UNIVERSITEIT TWENTE.

PROGRAMME APPENDIX TO THE TEACHING AND EXAMINATION REGULATIONS OF THE BACHELOR'S PROGRAMME CREATIVE TECHNOLOGY

The regulations in this appendix are part of the teaching and examination regulations of the bachelor's programme Creative Technology of the Faculty of Electrical Engineering, Mathematics and Computer Science of the University of Twente.

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PARAGRAPH 1
THE PROGRAMME SPECIFIC ISSUES OF ARTICLES 3.1 AND 3.2. (WHW 7.13.2) OF THE REGULATIONS[1]

Art 1.1 - PROGRAMME CONTENTS AND EXAMINATIONS(A)

1) Students who were enrolled for the Bachelor's programme Creative Technology in the academic year 2012-2013 pass the bachelor's examination by completing2 the units of study of tables 1a, 2a and 3a.
2) Students who enrol for their first year in Creative Technology at September 1, 2013, or later, pass the bachelor's examination by completing the units of study of table 1b, and the units of the second and third year.
3) Some units in the second and third year are options, some are electives. Options and electives are further specified in this Art 1.1, items 5 – 8 below.
4) The student's choice of options and electives must meet the requirements of Art 1.12 of this appendix.
5) At the end of the first year students must choose between two options in their second year: Smart Technology and New Media.
6) During the second year students choose between two mathematics courses: Strategies and Protocols and Queues and Logistics.
7) Students have to choose courses with a study load of 30 EC in semester 5 (the first half of the third year of the programme), This is the *profileringsruimte,* i.e. the free space to establish an individual profile in the curriculum.
   In the *profileringsruimte*
   - students can take courses to prepare for further study in a Master's programme,
   - students can take a standard or individual minor programme
   - students can take one semester of courses at another (foreign) university (which is in fact a special kind of an individual minor),
   - students can take the opposite course of their second year specialization (15 EC), and combine this with a choice of other courses with a 15 EC study load in total, to make an individual 30 EC minor,
   - and possibly more.
8) Students have to choose *electives* in their third year totalling at least 15 EC. The choice of electives must serve at least two purposes:
   - students are confronted with a view on the human-technology relationship which is largely inspired by behavioural or management sciences, and
   - students work on ethics and professional standards for design.

[1] The letters (a-m) in the article titles of this paragraph refer to the corresponding items in WHW 7.13.2

[2] To complete a unit means to pass the unit's assessment with a sufficient result.

9) In their Final project at the end of their third year students complete graduation work with a study load of 15 EC.

   Graduation work consists of

   1. A design project, where context and goals are set preferably by an external party.
   2. A graduation report, with appendices when necessary, in which the student renders account of the graduation project and the design approach, and describes and documents literature search, surveys and experiments conducted during the project, as well as the prototypes and other deliverables which result from the project.
   3. A summary of the graduation report.
   4. A public presentation and defence of the graduation work.

   The student can start graduation work at the beginning of a semester.

   The deadline for graduation work is at the end of the semester in which it started. This period of time cannot be extended. If the deadline is not met, the examiners will assess the graduation work anyway. This may result in a fail.

10) The Examination Board may decide that students pass their examination even if some results are insufficient. The rules set by the Examination Board for passing examinations are in the *Rules and Regulations* of the Examination Board.

Table 1a: the first year (for students enrolled in 2012-2013)

	study load in EC	teaching activities[3]	assessment[4]	enablers
We Create Identity	5		Q1	
Smart Environments	4		Q2	ST
Living and Working Tomorrow	5		Q3	
Have Fun and Play!	5		Q4	
Visual Communication	4		Q1	NM
Sketching for CreaTe	3		Q2	
Interactive Visualization	4		Q3&Q4	NM
Designing in Context	3		Q3	
Human Factors	3		Q4	
Introduction to Computer Science	2		Q1	
Programming and Physical Computing	7		Q1&Q2	NM
Introduction to Physical Systems and their Dynamic Behaviour	5		Q3&Q4	ST
Introduction to Mathematics and Modelling	6		Q2&Q3	ST
First year portfolio	4		Q1-Q4	P
Year 1	60			

The abbreviations for enablers must be read as follows

NM (New Media) students must have completed these units before they can participate in the New Media course of the second year (cf. Art 1.12 of this appendix).

