apply for this programme after 4 years. These candidates have to (re-) participate in the matching and selection procedure, before being able to be re-admitted.

### 3. Selection criteria

- 3.1. On the basis of the end terms of the programme the following three criteria have been distilled that form the basis for the selection for the bachelor Computer Science and Engineering:
  - 3.1.1. Mathematics
  - 3.1.2. Systematic Reasoning & Logical Thinking
  - 3.1.3. Algorithmic & Computational Thinking
- 3.2. Several steps are defined to select candidates, some of which are *not* necessarily linked to a single selection criterion, but are part of the matching and selection procedure.
- 3.3. It is assumed that at the time of the matching and selection procedure candidates will (almost) meet all admissions requirements. The skills and knowledge inherent from the admission requirements have been used as a starting point for the development of the tests.

### 4. Selection & Matching procedure

#### 4.1. Selection General

- 4.1.1. The candidate is responsible to ensure that the email address used in the matching and selection procedure by the candidate is equivalent to the email address used for Studielink.
- 4.1.2. The candidate is responsible for checking messages in their inbox and spam folder during the entire matching and selection procedure.
- 4.1.3. Validating completion of the tests will be based on candidates' e-mail address.
- 4.1.4. The selection and matching procedure consists of three steps. Candidates need to complete all steps in order to receive a ranking number.

- 4.1.5. All the assessments and tests have to be started and completed online within the specified time frame.
- 4.1.6. The candidate is responsible for assuring a well-functioning internet connection.
- 4.1.7. In general the rule applies that the candidate will need to take the tests as under regular (Dutch) exam sittings, which means that they will need to take the tests individually and without other sources of information.
- 4.1.8. The following items are allowed to be used during the tests: a dictionary in book form, identification card or passport and blank paper in single sheets, pencils/pens.
- 4.1.9. A calculator is *not* allowed, *nor* is a calculator on a mobile device, neither a second computer.
- 4.1.10. Grading sheets will be used to determine the individual test scores of the candidates for the tests.
- 4.1.11. Only candidates who have completed all three steps of the selection and matching procedure - consisting of the elements as listed in 4.2.1, 4.2.7 and 4.2.17 - within the stated time frames and before the deadlines in a meaningful way, will receive a ranking number.
- 4.1.12. Those who fail to complete all three steps in a meaningful way within the stated time frames and before the deadline will be excluded from the matching and selection procedure. Candidates will *not* receive a ranking number and will have used a selection opportunity. Excluded candidates will be informed by e-mail within one month after the test period has ended.

#### **4.2. Selection Method**

##### **4.2.1. Step 1 Non-Cognitive Skills Assessment (=NCSA)**

The Non-Cognitive Skills Assessment consists of the following three elements:

- 4.2.1.1. Online Student Experience
- 4.2.1.2. Motivation & Perseverance Questionnaire
- 4.2.1.3. Group Work Questionnaire
- 4.2.2. The candidate receives an invitation for step 1 the Online Non-Cognitive Skills Assessment (=NCSA) at least one week before the start of the assessment period. See annex 1 for the exact Timeline.
- 4.2.3. The possible score that a candidate can get for all three elements of the online NCSA is 0 (did *not* fill out in a meaningful way) or 1 (filled out in a meaningful way). This score is based on the motivation, attitude and the knowledge of the programme by the candidate. An assessment form has been created for this purpose.
- 4.2.4. Candidates who fail to complete all three elements of the Non-Cognitive Skills Assessment (=NCSA) within the set timeframe in a meaningful way, will score a 0 and will be excluded from the matching and selection procedure.
- 4.2.5. All candidates who have completed all three elements of step 1 the Online Non-Cognitive Skills Assessment (=NCSA) in a meaningful way will be invited at least one

week before the start of the test and assessment period to participate in the next steps of the matching and selection procedure: the Cognitive Skills Tests and the Self-Reflection Assessment. The invitation will include login codes that can only be used in the specified test period. See annex 1 for the exact Timeline.

- 4.2.6. Performance in the Non-Cognitive Skills Assessment (=NCSA) will *not* be used to determine the final ranking. Candidates are not expected to prepare for the NCSA.

