Block / Semester: S1					
CU75001V3	**Title: Program- & Career Orientation**				
Course information					
Amount of study credits: 2.5			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: Students are introduced to each other, the teachers, the programme and their career opportunities. Based on this knowledge the students can, supported by examples and/or reflections, draw some conclusions for the rest of their own study. Students will start with hands on practice.					
Course learning outcomes: 7.2K: You can create a website as introduction to the program, include your motivation and show that you improve the website based on received feedback. Leading to a website that is improved in quality and attractiveness.					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Presentation (individual)	Presentation (individual)	100%	5.5	S1.5, S1.6 & S1.10

Block / Semester: S1					
CU75002V2	**Title: Computer Science Basics**				
Course information					
Amount of study credits: 5			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: Fundamental computer science concepts including definition, history, and working of computers; compilers; data structures; operating systems; and client-server architecture.					
Course learning outcomes: 5.1A: you describe the foundations of a computer system					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Written knowledge test	Written knowledge test	100%	5.5	S1.10 & S1.15

Block / Semester: S1					
CU75003V1	**Title: Programming Basics**				
Course information					
Amount of study credits: 5			**Language:** English Dutch		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: Your first steps into programming. You learn subjects as: data structures conditionals, loops, functions problem solving and algorithmic thinking.					
Course learning outcomes: 4.3G: you apply programming concepts to realise functionality (Miller: 1. prescriptive, 2. applying) 4.3H: you write readable, well-organized code (Miller: 1. prescriptive, 2. applying) 4.3I: you make robust code (Miller: 1. prescriptive, 2. applying)					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Written knowledge test	Case study exam	100%	5.5	S1.09 & S1.15

Block / Semester: S1	
CU75004V1	**Title: Object-Oriented Programming**

Course information

Amount of study credits:	**Language:**
10	English Dutch

Conditions for course participation:

none

Conditions for test participation:

none

Brief description of course content:

You apply the object-oriented principles: abstraction, encapsulation, inheritance and polymorphism. First, we cover the theory then we move on to a practical assignment for a regional client.

In this course you will collaborate with students from PABO. The kick-off for that collaboration is in Week 6 (S1.16) including a visit to an appointed primary school. The second visit is planned in Week 8 (S1.18)

Course learning outcomes:

Test 1:

4.1F: you collect information so as to formulate functional requirements for a system to be developed according to a standard method
4.2E: you write a technical description of (the internal) structure and working of an Object Oriented information system.
4.3F: you apply Object Oriented programming concepts to realise functionality.
4.3G: you apply programming concepts to realise functionality (Miller: 1. prescriptive, 2. applying)
4.3H: you write readable, well-organized code (Miller: 1. prescriptive, 2. applying)
4.3I: you make robust code (Miller: 1. prescriptive, 2. applying)

Test 2:

4.3F: you apply Object Oriented programming concepts to realise functionality.
4.3G: you apply programming concepts to realise functionality (Miller: 1. prescriptive, 2. applying)
4.3H: you write readable, well-organized code (Miller: 1. prescriptive, 2. applying)
4.3I: you make robust code (Miller: 1. prescriptive, 2. applying)

Compulsory literature:

Assessment information

Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Presentation (individual)	Presentation (group)	50%	5.5	S1.15 & S2.3
TOETS02 (VT)	Written knowledge test	Written knowledge test	50%	5.5	S1.20 & S2.3

Block / Semester: S2	
CU75011V3	**Title: Framework Project 2**

Course information

Amount of study credits:	**Language:**
10	Dutch English

Conditions for course participation:
none

Conditions for test participation:
none

Brief description of course content:
The course focuses on the application of the prior gained knowledge about human-machine interaction principles and advanced framework principles. The students learns to study more advanced concepts of a given framework. Student work on a real life project related to the SDG's. Students will deliver their final product to the client and will work on acceptation tests on their products. Student can apply a variation of certain IT developments and techniques to their project. In this way students can choose (in addition to a general basis) their own personalized theme to deepen or broaden.