ST (Smart Technology) students must have completed these units before they can participate in the Smart Technology course of the second year (cf Art 1.12 of this appendix).

P students must have completed the first year portfolio before they can participate in the second year portfolio.

[3] The column is empty since these units of study are no longer taught

[4] The column contains quarters where subtests have to be taken to fulfil the assessment requirements, since there will be no more examinations for these units. See the Transitional arrangements appendix.

Table 1b: the first year for students first time enrolled after 2012-2013

	study load in EC	teaching activities[5]	Number of tests
We Create Identity	15	LPIADG	
Smart Environments	15	LPIADG	
Living and Working Tomorrow	15	LPIADG	
Have Fun and Play!	15	LPIADG	
Year 1	60		

[5] The abbreviations are explained in the subsection *The nature of teaching activities* above.

Table 2a: the second year for students enrolled in 2012-2013

		study load in EC	teaching activities[6]	assessment[7]	prerequisites
Ambient Screens		5	LPIDG	DEP	45
Hybrid Worlds		5	LPIDG	DEP	45
Creative Explorations in Art, Science and Technology		2	A	H	45
Animated Narration		3	LPID	D	45
Innovation and Entrepreneurship for IBA		3		AW	45
Startrix for CreaTe		5		DP	45
Programming with Structures		5	LID	AO	45
Web Services and Data-driven Applications		4	LA	A	45
Introduction to Probability and Statistics		3	LI	W	45
Research Methodology		2		A	45
Systems and Signals		3		W	45
either	Strategies and Protocols	3	LI	W	45+r
or	Queues and logistics	3	LI	W	45+r
either	*Smart Technology*	15		(4)	45+ST
or	*New Media*	15		(4)	45+NM
Second Year Portfolio		2			45+P
Year 2		60			

A number (n) between brackets in the assessment column indicates that the interim examination for the unit consists of n separate sub tests.

The two pairs of units preceded by “either…or” are options. Each student has to complete at least one of the units of each pair. (cf this Art 1.1 items 5 and 6)

The units which are printed in italics are specific for a specialization. (cf this Art 1.1 items 5 and 6). Students who opt for Smart Technology take the Smart Technology unit. Students who opt for New Media take the New Media unit. Both units have a study load of 15 credits.

[6] The abbreviations are explained in the subsection *The nature of teaching activities* above.

[7] The abbreviations are explained in the subsection *The nature of assessment* above.

The prerequisites must be understood as follows (see also Art 1.12 of this appendix)*:*

45 To participate, students must have completed units of the first year with a total study load of at least 45 EC

+r To participate, students have to register, and their registration must be accepted; the courses have a limited capacity for participation

+NM (New Media) To participate, students must have completed the NM enablers of table 1.

+ST (Smart Technology) To participate, students must have completed the ST enablers of table 1.

+P To participate, students must have completed the first year portfolio.

Table 3a: the third year for students enrolled in 2012-2013

	study load in EC	teaching activities	assessment	prerequisites
Free space to establish a profile (profileringsruimte)	30			90
Electives	15			90
Final Project	15			150
Year 3	60			

The units of table 3 which are printed in italics describe electives and options for the student. See this Art 1.1 items 7 and 8.

The prerequisites must be understood as follows (see also Art 1.12 of this appendix)

90 To participate in these units of study, students must have completed units of their first and second year totalling at least 90 credits.

150 To start the Final Project, students must have completed 150 EC of the entire programme.

Art 1.2 - CONTENTS OF EXAMINATION SPECIALIZATIONS (B)

There are no specializations a student can choose for graduation.

Art 1.3 - FINAL QUALIFICATIONS (C)

The intended learning outcomes of the Creative Technology curriculum are captured by the following 12 final qualifications for the Creative Technology graduates. Names for the qualifications are in boldface.

