

## Curriculum changes CreaTe

This note is an introduction to a further fine-tuning of the CreaTe curriculum of the first and second year. It follows two discussions on the same subject, one in the working group meeting of 28-11-2011, and the programme committee meeting of 13-12-2011.

The text of this note up to and including the Note following table 5, describes the current situation of the curriculum. The current Year 2 is a transitional year, it has to be replaced by a final version. (The transition has to do with the changes we made in the first year, starting 2011-2012.)

Table 6 shows the proposal for a final second year as it has been presented in the working group meeting of May 2011.

### The CreaTe programme's first year as it is in 2011-2012.

The floorplan of the current first year is in table 1, the courses are listed in table 2.

TABLE 1, THE CURRENT FIRST YEAR

block 1A	block1B	block2A	block2B
(5 EC, block 1A) We Create Identity	(3 EC, block 1B) Smart environments	(5 EC, block 2A) Living and working tomorrow	(5 EC, block 2B) Have fun and play (project)
(4 EC, block 1A) Visual Communication	(2 EC, block 1B) Sketching	(2 EC, block 2BA) Designing in context	(3 EC, block 2B) Human factors
(3+2 EC, block 1A) Computer Science and Programming	(5 EC, block 1B) Programming and Physical Computing	(3 EC, block 2A) Interactive Visualization part 1	(2 EC, block 2B) Interactive Visualization part 2
	(3+1 EC, block 1B) Mathematical Modelling & Dynamical Systems	(3+1 EC, block 2A) Dynamical Systems & Mathematical Modelling	(3+1 EC, block 2B) Mathematical Modelling & Dynamical Systems
(1 EC) Portfolio 1	(1 EC) Portfolio 2	(1 EC) Portfolio 3	(1 EC) Portfolio 3

TABLE 2: THE COURSES OF THE FIRST YEAR IN 2011-2012<sup>1</sup>

	study load in EC	teaching activities	assessment
We Create Identity	5	LPIpG	pPE
Smart Environments	3	LPIpG	pPE
Interactive Visualization	5	LPIp	pE
Living and Working Tomorrow	5	LPIpG	pPEO
Have Fun and Play!	5	LPIpG	pPE
Visual Communication	4	LPpl	p
Sketching for CreaTe	2	Llp	p
Designing in Context	2	LPpl	p
Human Factors	3		
Introduction to Computer Science	3	LPIG	pPE
Programming and Physical Computing	7	Llp	pO
Dynamical systems	6	LI	HO
Introduction to Mathematics and Modelling	6	Llp	pW
First year portfolio	4	I	p
Year 1	60		

The relationship between the list of courses and their arrangement in blocks is not straightforward.

<sup>1</sup> The abbreviations in the columns Teaching activities and assessment are explained at the end of this note.

Table 3 below shows how *Programming and Physical Computing*, *Interactive Visualization*, *Dynamical Systems* and *Mathematical Modelling* stretch over a longer period of time.

All four courses where learning activities are scheduled across block boundaries have an intermediate test at the end of each block. The numbers in table 4 indicate how intermediate tests are arranged in blocks. (FA indicates final assessment; a(b) stands for a tests, accounting for a study load of b EC)

There is a single course, *We Create Identity*, which has two intermediate tests in a single block.

TABLE 3\*: TESTS

	block1A	block1B	blok2A	block2B
We Create Identity	2(5) FA			
Smart Environments		FA		
Interactive Visualization			1(2)	1(3) FA
Living and Working Tomorrow			FA	
Have Fun and Play!				FA
Visual Communication	FA			
Sketching for CreaTe		FA		
Designing in Context			FA	
Human Factors				FA
Introduction to Computer Science	FA			
Programming and Physical Computing	1(2)	1(5) FA		
Dynamical systems		1(1)	1(4)	1(1) FA
Intro to Maths and Modelling		1(3)		1(3) FA
First year portfolio	1(1)	1(1)	1(1)	1(1) FA
Year 1	3	3	2	6

\*FA is final assessment; a(b) stands for a tests, accounting for a study load of b EC

