

**Teaching and Examination Regulations  
(Programme Appendix Only)**

(under Articles 7.13 and 7.59 of the Higher Education and Research Act)

**UT Bachelor's Programmes**

**The Dean of the faculty,**

*in view of* the Articles 9.5, 9.15, paragraph 1 under a, 7.13 paragraph 1 and 2, 9.38, under b, and 9.18, paragraph 1 under a, and 7.59 of the Higher Education and Research Act (WHW), and

*in due consideration* of the recommendations of the Board of Studies, as well as the approval by, or advice of, the Faculty Council, pertaining to the specific appendix of the programme in question,<sup>1</sup>

**hereby authorizes** the Teaching and Examination Regulations of the following educational programme:  
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<sup>1</sup> The right of recommendation relates to Article 7.13 of the Higher Education and Research Act in respect of parts a through g. The right of approval relates to Article 7.13 of the Higher Education and Research Act in respect to other parts.

## 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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## Scope of these regulations

The regulations in this appendix apply to students who meet the following conditions

1. They have been enrolled for the Bachelor's programme Creative Technology since September 1, 2012, or longer,  
and either
- 2a. on September 1, 2013 (or earlier) they have completed units of study of their first year with a study load of at least 45 EC,  
or
- 2b. on September 1, 2013 they have permission of the Examination Board to continue their studies under the regulations of this appendix.

### a. The programme's final qualifications

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 multidisciplinary)**
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 (qualifications 1,3), 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)**

## b. Programme and examinations

### First year examination

The student passes the propedeuse (first year's) examination by completing<sup>2</sup> the units of study of table 1.

### Bachelor examination

The student passes the Bachelor's examination by passing the propedeuse examination, and completing the units of tables 2 and 3.

Some units in tables 2 and 3 are options, some are electives. The student's choice of options and electives must meet the requirements of the subsections *Options and electives* below.

### Authority of the Examination Board

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 for Assessment and Examination*.

The Examination Board may grant students permission to deviate from the requirements of the subsections *Options and electives* when choosing their options and electives.

### Tables of units

The tables 1, 2 and 3 offer the following information for each unit:

- The name of the unit
- The study load of the unit, in EC (European Credit, 1 EC amounts 28 study hours)
- The nature of the teaching activities, expressed in letter codes, see explanation below
- The nature of the assessment, expressed in letter codes and numbers, see explanation below
- Enablers/Prerequisites, to participate in some units of study, it is mandatory to have completed at least some other preceding units. The preceding units are enablers for the units which have them as prerequisites. (The enabler/prerequisite relation is indicated by the abbreviations NM, which stands for New Media, or ST, which stands for Smart Technology; more explanation is below the tables)

### The nature of teaching activities

The abbreviations for teaching activities must be read as follows.

- A (Assignments) Students work on assignments, under supervision of a teacher and/or assistant.
- D (Deliverable) a result is being produced, which can be demonstrated and observed; the product is more than mere text for reading.
- G (Group) students collaborate in a group.
- I (Interaction) questions are raised, discussed and answered, in collaboration between students and teacher.
- L (Lectures) an expert speaker addresses the students.
- P (Presentations) the students address their fellow students.

### The nature of assessment

The abbreviations for assessment must be read as follows.

- 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 examination.

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

**Comment [GfH1]:** As I understand it, the University will abandon the first year's examination. I assume however that students from previous generations will still have one.

<sup>2</sup> To complete a unit means to pass the unit's assessment with a sufficient result.

Table 1: the first year – the propedeuse

	study load in EC	teaching activities <sup>3</sup>	assessment <sup>4</sup>	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 (see *section c, Specializations* below).
- ST (Smart Technology) students must have completed these units before they can participate in the Smart Technology course of the second year (see *section c, Specializations* below).
- P students must have completed the first year portfolio before they can participate in the second year portfolio.

<sup>3</sup> The column is empty since these units of study are no longer taught

<sup>4</sup> 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 *section m Transitional arrangements*.

Table 2: the second year

	study load in EC	teaching activities <sup>5</sup>	assessment <sup>6</sup>	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
<i>either Smart Technology</i>	15		(4)	45+ST
<i>or New Media</i>	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.

The units which are printed in italics are specific for a specialization. See also *section c, Specializations* below. 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.

The prerequisites must be understood as follows (see also *section d, The conditions of admission to units of study, and section e, Bindend studieadvies, study plan, student counselling and tutoring*):

- 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.