1. Graduates are skilled in problem-finding, idea and concept generation, and in the identification of opportunities for the exploitation of new technology; they can develop concepts and ideas, using the latest tools, into key prototypes. (**Concept generation and prototype development**)
2. Graduates can evaluate concepts and ideas from the viewpoints of functionality, performance, experience, user acceptance and usability, marketing and societal implications (issues like privacy and security); they can present the results of their evaluation in an understandable manner. (**Evaluation of concepts**)
3. Graduates understand the workflow of a design process, can plan such a design process, and are aware of the effects that unforeseen circumstances (new ideas, new requirements, lack of resources) may have on this planning. (**Understanding and planning the design process**)
4. Graduates can assume a role in a multi-disciplinary team, are aware of personal strengths and weaknesses, can develop a personal vision and can capture requirements and knowledge from different fields of specialization. (**Collaboration and multidisciplinarity**)
5. Graduates know the relevant theories underpinning graphic design in all its aspects (including the use of colour and motion, the combination of text and other visual means, and even the combination of graphics and sound) (**Skills and knowledge in graphic design**)
6. Graduates know the relevant (web technology, databases, dynamic and control systems) technologies to be used, and the relationships they have to one another and to graphic and motion design (qualification 5), concerning both principles and functionality. In addition to this, each student has additional technological knowledge, which concerns, depending on his specialization, either knowledge of (serious) games and 3D (virtual) environments or knowledge of sensors, wireless communication and electronics. (**Knowledge of technology**)
7. Graduates can implement algorithms and combine principles from physics and mathematics at the level required to demonstrate an application. (**Skills in technology**)
8. Graduates can analyze and classify system behaviour and express the analysis in mathematical models; they can use tools to perform simulations, they are capable of critical evaluation of their simulations. (**Skills and knowledge in modelling and simulation**)
9. Graduates know how to develop a business plan. (**Business knowledge)**
10. Graduates are aware of the roles of designers in society, and the standards (ethically and legally) for professional behaviour. (**Roles in society)**

11. Graduates can communicate with experts and non-experts about all aspects of his field, i.e. firstly concerning concepts, ideas, opportunities, and design workflow (qualifications1,3), secondly concerning evaluation of concepts (qualification 2), and finally concerning prototype development and technological and modelling issues (1,6,7,8); this communication covers presentation, justification and documentation, and (to a limited extent) scientific debate; in this communication the graduate knows how to employ modern media.(**Communication**)
12. Graduates are capable of logical reasoning; they are inquisitive and capable of posing proper questions; they can critically evaluate results obtained (by themselves and others); they are capable of critical reflection and can adapt their behaviour on the basis of that reflection, and are aware of gaps in their own knowledge and skills; they are prepared to learn and capable of learning. (**Basic academic attitude**)

Art 1.4 - PRACTICAL WORK AND PRACTICAL EXERCISES (D)

There are no special provisions for practical work and exercises.

Art 1.5 - STUDY LOAD OF THE PROGRAMME AND ITS UNITS (E)

The study load of units of study is in the tables of article 1.1 of thhis appendix. The study load of the entire programme is 180 EC..

Art 1.6 - ADDITIONAL REQUIREMENTS REGARDING BSA (NOTICE OF EXCLUSION) (F)

The programme imposes no additional requirements regarding BSA (the “bindend studieadvies”).

Art 1.7 - STUDY LOAD MASTER’S PROGRAMME (G)

Does not apply.

Art 1.8 - PROVISIONS REGARDING THE ORDER OF TESTS AND INTERIM EXAMINATIONS (H)

The provisions regarding the order of tests and exams are contained in the admission conditions of Art 1.12 of this appendix. The same provisions appear in the tables of Art 1.1 of this appendix.

Art 1.9 - THE FULL- /PART-TIME STATUS (I)

The programme enrols only students with a full-time status.

Art 1.10 - TEST AND EXAMINATION PERIODS (J)

1) Periods for tests and exams are in the rosters.
2) There is no specific period to take the bachelor’s examination.

Art 1.11 - TYPE AND ORGANIZATION OF TESTS AND ASSESSMENT (K)

1) For units in the programme of students enrolled in 2012-2013, the way test and assessment are organized can be found in the tables 1a, 2a, and 3a of Art 1.1 of this appendix. The following abbreviations are used::

   A (Assignments) students hand in (homework) assignments.

   D (Deliverable) students demonstrate the results of an assignment (a working prototype, a result to be analyzed and observed, not mere text)

   E (Essay) students hand in one or more essays.

   O (Oral) oral examination

   P (Public defence) student give a presentation and (publicly) defend the results of an assignment

   W (Written) students participate in a session for a written exam.

   These codes for assessment characterize exams. The examiner will observe these characteristics, but may add more detailed requirements for assessment.