- *First year portfolio* is not so much a course. It is a space for self directed learning. Over the last half year tutors have been working on a “road map” for the development of the individual Create students. The idea of such a map is the following:  
The map draws development lines, which show the characteristics of a “beginner”, and the characteristics of an “expert”.
  - Every student starts as a “beginner” for most lines.
  - All students arrive at least half way along all lines
  - All students have a few strengths which they shall want to develop especially. Along those lines they should reach the “expert” level. Everyone will be “expert” along some lines.
 The role of tutor and portfolio (and also of a course like *We Create Identity*) is:
  - to make students aware of their “beginner” status, and at the same time of their ambition to reach the “expert” status along some lines;
  - to help students to monitor their own development along all lines, to make sure they do not fall behind along some lines, and to help them to reach a higher level along the expert lines of their choice;
  - to help students studying in this self directed manner.

*First year portfolio* has four intermediate tests. In this case they are portfolio assessments. The student portfolio is assessed on the basis of the note which is attached to this document.

## The CreaTe programme's second year

The floorplan of the Creative Technology second year programme for the current (2011-2012) academic year is in table 4. The list of courses is in table 5

The floorplan of the (incomplete) programme for 2012-2013 is in table 6.

TABLE 4, THE SECOND YEAR IN 2011-2012

block 1A	block1B	block2A	block2B
	(6,5 EC, block 1B) Ambient Screens		(7,5 EC, block 2B) Hybrid Worlds
(1 EC, block 1A) Strategies and Protocols part 1	(2 EC, block 1B) Strategies and Protocols part 2	(3 EC, block 2A) Queues and Logistics	
(5 EC, block 1A) Design Marketing	(2,5 EC, block 1B) 3-D Modelling	(5 EC, block 2A) Business Management	(2,5 EC, block 2B) Advanced Graphic Design
(5 EC, block 1A) Programming with Structures	(2 EC, block 2B) Creative Exploration in Art, Science and Technology	(3 EC, block 2A) Data-driven Applications	(2 EC, block 2B) Creative Exploration in Art, Science and Technology
(4 EC, block 1A) Introduction to Electronics	(4 EC, block 1B) Introduction to Communication Systems	(4 EC, block 2A) Control Engineering	(3 EC, block 2B) Sensors
(3 EC, block 1A) Web services	(2 EC, block 2A) Game Development	(4 EC, block 2A) Game Development	(6 EC, block 2B) Virtual Environments
Tutoring			

TABLE 5, THE COURSES OF THE SECOND YEAR IN 2011-2012<sup>2</sup>

	study load in EC	teaching activities	assessment
Ambient Screens	6,5	LPIDG	DEP
Hybrid Worlds	7,5	LPIDG	DEP
CE in Art, Science and Technology	2	A	A
3-D Modelling	2,5	LID	D
Advanced Graphic Design	2,5	LPID	D
Design Marketing	5	LPI	W
Business Management	5	LI	DP
Introduction to Electronics	4	LA	AO
Wireless Communication Systems	4	LA	W
Control Systems	4	LIA	W
Sensors	3	LIA	
Web 2.0 Mashups	3	LPID	DEP
Virtual Environments	6	LPID	DEP
Game Development	6	LPID	DEP
Programming with Structures	5	LID	AO
Data-driven Applications	3	LA	A
Strategies and Protocols	3	LI	W
Queues and Logistics	3	LI	W
Tutoring		I	D
Year 2	60		

<sup>2</sup> The abbreviations in the columns Teaching activities and assessment are explained at the end of this note.

**Note:**

In practice the Design Marketing course is the Marketing for IBA course, and the Business Management course is the Startrix course for AT. Moreover, in Data-driven Applications also TBK students participate. The Control Engineering course is the second year EE course Regeltechniek. The Web 2.0 Mashup course is an adaptation of the Web Services course for Computer Science. Finally Virtual Environments will be taught in cooperation with Stanford University.

