Fontys Hogeschool Techniek en Logistiek

Study programme section of the Students' Charter with the 2020-2021 Teaching and Examination Regulations of the Bachelor's fulltime programmes at Fontys School for Technology and Logistics

Study programme name (CROHO)	Abbreviation	Programme code	Variant	Language classes foundation course phase	Language classes main phase
B Mechatronics	MEC	30026	fulltime	Dutch	Dutch
B Information Technology	ICT	34479	fulltime	Dutch German English	English
B Industrial Design Engineering	IPO IDE	34389	fulltime	Dutch English	Dutch
B Logistics Management	LM	35522	Fulltime	Dutch German English	English
B Logistics Engineering	LE	34390	fulltime	Dutch German English	English
B Mechanical engineering	WTB	34280	fulltime	Dutch	Dutch

The study programme's section of the Students' Charter was adopted by the institute's director on 11 June 2019, after obtaining the IPC (*IMR*) consent on 25 May 2020 and after obtaining consent from the PC's (*OC*):

- Informatics (27 May 2020)
- Logistics (7 May 2020)
- Engineering (28 May 2020)

The teaching and examination regulations of the study programme expand on the general section of the teaching and examination regulations of Fontys Bachelor's programmes.
This general section for the 2020-2021 academic year was established by the Executive Board on 10 December 2019, provided consent would be given by the students' section of the CPC. This consent was given on 16 January 2020.

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A – Teaching and Examination Regulations

Section 1 General

Article 1 Definitions

Academic year	The period from 1 September up to and including 31 August of the following year.
Advice regarding the continuation of studies	Advice given to students at the end of the first year of the foundation phase of a Bachelor's programme regarding the continuation of their studies either with the programme or elsewhere. This advice may entail a binding rejection (binding negative study advice).
Assessment	Generic term for tests aimed at assessing a student's competencies in a professional situation that is as authentic and realistic as possible.
Assessor	An examiner that grades the student's progress in acquiring the required competencies.
BILL	Business Innovation Learning Labs
BILL assessment committee	An assessment committee independently assesses whether a unit of study (pillar) has been achieved. The committee does this on the basis of the portfolio (source 1), the advice of the PPD coach (source 2) and an interview with the student (source 3). The committee is made up of at least three examiners, who 1) A lecturer from the graduation phase of the bachelor programme; 2) A researcher from the research group associated with the bachelor programme; 3) A PPD coach from BILL who has not supervised the student himself/herself.
BILL Learning plan	A learning plan is a document in which the student describes at the start of each project (in consultation with his PPD coach) for the four units of study (pillars) where he stands and how he wants to develop further on the four pillars in an upcoming project (e.g. workshops, masterclasses, company visits and excursions).
BILL Portfolio	A portfolio is an overview of projects in which a student has participated. Per project a student describes (by means of evidence how he has worked on achieving learning outcomes of the BILL profile) and what his or her progress is.
BILL profile	Description of the learning outcomes for the units of study in the BILL programme.
BILL programme	The BILL programme (Business Innovation Learning Lab) is a multidisciplinary hybrid learning environment in which students, lecturers, researchers and entrepreneurs from different disciplines work closely together to solve business challenges.
BILL PPD coach	The PPD coach guides the student individually and where necessary (just-in-time) in his personal and professional development (PPD). The PPD coach is linked to a student during the entire BILL journey (academic year 3 and 4).
BILL project	A BILL project is a business challenge or research assignment, elaborated in Communities for Design.
BILL Project coach	The project coach supervises the execution of projects at group level and provides formative feedback to the group and individual students. The project coach is part of the Community for Design that works on solving a business challenge.

CAA	Centre for Administrative Activities. The CAA is the internal partner within Fontys of the representative and participatory bodies and their discussion partners with respect to optimising how these bodies function.
Certificate	The certificate as referred to in Section 7.11 of the Dutch Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderwijs*, WHW).
CPC	Central Participation Council
Cohort	The group of students who are enrolled for the first time in the foundation year of a study programme on the same reference date to which the prevailing Teaching and Examination Regulations (TER) apply. For students who enrol in a higher year, cohort membership is determined on an individual basis.
Community for Design	A Community for Design (CfD) is a team composed of at least three students, a project coach, a researcher from the research group and the client. A CfD works together to design a solution to the business problem.
Competency	A cluster of related knowledge, skills and attitudes that influences a substantial part of a person's job, is related to the performance of the job, can be measured and tested against accepted standards and can be improved through training and development.
Competency examination	*A test to assess whether a student has certain competencies.*
Component test	If an interim examination consists of several tests, each of those tests is referred to as a component test.
Coordinating institute	The coordinating institute is the Fontys Institute which bears final responsibility for the development, implementation, assessment and improvement of a minor programme.
Credit	One credit equals 28 standard study-load hours. Students are awarded credits on passing the interim examination of a unit of study. The international term for credits is European credits (EC's).
Course-based learning	A fixed, offered study programme in which the learning outcomes and the path towards them are determined by the educational institution
Education components	The courses offered to students to help their learning process.
CROHO	Central Register of Higher Education Study Programmes, which is a register of all study programmes. Students that pass the interim examinations of a study programme registered in CROHO are entitled to an official higher professional education certificate with the associated degree (Associate degree, Bachelor or Master).
Deficiency	Any required prior qualification(s) a student lacks.
Differentiation	A specific definition of the curriculum within a programme, from the start of the programme that contributes to the development of generic or specific competencies aimed at deepening a specific area of knowledge in the professional field, application throughout the programme.
Diploma supplement	Document drawn up in accordance with a European format that is added to the certificate and states the nature, level, context, content and status of the study programme.
Dual-study programme	A dual-study programme is organised in such a way that education is alternated with one or more periods of professional practice related to the study programme. The study programme therefore consists of an educational segment and a practical segment, both of which are integral parts of the study programme.
DUO	Short for *Dienst Uitvoering Onderwijs*, a government agency charged with implementing education legislation and regulations of which the IB Group forms a part.
Diploma with subject combination	Former senior general secondary education (*HAVO*) or pre-university education (*VWO*) diploma based on subject combinations. These diplomas were issued before the HAVO and VWO profiles were introduced (from 1998).
ECTS	European Credit Transfer System. The system that is used to express credits in order to facilitate international comparison. See also: credits.
EVC (RPL)	*Erkenning van eerder Verworven Competenties* (Recognition of Prior Learning).
Examination	**Assessment administered by the Examination Board to determine whether students have successfully completed the educational components of a study programme or the foundation-year phase.** The final examination may also include a supplementary assessment conducted by the Examination Board.
Examination Appeals Board	The Board as referred to in Sections 7.60 up to and including 7.63 of the WHW and Articles 45 and 46 of the Students' Charter. The organisation, duties and powers of the Board are laid down in the Rules of Procedure adopted by the Examination Appeals Board and approved by the Executive Board.
Examination Board	The board of persons referred to in Section 7.12 of the WHW.
Examiner	Member of staff who is designated by the Examination Board to administer examinations and assess the results thereof or an external expert.

Executive Board	The administrative body of Fontys University of Applied Sciences, as described in the articles of association and the WHW.
Executive institute	A Fontys institute responsible for the execution of a minor.
Exemption	Full or partial exemption from meeting enrolment and / or admission conditions and / or sitting interim examinations.
Exit assessment	*Part of the competency examination administered at the student's request when he or she wishes to terminate his or her study programme prematurely.*
Exit qualifications	Qualifications students must have on completing the study programme.
Fontys minor	A minor open to all Fontys students, so long as they meet any admission criteria for the minor, with a focus on overarching and distinctive themes.
Foundation year	First phase in a Bachelor's programme.
Fraud	Any act (including plagiarism) or omission that either partially or fully impairs the correct assessment of a person's knowledge, understanding, skills, competencies, professional attitude, powers of reflection, etc.
FSS Board	Board charged by the Executive Board to implement the student financial support scheme (FSS), now known as the Profiling Fund Board.
FSS scheme	Scheme for the granting of support to Fontys students in the form of graduate funding, committee member grants or holiday allowances from the profiling fund, now known as the Profiling Fund Scheme.
Full-time study programme	A full-time study programme is a study programme whose structure is such that students are assumed not to participate in any activities other than academic activities.
Hardship clause	A provision in a law or regulation that makes it possible to deviate from regulatory provisions in favour of the student or external student.
He / him	He / him is taken here to refer to men, women and individuals who do not identify as either of these options.
IELTS	International English Language Teaching System, a tool used to determine a student's command of the English language.
Institute	The operational unit at Fontys that is, in particular, responsible for organising Fontys's core competencies and that executes the primary processes.
Institute Director	The staff member charged with running a Fontys institution.
Institution	The Fontys Universities of Applied Sciences.
Intake assessment	Portfolio assessment conducted at the student's request to validate previous learning experiences prior to enrolment in the study programme. A fee covering the costs is charged for an intake assessment.
Intake interview	Interview conducted at the student's request prior to the start of the study programme if the student believes that he or she has competencies acquired previously. An intake interview comprises a general assessment from which no rights can be derived by a student.
Interim examination	An examination of the knowledge, understanding, skills and / or competencies of a student required to conclude a unit of study, including an assessment of the results of such an examination *(Section 7.10(1) of the WHW)*. An interim examination may consist of one or more component tests.
IPC	Institute Participation Council
Main subject	**A specific definition of the curriculum within a programme, which begins immediately from year 1 or following the foundation year.**
Major	*That part of the Bachelor's programme with a study load of 210 credits that contributes to the competencies associated with the programme and that is directly related to the study programme(s)'s registration in the CROHO.*
Minor	*Programme of optional subjects within a Bachelor's programme with a study load of 30 credits that contributes to generic or specific competencies.*
Minor regulations	Regulations that describe the content, the education components, the testing and the completion of a minor. The regulations of all minors offered by Fontys can be found on the Fontys website (www.fontys.nl/minors). The regulations of the minors associated with a particular study programme have been included as an appendix of the study programme's TER.
Nt2 diploma	Diploma of the Nt2 official state examination in Dutch as a second language, of which programme II is considered to be the guideline for admittance to higher education.

Occupational requirements	**The legal requirements to which the practice of a particular profession is subject.** A study programme aimed at such an occupation will prepare students to meet the relevant requirements. *(Section 7.6 of the WHW).*
Part-time study programme	A part-time study programme is a study programme whose structure is such that the student is able to participate in supplementary activities, either work-related or educational, alongside the study programme.
Portfolio	A collection of evidence, digital or otherwise, with which students can demonstrate that they master the competencies of a particular study programme.
Post-foundation year phase	Second phase of a Bachelor's programme.
Principle	All study programmes offered are based on one of the following principles: non-denominational private education (NPE), Roman Catholic (RC), Protestant Christian (PC) or a combination of general special education, Roman Catholic and Protestant Christian (NPE, RC, PC).
Practice-based learning	A flexible learning journey, in which the learning outcomes are determined by the study programme and the student makes his / her own choices on the basis of practical cases.
Profiling Fund Board	Board charged by the Executive Board with implementing the Profiling Fund scheme, formerly known as the FSS Board.
Profiling Fund Scheme	Scheme for the granting of support to students in the form of graduate funding, committee member grants or attendance fees from the profiling fund, now known as the Profiling Fund Scheme
PC	Opleidingscommissie (Programme Committee, PC), a committee established for a particular study programme of an institute referred to in Section 10.3c of the Act (see the Regulations on the Participation Councils and Degree PC's).
Tailored programme	Special programme which differs from the standard programme.
Teaching period	Period in the academic year during which education components are organised. A teaching period is referred to as a study quarter in the Fontys annual calendar.
TER	Teaching and examination regulations. The TER consists of a general section for all study programmes offered by the Fontys Universities of Applied Sciences as well as information specific to individual study programmes. The TER forms a part of the study programme section of the Students' Charter.
Test	Activity used to assess whether a student has certain knowledge, understanding, skills and / or competencies.
Top-class athletes scheme	Scheme for top-class athletes that specifies which students are eligible to benefit from it and the facilities that they may use under it.
Student	A person who is enrolled in the institution, as referred to in Sections 7.32 up to and including 7.34 of the WHW.
Student counsellor	Staff member appointed by the Executive Board who is responsible for looking after the students' interests, providing assistance when problems occur and providing information and advice. The student counsellor is part of the Student Facilities Service (*Dienst Studentenvoorzieningen*).
Study Career Centre	Service provided by the Student Facilities Service (*Dienst Studentenvoorzieningen*) to help students with issues involving admission, transfer to another study programme / institution or the termination of their studies.
Students' Charter	The charter containing the rights and obligations of students, divided into an institution-specific section and a study programme-specific section.
Student entrepreneur scheme	Scheme which is intended to help Fontys students who are deemed student entrepreneurs to combine entrepreneurship and study.
Study career counsellor	Counsellor who helps students with issues such as planning their studies, taking the right approach to their studies, making the right choices and the progress of their study careers.
Study career support	Support system that focuses on the individual student's development. The student is encouraged to reflect on his own development as a future professional and to take responsibility for this development.
Study check advice	Advice provided to a prospective student who has participated in the study check with regard to his choice of Bachelor's.
Study check	The activity offered by Fontys whereby the prospective student is given advice with respect to his choice of study programme. The study check consists of at least two

	components: a digital questionnaire and a consultation to discuss the results of the questionnaire.
Study load	The standardised time investment expressed in units of 28 study load hours related to a study programme.
Study programme	A coherent totality of education components aimed at achieving the well-defined objectives in the area of knowledge, understanding and skills which the person completing the study programme should possess. Every study programme is recorded in the CROHO.
Study programme minor	A minor which can only be taken by students from a specific domain or study programme and which highlights one particular theme.
Study programme profile	The entire set of final qualifications for which the study programme provides training or, in other words, the professional competencies expected of a beginning professional.
Unit of study	Part of a study programme that is concluded with an interim examination as referred to in Section 7.3(2) of the WHW or an additional assessment carried out by the Examination Board, as referred to in Section 7.10(2) of the WHW. Units of study may relate to the assessment of one or more competencies, a component of competencies (knowledge, understanding, skills, attitude) or a combination of competencies or of a minor. Students are awarded the relevant credits on passing the interim examination for the unit of study.
WEB	Adult and Vocational Education Act (*Wet Educatie en Beroepsonderwijs*, WEB; Bulletin of Acts and Decrees 507, 1995, and later supplements and amendments).
WHW	The Dutch Higher Education and Research Act (*Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek*, WHW; Bulletin of Acts and Decrees 593, 1992, and later supplements and amendments).