Course learning outcomes:

Test 1:
1.3E: You can apply standards and internal consistency when developing more complex functions within an application
3.3A: Make available a software system based on a Framework for users in a simple hosting environment
4.3C: Deliver Code that is acceptable for a production environment
4.3D: Within a given framework context apply a more complex concept
4.3E: Within a given organization and framework context develop an innovation
4.5D: you set up (generic) servers to make an application available

Test 2:
4.1D: develop acceptation criteria for a user story
4.1E: you determine the System and the Systems context for a system to be developed with one interested party
4.1G: you document functional requirements for a system to be developed in natural language and in models through a given standard method
4.2D: you communicate more complex concepts and designs univocally with the professional field
4.5B: Use the project tools to improve the process of analysis, design, realization, testing and making functions available in an application
4.5D: you set up (generic) servers to make an application available

Test 3:
1.3C: You can help a user with preventing, recognising and solving erroneous actions in a consistent manner within a team
1.3D: You can help a user with recognising and solving erroneous actions
4.5E: you use containerization to make an application available and modify it

Compulsory literature:

Assessment information

Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Presentation (group)	Final group delivery	25%	5.5	S2.18 & S2.20
TOETS02 (VT)	Portfolio	Individual project assessment	25%	5.5	S2.15 to S2.20

TOETS03 (VT)	Portfolio	IT Development portfolio	50%	5.5	S2.18 & S2.20

Block / Semester: S1					
CU75054V1	**Title: IT Personality Projectweek 1**				
Course information					
Amount of study credits: 1.25			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: This course can be followed 3 times during the study programme. Course description for CU75054, CU75058, and CU75075 are identical. IT Personality content is based on the HZ-wide programme HZ personality that stimulates the skills concerning and attitudes towards personal development and personal leadership. The programme can either have a broadening or a deepening focus when it comes to the curriculum. Each year the ICT program organizes a project week with real life casus and (if possible) in cooperation with other programs. This project week course can be chosen as 1,25 ec content for personality. The assessment criteria and assessment process are listed in the IT Personality 2021-2022 instruction manual which can be found on the Learn page. This course is already approved for IT personality, students only need to define their personal goals within the given context.					
Course learning outcomes: 7.2M: Developing skills and behavior to achieve personal and professional goals. Carrying out activities that contribute to sustainable development goals through participation in a project week.					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Portfolio	Portfolio	100%	Pass	See learn

Block / Semester: S2					
CU75055V1	**Title: IT Personality International week**				
Course information					
Amount of study credits: 1.25			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: IT Personality content is based on the HZ-wide programme HZ personality that stimulates the skills concerning and attitudes towards personal development and personal leadership. The programme can either have a broadening or a deepening focus when it comes to the curriculum. Each year the ICT program organizes an international week. If possible including a visit in an international city. This international week course can be chosen as 1,25 ec content for personality. The assessment criteria and assessment process are listed in the IT Personality 2021-2022 instruction manual which can be found on the Learn page. This course is already approved for IT personality, students only need to define their personal goals within the given context.					
Course learning outcomes: 7.2N: Developing skills and behavior to achieve personal and professional goals. Carrying out activities that contribute to personal goals through participation in an international week.					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Portfolio	Portfolio	100%	Pass	See learn

Block / Semester: S1 **Block / Semester: S2**	
CU75056V1	**Title: IT Personality 1**

Course information	
Amount of study credits: 1.25	**Language:** Dutch English
Conditions for course participation: none	
Conditions for test participation: none	
Brief description of course content: IT Personality content is based on the HZ-wide programme HZ personality that stimulates the skills concerning and attitudes towards personal development and personal leadership. The programme can either have a broadening or a deepening focus when it comes to the curriculum. A prerequisite for starting the HZ Personality related activities is having obtained a GO from one of the IT personality coordinators. The assessment criteria and assessment process are listed in the HZ Personality 2021-2022 instruction manual which can be found on the Learn page.	
Course learning outcomes: 7.2M: Developing skills and behavior to achieve personal and professional goals. Carrying out activities that contribute to sustainable development goals through participation in a project week.	
Compulsory literature:	

Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Portfolio	Portfolio	100%	Pass	See learn

Block / Semester: S1 **Block / Semester: S2**					
CU75057V1	**Title: IT Personality 2**				
Course information					
Amount of study credits: 1.25			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: IT Personality content is based on the HZ-wide programme HZ personality that stimulates the skills concerning and attitudes towards personal development and personal leadership. The programme can either have a broadening or a deepening focus when it comes to the curriculum. A prerequisite for starting the HZ Personality related activities is having obtained a GO from one of the IT personality coordinators. The assessment criteria and assessment process are listed in the HZ Personality 2021-2022 instruction manual which can be found on the Learn page.					
Course learning outcomes: 7.2L:Developing skills and behavior to achieve personal and professional goals. Carrying out activities that contribute to sustainable development goals, community goals and personal goals.					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Portfolio	Portfolio	100%	Pass	See Learn

Block / Semester: S1
Block / Semester: S2

CU75068V3	**Title: Personal Professional Development Exploration**

Course information

Amount of study credits:	**Language:**
12.5	English Dutch

Conditions for course participation:
none

Conditions for test participation:
2 level checks submitted on time for feedback. If you have not submitted this, the first summative opportunity will be used for a formative submission and the Summative grading will follow upon resit.

Brief description of course content:
General Bachelor-competences, in this case: aspects of written reporting like language provision, style, typography, house style, further layout and referencing. Reporting skills are applied on the subject of game development and combined with further guidance on development as an (international) ICT student on this program. The feedback based improvement can be demonstrated in the second reading and writing assignment. General bachelor competences in Agile working project groups (by retrospective feedback or self study). In this case: self-steering and (team)learning, methodical judgment, communicational behaviour in project groups.

Course learning outcomes:
7.2O: You're considerate, see opportunities and seize them. You have a proactive attitude that you take initiative and feel responsible for what you do
7.2P: You can motivate yourself and others, you are willing to help others / support (individual and team). You can present yourself or a team, take others into your own development.
7.2Q:You study demonstrates considered, strengthens your own learning and can recognize a learning need in yourself and mating act, reflect, evaluate, and give active feedback questions. You recognize when you need help and do it then.
7.2R: You can specify what type of professional you want to be and / or what type of positions you aspire, know your own strengths and weaknesses and can describe yourself well

7.3C: You focus on the various groups of stakeholders such as partners, interest groups, individual team members etc.
7.3D: You focus on what you want to communicate and what purpose you choose the most appropriate form and while you perform this proactively
7.3E: You focus on your role in the context of the ICT job, you recognize these tasks and takes proactive. You dare others to speak (feedback) and is open to feedback. You are open to other opinions / views / arguments and see that as an enrichment. You consciously builds confidence in an interdisciplinary and intercultural cooperation contex

7.4L: Gives evidence that you are able to think ahead and plan ahead. You think methodically about the approach suitable for the assignment (identification of tasks, order of execution, proper prioritization) and how this contributes to the end result.
7.4M:You plan and monitors the time. You are cost conscious. You recognize opportunities and risks. You can thereby all time aware of agreements, legal regulations and ethical standards
7.4N: You have a keen eye for the feasibility of duties in the organization. You taking into account the characteristics of the area of the assignment.
7.4O: You examine where necessary and relevant to the ethical implications of the tasks you perform. You recognize their own and others' limits and act accordingly
7.4P: You can construct achievable and realistic goals within the time available which contribute to solving a problem or achieving a demand. The goals can be divided into multiple related detailed tasks

7.5D: Gives evidence that your problems / challenges to identify and put in context (department / organization / business environment, social environment) and can analyse these problems. You are able, where appropriate and relevant to search for multiple solutions.
7.5E:Throughout the dissolution process you're curious, ask yourself if from different perspectives. You are pragmatically, creatively and critically and make if appropriate use of resources