2) For students enrolled after the academic year 2012-2013, assessment details are in Tables 11.1 – 11.4; which offer the following information for the units of the first year

   a. The names of the tests a student has to take in order to get a result for the entire unit

   b. The nature of each test, expressed by ‘deliverables’ students must hand in for grading by the examiner

   The examiner sets (and publishes) a required minimum score for each test, in order to achieve a result for the entire module.

   The examiner determines (and publishes) the weight that each test will have in determining the final grade for the entire module.

3) Sub tests and repair options (applicable only to units of table 1b)

   A test may be divided into sub tests, which are graded separately. Before the start of the unit he examiner sets and publishes the rules by which the final test result is determined, based on the sub test results.

   Tests and sub tests are organized in such a way that participants have the option of ‘repair’ before the final result of the entire unit is determined.

4) Authority of the Examiner and the Examination Board regarding supplementary assessment (applicable only to units of Table 1b)

   The examiner of each unit can offer participants a *supplementary assessment* for the unit.

   Admission to supplementary assessment can be granted only to students who failed the unit, but who were close to success, and who have shown, despite their failure for this module, clear progress towards reaching the final qualifications of the programme.

   The Examination Board gives directions to the examiner regarding the admission of students to supplementary assessment.

5) Supplementary assessment (applicable only to units of Table 1b)

Supplementary assessment for a unit is conducted within a 10 weeks period after the moment the result of the unit is set.

For candidates who are admitted to the supplementary assessment, the result of the unit is suspended, until the result of the supplementary assessment is available (i.e. the suspension lasts at most 10 weeks)

If the result of the supplementary assessment is positive, the candidate is awarded by a grade 6 for the entire unit.

If the result of supplementary assessment is negative, the result of the unit is the original result, that has been suspended until the supplementary assessment.

Table 11.1: We Create Identity

Test	Nature of assessment
Me-as-a-creative technologist	Student submits portfolio website Student submits essay
Creative application	Group of students submits project outcome
Visual Communication	Student submits weekly assignments
Technology	Student submits weekly assignments
Personal challenge	Student submits proof of participation in challenge (set by tutor)

Table 11.2: Smart Environments

Test	Nature of assessment
Personal challenge	Student submits proof of participation in challenge (set by tutor)

Table 11.3: Living and Working Tomorrow

Test	Nature of assessment
Gestructureerd ideeën kunnen genereren, methodes hiervoor kunnen beschrijven en in praktijk ervaren hebben	
Omgaan met externe klanten (een eerste	

kennismaking in communicatie, doelstellingen, visualisatie)	
In een project te werken in snelle ontwerpcyclus (iteratief, wekelijkse increment)	
Diverse uitvoeringsvormen van ideeen kennen, kunnen toepassen en keuzes hierin kunnen maken (proto, scenario, storyboard, film, mockup, meetopstelling, model, simulatie (fysica), 3D visualisatie)	
5. Domein onafhankelijk/overschrijdend denken over uitvoeringsvorm. Ontwerpen en ontwerpkeuzes kunnen evalueren. (kritisch inzicht, zelfreflectie)	Student submits proof of participation in challenge (set by tutor)
6. Skills op gebied van vormgeving, wiskundig modelleren, dynamische systemen, elektronica, simulatie (20sim), 3D modelleren (Unity, Blender)	
Personal challenge	Student submits proof of participation in challenge (set by tutor)

Table 11.4: Have Fun and Play!

Test	Nature of assessment
Personal challenge	Student submits proof of participation in challenge (set by tutor)

Art 1.12 - CONDITIONS OF ADMISSION TO UNITS OF STUDY (L)

1) Specific conditions of admission to (i.e. prerequisites for) units of study are in the tables of Article 1.1 of this appendix, where the units of study are listed. For units of the second year these requirements partly coincide with the conditions for a notice of admission.
2) To participate in units of study of the second year the following conditions must be met:
    a. There is a registration as either New Media or Smart Technology student
    b. Study units of the first year with a total study load of at least 45 credits have been completed.

c(Math) To take either Queues and Logistics or Strategies and Protocols, the student's registration for the course of his/her choice must have been accepted. There is a registration procedure for students to apply for participation, the number of participants for each course is limited.