Section 2 Admission to a Bachelor's programme

Article 2 Required prior qualifications

1. Only students with diplomas awarded on completing pre-university education (*VWO*) or senior general secondary education (*HAVO*), with profiles, or senior vocational education (*MBO*) in middle management as well as students that have completed specialist training or a vocational training programme designated by a ministerial regulation may be admitted to a Bachelor's programme *(Section 7.24 of the WHW)*. Additional conditions for admission apply if a shortened programme is offered. Those conditions are set out in Article 7.
2. Students with a certificate awarded on completing a foundation year or passing the final examination of a higher professional education (*HBO*) or academic higher education (*WO*) study programme are also entitled to be admitted to a Bachelor's programme at a university of applied sciences. Students must, however, also meet any applicable requirements regarding their previous qualifications (paragraph 4) and any other additional requirements imposed (paragraph 5). *(Section 7.28 of the WHW.)*
3. All citizens that have access to education offered by research universities or universities of applied sciences in a country that has ratified the Convention on the Recognition of Qualifications concerning Higher Education in the European Region may also be admitted to a Bachelor's programme, without prejudice to the provisions in paragraphs 4 and 5 of this article and the provisions of Article 3. This right to enrolment does not apply if the Executive Board can prove that there is a substantial difference between the general admission requirements in the territory of the country concerned and the general requirements under or pursuant to the WHW. *(Section 7.28 of the WHW.)*
4. Dutch previous qualifications: The previous qualifications of students seeking enrolment in a Bachelor's programme are subject to the following additional requirements in respect of HAVO and/or VWO diplomas and for MBO diplomas. In the case of deficiency/ies, students have the opportunity to make use of the deficiency assessment possibilities the Bachelor's programme offers.
   a. The following additional educational entry requirements apply to students seeking admission on the basis of a HAVO or VWO diploma (Section 7.25(1) of the WHW).

Study programme	Culture and Society	Economics and Society	Nature and Health	Nature and Technology
Mechatronics, Mechanical Engineering				
havo profile	-	-	Physics, or Nature, Life & Technology (NLT)	+

vwo profile	-	Physics	Physics, or Nature, Life & Technology (NLT)	+

Industrial Design Engineering				
havo profile	-	Physics	Physics, or Nature, Life & Technology (NLT)	+
vwo profile	-	+	+	+

Information Technology				
havo profile	+	+	+	+
vwo profile	+	+	+	+

Logistics Management				
havo profile	(Economics or Management & Organisation) + (Maths a or Maths b)	+	Economics or Management & Organisation	Economics or Management & Organisation
vwo profile	Economics or Management & Organisation	+	Economics or Management & Organisation	Economics or Management & Organisation

Logistics Engineering				
havo profile	-	+	+	+
vwo profile	-	+	+	+

+ = automatically admissible, - = not admissible

b. Students who hold an MBO level 4 diploma have the right to admission if the diploma is in a related sector (Section 7.24(3) of the WHW). Students who do not hold an MBO level 4 diploma in a related sector may be admitted if it can be established by means of an assessment conducted before the study programme commences that they have satisfied requirements that are commensurate in terms of content (Section 7.25(5) of the WHW). Domains that are deemed not to be related are:

- MBO domain Technology and the Processing Industry for the HBO sector Economy
- MBO domain Trade and Entrepreneurship for the HBO sector Healthcare
- MBO domain Trade and Entrepreneurship for the HBO sector Technology
- MBO domain Economics and Administration for the HBO sector Healthcare
- MBO domain Economics and Administration for the HBO sector Technology
- MBO domain Care and Wellbeing for the HBO sector Economy
- MBO domain Food, Nature and Living Environment for the HBO sector Economy

Source: CROHO register, on the internal portal of Fontys Legal Affairs Department.

c. Admission requirements German previous qualifications:

Study programme	Fachhochschulreife	Abitur
All	+ (theoretical)	+

5. There are no additional requirements to enrolment in a Bachelor's programme(Section 7.26 and 7.26a of the WHW).
6. Students who are 21 or older at the start of the study programme and do not meet the requirements regarding their previous qualifications and have not been exempted from the requirements may still be eligible for exemption after taking an entrance examination. *(Section 7.29 of the WHW.) (Also see Article 3(**5**).)* The aim of this examination is to determine the student's suitability to take part in the Bachelor's programme as well as the student's command of the Dutch language. The study programme makes use of the Differential Ability Test (DAT), along with subject matter assessment. Students wishing to take the entrance examination must meet the following requirements:

- DAT:
  Minimum scores per aspect of this test can be found in the table below.

Aspect (DAT)	Minimum score
Word pictures	Middle (minimum of 4)
Use of language	Middle (minimum of 4)
Analogies	Middle (minimum of 4)
Series of figures	Middle (minimum of 4)
Spatial awareness	Middle (minimum of 4)
Arithmetic	Middle (minimum of 4)
Practical awareness	Middle (minimum of 4)

Speed & Accuracy	Middle (minimum of 4)

- Subject matter assessment

Study programme	Dutch at level Nt2, programme II	English at havo level	Mathematics at math a or math b havo level	Physics at physics havo level
Mechatronics	+	+	+	+
Industrial Design Engineering (Dutch)	+	+	+	+
Industrial Design Engineering (English)				
Mechanical Engineering	+	+	+	+
Information Technology	+	+	+	
Logistics Management	+	+	+	
Logistics Engineering	+	+	+	

+ = requirement for admission (in the entrance examination)

Students will be notified of the results of the entrance examination within two weeks. If the prospective student applies for enrolment on the basis of an experience certificate (issued by an acknowledged Recognition of Prior Learning (RPL) centre), this certificate will be used to determine the student's suitability to take part in the Bachelor's programme as well as their command of the Dutch language.

7. The Executive Board has declared that 'old' HAVO and VWO diplomas with subject combinations chosen by the pupil are at least equivalent to the 'new' diplomas with subject cluster requirements. Consequently, prospective students holding these types of diploma may be admitted. Students must, however, meet any requirements regarding previous qualifications (paragraph 4) and any further additional requirements (paragraph 5). (Section 7.28 of the WHW.)
   The institute director has declared that the 'old' HAVO and VWO diplomas with old profiles are equivalent to 'new' diplomas with profile requirements. Consequently, prospective students holding these types of diploma may be admitted. Students must, however, meet any requirements regarding previous qualifications (paragraph 4) and any further additional requirements (paragraph 5). (Section 7.28 of the WHW.)
8. Where a student applies for admission to a study programme based on a diploma other than one of the diplomas referred to above, the institute director will decide whether that diploma is equivalent and if it grants access to the study programme. Students must, however, meet any requirements regarding previous qualifications (paragraph 4) and any further additional requirements (paragraph 5). *(Section 7.28 of the WHW.)*
9. Students who are admitted by virtue of a diploma as referred to in paragraphs 2, 7 or 8 of this article will be subject to an additional assessment to determine whether they meet the knowledge and skills requirements as referred to in paragraph 4 and 5 of this article. (Section 7.28 of the WHW.)
   Students must meet the requirements of this assessment prior to enrolment.
10. Admission to the study programme is not subject to an admission quota in accordance with Sections 7.53, 7.54, 7.56a and 7.57a of the WHW.

Article 2a Study choice check and study choice advice

1. The study choice check consists of at least the completion of a digital questionnaire and a contact moment with the study programme.
   International students as referred to in the Study Choice Advice Rules will be offered a contact moment (video call or by request face-to-face). Furthermore international student can participate in a webinar.
2. Within 4 weeks following registration, the prospective student will receive a link to the digital questionnaire. Within 4 weeks following completion of the questionnaire, the prospective student will receive an invitation to the contact moment with the study programme. International students as referred to in the Study Choice Advice Rules will receive further information on the study choice check within 4 weeks following registration.
3. The digital questionnaire can be completed in the period from January until September. The study choice activities for international students will take place in the period between January and September.
4. The contact moments with the study programmes are planned in the period from January until September.
5. The contact moment will consist of a 30-minute interview, preferably conducted in person. Students resident abroad with a travel distance of more than 75 km will be invited for a telephone or video-interview.
6. The study choice advice will be sent to the prospective student by e-mail within ten working days of the contact moment.

7. The study choice advice is non-binding for prospective students who apply by no later than 1 May. Students who apply after 1 May will not be permitted to enrol, except in the case of a situation as referred to in Article 2(2) or of a student as referred to in Article 3(3) of the **Study Choice Check Rules**
8. The **Study Choice Check Rules** determine the categories of students for whom the study choice advice is not obligatory. The study choice advice is likewise not binding for those groups of students.

Article 3 Requirements regarding foreign diplomas/international students

1. Holders of a foreign diploma may not sit tests for which credits are awarded in the foundation year of a Dutch-taught study programme before having demonstrated to the Examination Board to have an adequate command of the Dutch language. (Section 7.28 of the WHW.)
   Command of the Dutch language must be at Nt2, programme II. The certificates for Dutch as a foreign language, Higher Education Language Proficiency Subject Cluster and Academic Language Proficiency Subject Cluster) (CNaVT- PTHO and PAT) can be viewed as equivalents.
2. The institute director may also decide that a student with a foreign diploma may only be admitted after the student has demonstrated that he or she has an adequate command of the Dutch language. (Section 7.28 of the WHW.) Command of the Dutch language must be at Nt2, programme II
   The certificates for Dutch as a foreign language, Higher Education Language Proficiency Subject Cluster and Academic Language Proficiency Subject Cluster) (CNaVT- PTHO and PAT) can be viewed as equivalents. Exceptions are the study programmes Mechatronics, Industrial Design Engineering and Mechanical Engineering. Here, no entrance requirement will be imposed on Dutch-language skills for foreign students, on condition the student is not older than 21 years at the moment of registration. Dutch language will be taught in the foundation course phase as (part of) teaching units.
3. Students with a foreign diploma seeking admittance by virtue of an entrance examination as referred to in Article 2, paragraph 6, must be at least 21 years of age.
4. Foreign students from outside the EU who are 18 years of age or older on the date of their first enrolment must have a valid residence permit. (Section 7.32 of the WHW.)
5. Foreign students with a residence permit are required to earn at least 50% of the available credits each year. The IND will be informed if the student fails to meet this requirement, unless there are special circumstances due to which the student was unable to meet this requirement. Such a notification may be withheld once during the course of each study programme.
6. According to the Code of Conduct regarding International Students, international students[1] seeking admittance to an English-taught study programme must be able to prove that their command of the English language is at least equal to the following scores:

IELTS	6.0
TOEFL Paper	550
TOEFL Internet	80
TOEIC	670

   (provided the student has passed ‘Speaking and writing’ and ‘Listening and Reading’ components.)

Cambridge ESOL	FCE-C (scale 169 – 172), FCE-B (scale 173-175)

   Exemption from this requirement can be awarded if the international student’s preparatory education was followed in a country where English is the official language and language of instruction.
7. Various bachelor programmes at FHTenL are taught in a variant in which German is the working language for the foundation course phase. Students who opt for this variant must either have a school diploma from a German school or have passed one of the following certificates:
   - TestDaf at level 4 (TestDaf = Test Deutsch als Fremdsprache)
   - DSH at level 2 (DSH = Deutsche Sprachprüfung für den Hochschulzugang)
   - ZOP (Zentrale Oberstufenprüfung (this test has no longer been administered since the beginning of 2012)

Article 4 Professional activity requirements

1. The study programme only exists as a full-time programme, in which case the professional practice environment is not subject to any requirements.

Section 3 Intake assessment, exemptions, short track

Article 5 Intake assessment

1. Students entering a study programme may beoffered an intake assessment if they have competencies previously acquired elsewhere. Students may use this evidence to substantiate a request for exemption before the Examination Board, see article 6.

[1] According to the Code of Conduct regarding International Students, ‘an international student’ is a student with a foreign nationality.

2. Students who re-enrol after an interruption or re-enrol in between in a study programme in which they were previously enrolled will be required to take an intake interview to determine which part of the study programme still has to be completed. No intake interview is needed if agreements regarding re-enrolment in the study programme were already made with the Executive Board at the time that the student interrupted his study. If a student enters a study programme during the foundation year, agreements will be made on the period of time the student will be granted before he or she receives advice regarding the continuation of studies.
3. A study programme will be drawn up based on the assessment of the competencies previously acquired, which assessment is subject to the approval of the Examination Board.

Article 6 Exemptions

1. The institute director can exempt a student from the foundation year examination if the student holds a diploma, Dutch or foreign, which is at least equivalent. (Section 7.30 of the WHW.)
   (In the case of students who hold a foreign diploma, also see Article 3.)
2. Students who believe they are eligible for an exemption must submit an application to that end to the Examination Board. The Examination Board may grant an exemption from one or more interim examinations on the grounds of a review of an assessment or the holding of a diploma, certificate, accreditation of prior learning or similar document, such as proof of results achieved in a study programme taken at a research university or university of applied sciences and/or proof of administrative activities, with which the student can show that he or she has already met the requirements of the test in question. Exemptions are recorded in the study progress system. The period of validity of the exemption is stated in the exemption decision.
3. The Examination Board can grant an exemption from a minor based on the certificate of an accredited Bachelor's or Master's programme or on a document proving that the student completed a minor in an accredited Bachelor's or Master's programme, so long as this minor does not overlap substantially with the student's current Bachelor's programme. Exemptions based on study results from an accredited Bachelor's or Master's programme can only be granted if the student has documented proof of obtaining at least 30 credits in this study programme (for a Bachelor's programme, this requirement refers to the second and third year) and if these results do not overlap substantially with the student's current Bachelor's programme. A student who has taken part in the Fontys Empower programme and has successfully completed all components of that programme may, on that basis, be granted an exemption for a minor provided the student submits a request to that effect and this possibility has been set out in Article 15(5).
4. The institute's exemption policy can be found on the portal of the institute.

Article 7 Short-track/tailored study programmes

1. Students who believe they are able to proceed with and/or complete their study programmes at an accelerated pace may submit an application requesting such to the Examination Board. The study career counsellor's advice must be enclosed with the application.
2. Students from WTB, MEC, IPO, LE and LM are offered the opportunity to choose a different study path in year 3 and 4: the BILL programme, a practice-based course. From the students who register for the BILL programme at the end of the 2nd year, a maximum of 30 students will be selected on the basis of an interview and according to the conditions below:
   1. Sufficient study results: A student may only start the BILL programme if they have passed the propaedeutic year (60 EC).
   2. Multidisciplinarity: Students must be equally divided from the various study programmes, so that multidisciplinarity is guaranteed.
   3. Motivation: The student must have demonstrated, in an interview with the BILL team, that he is sufficiently motivated to participate in BILL.See also article 14.3

Section 4 Study career counselling, functional disability, administrative activities, top-class athletes scheme, student entrepeneurship

Article 8 Study career counselling

1. Every student is coached by a study career counsellor.
2. In consultation with the study career counsellor, the student decides how best to work on his or her development and how to shape the learning process.
3. The student consults with the study career counsellor on the progress of the learning process.
4. The study career counsellor conducts support and orientation interviews with the student in the foundation year. Reports are drawn up of these interviews, copies of which are given to the student. The student must sign these reports to indicate his agreement or, if applicable, with the note 'reviewed and not approved'.

5. Students may submit a request to the institute director to be assigned a different study career consultant if they can give arguments for this.
6. Students enrolled in their foundation year whose mother tongue is not Dutch can apply to the Examination Board to be allowed extra time when they sit tests in the first year of the foundation phase. Extra time to sit tests will only be granted to students who can prove that they use facilities to improve their command of the Dutch language. This rule applies in an adapted version for the language variants of the study programmes in which the German language is the working language in the foundation course phase: in these variants, students for whom German is the second language can apply to the Examination Board to be allowed extra time when they sit tests. This rule does not apply for German students completing tests formulated in two languages (i.e. both in Dutch and in German).