7.5F:You can make a thoughtful and methodical choosing the correct / most appropriate / suitable solution or approach. While you are critical about your own basis and used arguments.					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Criterion-referenced assessment	Criterium focused interview	100%	5.5	S2.11 to S2.14

Block / Semester: S2	
CU75080V2	**Title: Framework Project 1**

Course information

Amount of study credits:	**Language:**
10	Dutch English

Conditions for course participation:

none

Conditions for test participation:

none

Brief description of course content:

The student learns the basic principles of a specific framework. The student will learn to apply that framework in a project, including requirement analysis (identify requirements and wishes) and software-development process. Students work in groups on real life SDG related cases within given projects.

Course learning outcomes:

Test 1:

4.3A: You can realise functionality within given concepts of a Framework according to the given specification
4.3B: You can test a software system based on a Framework on the own work environment
4.3G: you apply programming concepts to realise functionality (Miller: 1. prescriptive, 2. applying)
4.3H: you write readable, well-organized code (Miller: 1. prescriptive, 2. applying)
4.3I: you make robust code (Miller: 1. prescriptive, 2. applying)
4.5C: You can set up an environment on your working environment using virtualization and use it to test code.

Test 2:

4.2A: you design a database of a simple information system and document this by means a standard modelling technique

Test 3:

1.3A: You can apply design guidelines and corporate branding when realising a simple interaction within an information system
1.3B: You can realise a simple interaction within a team while taking into account consistency and standards
4.2B: You can make a functional design of a simple function of a system yet to be developed, and document it through a standard modelling technique.
4.2C: You can make a technical design of a simple function of a system as yet to be developed, and document it be means of a standard modelling technique
4.5A: You can organize and use tools to exchange code and documentation within a team
4.2A: you design a database of a simple information system and document this by means a standard modelling technique
4.3B: You can test a software system based on a Framework on the own work environment
4.5C: You can set up an environment on your working environment using virtualization and use it to test code.

Test 4:

2.1A: map, according to the given methodology, the current situation of a singular company process (IST)
2.2A: describe, according to a given methodology, a design for an improved company process through ICT (soll)
4.1A: you determine the systems context of a system to be developed
4.1B: you collect relevant data from multiple requirement's source through given elicitation technique s
4.1C: you interpret collected data from the functional perspective to formulate and document requirements according to given standard method in natural language
4.1D: develop acceptation criteria for a user story
4.1E: you determine the System and the Systems context for a system to be developed with one interested party
4.1G: you document functional requirements for a system to be developed in natural language and in models through a given standard method

Compulsory literature:

Assessment information

Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Written knowledge test	On-site case study exam	40%	5.5	S2.5 & S2.10
TOETS02 (VT)	Written knowledge test	Database exam	10%	5.5	S2.7 & S2.10
TOETS03 (VT)	Presentation (group)	Group presentation on project result	25%	5.5	S2.10 & S2.12
TOETS04 (VT)	Portfolio	Group porfolio with individual elements on requirements	25%	5.5	S2.9 & S2.12

Block / Semester: S2					
CU75081V1	**Title: Business IT Consultancy Basics**				
Course information					
Amount of study credits: 2.5			**Language:** Dutch English		
Conditions for course participation: none					
Conditions for test participation: none					
Brief description of course content: The aim of these learning objectives and content is to introduce first-year IT students to the role of a business IT consultant and provide them with fundamental skills and concepts necessary for success in this role. By offering both theoretical knowledge and practical application, students can gain a better understanding of the work of a business IT consultant and develop their own skills in this field.					
Course learning outcomes: 2.1M: Acquire practical skills for conducting an IT consultancy project					
Compulsory literature:					
Assessment information					
Test code	**Assessment type**	**Assessment description**	**Weighting Factor** (%)	**Minimum score**	**Test opportunities** (block codes)
TOETS01 (VT)	Assignment (individual)	Video	100%	5.5	S2.19 & S2.20