#### 4.2.7. Step 2 Cognitive Skills Tests (=CST)

The Cognitive Skills Tests consist of the following three elements:

- 4.2.7.1. Mathematics (40%)
- 4.2.7.2. Systematic Reasoning & Logical Thinking (20%)
- 4.2.7.3. Algorithmic & Computational Thinking (40%)

- 4.2.8. Mathematics and Algorithmic & Computational Thinking will each count for 40% of the final selection score. Systematic Reasoning & Logical Thinking will count for 20% of the final selection score.
- 4.2.9. Candidates who fail to complete all three elements of the CST within the set timeframe will be excluded from the matching and selection procedure.
- 4.2.10. After having completed all three elements of step 2; the online Cognitive Skills Tests, candidates can directly complete step 3; the online Self-Reflection Assessment within the same test period and herewith finalize their matching and selection procedure.
- 4.2.11. Step 2 the online Cognitive Skills Tests (CST) are proctored, which means that candidates are “followed” online to check whether the test is completed under the correct conditions. Candidates will receive a manual about the online proctored tests. This manual describes the strict regulations that candidates need to follow when taking the Cognitive Skills Tests (CST).
- 4.2.12. By taking the online proctored tests, candidates agree upon making and monitoring video recordings, keystrokes, and screenshots. An examiner will have access to this data to judge if the tests were completed according to the regulations. Collected data will only be used for this purpose. The collected data will be destroyed if it is clear whether the candidate is admitted or *not* and the objection period has ended.
- 4.2.13. Candidates who have principal issues against online proctoring or who *cannot* meet the proctoring requirements can request to take the online Cognitive Skills Tests (CST) at the TU Delft by submitting a request to [selection-bsc-cse@tudelft.nl](mailto:selection-bsc-cse@tudelft.nl) before the deadline of January 15<sup>th</sup>.
- 4.2.14. The Cognitive Skills Tests (CST) can only be taken once at any time before the stated deadline (see annex 1 for the exact Timeline). Once a candidate starts with the Cognitive Skills Tests they need to complete all three elements of the CST within the same proctoring session.
- 4.2.15. Candidates can go forward and backward within a test, but the order of the three tests has been set in the order as stated in 4.2.7. The sequence of the questions in the

CST are designed in such a way that the questions become gradually more difficult, within all three elements of the CST, as the tests progress. Once a test is completed, a candidate progresses to the next test and cannot go back to the previous test.

- 4.2.16. The time for each of the three elements of the CST is limited. The maximum time per element is communicated beforehand. A counter showing the remaining time will be visible during the test.

**4.2.17. Step 3 Self-Reflection Assessment (=SRA)**

As a final step candidates will reflect on their application in the Self-Reflection Assessment. There is a maximum of 500 words for this assessment.

- 4.2.18. The possible score that a candidate can get for the SRA is 0 (did *not* fill out in a meaningful way) or 1 (filled out in a meaningful way). This is a subjective evaluation on the self-reflection of the candidate about their motivation for the bachelor programme Computer Science and Engineering.
- 4.2.19. This score is *not* included in the final score on which the ranking is based. However, when a candidate scores a 0 for step 3 SRA, this means that the candidate has *not* completed this part of the procedure and will therefore be excluded from the matching and selection procedure.
- 4.2.20. Candidates *cannot* prepare for the SRA.

**4.3. Preparing for the Selection tests**

**4.3.1. Step 2a Cognitive Skills Tests (=CST) – Mathematics (40%)**

This test will test the potential mathematical capacities. Candidates can prepare for Mathematics with the free [online pre-university calculus course](#) developed by the TU Delft. The time for this element within the CST is limited to one hour, a counter showing the remaining time will be visible during the test.

**4.3.2. Step 2b Cognitive Skills Tests (=CST) – Systematic Reasoning & Logical Thinking (20%)**

This test will test the systematic reasoning and logical thinking capacities. Candidates can prepare for Systematic Reasoning & Logical Thinking with material that will be provided online at least two weeks before the start of the CST. The time for this element within the CST is limited to one hour, a counter showing the remaining time will be visible during the test.

**4.3.3. Step 2c Cognitive Skills Tests (=CST) – Algorithmic & Computational Thinking (40%)**

This test will test the potential of candidates to solve puzzles, process-oriented thinking and their ability to come up with efficient solutions to real-world computational problems. Candidates *cannot* prepare for Algorithmic & Computational Thinking. The time for this element within the CST is limited to one hour, a counter showing the remaining time will be visible during the test.