TABLE 6, THE PROPOSED SECOND YEAR FOR 2012-2013

block 1A	block1B	block2A	block2B
(5 EC, block 1A) Statistics and Research Methodology	(5 EC, block 1B) Ambient Screens	(3 EC, block 2A) <i>Mathematics</i>	(6 EC, block 2B) Hybrid Worlds
	(3 EC, block 1 B) Systems and Signals	(4 EC, block 2A) Design Marketing and Business management	(3 EC, block 2B) Design Marketing and Business management
(5 EC, block 1A) Programming with Structures	(3 EC, block 2A) 3-D Modelling	(3 EC, block 2A) Data driven Applications	(3 EC, block 2A) Advanced Graphic Design
(4 EC, block 1A) Introduction to Electronics	(4 EC, block 1B) Introduction to Communication Systems	(4 EC, block 2A) Control Engineering	(3 EC, block 2B) Sensors
(4 EC, block 1A) New Media Course 1	(4 EC, block 1B) New Media Course 2	(4 EC, block 2A) New Media Course 3	(3 EC, block 2B) New Media course 4
(1EC) Portfolio 5		(1 EC) Portfolio 6	

**Note:**

The Design Marketing and Business Management courses are scheduled for a study load of 7 EC in total (instead of 10 EC in the current transitional year), in the fourth semester. So they will have to be offered as new courses, for CreaTe only. Discussion with the NIKOS group has yet to start.

The Systems and signals course in the second quarter is in fact two courses: one for NM and one for ST. We are looking for a better name for Advanced Graphic Design, it is about story-telling and movie making. In preparation of a future module based curriculum, I have cut the New Media track into 4 segments (there are 3 courses in the current transitional year). It is my intention that Game Development and Virtual Environments return in the new setting. I am not sure about web services. See questions below.

**Questions about the 2012-2013 programme**

We have been discussing the way courses are ordered in time. The discussion concentrates on three points. (My conclusions are added in italics.)

- The position of dynamical systems: should we teach it before Introduction to Electronics or after? *Leave it as it is. Urgent suggestion from the programme committee: get student assistants involved. Question: is it possible to have practicals?*
- The programming line: is there a proper connection between first year programming courses and second year programming? *Solve the problems by requiring that all students do at least some programming work in the first year projects*
- Programming languages in the second year: is it wise to teach two languages at the same time? *My plan is to move web services to the second block (or to remove it)*

Remaining questions

- The New Media track and the Smart Technology track: what is the overall objective of teaching the courses in these tracks, are the courses as taught until now the right courses for the tracks? There is doubt especially about Web services and Regeltechniek. *And how do I organise the discussion about these issues with parties involved?*
- Do we need more alignment between the New Media track, the Smart Technology track and other courses? *The students in the programme committee indicate that they experience too much divergence, and too few points where the two tracks really meet.*
- What about the demise of Creative Exploration in Art, Science and Technology?
- Is there enough development towards being an inventor, and/or an artist, in the second year?
- What about the development towards being an academic?

6. There is an offer from the philosophy department to develop a course on Responsible conduct in creative professions. Should we make such a course a mandatory course in the second year?

And of course there is the issue of the Mathematics courses.

7. There is one slot left for Mathematics where there were two courses originally: Queues and Logistics, and Strategies and Protocols. What do we do in this single slot?

### **Questions about the 2013-2014 programme**

One way or another we shall have to introduce 15 EC modules, and/or a pass-year-by-year-system. How do we organise that?

## **Abbreviations for teaching activities and assessment**

The abbreviations in the various tables must be read as follows.

For teaching activities

- L (Lectures) an expert speaker addresses the students.
- P (Presentations) the students address their fellow students.
- I (Interaction) questions are raised, discussed and answered, in collaboration between students and teacher.
- 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.

For assessment

- W (Written) students participate in a session for a written examination.
- O (Oral) oral examination
- E (Essay) students hand in one or more essays.
- A (Assignments ) students hand in (homework) assignments.
- P (Public defence) student give a presentation and (publicly) defend the results of an assignment
- D (Deliverable) students demonstrate the results of an assignment (a working prototype, a result to be analyzed and observed, not mere text)