Article 9 Special facilities for students with a functional disability

1. Students with a functional disability are legally entitled to effective adjustments, unless such adjustments would burden the institution disproportionally. *(Section 7.13 of the WHW.)*
2. These adjusted facilities must be aimed at the removal or restriction of any obstacles and encourage the independence and full participation of the student as much as possible. The adjusted facilities may relate to the study programme (including internships), the timetables, and type of study programme, the tests and educational tools.
3. A student who seeks to have adjusted facilities must submit a written and substantiated application in good time to the Examination Board. If necessary, the Examination Board will seek an expert's advice (such as a student counsellor) before taking a decision. If the Examination Board deems it necessary before taking a decision, it may confidentially inspect the medical certificate that may be available with the student counsellor, unless the student objects.
   The Examination Board must decide within four work weeks after receipt of the application, unless it requires further inquiry, in which case the student will be informed as to when more clarity can be given with respect to his application.
4. In the case of a protracted or chronic disability, such an application will only have to be made once for the entire study programme; in all other cases once per testing period or academic year. In its decision to grant the facilities, the Examination Board may also rule that these will apply for the entire duration of the student's study or that the student is to consult with his study career consultant annually to discuss whether the facilities are still adequate.
5. At the beginning of the academic year the institute will inform students regarding the possibilities for special facilities. Students will be informed of their right to consult a student counsellor.

Article 10 Students with board memberships

1. Student can include any board memberships as part of their portfolios. In order to do so, they must describe, in consultation with their study career counsellors, how the board membership can contribute to the acquisition of one or more competencies of their Bachelor's programme.
2. Board memberships can be listed on the diploma supplement. The student must request the listing at least two weeks prior to the graduation *ceremony* via the study programme administration. At the request of the student's study programme, the Centre for Administrative Activities (CAA) can confirm that the student has been an active board member of a CPC . In the case of board memberships of a PC or IPC, the study programme can request confirmation from the relevant IPC or PC.
3. Students who believe that their board memberships demonstrate that they have the knowledge, understanding and / or skills, etc. that are assessed in particular tests for which credits are awarded may apply for an exemption from such tests from the Examination Board.
4. A student may apply to be included under the Profiling Fund Scheme (FSS Scheme) on the basis of his administrative activities and submit a request to his institution for an attendance fee or for a board membership scholarship from the Profiling Fund Board (FSS Board).
   See also Article 14 of the **Participation Regulations on the participation councils and PC'S**.

Article 11 Top-Class Athletes scheme

Students who have been granted a Top-Class Sport or Talent status are entitled to facilities from the Top-Class Athletes Scheme. Facilities regarding the adjustment of tests or test timetables, an adjusted arrangement regarding compulsory attendance, working in groups and an adjusted internship must be sought from the Examination Board. The responsible person Top-Class Athletes will conduct an intake with the student, and informs the student about the procedure. The Examination Board has the necessary contact information. Advice regarding the continuation of studies may be deferred for students with a Top-Class status (see Article 32).

Article 11a Student entrepeneurship

Students who are eligible for the Student Entrepreneurship Scheme may apply to the Examination Board for facilities regarding, among others, the adjustment of tests or test timetables, an adjusted arrangement regarding compulsory attendance for educational activities, working in groups and an adjusted internship. These facilities should be sought from the Examination Board.
Advice regarding the continuation of studies may be deferred for students with entrepreneur status (see article 32)

Section 5 Study programme content

Article 12 Study programme profile – main subjects/differentiations – occupational requirements

1. The study programme is based on a study programme profile. The exit qualifications of the study programme are described in the study programme profile. These can be found via the following links: MEC FT, ICT, IPO, IDE, LM&LE, WTB FT.
2. The study programme has the following main subjects:
    - Information Technology has the main subjects Software Engineering and Business Informatics.
    - Logistics Management has the main subject Food and Flower Management. Students may follow this main subject at the FIBS institute.
    - Starting September 2020 Industrial Design Engineering has the main subjects Industrieel Product Ontwerpen and Industrial Design Engineering.

3. The study programme is based on the following principle:

Study programme	Principle
Mechatronics	AB/RC
Industrial Design Engineering	RC
Mechanical Engineering	AB/RC
Information Technology	RC
Logistics Management	RC
Logistics Engineering	RK

RC = Roman Catholic
AB = *"Algemeen Bijzonder"*. This entails that the education as given, is provided at a special ("*bijzonder"*) school (because Fontys is a foundation), but that the educational programme is not tied to philosophical or social trends.

4. The study programme does not impose any specific occupational requirements.

Article 13 Study programme layout

1. Each Bachelor's programme has a foundation year phase with a study load of 60 credits, which is concluded with the foundation year examination. The function of the foundation year is to orientate the student, allowing him or her to make suitable choices.
2. A Bachelor's programme has a study load of 240 credits with a nominal course load of 60 credits per academic year and consists of a major and a minor. The major has a study load of 210 credits. The minor has a study load of 30 credits. For students following the BILL programme the bachelor's programme consists of a major with a study load of 240 credits.

Article 14 Overview of units of study and credits

1. Every study programme consists of a coherent set of units of study, which are components of a study programme concluded with an interim examination. Units of study cannot exceed 30 credits.
   In year 3 and 4 two different learning routes are offered: 'course-based learning' and 'practice-based learning'. The learning outcomes of both learning routes are the same.
    - '**Course-based learning'** means that the study programme is structured in a supply-oriented way and is offered as a fixed 'regular' educational programme (blueprint). The course-based programme has a studyload of 240 credits (semesters 1 to 8)
    - **'Practice-based learning'** means that the study programme is set up on the basis of real-life practical business challenges and is offered as a 'BILL (Business Innovation Learning Lab) programme' to a maximum of 30 students from six study programmes located on the Venlo campus (of the FIBS and FHTenL institutes). The BILL programme is only offered in English. Units of study belonging to this programme are based on the four HBO standards. The practice-based programme, also called BILL, equals 120 credits of studyload (year 3+4). More information about the BILL programme can be found in the annex.
2. Only whole credits are awarded for units of study. Via the following links the distribution of credits can be found: MEC FT, ICT, IPO, IDE, LM&LE, WTB FT, BILL.

3. Study programmes and tests conducted in a foreign language are subject to the Code of Conduct for Study Programmes taught in a Foreign Language, which is stated in the overview of units of study.

Article 15 Content of minors and other special programmes

1. Students are not restricted in their choice of a minor, whether the minor is a minor specific to a study programme or one offered across Fontys, provided there is no overlap with the major programme. The institute offers the following study programme minors:

Offering school	Programme/ Minor	IPO	IDE	WTB	MEC	ICT	LM	LE
FHTenL	Smart Innovation (SI)	+	+	+	+	+	+	+
	Design for Engineers (DFE)	+	+	+	+	+	+	+
	Composite minor	+	+	+	+	+	+	+

+ = students of the study programme in question may select the relevant minor.

The institute also offers the following fontys-wide minors:

Offering school	Programme/ Minor	IPO	IDE	WTB	MEC	ICT	LM	LE
FHTenL	E-preneurship (EPREN)	+	+	+	+	+	+	+
	A-systems (High Tech Agricultural Solutions) (HTAS)	+	+	+	+			
	Customs Management in International Business (CUMIB)	+	+	+	+	+	+	+

The following study programme minors from other Fontys programmes are accessible for students from the following FHTenL study programmes:

Offering school	Programme/ Minor	IPO	IDE	WTB	MEC	ICT	LM	LE
FH BEnT	Trainer and Coach in Technology*	+	+	+	+	+	+	+
FPH	Centre of Expertise Health and Technology *	+	+	+	+	+	+	+
FIBS	International Management	+	+	+	+	+	+	+
FIBS	EBM – European Business Management	+	+	+	+	+	+	+
FH ICT	Study programme minor *					+	+	+
FH ENG	Study programme minor *	+	+	+	+			
FH TNW	Study programme minor *	+	+	+	+			

+ = students of the study programme in question may select the relevant minor.
* = agreed upon between affected directors; more information about the minor can be requested from the school

2. Students who want to take a minor abroad or an external minor must seek the Examination Board's permission regarding their personal choices with respect to the minor prior to its start. Participation in a minor requires students to have passed the foundation year examination, unless the Examination Board grants them permission to take the minor without fulfilling this requirement. The minor must be taken in the third year of study.
3. Enrolment in a minor must be done before the start date as stated on the Fontys minor portal or in the Minor Regulations.
4. High-achieving students can take a minor on top of the regular study programme of 240 credits. This is subject to the following conditions:
   - The student submits a request to examination board in which he adequately motivates:
     - why he wishes to follow two minors;
     - which second minor he wishes to follow
   - The student studies in the nominal time
   - The student is eligible for the distinction cum laude in the main study phase.

   A minor that has been passed will be mentioned on the diploma supplement.
5. The Fontys Empower reorientation programme is open to students who have hit a roadblock in their studies. The programme has a study load of 30 ECTS credits. The regulations for this reorientation programme can be found on the Pulsed portal: ***https://fontys.nl/fontyshelpt/Andere-studie/Empower-TEC-kickstartprogramma.htm*** A student who has taken part in the Fontys Empower programme and has successfully completed all components of that programme may, on that basis, be granted an exemption for a minor, provided the student requests an exemption from the Examination Board of the programme in which they are enrolled, unless that programme does not offer a minor.

Article 16 Education components

1. Via the following links, an overview of the education components that are part of the study programme is offered: MEC VT, ICT, IPO, IDE, LM&LE, WTB VT, BILL
2. The education components of the minors are described in the minor regulations. The regulations governing the minors offered across Fontys can be found at www.fontys.nl/minors. The regulations governing minors specific to study programmes can be found on the website of the offering school. The regulations governing minors specific to FHTenL are included in appendix 4.
3. Any entry requirements a student must meet before participating in an education component are stated in the overview as referred to in paragraph 1.
4. Participation in education components in the post-foundation year phase is allowed after passing the foundation year examination. The Examination Board may grant permission to a student who has not passed the foundation year examination to participate in education components in the post-foundation year phase. (Section 7.30 of the WHW.) The Examination Board will grant all students that received a B study advice (after one year of study) automatic permission to the post-foundation year, see article 32.
5. Enrolment in the education components is not required, except for internship and graduation. Registration for the internship and the graduation project is outlined in the Internship/Graduation Regulations, together with the entrance requirements for internship and graduation. See the specific regulations on the institute's portal.
6. The timetable is announced on the institute's portal no later than 3 weeks prior to the start of classes.
7. Students who have registered for an education component must ensure that they meet the entry requirements of that component. The overview in Article 16, paragraph 1, indicates the education components to which requirements apply for participation as well as the nature of these requirements. If the requirements concern compulsory attendance, students who are eligible for the top-class athletes scheme or the student entrepreneur scheme can apply to meet this requirement in a parallel group or for exemption from this obligation (see also Article 11 and 11a).

Article 16a – Evaluation of teaching

The teaching provided during the study programme is evaluated in the following way:
Each study programme has its own evaluation calendar, in which is stated when and how the teaching will be evaluated. The calendar can be consulted via the portal of the quality committee. It is the result of our quality policy, which can also be found on that portal.

Section 6 Tests, assessment and study progress

Article 17 Types of tests

1. The study programme has formative and summative tests. Only summative tests are linked to credits. Tests with credits result in the immediate award of credits when passed. Credits of teaching units that are assessed with multiple tests will be rewarded after passing all tests. A competency examination is – when used- a special form of a test with credits.
2. A test comprises an examination conducted by the examiner of a student's knowledge, insight, skills or competencies as well as an assessment of the examination results.
3. Tests are conducted in writing or orally or in a fashion that combines both writing and oral delivery (e.g. product and presentation/interview).
4. An oral examination, including an assessment, is conducted by at least two examiners, with one of them acting as the first examiner designated by the (chairman of the) Examination Board. A report must always be drawn up of an oral test to enable an assessment of the quality afterwards. A test may be conducted by a single examiner only following the approval of the Examination Board and provided the student does not object. In the case of graduation and internship, both assessed with –amongst other tests- an oral examination, there is only one examiner, who is assisted by the supervising lecturer, external commissioner (in graduation) and the company supervisor. Further details can be found in the regulations for internship and graduation.
   An oral test is held in public. Interested parties who wish to attend an oral test must submit a request to that effect to the examiner(s) at least two weeks before the test is held. The examiner must inform the student who is taking the test. If the student objects, the request to attend the oral test will in any event be rejected. Any rejection by the examiner will be substantiated.
   When the Examination Board offers students the possibility to sit an additional oral test by way of replacement of a regular test, it will always be conducted and assessed by two examiners.

Article 18 Overview of tests

Via the following links, a list is provided of which tests are offered: MEC FT, ICT, IPO, IDE, LM&LE, WTB FT, BILL

Article 19 Tests and assessments

1. The Examination Board will designate one or more examiners for each test. An examiner can also be an external expert. Each competency examination will be assessed by at least one assessor who is not involved in that student's study career counselling.
2. The assessment of minors is described in the minor regulations. The examiner of the minor determines whether a student has passed the tests. The Examination Board of the coordinating institute that offers the minor must determine whether the student has passed the minor and ensure that the student receives a certificate. The result achieved for the minor is forwarded to the programme administration of the study programme in which the student concerned is enrolled.
3. Preceding the first summative assessment of each study year, the student hands in a signed authenticity statement. In addition the student takes care of a signed authenticity statement prior to handing in the internship and graduation report. The procedure and statement (format) can be found on the portal of the examination board.

Article 20 Content of tests, duration of the test, test aids and test timetables

1. The content of the test, including the learning objectives, is described in the module manuals/theme books of the relevant units of study and this information is made available to students at least 3 weeks before the test. After publication, the test information will not be changed significantly before the test.
2. The examiner determines the period of time allowed to students to take the test as well as any aids that students may use during the test, subject to the guidelines and instructions provided by the Examination Board. This information must be stated on the examination paper, and/or in the relevant guidelines. The institute's surveillance guidelines can be found on the portal.
3. The test timetable, also including the resit timetable, for a particular teaching period must be announced via the portal of the study programme, at least 3 weeks before the start of that test period. The test timetable also contains dates and resit dates for the handing in of assignments, in the case these assignments are used as a summative test.

Article 21 Sitting competency examinations

There are no competency examinations; all tests are linked to the end competencies or end qualifications of the course.

Article 22 Registration for tests

Registration for tests is not required.

Article 23 Proof of identity during tests

Students must prove their identity at every test by showing a valid form of ID other than a student ID card. This information can also be found in the Examination regulations, as published on the portal.

Article 24 Test marking system

1. The assignments, questions, assessment norms and criteria are determined by the examiners with due regard for the guidelines and instructions provided by the Examination Board and according to the institute's Assessment policy. The examiner conducts the test and determines the result on the basis of the determined assessment standards and assessment criteria.
2. If one and the same test is conducted and assessed by more than one examiner, the Examination Board will ensure that these examiners adhere to the same standards and criteria.

Article 25 Test results

1. The test results must be announced in writing to the student within ten days of the date of the test, apart from the exceptions laid down in the Teaching and Examination Regulations. The study programme administration is responsible for announcing the test results via the study programme progress system The privacy of students will be respected when test results are announced.
2. Students are entitled to inspect all assessed tests and assessment criteria used and to be given feedback on the results.
3. Inspection is subject to the procedure described below.
   Inspection of written tests will take place within 5 working days (ideal) following announcement of the test results, but at least 3 working days before the relevant resit. Preferably, inspection is timetabled, or by appointment.
4. The feedback procedure can be found in the module manuals/ theme books of the specific teaching unit.