d(ST). To take Smart Technology as a specialization in the second year, the enabling units of the first year must have been completed. The enabling units for ST are (see also table 1a)
Smart Environments
Introduction to Physical Systems and their Dynamic Behaviour
Introduction to Mathematics and Modelling

d(NM). To take New Media units as a specialization in the second year, the enabling units of the first year must have been completed. The enabling units for NM are (see also table 1a)
Visual Communication
Interactive Visualization
Programming and Physical Computing

6) With the last study advice preceding the final notice of exclusion or admission for the second year, the Examination Board will ask the students to announce their choice of track. After the registration for a specialization, and a check if all conditions are met, the Examination Board issues a formal permission for the participation in second year units. Students without such a permission can be excluded from classes and interim examinations.

7) The Examination Board issues a regulation for students who wish to change their registration (from NM to ST or conversely).

8) To participate in units of the third year, the following conditions must be met

   a. Study units of the first and second years must have been completed with a total study load of at least 90 credits.

   b. (*profileringsruimte*) The second year tutor has given permission (on behalf of the Examination Board) for the courses in the *profileringsruimte*; the tutor has the authority to refuse permission even if a proposed choice of courses meets the requirements b1, b2 and b3.

   b1. (*profileringsruimte*) The units of study in the *profileringsruimte* are courses offered by an institution or programme which has an accreditation proving its university level, or comparable.

   b2. (*profileringsruimte*) The units of study of an introductory nature among the courses in the *profileringsruimte* have a total study load of at most 20 EC; the amount of practical work in the *profileringsruimte* does not exceed a study load of 15 EC.

   b3. (*profileringsruimte*) The units of study devoted to foreign culture and language among the courses in the *profileringsruimte* have a total study load of at most 10 EC

   c (*electives*) The second year tutor has given permission (on behalf of the Examination Board) for the choice of electives; the tutor has the authority to refuse permission even if a proposed choice of courses meets the requirements c1, c2, c3 and c4.

   c1 (*electives*) At least one unit among the electives deals with ethics and professional standards.

c2 (*electives*) other units among the electives deal with human-product relationships, from the perspective of behavioural and/or management sciences, except for students who opt for an effort as described under c3 or c4.

c3 (*electives*) one unit among the electives, with a study load of 5 EC maximum, can be an assistantship in a final project of a fellow student. It must be clear that the student doing the final project defines the work of the assistant, and acts as his or her manager. An examiner appointed by Examination Board is responsible for the assessment of the assistant's work.
This option cannot be combined with the option under c4.

c4 (*electives*) one unit among the electives, with a study load of 5 EC maximum, can be devoted to academic writing. This option cannot be combined with the option under c3.

9) The Examination Board sets rules for the assistantships under 1.12. item 5.c3.

10) To start their Final Project, students must have completed units totalling 150EC of the programme.

Art 1.13 - MANDATORY PARTICIPATION IN PRACTICAL WORK AND/OR PRACTICAL EXERCISES TO BE ADMITTED TO THE EXAMINATION (M)

The tables in Art 1.1 of this appendix show for which units of study participation in practical work is mandatory in order to be admissible to the exam (if any).

Provisions (if any) regarding mandatory practical work are also to be found in Art 1.12 of this appendix.

PARAGRAPH 2
OTHER PROGRAMME SPECIFIC CHARACTERISTICS

Art 2.1 - LANGUAGE

1) The language of the programme is English. This applies to teaching and examination.
2) The Examination Board can grant permission to teach and conduct interim examination in another language. Permission can be granted only if it serves the quality of the assessment.
3) Dutch students with a vwo diploma meet the English language proficiency requirements for admission.
   Students from countries participating in the Lisbon treaty for whom English is a subject of their final examination, meet the language proficiency requirements for admission.
   In particular, German students with English up to their Abitur (13 years) meet the English language proficiency requirements for admission.
   Students who went to school in a system of education where the language of teaching is English, meet the language requirements. (The admissions office maintains an official list of these countries. This list is decisive.)
   Others must explicitly prove their proficiency at IELTS 6.0 level (over all score), before admission can be granted.
4) Students who meet the admission requirements of *section j, subsection 3* above, but without English language proficiency corresponding to the IELTS 6.0 level, must take English language courses to overcome their deficiency. The dean issues a regulation concerning the conditions for participation in these courses, and the faculty's contribution in the costs of these courses.
5) The dean issues a regulation concerning the assessment of English language proficiency of staff members who teach courses in the programme, and of the support staff for the programme. All staff involved must meet the language requirements of the regulation. Courses to improve English proficiency of staff members are provided.