<sup>5</sup> The abbreviations are explained in the subsection *The nature of teaching activities* above.

<sup>6</sup> The abbreviations are explained in the subsection *The nature of assessment* above.

Table 3: the third year

	study load in EC	teaching activities	assessment	prerequisites
<i>Free space to establish a profile (profileringsruimte)</i>	30			90
<i>Electives</i>	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 the subsection *Option and electives of the third year* below.

The prerequisites must be understood as follows (see also *section d, Conditions of admission to units of study*)

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.

#### Options and electives of the second year

At the end of the first year students must choose between two options in their second year: Smart Technology and New Media. See *section c, Specializations*, below.

During the second year students choose between two mathematics courses: Strategies and Protocols and Queues and Logistics.

The regulations governing the choice between options in the second year are in *section d, The conditions of admission to units of study*.

#### Options and electives of the third year

##### **Profileringsruimte**

Students have to choose courses with a study load of 30 EC in semester 5 (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.

The regulations governing the choice of courses for the *profileringsruimte* in the third year are in *section d, The conditions of admission to units of study*.

##### **Electives**

Students have to choose *electives* in the third year totalling at least 15 EC.

The choice of electives must serve at least two purposes:

1. students are confronted with a view on the human-technology relationship which is largely inspired by behavioural or management sciences, and
2. students work on ethics and professional standards for design.

Among the courses which meet condition 1 are:

Design against Crime

Education Entertainment

Remote Care Nearby

Among the courses which meet condition 2 are:

Ethics for Creative Technology

Computer Ethics

The regulations governing the choice of *electives* of the third year are in *section d, The conditions of admission to units of study*.

## Final project

In their Final project 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.

Students can start graduation work only if they have completed 150 EC of their programme.

### c. Specializations

At the end of the first year students choose between two options: Smart Technology and New Media. Programmes for these tracks (or specializations) differ in the second year. Students who opt for Smart Technology take the units of the ST category in table 2. Students who opt for New Media take the units of the NM category of table 2. Both options have a study load of 15 credits.

Admission to the options is discussed in *section d, Conditions of admission to units of study*.

### d. The conditions of admission to units of study and interim examinations

#### Enrolment as a second year student

To be enrolled as a second year student in Creative Technology, students need a notice of admission. (Or alternatively, their notice of exclusion must have been suspended.) More details on these notices are in *section e, Bindend studieadvies, study plan, student counselling and tutoring*.

In any case, according to [article 6a](#) of the main text of these regulations, for a notice of admission students need to complete at least 45 EC of their first year's programme.

Comment [GfH2]: Check, I don't know the final numbering of articles in the main text yet

#### Admission to units of study of the second year

Specific conditions of admission to (i.e. prerequisites for) units of study are in the tables of *section a, Programme and examinations*, 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.

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 1)  
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 1)  
Visual Communication  
Interactive Visualization  
Programming and Physical Computing

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.

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



### Admission to units of study of the third year

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.

The Examination Board sets rules for the assistantships under c3.

### Admission to the Final Project

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

### Authority of the Examination Board

The Examination Board may grant permission to students to start in their second or third year, or in their Final Project, even if they do not meet the requirements of this regulation. Note however that the Examination Board can never overrule a previous notice of exclusion (see *section e, Bindend studieadvies, study plan, student counselling and tutoring*)

### **e. Bindend studieadvies (notice of exclusion), study plan, student counselling, and tutoring**

#### *Bindend studieadvies*

By [article 6](#) of the main text of these regulations, all students get a progress evaluation regarding the continuation of their studies at the end of their first year.

Comment [GfH3]: Number?

By [article 6a](#), only students who have completed 45 EC of their first year are eligible for a positive advice to continue.

Comment [GfH4]: Number?

A negative advice is compelling and absolute, it amounts to a notice of exclusion (in Dutch: this study advice is a *bindend studieadvies*). For appeal in exceptional cases, see below.

For students in Creative Technology there are no extra provisions besides the minimum requirement to get a positive advice (a notice of admission to the second year). A student who has taken 45 EC of the first year gets a positive advice.

In accordance with the university directive for study advice and notices of exclusion, the procedure towards the final advice (and exclusion or admittance) has the following steps:

Before the start of the academic year, new first year students are informed by the Director of Education about the study advice, the threshold value for notices of exclusion, and the admittance/exclusion procedure for the second year.