5. Students can receive a written notification of their results, from which students may derive rights, once a year, by sending an email to the study programme administration: fhtenl-bedrijfsbureau@fontys.nl. The notification includes an official stamp and is signed.

Article 26 Inability to sit tests

1. Students who have acted in accordance with the registration procedure described in Article 22 but who are unable to sit the test for reasons beyond their control, the legitimacy of which reasons is subject to assessment by the Examination Board, may apply to the Examination Board to sit the test within a period of time to be set by the Board.
2. The application referred to in the previous paragraph must be submitted in writing to the chairman of the Examination Board and include the necessary evidence (see article 38 (3)). The Examination Board will then take a decision and inform the student concerned. If the request is granted, the Examination Board will set a date, time and place for the test. Any rejection of the request will be substantiated and the student will be informed of his right to appeal. In assessing the request, the Examination Board's primary criteria are the obstruction of the study progress and the student's personal circumstances.
3. If such a request relates to a test of a minor offered across Fontys, the student must direct the request to the coordinating institute responsible for the minor, as described in regulations governing the minor.

Article 27 Request for a review

1. Students who do not agree with an assessment can submit a request for a review of the assessment to the Examination Board within 4 working weeks after the date of the assessment (see Article 38 of these Teaching and Examination Regulations and Article 44 of the Students' Charter). The Examination Board must take a decision within 4 work weeks at a maximum. The Examination Board must make a decision within four work weeks at a maximum.
2. Students may also appeal directly to the Examination Appeals Board within 6 calendar weeks after the date of the assessment via www.fontys.nl/studentenloket. (see Article 45 and Article 46 of the Students' Charter).

Article 28 Resits

Paragraphs 1 to 5 apply to course-based programmes. Paragraph 6 applies to practice-based programmes (BILL)

1. Tests are conducted at least twice an academic year. If the student has not participated in the first test moment, whether or not as a result of force majeure, the student must first make use of the second test opportunity. Students can resit components marked with a pass no more than once, and at least once, in which case the highest mark will count, as can be retraced in the study programme progress system. For the practical tests referred to below, full resits of the teaching unit only take place in the earliest possible teaching period:

In the next semester	Internship and Graduation
In the next study year	Projects, unless stated otherwise in the module manuals.

2. At least two opportunities to take tests that assess the material they have learned will be offered. Following these two test opportunities, the material to be studied for the test may be adapted to the material offered in the teaching block prior to the test. An up-to-date description of the material to be tested can be found via the module manuals.
3. The study programme gives students one extra resit opportunity of one or more semester 7 units of study, when the following criteria apply:
    1. The student expects to graduate nominally
    2. The student has not passed one or more teaching units in semester 7
    3. The student has used both the regular test and the resit opportunities for these teaching units.

    The study programme will plan these resits in the test(year)schedule as an 'extra' resit and will send the '*bedrijfsbureau'* a list of eligible participants. The student does not have to officially request this with the Examination Board.
4. In the case that a student only has to pass one more teaching unit (project teaching units excluded), the study programme strives for a resit opportunity preferably planned within 3 months after passing the second to last teaching unit, provided the student participated in at least 80% of the offered assessment opportunities for that specific teaching unit. The student needs to officially request this with the Examination Board.
5. The study programme offers an extra resit for selecting teaching units at the end of the second semester.
6. The study programme offers two summative assessments, to be scheduled by the student, in consultation with the coach. The student has one resit opportunity a year for each assessment. Should

there be insufficient time to plan a resit at the end of the study year, the student and assessment committee can decide to schedule the resit in the following study year.

Article 29 Period of validity of results

1. The period of validity of results is ten years. Results achieved for interim examinations can only lapse if the understanding / knowledge / skills to which these interim examinations relate can be shown to be obsolete. Understanding, knowledge and skills that were assessed more than 10 years ago can evidently be shown to be obsolete. The period of validity of successfully completed interim examinations is: 10 years. The Examination Board may extend this term.
2. In the event of special circumstances as referred to in the Profiling Fund Scheme, the period of validity of interim examinations will as a minimum be extended by the duration of the support granted on the basis of that scheme.
3. If the study programme has been substantially altered, details on how this term will be restricted can be stated below, whether in the form of a written decision issued to a student or incorporation in the Teaching and Examination Regulations, if it applies to the entire cohort.

Article 30 Final paper - Knowledge bank

Students who write a final paper as part of the study programme must submit the paper digitally, as one document, to enable its filing in one or more digital knowledge bank(s). On submission of the final paper, students must also attach the signed 'Permission form for the filing and making available of a final paper in a digital knowledge bank'. With this form, students give their permission for the final paper to be entered in the knowledge bank and for it to be made available to potential users at the university of applied sciences and elsewhere. On submission of the digital final paper, the student and / or client and / or organisation offering the internship may indicate their objection to the final paper being entered in the databank.

Article 31 Study progress

The study programme is responsible for recording the test results in the programme administration. Additionally, students must also keep records of the results.

Article 32 Advice regarding the continuation of studies

1. During the first year of enrolment in the foundation (first-year) phase of a study programme and, where possible, prior to the start of the second semester, the student is given advice on his study progress. If the study progress is unsatisfactory, the student will receive a warning and be told that if the study progress continues to be unsatisfactory, he will receive a binding negative advice regarding the continuation of his studies. A reasonable period within which the student must have improved his or her grade point average and the opportunities a study programme offers in that regard are stated in the warning. (*Section 7.8b of the Act.)*
   A student who has not received a warning at that stage may yet receive one at a later point in the first year if he has fallen behind, and will be given a period within which to improve his grade point average. The student will be given a warning in the following cases:
   - the number of credits achieved is $\leq$ 22

   In calculating the number of course credits in the framework of the initial study advice, for the study programmes ICT, MEC, WTB and IPO, the following are counted:
   - already completed teaching units or the credits already awarded as a result;
   - all teaching activities scored with at least a grade 5.5 or the equivalent calculated credits (in the module manuals and in the study progress system, an indication is given of how for each teaching unit the credits are compiled proportionally to the weighting of the teaching activities).
2. The study programme must give students advice regarding the continuation of studies in writing before the end of their first year of enrolment (12 months) in the foundation phase. Advice may be related not only to the continuation of the study programme, but also to the specialisation the student may take. Advice regarding the continuation of studies can be negative (binding negative study advice), meaning that the student's enrolment in that particular study programme will be terminated and that he will not be allowed to re-enrol in the same study programme.
   The study programmes below have a common foundation year:
   - Logistics Management
   - Logistics Engineering.

   Advice regarding the continuation of studies given for a common foundation year applies to the study programmes sharing a common foundation year. Students that receive a binding negative study advice given in a study programme with a common foundation year, are –as a consequence- also not allowed to register for the other study programme sharing the common foundation year.
3. Advice regarding the continuation of studies is based on the student's results in the foundation year. The Examination Board advises the institute director on advice regarding the continuation of studies to be

given. This advice must take into account the student's personal circumstances. Students must report any personal circumstances to their study career counsellors or student counsellors the moment they occur. If the student misses the deadline for reporting special circumstances, the Examination Board will examine whether it was excusable for the student to miss the deadline for reporting those circumstances.
Engaging in top-class sports activities by students who have been granted a Top-Class Sport or Talent status are entitled is regarded as a special circumstance, on the basis of which the delivery of advice regarding the continuation of studies can or will be deferred. A minimum of credits these students must earn in order to be eligible for such postponement has been established.
The practice of running a business of his own by student entrepreneurs who have been awarded student entrepreneur status, as defined in the Fontys Student entrepreneur scheme, is also regarded as a special circumstance, on the basis of which the delivery of advice regarding the continuation of studies is deferred. However, a minimum number of credits which must be achieved to qualify for that deferral may be specified for student entrepreneurs (see also paragraph 4 of this article).
If credits can only be earned with a competency examination, students who have failed to sit the competency examination in the foundation year will be given binding negative advice regarding the continuation of studies, unless there are special circumstances, the legitimacy of which circumstances is subject to assessment by the director. In that case, it may be decided to defer the delivery of advice regarding the continuation of studies based on the individual student's portfolio.

4. The student will be given positive study advice regarding the continuation of studies in the following cases. Students who do not or not completely meet the criteria, will receive a binding negative study advice.

	Positive	
Study programme	Number of credits	Teaching units passed
MEC VT	≥ 45	ELC2
INF	≥ 45	At least one project from year 1, plus teaching unit PRC1
IPO	≥ 45	DSGN2
IDE	≥ 45	At least 5 credits of each of the 6 competences.
WTB VT	≥ 45	MFE2
LE	≥ 45	CAS1.1 + CAS1.4 ór CAS2.4
LM	≥ 45	CAS1.1 + CAS1.4 ór CAS2.4

In calculating the number of course credits in the framework of the initial study advice, for the study programmes ICT, MEC, WTB and IPO, the following are counted:
- already completed teaching units or the credits already awarded as a result;
- all teaching activities scored with at least a grade 5.5 or the equivalent calculated credits (in the module manuals and in the study progress system, an indication is given of how for each teaching unit the credits are compiled proportionally to the weighting of the teaching activities).

Students who have been granted a Top-Class Sport or Talent status as referred to in Article 32(3) must have earned at least 23 credits in order to be eligible for postponement of their study advice.
The minimum number of credits which that must be achieved to qualify for that deferral for student entrepreneurs is 23.

5. Where there are special circumstances as defined in paragraph 3 of this article which may have had an influence on the credits the student obtained, the delivery of advice regarding the continuation of studies may be deferred until the end of the second year of enrolment or until the end of a shorter period. At the end of the second year or the shorter period, there will be a further review of whether the student has met the criteria as defined in paragraph 4.
6. Students who seek the termination of their enrolment during the first year of enrolment will be given a warning from the director stating his expectation that they may not be suitable for the study programme. The director must seek the advice from the Examination Board before doing so. The number of months of enrolment students have left before being given advice regarding the continuation of studies must also be determined in the event the student should decide to enrol in the same study programme at a later date (see also Article 35).

Article 33 Additional provisions concerning binding negative advice regarding the continuation of studies

1. An institute wishing to issue binding negative advice regarding the continuation of studies must make provisions that allow for, among other things, a student's personal circumstances and which are aimed at guaranteeing a student's good progress.
2. Binding negative advice regarding the continuation of studies is valid for a period of 4 years.
3. At the student's request, the institute director may change or withdraw the binding negative advice as referred to in Section 7.8b(3) of the WHW.

4. A binding negative advice regarding the continuation of studies refers to the full-time, part-time and dual forms of the study programme, unless otherwise stated.
5. Each binding negative advice regarding the continuation of studies must expressly state that the binding negative advice only refers to the study programme mentioned and the study programmes that have a common foundation year (see article 32). Each binding negative advice regarding the continuation of studies comes with a referral to either another study programme, the student counsellor or the study choice advisor.

Section 7 Graduation

Article 34 Examinations - certificates - diploma supplement

1. Students have passed the examination of the foundation year, or the study programme if they have passed all units of study which form part of the foundation year, or the study programme, as referred to in article 14. *(Section 7.10 of the WHW.)*
2. Certificates are given at the following occasions:
   - on passing the foundation year examination;
   - on passing the study programme's final examination.
3. The certificate will only be given after it has been established that the student is enrolled and has paid his or her tuition fees for all the enrolment years. *(Section 7.11 of the WHW.)*
4. After passing the examination, the Examination Board awards the certificate. The certificate is dated on the date of the student's final academic activity. The certificate of a study programme comes with a diploma supplement. This diploma supplement may include mention of a student's board activities (see Article 10). Students who have served as members of the Examination Appeals Board may also request that activity to be included on their diploma supplement.
   The Examination Board will determine that the student has passed within a maximum of eight calendar weeks after the last academic activity. If the student wishes for the certificate to be dated later, the student must postpone the completion of his final academic activity.
5. The certificate is signed on behalf of the Examination Board by the (deputy) chairman, the (deputy) secretary, the candidate and, if applicable, an external expert.
   (Section 7.11 of the WHW). On behalf of the institute, the Examination Board also confers on the student the degree if the student has taken the study programme examination. For the study programmes' examination the following degrees are awarded:

Education	Degree	Abbreviation
Mechatronics Industrial Design Engineering Mechanical Engineering Information Technology Logistics Engineering Logistics Management	Bachelor of Science	BSc

6. The award ceremony takes place at a time decided by the institute. Students who passed the study programme examination and have requested the postponement of the award of the certificate may be issued a statement that the study programme degree has been conferred on them. *(Section 7.11 of the WHW.)*
7. The certificates of students whose performance has been extraordinary will state the distinctions referred to below. The distinction 'cum laude' is the highest degree possible.
   Students will be awarded the distinction 'cum laude' if they meet the following criteria*:*
   The student is awarded the distinction 'cum laude' on his foundation year certificate if he has complied with the following requirements:
   - The student passed the foundation year in the nominal time (when following the standard programme within the first year of his study).
   - The student may not have more than 20% exemption for the credits for the foundation year.
   - The student has passed all examination units of the foundation year with a grade of at least 7.0 (not rounded off) and achieved a weighted average (on the basis of all credits) for all foundation year teaching units (final grades) of at least 8.0 (not rounded off).

   The student will be awarded the distinction 'cum laude' on his bachelor certificate if he has met the following requirements:
   - The student passed the study programme in the nominal time (when following the standard programme within four years, when following two study programmes simultaneously 4 and a half years).
   - The student has completed the graduation and internship project both with at least a grade of 8.0 (not rounded off). For the internship, exemption is permitted.
   - The minor was passed.

- The student may not have an exemption for more than 20% of the course credits from the main phase.
- With the exception of the minor (which is not considered), the student has passed all teaching units in the main phase with a grade of at least 7.0 (not rounded off) and (on the basis of the credits) a weighted average for his grades for the teaching unit of at least 8.0 (not rounded off).

The final grade in a teaching unit is calculated as the weighted average of the grades for the tests in the teaching unit. Exemptions as well as results expressed in 'sufficient' are not counted in calculating the weighted average.

8. The Executive Board reports to DUO the students that have passed the final examination of the study programme.

Article 35 Statement on departure

1. Every student who seeks to terminate his enrolment without having passed the study programme's final examination will be invited for an interview.
2. At the student's request, the student may be issued a statement listing any results achieved. Results of successful tests without credits can be converted into an equivalent of credits based on the study load. (Section 7.11 of the WHW.)
3. The statement must specify that the test results will in principle be valid for ten years. The statement can include a reservation in the event of a substantial overhaul of the study programme. See Article 29.

Article 36 Transfer

No specific arrangements are made with universities with respect to the Bachelor's programme in order to facilitate the smooth transfer of students to a university Master's programme.