Art 2.2 - STUDY PLAN

De student die vóór 1 september 2013 gestart is met de studie, is verplicht voor aanvang van een semester een studieplan in te dienen voor het betreffende semester.
De student kan zijn studieplan alléén aanpassen na overleg met de studieadviseur. Indien de studieadviseur dit nodig acht ontvangt de student een advies over het door hem ingediende studieplan.

Werkwijze:

- De uitvoering van het studieplan is neergelegd bij de studieadviseur. De studieadviseur stuurt een digitaal format naar de studenten, met een periode van minimaal 10 werkdagen voor de student om het in te vullen. De termijn waarop het moet zijn ingevuld en ingediend door de student is gesteld op de laatste werkdag voorafgaand aan de tentamenperiode van respectievelijk het tweede en het vierde kwartiel.
- De studieadviseur bepaalt het tijdstip waarop en de selectie van personen aan wie een reactie op het studieplan wordt gegeven. Wanneer een student zelf een verzoek doet voor advies over het ingevulde studieplan aan de studieadviseur,

wordt altijd een reactie gegeven.
- De adviezen van de studieadviseur aan de student over het studieplan zullen grotendeels mondeling zijn, als gespreksonderwerp in de reguliere begeleidingsgesprekken met de student. Daarnaast kunnen er schriftelijke reacties worden gegeven op ingevulde studieplannen. Als de student hiertoe verzoekt zal er altijd een reactie worden gegeven.

Art 2.3 - STUDENT COUNSELLING

By Art. 6.2.2 of the teaching and examination regulations, each student has a student adviser, who, in accordance with the university directive for study advice and notices of exclusion, is the primary person to address for students in matters concerning their study.

The student adviser for Creative Technology has a task in mentoring, i.e. personal guidance oriented to personal problems and personal growth.

Art 2.4 - TUTORING

Every student of Creative Technology has a tutor. Tutors are university staff members who take care of academic guidance and professional growth of their tutees (a tutee is a student who is guided by the tutor).

The Examination Board delegates advice and approval for choices of specializations, courses in the *profileringsruimte*, and choices of electives to the tutors.

Art 2.5 - REGULATIONS REGARDING REGISTERING FOR TESTS AND EXAMS

Op de onderwijssite van de opleiding staan de regels ten aanzien van het inschrijven voor toetsen.

Art 2.6 - THE DESIGNATED MASTER'S PROGRAMME

The master's programme for Creative Technology graduates, in accordance with section 7.13, subsection 3 of the Act, is the Human Media Interaction Programme of the University of Twente.

Admission to other Master's programmes depends on study units in the student's "profileringsruimte".

Art 2.7 - THE ADMINISTRATION OF THE RESULTS FOR TESTS AND EXAMS

1) Het resultaat "vrijstelling" krijgt bij 'toetsen' de vaste waarde VR en telt als een 6 mee in de weging. Bij 'modules' wordt een vrijstelling ook geregistreerd met een VR, maar dan (nog) zonder onderliggende numerieke waarde.
2) De student heeft de keuze om een vrijstelling aan te vragen met als consequentie dat deze als 6 meetelt in de weging, of mee te doen met de toets.
3) De alfanumerieke resultaten voldaan (V) en niet voldaan (NVD) kennen geen numerieke waardes.
4) Het hoogste cijfer telt, ook op toetsniveau.

Art 2.8 - REGULATIONS REGARDING BSA (NOTICE OF EXCLUSION)

1) De opleiding maakt volledig gebruik van de BSA-module binnen Osiris.
2) De BSA-Adviezen worden gegeven op basis van moduleresultaten. Na afloop van module 1 kan een positief, een negatief of een neutraal advies gegeven worden.
3) Officieel gehanteerde adviesmomenten zijn het tussentijdse- en het eindadvies.
4) De officiële adviezen worden afgegeven door de examencommissies.
5) De adviesbrieven worden op basis van de romp-OER en deze besluiten ontworpen.
6) De BSA-adviesbrieven worden digitaal verstuurd.
7) De ondertekening van de adviesbrieven gebeurt automatisch en digitaal.