Half way through the second quarter students get a provisional advice by the Examination Board.

Half way through the fourth quarter students get a second provisional advice by the Examination Board.

At the end of the academic year the Examination Board issues the final advice.

A negative advice is a notice of exclusion, but the student may lodge an appeal against the exclusion with the university *BSA commissie*. Under special circumstances, as defined in the Act, the *BSA commissie* may decide to suspend the exclusion.

## Study plan

By article 5 of the main text of these regulations, each student maintains a study plan, which is a study programme itinerary.

Comment [GfH5]: Number?

Decisions about choice of specialization, choice of electives and courses in the *profielingsruimte* are taken on the basis of the information in the student's study plan.

The specific rules for the implementation of article 5 are as follow.

For section 5.1: The study adviser maintains the regulations of this article. The study adviser sends the students a digital form, allowing the student a 10 days period to fill it. The form must be filled and returned at the last day preceding the examination period of the quarter..

For section 5.2

The study plan for the first quarter of the first year is set by the course management. This plan will have all units of the first semester (of the first year). Modification of this standard plan is possible after consultation of the study adviser. At the beginning of each quarter, students are requested to update their plan (see the implementation of 5.1). The update is obligatory for students who failed subjects of the original plan.

For section 5.3

Students who wish to update their study plan (outside the periods mentioned in section 1), can do so after consultation of the study adviser..

For section 5.4

For first year students, their study plan is discussed in every meeting with their study adviser. The study adviser can send an e-mail response to a student's study plan, but only if the adviser finds it necessary to do so.

For students in their second or later year, the study adviser decides at what time and to whom a response to the study plan will be given.

Students requesting an advice on their study plan, will always receive the requested advice.

For section 5.5:

The implementation of this section has been outlined in the implementation of articles 5.1-5.4.

If a student wants to use a third (or later) attempt at an interim examination, the request for such an attempt must always be accompanied by a recent study plan. Contents of the plan may influence the advice of the study adviser and the decision of the Examination Board.

Advice regarding study plans is not taken into account in matters regarding notices of exclusion.

Study plans cannot be considered to be private.

## Student counselling

By article 5 of the main text of these 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.

## 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 *profielingsruimte*, and choices of electives to the tutors.

### f. The language of the programme, and language proficiency conditions for admission

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.

**g. Practicals**

No special provisions apply to the organisation of practicals.

**h. Study load**

The study load of units of study can be found in the tables of *section b, Programme and Examinations*.

**j. Master's programmes**

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 "profielingsruimte". See *section a, Programme and Examinations*, under *subsection Options and electives of the third year*.

**k. Provisions for part-time students**

The programme offers no provisions for part-time students. The programme is a programme for full-time study.

### m. Transitional arrangements

#### 1. Regulation 2012-2013 regarding the first year's exam (propedeuse)

**Occasion:** This regulation is necessary because the first year's programme changes, starting September 2012. The earlier regulation regarding study units of the first year of 2011-2012 is incorporated in this regulation.

**Term of validity:** until September 1, 2014.

**Contents of the regulation:**

Students who started their studies before September 1, 2012 can take their first year's exam if they meet the following requirements:

1. They have completed units of study with a study load totalling 60 EC;
2. According to the table below, they meet the examination requirements, by substitution.
  - a. In case of *first year EC excess*, i.e. after application of the first year substitution table the student takes the first year's exam with more than 60 EC, the surplus in EC can be used in the application of regulation 2 below.
  - b. In case of *first year EC shortage*, i.e. after application of the first year substitution table the student's accumulated study load remains below 60 EC, the tutor decides on behalf of the Examination Board about the extra requirements that must be met.
  - c. In case of incomplete substitution, i.e. the student meets only part of the substitution requirements for a specific unit, and other parts of the substitution can no longer be obtained, the examiner of the unit to be substituted decides about the extra requirements that must be met.