Section 8 Irregularities and fraud

Article 37 Irregularities and fraud

1. If irregularities are discovered in connection with a test, as a result of which the Examination Board cannot guarantee the test's quality and any of its results, the Examination Board may forgo having the test checked, or declare a test result void. In such cases, the Examination Board must ensure that an opportunity to resit the test in the near future is offered to the affected students.
2. If a student is guilty of an irregularity committed with respect to (a component of) an examination or fraud, the Examination Board may exclude the student from sitting one or more tests of the study programme for a period to be determined by the Examination Board but which will not exceed one year. If the test has already been assessed, the result will be declared void.
3. In the case of serious fraud, the Examination Board can propose to the Executive Board that the enrolment of the student involved be prematurely terminated *(Section 7.12b of the WHW.)*
4. If the irregularity or fraud is only discovered after the examination, the Examination Board may withhold or claim back the certificate of the study programme or decide that the certificate will not be issued unless the student sits a new test or examination in the components to be determined by the Examination Board and in a fashion to be determined by the Examination Board
5. Before taking a decision, the Examination Board will hear the student and any other interested parties. A report will be drawn up of this hearing, of which a copy is forwarded to the student. The Examination Board must notify the student of its decision without delay, which notification can be given orally if required but must in any event also be issued in writing. Furthermore, the student is informed of his right of appeal.
6. The Examination Board makes up a report of its decision and the facts it is based on.

Section 9 Examination Board, appeal

Article 38 Examination Board

1. The institute director establishes an Examination Board for each study programme or group of study programmes.
2. The Examination Board's duties and responsibilities are laid down in the WHW. *(Sections 7.12, 7.12b and 7.12c of the WHW).* These include the following duties and responsibilities:
   - responsibility for guaranteeing the quality of testing;
   - responsibility for guaranteeing the quality of the organisation of and the procedures surrounding tests and examinations;
   - responsibility for (the course of affairs surrounding) the conduct of tests of a study programme;
   - to determine objectively and professionally whether a student has passed an examination;
   - to award certificates and the diploma supplement;
   - to determine alternative tracks;

- to assess applications for exemptions and reviews and to award applications for special facilities;
- to determine whether an examination has been conducted in a way other than that prescribed in the TER;
- approval of the details of a foreign minor or external minor;
- to give advice to the institute director on advice regarding the continuation of studies to be issued;

The composition of the Examination Board can be found in the Appendix 'Composition of the Examination Board'

3. An application to the Examination Board can be submitted to fhtenl-excie@fontys.nl . Guidelines for applications can be found on the portal (see also Article 26(2) and 27).

Article 39 Appeals

Student who do not agree with a decision of the Examination Board can lodge an appeal against this decision within six calendar weeks with the Examination Appeals Board (see Articles 45 and 46 of the Students' Charter). *(Section 7.61 of the WHW.)*
Notices of appeal should preferably be submitted in digital format via the portal of the Examination Appeals Board. See website. Students can contact the Student Counselling Office (iStudent@fontys.nl) for help on lodging an appeal.

Section 10 Retention and hardship clause

Article 40 Retention of documentation

1. The Examination Board is responsible for retaining the minutes of its meetings and its decisions for a period of seven years.
2. The Examination Board is responsible for retaining its issued statements for a period of ten years. The institute director is responsible for retaining the lists drawn up by the examiners containing the results achieved for a period of ten years.
3. The Examination Board will ensure that the following information on each student will remain in the institute's archives for 50 years:
   - information on whether each student has obtained a foundation year certificate and/or a certificate of higher professional education including the list of marks.
4. The institute director is responsible for retaining test papers/assignments, assessment criteria, marking standardisation, pass marks, test matrices and test analyses for a period of seven years.
5. The institute director is responsible for retaining the lists drawn up and signed by the examiners containing the results achieved for a period of ten years.
6. The institute director is responsible for ensuring that all final papers and other kinds of tests in which students demonstrate their command of all aspects of the final attainment level, including assessments, will be kept for a period of seven years.
7. For the purpose of the external assessment of the programme in connection with accreditation, the institute director will ensure retention of a representative set of tests, including assessments, for a period of two years after the assessment.
8. The institute director is responsible for ensuring that the work completed by the student (written and non-written, including digital work) including assessments, with the exception of the work forming part of the representative set of final papers, is either destroyed or returned to the student after the expiry of a term of at least six months following the publication of the result. This term may be extended if necessary in connection with an appeal procedure.

Article 41 Hardship clause

1. The Examination Board can make provisions for serious injustices that occur as a result of the application of these rules; it can also make decisions in cases not provided for by these rules. In order to decide whether the hardship clause must be applied, the Examination Board must weigh the interests of the student concerned and those of the study programme. Cases requiring immediate action may be heard by the chairperson of the Examination Board or his deputy after which the other members must be notified as soon as possible.
2. Students must apply in writing, stating reasons, to the Examination Board for the application of the hardship clause in accordance with Article 44 of the Students' Charter. The Examination Board decides on the student's application and communicates this decision in writing, stating reasons, to the student concerned, who is also informed of his right of appeal.

Section 11 Final provisions and implementation

Article 42 Entry into force, amendments, publication and official title

1. The TER applies to all students enrolled in the study programme in question during the 2020–2021 academic year.
2. The general section of these regulations and any amendments thereto will be established by the Executive Board, after having obtained the consent of the students' section of the Central Participation Council. That general section of the TER constitutes the basis on which the study programme-specific TER for each study programme will be drawn up before being submitted to the Examination Board and the (joint) study programme committee for their advice. The (joint) study programme committee advises the institute director and sends its advice to the IPC for informational purposes. The establishment of and amendments to the study programme-specific TER are effected following a proposal from the institute and require the consent of the students' section of the competent IPC. (*see Sections 10.20 and 7.13 of the WHW.)*
3. The text of the TER can be amended if warranted by changes to the organisation or organisational components with due observance of the provisions of paragraph 4. In the event of an interim change, the procedure as described in paragraph 2 applies.
4. If the interests of an individual student are prejudiced as a result of interim amendments of the regulations, the student may submit a written application to the Examination Board to protest against the amendment of the rules. The Examination Board examines the student's application and bases its decision on a weighing-up of the interest of the individual student on the one hand and the interest of the quality of the study programme on the other.
5. The institute director adopts the study programme-specific TER before 1 June of the academic year preceding the academic year that starts on 1 September. He ensures the publication of the study programme-specific component of these regulations and any amendments thereto by making them available for inspection with the secretariat of the study programme and placing them on the website.
6. The text of the TER may be adapted if required following changes in the organisation or parts of it, without prejudice to the provisions of paragraph 3.
7. The official title of these rules is 'General Section of the Teaching and Examination Regulations of the Bachelors fulltime programmes of Fontys' School for Technology and Logistics'.

Article 43 Transitional provisions

When a study programme is subject to a substantial overhaul, the following transitional provisions will apply. After the last regular activities of the 'old' programme and the related test or examination have been completed, this test or examination will be held two more times by way of resits. After that, it will be decided which test or examination that is part of the 'new' programme the student must sit to replace the 'old' one, or transitional provisions of the individual study programme.

Article 44 Unforeseen cases

The Examination Board decides in all cases not provided for by the study programme-specific part of the TER, unless the issue is covered by the institute director's competency.

B - Set-up of the study programme and support facilities

1. Set-up, organisation and execution of the study programmes

Information on the set-up, organisation and execution of the study programmes can be found in:

- the Teaching and Examination Regulations (see under A).
- the module manuals/ theme books.
- the information on the study programme's portal

2. Facilities for students

Information on facilities for students can be found at:

- the institution-specific section of the Fontys Students' Charter (www.fontys.nl/rules)
- the website of the Students Facilities Department (http://www.fontys.nl/studentenvoorzieningen)
- the website of Fontys Study Abroad

3. Study support

Information on study support can be found in:

- the Teaching and Examination Regulations (see under A)
- the information on the study programme's portal

C - Internal complaints procedure

Students whose interests are directly affected by acts carried out by a staff member or a student against them, or who have a grievance regarding organisational matters, may lodge a complaint with the Executive Board, as described in Article 47 of the Students' Charter. The email address that students use for handing in a complaint is studentloket-beroep-bezwaar-klacht@fontys.nl; which is also mentioned on the institute's portal.

APPENDIX 1 Programme-specific annexes

Study programme	Variant
MECHATRONICS	Full time
INFORMATION TECHNOLOGY	Full time
INDUSTRIAL DESIGN ENGINEERING (IPO)	Full time
INDUSTRIAL DESIGN ENGINEERING (IDE)	Full time
LOGISTICS MANAGEMENT LOGISTICS ENGINEERING	Full time
MECHANICAL ENGINEERING	Full time
BILL	Full time

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Study programme	MECHATRONICS
Variant	FULL TIME
Academic year	2020/2021

Contents
1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to Article 12

See OER Article 12

This section contains information about the set of qualifications for the study programme, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The study programme's set of exit qualifications is based on the national degree programme profile, which contains eight engineering competences ('the BEng competences'). The study programme defines its profile by specifying the national competences for the Mechatronics field of application: by indicating the context, field and knowledge base; the profile is thus shaped by the translation of the competences into the curriculum. The set of exit qualifications is validated in the table below by linking it to national and international standards.

An 'x' means that all behavioural characteristics for the field competence concerned contribute to the implementation of the Dublin Descriptor. A letter (e.g. 'a') indicates that the specific behavioural characteristic for that field competence contributes to the implementation of the Dublin Descriptor. For an explanation of the letters, see pages 17–19 of the national Bachelor's profile.

Table 1. Study programme competences.

Qualification/competence	Validation against Dublin Descriptors				
	Knowledge and understanding	Applying knowledge and understanding	Making judgements	Communication	Lifelong learning skills
Connection with HBO standards	ST1, ST3	ST2,ST3	ST2,ST4	ST3	St2
Analysing	X	X	A, B	C, D	
Designing	X	X	A, E	F	
Implementing	X	A, B	C	D	
Controlling	X	X	C	D	
Managing	X	A	B	C, D, E	
Advising	X	D	C	A, B, D, E	
Researching	X	A	B	C, D, E	E
Professional development	X	X	A, B, C	D, F	X

1.2 Levels

Diversity in qualifications, and in the desired level of proficiency in the different phases of the study programme (the programme has a first-year phase, a core phase and an engineer phase), requires the details of each level to be specified. The programme is committed to the nationally-defined level descriptions (HBO Engineering, 2016). Each level is explained with reference to three factors. The levels (1, 2, 3) are set out below, together with a brief explanation. (Source: Bachelor of Engineering).

Table 2. Description of levels.

Factors	Intake level	Level 1	Level 2	Level 3
Nature of the task	HAVO 5 / MBO 4 exit level	Simple, structured, applies familiar methods directly in accordance with accepted standards	Complex, structured, applies familiar methods in changing situations	Complex, unstructured, improves methods and applies standards to the situation

Nature of the context		Familiar, simple, monodisciplinary, in a classroom setting	Familiar, complex, monodisciplinary, in a practical setting under supervision	Unfamiliar, complex, multidisciplinary, in a practical setting
Level of independence		Supervised	Supervision if required	Independent

For each year of study, the programme has determined the level at which students must demonstrate the competences (through their professional tasks). The programme is committed to the national guidelines concerning levels: 'The level of each competence can vary from 1 to 3 depending on the nature of the task, the nature of the context and the level of independence. In determining the programme profile, for a particular field each competence must be classified at Level 1 as a minimum, and the sum of all levels must be at least 18. Programmes can define their profile by classifying one or more competences at a higher level.' (Werktuigbouwkunde, 2014). See the table below for the level distribution across each year of study.

Table 3. Level distribution by year of study.

Field competence	Year 1	Exit level
Analysing	1	3
Designing	1	3
Implementing	1	2
Controlling	1	2
Managing	1	2
Advising	1	2
Researching	1	2
Professional development	1	2
Totals	8	18

1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:

Level

- Dublin Descriptors
- Higher professional education (HBO) standards[2]

Contents

- National Bachelor's profile: Bachelor of Engineering(BEng)
- National degree programme profile: National profile
- Study programme profile: Available from the relevant department on request.

2. Curriculum

Back to Article 14 Back to Article 16

See OER Articles 14 and 16

The tables below set out the units of study for each semester, how many credits[3] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Key 1. Teaching methods.

L Lecture = Teaching theory to large groups
T Tuition / Tutorial = Practising learning tasks in small groups
P Project = Individuals or small groups working independently on a problem
I Independent study = Individuals studying learning materials independently
E Exercise/Lab = Lab in small groups

Table 4. Curriculum by semester.

					Competences							
Sem.	Code	Unit of study	Teaching method	ECTS	Analysing	Designing	Implementing	Controlling	Managing	Advising	Researching	Professional development
1	VIS1	Visualize	T	5	X	X						
	MAP1	Materials & Production 1	L/E	5	X		X				X	
	MECH1	Mechanics 1	L/T	5	X							

[2] A comparison between the HBO standards and the Dublin Descriptors can be found here.
[3] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

	MAC1	Measurement & Control 1	T/E	5	X	X	X			X	X	
	PRJ1	Project 1	P	10	X	X	X	X	X	X	X	X
2	MECH2	Mechanics 2	L/T	5	X							
	AST2	Applied Sensor Technology 2	L/T/E/I	5	X	X	X					X
	ELC2	Electrical Circuits 2	L/T/E	5	X	X	X	X		X		
	SDR2	Software Design and Realisation 2	L/T/E	5	X	X	X	X				
	PRJ2M	Project 2 Mechatronics	P	10	X	X	X	X	X	X	X	X
3	EGT3	Energy Technics 3	L/T/E	5	X	X	X					
	ASDR3	Advanced Software Design and Realisation 3	L/T/E	5	X	X	X	X		X		X
	DYN3	Dynamics 3	L/T/E	5	X	X						
	ELK3	Electronics 3	L/T/E	5	X	X						
	PRJ3	Project 3	P	10	X	X	X	X	X	X	X	X
4	ELM4	Electromechanics 4	L/T/E	5	X	X						
	ETS4	Electronics and Sensors 4	L/T/E	5	X	X						
	HFD4	Heat and Flow Dynamics 4	L/T	5	X	X	X					
	CST4	Control Systems Technology 4	L/T/E	5	X	X	X					
	PRJ4	Project 4	P	10	X	X	X	X	X	X	X	X
5	STG			30	X	X	X	X	X	X	X	X
6	MNR	Minor		30	Depends on student choices: Fontys or elsewhere, type of minor, completion of minor							
	EMC7	Electromagnetic Compatibility 7	L/T	2.5	X	X	X			X		
	DCN7	Dynamic Constructions 7	L/T/E	5	X	X						
	IDA7	Industrial Automation 7	L/T/E	2.5	X	X		X			X	X
	ACS7	Advanced Control Systems 7	L/T	2.5	X	X	X					
	DCS7	Digital Control Systems 7	L/T	2.5	X	X	X					
	STK7	Statistics 7	L/T	5	X					X		X
	COM7	Communication 7	T/I	2						X	X	X
	PRJ7	Project 7	P	8	X	X	X	X	X	X	X	X
8	AFST	Graduation project		30	X	X	X	X	X	X	X	X

3. Assessment

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See OER Article 18

The tables below show the type of assessment and the marking method for each unit of study. All written exams are conducted in Dutch and German unless otherwise indicated by 'x*'. These exams are in English.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment*	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 5. Assessment by semester.