- 4.3.4. All three elements of the CST combined will take a maximum of three hours in total to complete.

## 5. Fraud

- 5.1. The Committee will ask the candidate to cooperate in collecting evidence, if a candidate is flagged with suspicious behaviour or is caught performing fraudulent behaviour. The suspected candidate will be interviewed and given the chance to respond in writing to the report of the Committee. During the investigation of the case, the candidate is allowed to finish the matching and selection procedure.
- 5.2. The Committee concludes whether fraud has been committed. Candidates who have committed fraud will be penalized, with the sanction varying from being awarded zero points on the specific section of the tests to exclusion from the entire matching and selection procedure, depending on the severity of the fraud. The decision about fraud and the corresponding sanction will be made by the Committee on behalf of the dean.
- 5.3. A candidate who is excluded on the basis of fraud, will be excluded from the matching and selection procedure of that particular year only. The candidate does *not* receive a ranking number and is considered to have used up a participation opportunity. A candidate can object to this decision.

## 6. Establishing the outcome of the matching and selection procedure and ranking

- 6.1. Each candidate must take part in all components of the matching and selection procedure in a meaningful way in order to qualify for the ranking number. If the candidate fails to take part in one or more components, the candidate will be excluded from the procedure and will *not* receive a ranking number.
- 6.2. The obtained ranking number is only valid during the selection and admission procedure preceding that specific academic year. It is *not* possible to use your ranking number for later academic years if you de-register before the 1<sup>st</sup> of September, unless severe personal circumstances occur. If the latter is the case a candidate can submit a substantiated request for an exemption to [selection-bsc-cse@tudelft.nl](mailto:selection-bsc-cse@tudelft.nl) This request will be evaluated by the Committee.
- 6.3. The score of each element of the CST is determined by the number of correct answers. These individual scores will be converted to standardized z-scores before they are combined into a final score. The final scores will be rounded to two decimals.
- 6.4. The ranking number of a candidate is determined by their final tests scores, which is based on the three elements as stated in Article 4.2.8. Their final tests scores are compared to other candidates, so-called z-scores. As a result there is no fixed pass or fail grade. Higher final tests scores result in better (=lower) ranking numbers. The candidate with the highest final score receives the lowest ranking number, the candidate with the second highest final score receives the next ranking number, et cetera.



- 6.5. If two or more candidates qualify for the same ranking number, the score on the mathematics element determines the ranking between these candidates. If this is not sufficient to obtain a ranking, the ranking number will be assigned by lot.
- 6.6. The ranking number will be ascertained by the Committee.

## 7. Announcement of ranking number and further procedure

- 7.1. Candidates who have completed the matching and selection procedure in a meaningful way will receive their ranking number on the 15<sup>th</sup> of April through Studielink.
- 7.2. Candidates will receive an overview of their tests scores as converted into standardized z-scores, after they have received their ranking number. No further feedback on the scores will be provided. For reasons of confidentiality and objectivity we will *not* communicate about the method and evaluation of the criteria, *nor* is it possible to review the tests or individual answers given. Candidates who would like more information regarding the compilation of their test scores can contact [selection-bsc-cse@tudelft.nl](mailto:selection-bsc-cse@tudelft.nl)
- 7.3. When a candidate is offered a place for the bachelor programme Computer Science and Engineering, the candidate has 14 days to accept this offer in Studielink. In case this offer is *not* accepted in Studielink within that time frame, the reserved spot will be made available for the next candidate with a ranking number who is waiting in line and hasn't received an offer yet.
- 7.4. Non-EU candidates that need a visa/residence permit in order to enter the Netherlands, can only be supported in their application procedure by the Contact Centre, when they are offered a place before June 15<sup>th</sup>, as it is too late to successfully complete all required steps in the registration process after this date.
- 7.5. In case situations occur in which this Regulation does *not* provide, the Committee will decide, on behalf of the dean, which actions and/or measures to take.

## 8. Final provisions

This regulation has been established by the Dean of the faculty of Electrical Engineering, Mathematics and Computer Science of the TU Delft, on 10 September 2018, and can be cited as Departmental Regulation Selection Criteria and Procedure for the bachelor program Computer Science and Engineering. This regulation applies to the Selection Criteria and Procedure executed in the year 2018/2019 for placement in the academic year 2019/2020 in the bachelor program Computer Science and Engineering.



## 9. Annex 1 Timeline



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