Table 4: substitution of units to meet first year's examination requirements

	To take the exam without:		You must have instead:
2011	We Create Identity	both	1967 We Create Identity 1967 Web Technology
2012	Smart Environments		1967 Smart Environments
2011	Living and Working Tomorrow		1967 Living and Working Tomorrow
2011	Have Fun and Play!		1967 Have Fun and Play
2011	Visual Communication		1967 Graphic Design
2012	Sketching for CreaTe		1967 Sketching for CreaTe
2012	Interactive Visualization		1967 Interactive Visualization
2012	Designing in Context		1967 Designing in Context
2012	Human Factors		1967 Human Factors
2012	Introduction to Computer Science		1967 Introduction to Computer Science
2011	Programming and Physical Computing		1967 Programming for CreaTe
2012	Introduction to Physical Systems and System Dynamics		1967 Dynamical Systems
2011	Introduction to Mathematics and Modelling	both	1967 Motion and Modelling 1967 Creative Exploration of Structures
2011	First year portfolio	both	1967 Systems and Signals 1967 Introduction to Probability and Statistics

## 2. Regulation 2012-2013 regarding the second year programme and the Bachelor's exam

**Occasion:** This regulation is necessary because the second year programme changes, starting September 1, 2012. The earlier regulation regarding Design Marketing and Business Management of 2011-2012 is incorporated in this regulation.

**Term of validity:** until September 1, 2015.

**Contents of the regulation:**

Students who started their studies before September 1, 2012 can take their Bachelor's exam if they meet the following requirements:

1. They have completed their first year's exam in accordance with the regulations of this Programme Appendix;
2. According to the table below, they meet the examination requirements of the second year, by substitution.
  - a. Under no circumstance a unit of study which counts (or has counted) to obtain the first year's exam, can be used as a substitute in the second year substitution table, nor can any unit be used twice as a substitute.
  - b. In case of *first year EC excess*, i.e. if the conditions of Regulation 1 sub a apply, study load which did not count for the first year's exam can either count as compensation of EC shortage in the second year (see article c below) or as study load in the "profleringsruimte" (or both).
  - c. In case of *second year EC shortage*, i.e. after application of the second year substitution table the student's accumulated study load for second year units remains below 60 EC, first year EC excess can be used to compensate for the difference. If there is no such compensation, or the compensation is insufficient, the tutor decides on behalf of the Examination Board about the extra requirements that must be met.
  - d. In case of *second year EC excess*, i.e. after application of the second year substitution table the student has an accumulated study load in second year units which exceeds 60 EC, the surplus in EC can be used as study load in the "profleringsruimte".
  - e. In case of incomplete substitution, i.e. the student meets only part of the substitution requirements for a specific unit, and other parts of the substitution can no longer be obtained, the examiner of the unit to be substituted decides about the extra requirements that must be met.

*The table is at the next page*

## 3. Regulation 2013-2014 regarding the first year's exam (propedeuse)

**Occasion:** This regulation is necessary because the first year's programme changes, starting September 2013. More specifically, none of the units of study of Table 1 in *section b, Programme and examination* will be offered (nor examined) in 2013-2014.

**Term of validity:** until September 1, 2014.

**Contents of the regulation:**

Students who started their studies before September 1, 2013 can take their first year's exam if they meet the following requirement:

For every unit of study of Table 1 they have completed a substitute (if not the unit itself), i.e.

1. They have completed units of study of Table 1 in *section b, Programme and examination*; and
2. For units that were not completed they have completed substitute units, in accordance with Regulation 1 of these *Transitional arrangements*, or
3. For units that were not completed they have successfully passed (sub)tests in one of the four modules of the 2013-2014 programme,

The modules (15 EC units of study of the 2013-2014 programme) consist of parts which correspond to first year courses of 2012-2013.

Table 1 indicates in which of the 4 modules these corresponding elements can be found.

The substitute (sub)tests will be in the corresponding quarters.

Table 5: substitution of units to meet second year requirements

To take the exam without:		You must have instead:	
2012	Ambient Screens	either or	2010 Ambient Screens 2011 Ambient Screens
2012	Hybrid Worlds	either or	2010 Hybrid Worlds 2011 Hybrid Worlds
2012	Animated Narration		2010 Advanced Graphic Design
	Innovation and Entrepreneurship for IBA		Marketing for IBA
2012	Startrix for CreaTe		Startrix
2012	Web Services and Data-driven Applications	either or	2010 Data-driven Applications 2010 Web 2.0 Mashups
2012	Smart Technology	all of	Introduction to Electronics Telecommunication Control Systems Sensors
2012	New Media	all of	Game Development Virtual Environments 3D modelling
2012	Research Methodology	one of	Web 2.0 Mashups 3D modelling Strategies and Protocols Queues and Logistics
2012	Second year portfolio	one of	Web 2.0 Mashups 3D modelling Strategies and Protocols Queues and Logistics