Sem	Units of Study	Assessment						Marking		
		Test	Type			Weighting	Entry requirements	Who		How
			K	S	IA			I	G	
1	Mechanics1	MECH1A	X			0,5		X		1..10
		MECH1B	X			0,5		X		1..10
	Measurement and Control1	MAC1E Exersises			X			X		B/NB
		MAC1P		X		1	Grade is awarded if MAC1_Exercises is passed	X		B/NB
	Materials and Production1	MAP1T	X			0,8		X		1..10
		MAP1S		X		0,2		X		
	Visualisation1	VIS		X		1		X		1..10
	Project 1	PRJ1			X	0,8		X		1 .. 10
		PRP1		X		0,2		X		1..10
2	Mechanics2	MECH2	X			1		X		1..10
	Applied Sensor Technlogy2	AST2T	X							B/NB
		AST2A		X		0,5	Grade is awarded if AST2T is passed	X		1...10
		AST2B		X		0,5	Grade is awarded if AST2T is passed	X		1..10
	Electrical Circuits2	ELC2E Exercises			X			X		B/NB
		ELC2P1		X		0,5	Grade is awarded if ELC2_Exercises is passed	X		1..10
		ELC2P2		X		0,5	Grade is awarded if ELC2_Exercises is passed	X		1..10
	Software Design and Realisation2	SDR2E Exercises			X			X		B/NB
		SDR2P		X		0,2	Grade is awarded if SDR2_Exercises is passed	X		1..10
		SDR2MP			X	0,8	Grade is awarded if SDR2_Exercises is passed	X		1..10
	Project 2	PRJ2			X	0,8		X		1..10
		PRP2		X		0,2		X		1..10
	Energy Technics3	EGT3T	X			1	Grade is awarded if EGT3_Exercises, EGT3P1 and EGT3P2 are oassed	X		1…10
S3		EGT3E Exercizes			X			X		B/NB
		EGT3P1		X				X		B/NB
		EGT3P2		X				X		B/NB
	Advanced Software Design and Realization3	ASDR3E exercises	X					X		B/NB
		ASDR3P		X		0,2	Grade is awarded if ASDR3_Exercises is passed	X		1..10
		ASDR3MP			X	0,8	Grade is awarded if ASDR3_Exercises is passed	X		1..10
	Mechanics3	MECH3			X	1		X		1..10
	Electronics3	ELK3T	X			0,5		X		1..10
		ELK3P		X		0,5		X		1..10
	Project 3	PRJ3A			X	0,4		X		1..10
		PRJ3B			X	0,4		X		1..10
		PRP3		X		0,2		X		1..10
4	Electromechanics4	ELM4T	X			0,5		X		1..10
		ELM4P		X		0,5		X		1..10
	Electronics and Sensors4	ETS4T	X			0,5		X		1..10
		ETS4P		X		0,5		X		1..10
	Heat and Flow Dynamics4	HFD4			X	1		X		1..10
	Control Systems Technology4	CST4T	X			1	Grade is awarded if CSTP and CST4_exercises are passed	X		1..10
		CST4E Exercises			X			X		B/NB
		CST4P		X				X		B/NB
	Project 4	PRJ4A			X	0,4		X		1..10

		PRJ4B			X	0,4		X		1..10
		PRP4		X		0,2		X		1..10
5	Stage				X	1	See regulations	X		1..10
6	Minor	Dependent on minor choice								
7	Electromagnetic Compatibility7	EMC7	X			1		X		1..10
	Dynamic Constructions7	DCN7	X	X		1		X		1..10
		DCN71	X			0,5		X		1..10
		DCN72		X		0,5		X		1..10
	Industrial Automation7	IDA7	X			1		X		1..10
	Advanced Control Systems7	ASC7	X			1		X		1..10
	Digital Control Systems7	DSC7	X			1		X		1..10
	Statistics7	STK71	X			0,5		X		1..10
		STK72	X			0,5		X		1..10
	Communication 7	COM7		X		1		X		1..10
	Project 7	PRJ7			X			X		1..10
8	Afstuderen				X		See regulations	X		1..10

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Study programme	INFORMATION TECHNOLOGY
Variant	FULL TIME
Academic year	2020/2021

Contents
1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to Article 12

See OER Article 12

This section contains information about the set of qualifications for the study programme, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The study programme's set of exit qualifications is based on the national model for the systematic description of the field of the Bachelor of ICT. The model has three dimensions:
1. Activities: What does an ICT professional do?
2. Layers of architecture: In what context?
3. Levels of proficiency.

See Paragraph 1.2 for an explanation of the three dimensions.

For the generic HBO exit qualifications the study programme is aligned with the HBO standards, which provide guidelines for a sound theoretical basis, professional conduct, research skills, and professional ethics and social orientation. These four standards are covered in the field description model [Field Description for Bachelor of ICT – 2014, national platform HBO-I]. This means that, in principle, any study programme that bases its exit profile on this field description is automatically meeting the four HBO standards. However, the study programme believes that two of the standards, namely professional conduct and research skills, should receive greater emphasis, and it has therefore explicitly added these to its exit profile.

The study programme offers its students the option of developing an individual profile in the field of ICT. During the first three semesters, students develop a generic basic profile. During the fourth semester, this profile is expanded with an 'Advanced Software Concepts' or a 'Business Informatics' profile. In the second half of the study programme, students develop their individual profiles by making choices about their internship, minor, certain electives in Semester 7 and their graduation project. Students' final profiles are determined on the basis of their graduation project. The requirements for an individual exit profile are as follows:

Table 1. Outline of an individual exit profile.

Bachelor Exit profile	B1 Analysing	B2 Advising	B3 Designing	B4 Implementing	B5 Controlling	Research skills	Professional conduct
At least one out of Layers I1 to I5	2 or 3 *	2 or 3 *	2 or 3 *	2 or 3 *	2 or 3 *	3	3

* Means that at least three of these competences must be a 3.

This means that through their graduation projects, students must demonstrate level-3 proficiency in at least three of the five activities, at any layer of architecture, as well as level-3 proficiency in the two added competences, 'Research skills' and 'Professional conduct'.

1.2 Explanation of the dimensions of the set of qualifications

Activities

The first dimension consists of five activities: 'controlling', 'analysing', 'advising', 'designing' and 'implementing' – derived from the life cycle of information systems. Every Bachelor of ICT graduate must be able to perform these activities within their professional context. For all activities, quality aspects and matters such as security, budget and available time are extremely important.

Table 2. Dimension 1 – Activity

Activity	Explanation
Controlling	Ensuring that all activities focusing on the process of development, commissioning and use of ICT systems remain manageable.
Analysing	Analysing processes, products and information flows, their interactions and the context of the environment.
Advising	Giving advice on the redesign of processes and/or information flows, and on a new ICT system that is to be developed or purchased, based on an analysis and in consultation with stakeholders.
Designing	Designing an ICT system based on specifications and within predetermined frameworks.
Implementing	Implementing an ICT system based on a design and within set frameworks.

Layers of architecture

The second dimension consists of five layers of architecture. The layers of architecture are intended to make the substantive differentiation visible and to describe the breadth of the Bachelor of ICT profile in detail.

Table 3. Dimension 2 – Layers of architecture

Layer of architecture	Description
User interaction	Concerns communication with end users and other users of the ICR system. This expressly does not refer to interactions with users that take place during the creation of an ICT system, since such interactions are covered by all of the layers of architecture.
Business processes	Concerns the facilitating of organisational processes using ICT systems. This relates to the functionality of the system as a whole (automated and non-automated parts), considered in the context of the organisational objectives that must be achieved.
Infrastructure	Concerns the set of ICT systems that are used to facilitate business processes. This relates to providing, configuring and ensuring the continued availability of traditional hardware infrastructure, but also software infrastructure.
Software	Concerns the development of various types of software. This relates to software which, after delivery, is incorporated into an ICT infrastructure.
Hardware Interfacing	Applies when software interacts with the available hardware. This concerns situations in which the software must explicitly take account of the possibilities and limitations of the available hardware. 'Computer system' has been chosen as a generic, overarching term. Depending on the context, this can be further specified as an 'embedded system', 'industrial automation', 'virtual system', etc.

Levels of proficiency

The programme uses the level descriptions in Dimension 3 of the European e-Competence Framework (e-CF) to define the different levels of proficiency. The e-CF lists five levels of competence in the workplace, each of which have three facets (see 'Bachelor of ICT – Field Description 2014', p. 4):

- Independence: Ranges from 'following instructions' to 'making personal choices'.
- Behaviour: Represents the observable result of an attitude and ranges from 'the ability to apply instructions' to 'the ability to understand'.
- Context: Ranges from 'Structured – predictable' situations to 'Unpredictable – unstructured' situations.

These three facets result in three different levels, with Level 1 as the lowest level, at which a student can acquire competence in one of the fields of ICT:

Table 4. Description of levels for competences

Level	Independence	Behaviour	Context
1	Can apply knowledge and skills to simple problems.	Responsible for own actions.	Stable.
2	Independent within specified actions.	Provides leadership to others within the set limits. Can think conceptually and perform modelling, using creative thinking.	Predictable and sometimes unpredictable.
3	Uses innovative methods and shows initiative.	Innovation, leadership, responsibility for teams.	Unpredictable environment.

Source: [Field Description for Bachelor of ICT – 2014, national platform HBO-I]

1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:

Level

- Dublin Descriptors
- Higher professional education (HBO) standards[4]

Contents

- National Bachelor's profile: Bachelor of ICT
- National degree programme profile: National profile
- Study programme profile: Available from the relevant department on request.

2. Curriculum

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See OER Articles 14 and 16

The tables below set out the units of study for each semester and how many credits[5] each unit is worth.

The first year is offered in three language variants, namely Dutch, English and German. As an exception to that rule, the projects in the first year (PRJ1 and PRJ2) and the modules PRC2 and DVPR are taught exclusively in English. From Semester 3 onwards, all modules are offered exclusively in English.

The way in which each module contributes to the development of the desired exit level within the various activities and layers of architecture is described in a separate table that does not form part of these regulations.

Teaching methods key

L Lecture = Teaching theory to large groups
T Tuition / Tutorial = Practising learning tasks in small groups
P Project = Individuals or small groups working independently on a problem
I Independent study = Individuals studying learning materials independently
E Exercise/Lab = Lab in small groups

Table 5. Curriculum by semester.

Units of study		Credits	Teaching method
Semester 1			
PRC1	Programming Concepts 1	5	L/T/I/E
DBS1	Database Systems 1	5	L/T/I/E
BAS1	Basic Skills	5	L/T/I/E
BIT	Business in IT	5	L/T/I/E
PRJ1	Project Web Application	10	L/P/I
Semester 2			
PRC2	Programming Concepts 2	5	L/T/I/E
DVPR2	Development Processes	5	L/T/I/E
AAD2	Analysis and Design	5	L/T/I/E
CSAR2	Computer Systems Architecture	5	L/T/I/E
PRJ2	Project Business Web Application	10	L/P/I
Semester 3			
DARC3	Design and Architecture	5	L/T/I/E
ALDA3	Algorithms and Data Structures	5	L/T/I/E
SEAR3	Applied Research and Security	5	L/T/I/E

[4] A comparison between the HBO standards and the Dublin Descriptors can be found here.

[5] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

DASC1	Data Science	5	L/T/I/E
PRJ3	Reactive Systems	10	L/P/I
Semester 4 – Advanced Software Concepts			
OSCO4	Operating Systems and Concurrency	5	L/T/I/E
UNPL4	Unmanaged Programming Languages	5	L/T/I/E
PPAR4	Programming Paradigms	5	L/T/I/E
DBS2	Advanced Database Concepts	5	L/T/I/E
PRJ4	App Development and Cloud Computing	10	L/P/I
Semester 4 – Business Informatics			
BUPR4	Business Processes	5	L/T/I/E
BIN4	Business Intelligence	5	L/T/I/E
ACCO4	Accounting	5	L/T/I/E
DATW4	Data Warehouses	5	L/T/I/E
PRJ4	App Development and Cloud Computing	10	L/P/I
Semester 5			
STG1	Internship	30	P
Semester 6			
MINR	Minor	30	
Semester 7			
CMOD1	Choice Module 1	5	(Depends on choice of module)
CMOD2	Choice Module 2	5	(Depends on choice of module)
PRSK7	Professional Skills	5	T/P/I/E
SOFA7	Software Factory	15	L/P/I
Semester 8			
STG2	Graduation Project	30	P

3. Assessment

Back to Article 18

See OER Article 18

The tables below show the type of assessment and the marking method for each unit of study. The test is offered in the language in which the module was taught unless it relates to a performance assessment, in which case the language will always be English.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment*	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 5. Assessment by semester.

Sem	Units of study	Assessment						Grading		
		Test	Type			Weighting	Entry requirements	Who		How
			K	S	IA			I	G	
1	Programming Concepts 1	PRC1	X	X		1		X		1..10
	Database Systems 1	DBS1T	X	X		0.6		X		1..10
	Database Systems 1	DBS1P	X	X		0.4		X		1..10
	Basic Skills Mathematics	BAS1M	X	X		0.6		X		1..10
	Basic Skills English	BAS1E	X	X		0.4				
	Business in IT	BIT1	X	X		1		X		1..10
	Project Web Application	PRJ11			X	0.4		X		1..10

	Project Web Application	PRJ12			X	0.4		X		1..10
	Project Web Application	PRJ13		X	X	0.2		X		1..10
2	Programming Concepts 2	PRC2T	X	X		0.4		X		1..10
	Programming Concepts 2	PRC2P	X	X		0.6		X		1..10
	Development Processes	DVPR2	X	X		1		X		1..10
	Analysis and Design	AAD2T	X	X		0.75		X		1..10
	Analysis and Design	AAD2P	X	X		0.25		X		1..10
	Computer Systems Architecture	CSAR2	X	X		1		X		1..10
	Project Business Web Application	PRJ21			X	0.3		X		1..10
	Project Business Web Application	PRJ22			X	0.5		X		1..10
	Project Business Web Application	PRJ23		X	X	0.2		X		1..10
3	Design and Architecture	DARC3	X	X		1		X		1..10
	Algorithms and Data Structures	ALDA3T	X	X		1		X		1..10
		ALDA3P		X				X		BEH / NB
	Security and Applied Research	SEAR3-A	X	X		0,5		X		1..10
		SEAR3-B		X		0,5			X	1..10
	Data Science	DASC1	X	X		1		X		1..10
	Project Reactive Systems	PRJ3			X	1		X		1..10
4 ASC	Operating Systems and Concurrency	OSCO4	X	X		1		X		1..10
	Unmanaged Programming Languages	UNPL4C	X	X		0,4		X		1..10
		UNPL4P		X		0,6		X		1..10
	Programming Paradigms	PPAR4C	X	X		1		X		1..10
		PPAR4P		X				X		BEH/NB
	Advanced Database Concepts	DBS2C	X	X		0,6		X		1..10
		DBS2P		X		0,4			X	1..10
	App development and cloud computing	PRJ4			X	1		X		1..10
4 BI	Business Processes	BUPR4C	X	X		0,5		X		1..10
		BUPR4P		X		0,5			X	1..10
	Business Intelligence	BIN4	X	X		1		X		1..10
	Accounting	ACCO4	X	X		1		X		1..10
	Data Warehousing	DATW4	X	X		1		X		1..10
	App development and cloud computing	PRJ4			X	1		X		1..10
5	Internship	STG1			X		Zie regelement	X		1..10
6	Minor	MNR	Afhankelijk van minorkeuze							
7	Choice Module 1	CMOD1	X	X				X		1..10
	Choice Module 2	CMOD2	X	X				X		1..10
	Professional Skills	COMPSY		X		0,5		X	X	1..10
		ETHICS		X		0,5		X	X	1..10
	Software Factory	SOFA7			X		Stage behaald	X		1..10
8	Graduation Project	STG2			X		Zie regelement	X		1..10

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Study programme	INDUSTRIAL DESIGN ENGINEERING (IPO)
Variant	FULL TIME
Academic year	2020/2021

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1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to Article 12

See OER Article 12

This section contains information about the set of qualifications for the study programme, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The set of exit qualifications for the study programme is based on the National Degree Programme Profile – LBOP IPO (2013), which contains six competences, and is linked to the National Engineering Competences ('the BEng competences'). See Table 1.

Table 1. Study programme competences.

	Field Competences for Higher Professional Education in Engineering							
Consistency with National IPO Agreement regarding the minimum level	III	III	III	I	II	II	II	II
List of competences: The national IPO programme profile (2013)	1. Analysing (Level 3)	2. Designing (Level 3)	3. Implementing (Level 3)	4. Controlling (Level 1)	5. Managing (Level 2)	6. Advising (Level 2)	7. Researching (Level 2)	8. Professional Development (Level 2)
A. General / Project Management (Level 2)	A2.1 A7.1 A7.2 A7.3	A6.1 A6.6 A9.2	A3.1 A3.2 A8.1 A9.2	A7.1 A8.2 A8.3	All	All	All	All
B. Orientation (Level 2)	B1.1	B1.1	B1.2 B1.3 B1.4 B2.1				All	
C. Analysing (Level 3)	All	C3.1					All	
D. Developing ideas (Level 3)	D1.2	All					All	
D. Developing concepts (Level 3)	E1.3	All				E1.3	All	
F. Physical execution (Level 3)	F2.1 F2.2 F5.2	F1.2 F1.3 F3.1 F3.2 F6.4	All		F5 F6	F1.3 F6.2 F6.3 F6.4	All	

1.2 Levels

Diversity in qualifications, and in the desired level of proficiency in the different phases of the study programme (the programme has a first-year phase, a core phase and an engineer phase), requires the details of each level to be specified. The programme is committed to the nationally-defined level descriptions (HBO Engineering, 2016). Each level is explained with reference to three factors. The levels (1, 2, 3) are set out below, together with a brief explanation. (Source: Bachelor of Engineering).

Table 2. Description of levels.

Factors	Intake level	Level 1	Level 2	Level 3
Nature of the task	HAVO 5 / MBO 4 exit level	Simple, structured, applies familiar methods directly in accordance with accepted standards	Complex, structured, applies familiar methods in changing situations	Complex, unstructured, improves methods and applies standards to the situation
Nature of the context		Familiar, simple, monodisciplinary, in a classroom setting	Familiar, complex, monodisciplinary, in a practical setting under supervision	Unfamiliar, complex, multidisciplinary, in a practical setting
Level of independence		Supervised	Supervision if required	Independent

In the National IPO Agreement, the IPO study programmes set a minimum level definition for each field competence from the Bachelor of BEng profile, adding up to a minimum total of 18. The level definitions are set out in Table 1 in the document 'National Professional Programme Profile – Industrial Design Engineering' (LBOP IPO) and are presented in Spider web diagram 1 below. The IPO programmes have then translated this spider web diagram into six LBOP IPO competences, which can be found in Spider web diagram 2.

For the Venlo IPO programme, it was decided that all Level 1 competences must be achieved in the first-year programme; the exit level of the competences (i.e. Level 2 or 3) must be demonstrated in the graduation project.

1	Analysing
2	Designing
3	Implementing
4	Controlling
5	Managing
6	Advising
7	Researching
8	Professional development

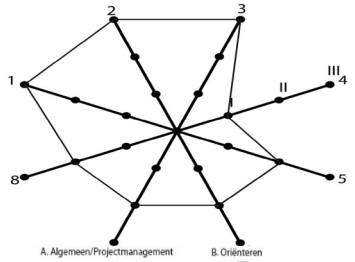

Figure 1. Spider web diagram 1: LBOP IPO level definitions for BEng competences

A	General/Project Management
B	Orientation
C	Analysing
D	Developing ideas
E	Developing concepts
F	Physical execution

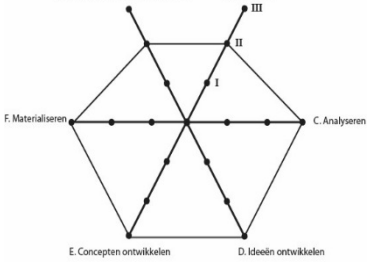

Figure 2. Spider web diagram 2: LBOP IPO competence definitions with level definitions

1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:

Level

- Dublin Descriptors
- Higher professional education (HBO) standards[6]

Contents

- National Bachelor's profile: Bachelor of Engineering(BEng)
- National degree programme profile: National Professional and Programme Profile (LBOP) – Industrial Design Engineering Professional Education Programme (IPO)
- Study programme profile: Available from the relevant department on request.

[6] A comparison between the HBO standards and the Dublin Descriptors can be found here.

2. Curriculum

See OER Articles 14 and 16

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The tables below set out the units of study for each semester, how many credits[7] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Key 1. Teaching methods.

L Lecture = Teaching theory to large groups
T Tuition / Tutorial = Practising learning tasks in small groups
P Project = Individuals or small groups working independently on a problem
I Independent study = Individuals studying learning materials independently
E Exercise/Lab = Lab in small groups

Table 3. Curriculum by semester.

					IPO Competences (LBOP)					
Sem.	Code	Unit of study	Teaching method	ECTS	A. General / Project Management	B. Orientation	C. Analysing	D. Developing ideas	E. Developing concepts	F. Physical execution
1	VIS1	Visualise 1	T	5			X	X	X	
	MAP1	Materials & Production 1	L/E	5			X			X
	MECH1	Mechanics 1	L/T	5		X	X			
	MAC1	Measurement & Control 1	T/E	5			X			X
	PRJ1	Project 1	P	10	X	X	X	X	X	X
2	DSGN2	Design 2	T	5			X	X	X	
	MAP2	Materials & Production 2	L/E	5			X			X
	MECH2	Mechanics 2	L/T	5		X	X			
	CADE2	Computer-Aided Design & Engineering 2	T	5			X			X
	PRJ2ID	Project 2 Industrial Design	P	10	X	X	X	X	X	X
3	FOCO3	Form and Colour 3	T	5			X	X	X	X
	VISCOM3	Visual Communication 3	T	5			X	X	X	
	MECH3	Mechanics 3	L/T	5		X	X			
	CADE3	Computer-Aided Design & Engineering 3	T	5			X		X	X
	PRJ3	Project 3	P	10	X	X	X	X	X	X
4	FOCO4	Form and Colour 4	T	5			X	X	X	X
	VISCOM4	Visual Communication 4	T	5			X	X	X	
	MECH4	Mechanics 4	L/T	5		X	X		X	
	MAP4ID	Materials & Production 4	T/E	5			X		X	X
	PRJ4ID	Project 4 Industrial Design	P	10	X	X	X	X	X	X
5	STG		P	30	X	X	X	X	X	X
6	MNR	Minor		30	Depends on student choices: Fontys or elsewhere, type of minor, completion of minor					
7	PPQ*	Production, Process & Quality	L/T/E	5	X	X			X	
	RCNC*	Robotics & Computer Numeric Control	L/T/E	5	X	X			X	
	SLC*	Stiff & Lightweight Construction	L/T/E	5	X	X	X		X	
	PRE*	Precision Engineering	L/T/E	5	X	X	X		X	
	REN*	Renewable Energy	L/T/E	5	X	X			X	
	ADVIS*	Advanced Visualization	P	5		X	X			
	SMART*	Smart Products and User Interface	P	5	X	X				X
	CIRC*	Design for Circularity	P	5	X	X				X
	TOPO*	Topology and Added Manufacturing	P	5	X	X	X			
	MANAG*	Product Management	P	5	X				X	X
	ADVIS*	Advanced Visualization	P	5		X	X			
	PRJ7ID	Project 7 Industrial Design	P	15	X	X	X	X	X	X
8	AFST	Graduation project	P	30	X	X	X	X	X	X

* Semester 7: 3 electives (3x5 = 15 ECTS) + PRJ7 (15 ECTS). 30 ECTS in total

[7] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

3. Assessment

See OER Article 18

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The tables below show the type of assessment and the marking method for each unit of study. The written exams are conducted in Dutch and German.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment*	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 4. Assessment by semester.

Sem	Unit of Study	Assessment						Grading		
		Test	Type			Weighting	Entry requirments	Who		How
			K	S	IA			I	G	
1	VIS1	Visualise 1		X		1		X		1..10
	MAP1	Materials & Production 1 Theory (MAP1T)	X			0.8		X		1..10
		Materials and Production 1 Skills (MAP1S)		X		0.2		X		P/F
	MECH1	Mechanics 1a (MECH1A)	X			0.5		X		1..10
		Mechanics1b (MECH1B)	X			0.5		X		1..10
	MAC1	Measurement & Control		X		1		X		P/F
	PRJ1	Project 1 (PRJ1)			X	0.8		X		1..10
		Project Professional Practice 1 (PRP1)		X		0.2		X		1..10
2	DSGN2	Design 2 Portfolio (DSGN2P)		X		0.8		X		1..10
		Design 2 Ergonomics (DSGN2E)	X			0.2		X		1..10
	MAP2	Materials and Production 2 Theory (MAP2T)	X			0.8		X		1..10
		Materials and Production 2 Skills 2 (MAP2S)		X		0.2		X		P/F
	MECH2	Mechanics 2	X			1		X		1..10
	CADE2	Computer Aided Design & Engineering 2		X		1		X		1..10
	PRJ2	Project 2 Industrial Design (PRJ2)			X	0.8		X		1..10
		Project 2 Industrial Design Professional Practice Communication (PRP2)		X		0.1		X		1..10
		Project 2 Industrial Design Professional Practice Portfolio (PRP2PO)		X		0.1		X		1..10
3	FOCO3	Form and Color 3.1 (FOCO31)		X		0.6		X		1..10
		Form and Color 3.2 (FOCO32)		X		0.4		X		1..10
	VISC3	Visual Communication 3.1 Photography (VISC3-PHOT)		X		0.2		X		1..10
		Visual Communication 3.2 Presentation drawing (VISC-PDRA)		X		0.4		X		1..10
		Visual Communication 3.3 DTP (VISC-DTP)		X		0.4		X		1..10
	MECH3	Mechanics 3.1 (MECH31)	X			0.5		X		1..10
		Mechanics 3.2 (MECH32)	X			0.5		X		1..10
	CADE3	Computer Aided Design and Engineering 3		X		1		X		1..10

	PRJ3ID	Project 3 Industrial Design (PRJ3)			X	0.8		X		1..10
		Project 3 Industrial Design Professional Practice (PRP3)		X		0.2		X		1..10
4	FOCO4	Form and Color 4		X		1		X		1..10
	VISCOM4	Visual Communication 4		X		1		X		1..10
	MECH4	Mechanics 4	X			1		X		1..10
	MAP4	Materials and Production 4 Industrial Design Theory (MAP4T)	X			0.5		X		1..10
		Materials and Production 4 Industrial Design Material Testing (MAP4M)		X		0.1		X		P/F
		Materials and Production 4 Industrial Design Skills (MAP4S)		X		0.4		X		1..10
	PRJ4	Project 4 A Multidisciplinair (PRJ4A)			X	0.2		X	X	1..10
		Project 4 Industrial Design B (PRJ4B)			X	0.6		X		1..10
		Project 4 Industrial Design Professional Practice (PRP4)		X		0.2		X		1..10
5	STG	Internship			X	1		X		1..10
6	MNR	Dependent on minor choice								
7	PPQ*	Production, Process & Quality			X	1		X		1..10
	RCNC*	Robotics & Computer Numeric Control			X	1		X		1..10
	SLC*	Stiff & Lightweight Construction			X	1		X		1..10
	PRE*	Precision Engineering			X	1		X		1..10
	REN*	Renewable Energy			X	1		X		1..10
	ADVIS*	Advanced Visualization			X	1		X		1..10
	SMART*	Smart products and User interface			X	1		X		1..10
	CIRC*	Design for circularity			X	1		X		1..10
	TOPO*	Topology and added manufacturing			X	1		X		1..10
	MARKT*	Product Marketing			X	1		X		1..10
	UX*	User Experience			X	1		X		1..10
	CADE7*	Advanced Surface Modeling and Mold Making			X	1		X		1..10
	PRJ7	Project 7A Industrial Design (PRJ7A)			X	6/15			X	1..10
		Project 7B Industrial Design (PRJ7B)			X	7/15		X		1..10
		Project 7 Industrial Design Professional Practice (PRP7)		X		2/15		X		1..10
8	AFST	Graduation			X	1		X		1..10

* Semester 7: 3 electives (3x5 = 15 ECTS) + PRJ7 (15 ECTS). 30 ECTS in total.

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Study programme	INDUSTRIAL DESIGN ENGINEERING (IDE)
Variant	FULL TIME
Academic year	2020/2021

Contents
1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to article 12

See TER Article 12

This section contains information about the set of qualifications for the study programme, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The set of exit qualifications for the study programme is based on the National Degree Programme Profile – LBOP IPO (2013), which contains six competences, and is linked to the National Engineering Competences ('the BEng competences'). See Table 1.

Table 1. Study programme competences.

	Field Competences for Higher Professional Education in Engineering							
Consistency with National IPO Agreement regarding the minimum level	III	III	III	I	II	II	II	II
List of competences: The national IPO programme profile (2013)	1. Analysing (Level 3)	2. Designing (Level 3)	3. Implementing (Level 3)	4. Controlling (Level 1)	5. Managing (Level 2)	6. Advising (Level 2)	7. Researching (Level 2)	8. Professional Development (Level 2)
A. General / Project Management (Level 2)	A2.1 A7.1 A7.2 A7.3	A6.1 A6.6 A9.2	A3.1 A3.2 A8.1 A9.2	A7.1 A8.2 A8.3	All	All	All	All
B. Orientation (Level 2)	B1.1	B1.1	B1.2 B1.3 B1.4 B2.1				All	
C. Analysing (Level 3)	All	C3.1					All	
D. Idea Development (Level 3)	D1.2	All					All	
E. Concept Development (Level 3)	E1.3	All				E1.3	All	
F. Materialisation (Level 3)	F2.1 F2.2 F5.2	F1.2 F1.3 F3.1 F3.2 F6.4	All		F5 F6	F1.3 F6.2 F6.3 F6.4	All	

1.2 Levels

Diversity in qualifications, and in the desired level of proficiency in the different phases of the study programme (the programme has a first-year phase, a core phase and an engineer phase), requires the details of each level to be specified. The programme is committed to the nationally-defined level descriptions (HBO Engineering, 2016). Each level is explained with reference to three factors. The levels (1, 2, 3) are set out below, together with a brief explanation. (Source: Bachelor of Engineering).

Table 2. Description of levels.

Factors	Intake level	Level 1	Level 2	Level 3
Nature of the task	HAVO 5 / MBO 4 exit level	Simple, structured, applies familiar methods directly in accordance with accepted standards	Complex, structured, applies familiar methods in changing situations	Complex, unstructured, improves methods and applies standards to the situation
Nature of the context		Familiar, simple, monodisciplinary, in a classroom setting	Familiar, complex, monodisciplinary, in a practical setting under supervision	Unfamiliar, complex, multidisciplinary, in a practical setting
Level of independence		Supervised	Supervision if required	Independent

In the National IPO Agreement, the IPO study programmes set a minimum level definition for each field competence from the Bachelor of BEng profile, adding up to a minimum total of 18. The level definitions are set out in Table 1 in the document 'National Professional Programme Profile – Industrial Design Engineering' (LBOP IPO) and are presented in Spider web diagram 1 below. The IPO programmes have then translated this spider web diagram into six LBOP IPO competences, which can be found in Spider web diagram 2.

For the Venlo IDE programme, it was decided that all Level 1 competences must be achieved in the first-year programme; the exit level of the competences (i.e. Level 2 or 3) must be demonstrated in the graduation project.

1	Analysing
2	Designing
3	Implementing
4	Controlling
5	Managing
6	Advising
7	Researching
8	Professional development

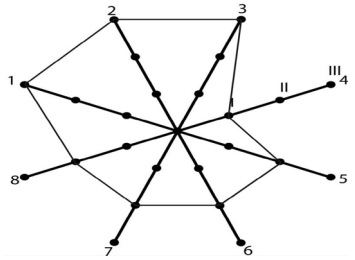
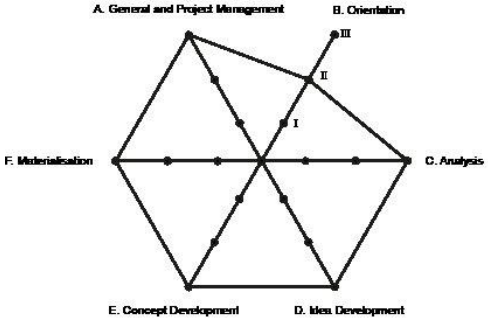


Figure 1. Spider web diagram 1: LBOP IPO level definitions for BEng competences

A	General/Project Management
B	Orientation
C	Analysis
D	Idea development
E	Concept Development
F	Materialisation

Figure 2. Spider web diagram 2: LBOP IPO competence definitions with level definitions for IDE



1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:

Level

- Dublin Descriptors
- Higher professional education (HBO) standards

Content

- National Bachelor's profile: Bachelor of Engineering(BEng)
- National degree programme profile: National Professional and Programme Profile (LBOP) – Industrial Design Engineering Professional Education Programme (IPO)
- Study programme profile: Available from the relevant department on request.

2. Curriculum

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See TER Articles 14 and 16

The tables below set out the units of study for each semester, how many credits[8] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Key 1. Teaching methods.

L	Lecture = Teaching theory to large groups
T	Tuition / Tutorial = Practising learning tasks in small groups
P	Project = Individuals or small groups working independently on a problem
I	Independent study = Individuals studying learning materials independently
E	Exercise/Lab = Lab in small groups

Table 3. Curriculum by semester.*

					IPO Competences (LBOP)					
Sem.	Code	Unit of study	Teaching method	ECTS	A. General / Project Management	B. Orientation	C. Analysing	D. Developing ideas	E. Developing concepts	F. Materialisation
1	PRP1	Professional Practice	TPIE	5	X					
	ORI1	Orientation & Research	TPIE	5		X				
	ANA1	Analysis	TPIE	5			X			
	IDG1	Idea Generation	TPIE	5				X		
	CON1	Concept development	TPIE	5					X	
	REA1	Realisation	TPIE	5						X
2	PRP2	Professional Practice	TPIE	5	X					
	ORI2	Orientation & Research	TPIE	5		X				
	ANA2	Analysis	TPIE	5			X			
	IDG2	Idea Generation	TPIE	5				X		
	CON2	Concept development	TPIE	5					X	
	REA2	Realisation	TPIE	5						X

* this curriculum starts with semester 1 and 2 in school year 2020/2021.

[8] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

3. Assessment

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See TER Article 18

The tables below show the type of assessment and the marking method for each unit of study. The written exams are conducted in English.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment*	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 4. Assessment by semester*.

Sem.	Unit of study (code)	Assessment					Marking		
		Test	Type			Entry requirement	Who		How
			K	S	IA		I	G	
1	PRP1	Integral assessment			X		X		U/S/G/E
	ORI1				X		X		U/S/G/E
	ANA1				X		X		U/S/G/E
	IDG1				X		X		U/S/G/E
	CON1				X		X		U/S/G/E
	REA1				X		X		U/S/G/E
2	PRP2	Integral assessment			X		X		U/S/G/E
	ORI2				X		X		U/S/G/E
	ANA2				X		X		U/S/G/E
	IDG2				X		X		U/S/G/E
	CON2				X		X		U/S/G/E
	REA2				X		X		U/S/G/E

* this curriculum starts with semester 1 and 2 in school year 2020/2021.

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Study programme	LOGISTICS MANAGEMENT (LM) LOGISTICS ENGINEERING (LE)
Variant	FULL TIME
Academic year	2020/2021

Contents
1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to Article 12

See OER Article 12

This section contains information about the set of qualifications for the study programmes, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The competence sets for the programmes are based on the competences for logistics set out in the national professional profile and competence profile (logistiek, HBO Landelijk platform, 2013).

The two programmes each have their own set of competencies. Each set of competencies comprises of three sub-competencies (expressed in terms of exit level), which are based on the three professional roles defined by the programme. As well as being defined by their content, these professional roles are defined by their 'level of execution', which is specified in brackets below:

- Develop (strategic)
- Set up (tactical)
- Implement (operational)

To make each sub-competency more specific, a number of facets are specified for each sub-competency. In addition, each sub-competency is associated with a set of knowledge and skills aspects. The set of sub-competences is placed in the context of five professional roles: the context in which the prospective logistics specialist is operating: production, warehousing, transport, integrated logistics (integration within the company) and Supply Chain Management (integration beyond the company). The sub-competences for each programme are set out below, along with the link to the nationally-defined competences. For Logistics Management, the Bachelor of Business Administration (BBA) competences are used; for Logistics Engineering, the Bachelor of Engineering (BEng) competences are used.

Table 1a. Exit qualifications for the LM study programme.

LM competences	Link to BBA competences		
	Research skills	Professional skills	Responsible business practices
I. Development of a logistics concept. The student is able to design or redesign a logistics concept for the various professional situations. This concept makes framework-setting statements, in line with the logistics objectives, about the focus areas of physical design (basic shape), control, information provision and organisation of staff. This explicitly establishes the relationships between the focus areas.	X	X	X
II. Setting up of a logistics concept. 1. The student is able to design or redesign, in detail, the focus areas within the logistics concept for the professional situations of warehousing, transport and production. 2. The student is able to design or redesign, in detail, for the professional situations of Integrated Logistics and SCM, the focus areas of management/control, information provision, organisation of staff and KPIs within the logistics concept, taking account of the influence of other focus areas such as physical design.	X	X	X

III. Implementation within a logistics concept. Within existing logistics processes, the student is able to provide operational leadership in the various professional situations in terms of managing, assessing, steering and maintaining relevant relationships outside of their own department.		X	X

Table 1b. Exit qualifications for the LE study programme.

	Link to BEng competences							
LE competences	Analysing	Designing	Implementing	Controlling	Managing	Advising	Researching	Professional development
I. Development of a logistics concept. The student is able to design or redesign a logistics concept for the various professional situations. This concept makes framework-setting statements, in line with the logistics objectives, about the focus areas of physical design (basic shape), control, information provision and organisation of staff. This explicitly establishes the relationships between the focus areas.	X	X			X	X	X	X
II. Setting up of a logistics concept. 1. The student is able to design or redesign, in detail, the focus areas within the logistics concept for the professional situations of warehousing, transport and production. 2. The student is able to design or redesign, in detail, for the professional situations of Integrated Logistics and SCM, the focus areas of physical design and management/control within the logistics concept, taking account of the influence of other focus areas such as information provision, organisation of staff and KPIs.	X	X			X	X	X	X
III. Implementation within a logistics concept. Within existing logistics processes, the student is able to operate in the various professional situations in terms of planning, assessing, steering and making any necessary adjustments.	X		X	X		X		X

Old curriculum

The previous curriculum is based on the national professional and competence profile from 2007 (Landelijk Platform Logistiek, 2007). The programmes have a single competency set, which includes five competencies. The first competency (‘advice/innovation around logistics processes and the underlying logistics policy’) is a sector-specific competency. This competency is also referred in short as ‘expertise’. It covers the knowledge and skills area of logistics. Competencies 2 to 5 (‘leadership, collaboration, communication and professional skills’) are general professional competencies. The competencies are given additional significance by the context in which they are applied, and this context is determined by the tasks of the logistics specialist. The profile defined in the exit qualifications is validated in the table below by linking it to national/international standards.

Table 1c. Exit qualifications for the LE and LM study programmes – old curriculum.

Exit qualifications (competencies)	Validation against Dublin Descriptors				
	D1 Knowledge and understanding	D2 Applying knowledge and understanding	D3 Making judgements	D4 Communication	D5 Lifelong learning skills
Competency 1: Advice/innovation around logistics processes and the underlying logistics policy. Also referred to in short as ‘expertise’	X	X	X	X	X
Competency 2: Leadership	X		X	X	X
Competency 3: Teamwork		X	X	X	X
Competency 4: Communication				X	

Competency 5: Professional skills			X		X

1.2 Levels

Diversity in qualifications, and in the desired level of proficiency in the different phases of the study programme (the programmes have a first-year phase and a main phase), requires the details of each level to be specified. The programme is committed to the nationally-defined level descriptions. Each level is explained with reference to three factors. The levels (1, 2, 3) are set out below, together with a brief explanation.

The following factors affect the level of the exit qualification:
a. scope and complexity of the task;
b. complexity of the professional situation (context);
c. degree of independence and responsibility.

The table below describes these factors in more detail:

Table 2. Exit qualification levels (CuCo Logistiek, 2019).

Factor	level 1	level 2	level 3
Nature of the task	Simple, structured, applies familiar methods directly in accordance with accepted standards	Complex, structured, adapts familiar methods to changing situations	Complex, unstructured, improves[9] methods and adapts standards to suit the situation
Nature of the context	Familiar, simple, monodisciplinary, in a classroom setting	Familiar, complex, monodisciplinary, in a practical setting under supervision	Unfamiliar, complex, multidisciplinary, in a practical setting
Degree of independence	Supervised	Supervision if required	Independent

The programme has determined the level at which students must demonstrate the sub-competences. At the sub-competence level, it can be specified that these must be demonstrated at Level 1 in the first-year programme, and at Level 3 by the time of graduation. The details of these levels for each competence aspect can be found in the Study Programme Profile (CuCo Logistiek, 2019).

1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:
Level
- Dublin Descriptors
- Higher professional education (HBO) standards[10]

Contents
- National Bachelor's profile: Bachelor of Engineering (BEng) and Bachelor of Business Administration (BBA)
- National degree programme profile: National profile
- Study programme profile: Available from the relevant department on request.

2. Curriculum

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See OER Articles 14 and 16

The tables below set out the units of study for each semester, how many credits[11] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Key 1. Teaching methods.

L	Lecture = Teaching theory to large groups
T	Tuition / Tutorial = Practising learning tasks in small groups
P	Project = Individuals or small groups working independently on a problem
I	Independent study = Individuals studying learning materials independently
E	Exercise/Lab = Lab in small groups

[9] 'improves methods' refers not to the improvement of methods per se but to the adaptation of methods for application in specific professional situations.
[10] A comparison between the HBO standards and the Dublin Descriptors can be found here.
[11] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

Table 4a. Curriculum by semester – Joint semesters. Course based programme

Semesters 1 to 3 (common)					
Sem.	Code	Units of study	Credits	Type	Language
1	PRO1	Warehousing	10	PLTI	NL/G/EN
	CAS1.1	Logistics & company	5	LTI	NL/G/EN
	CAS1.2	Warehousing, general and strategic	5	LTI	NL/G/EN
	CAS1.3	Warehousing, tactical and operational	5	LTI	NL/G/EN
	CAS1.4	Tools	5	LTI	NL/G/EN
2	PRO2	Distribution	10	PLTI	NL/G/EN
	CAS2.1	Distribution, general and strategic	5	LTI	NL/G/EN
	CAS2.2	Transport, tactical and operational	5	LTI	NL/G/EN
	CAS2.3	Distribution, tactical and operational	5	LTI	NL/G/EN
	CAS2.4	Tools	5	LTI	NL/G/EN
3	PRO3	Production	10	PLTI	NL/G/EN
	CAS3.1	Production, general and strategic	5	LTI	NL/G/EN
	CAS3.2	Production, tactical and operational, functional organisation	5	LTI	NL/G/EN
	CAS3.3	Production, tactical and operational, product-oriented organisation	5	LTI	NL/G/EN
	CAS3.4	Tools	5	LTI	NL/G/EN

Table 4b. Curriculum by semester – LM. Course based programme

Semester 4 LM					
Sem.	Code	Units of study	Credits	Type	Language
4	PRO4	Integrated Logistics LM & Self-Study	15	PLTI	NL/G/EN
	CAS4.1	Integrated Logistics, Strategic – LM	5	LTI	EN
	CAS4.2LM	Integrated Logistics, Tactical and Operational – LM	5	LTI	EN
	CAS4.3LM	LM Tools	5	LTI	EN

Table 4c. Curriculum by semester – LE. Course based programme

Semester 4 LE					
Sem.	Code	Units of study	Credits	Type	Language
4	PRO4	Integrated Logistics LE & Self-Study	15	PLTI	NL/G/EN
	CAS4.1	Integrated Logistics, Strategic – LE	5	LTI	EN
	CAS4.2LE	Integrated Logistics, Tactical and Operational – LE	5	LTI	EN
	CAS4.3LE	LE Tools	5	LTI	EN

Table 4d. Curriculum by semester – Semesters 5 and 6, LM and LE. Course based programme

Semester 5 LM&LE					
Sem.	Code	Units of study	Credits	Type	Language
5	STG	Internship	30	I	NL/G/EN
Semester 6 LM&LE					
Sem.	Code	Units of study	Credits	Type	Language
6	MNR	Minor	30	Dependent on minor	Dependent on minor

Table 4e. Curriculum by semester – Semesters 7 en 8 LM en LE. Course based programme

Semester 7 LM					
SEM	CODE	Units of study	Credits	Type	Language
7	PRO7 LM	SCM PROJECT 7 & self-study/choice	10+5+5	PHIZ	NL/D/EN

	CAS7.1	SCM Strategic & Tactical	5	HIZ	EN
	CAS7.2LM	SCM Management & Control	5	HIZ	EN
Semester 7 LE					
7	PRO7 LE	SCM PROJECT 7 & self-study/choice	10+5+5	PHIZ	NL/D/EN
	CAS7.1	SCM Strategic & Tactical	5	HIZ	EN
	CAS7.2LE	SCM Analysis & Control	5	HIZ	EN
Semester 8, LM & LE					
8	AFST	Graduation	30	Z	NL/D/EN

Old curriculum

The tables below set out the units of study for each semester and how many credits[12] each unit is worth. Format indicates the teaching and learning methods for the module. Alignment with the exit qualifications is guaranteed by specifying which competencies are covered in each module. The programme then tests and assesses the competencies equally across the various modules (see Section 2.4).

Table 4e. Curriculum by semester – Joint semesters, old curriculum.

Semesters 1 to 3 (common)						Logistics competencies				
Sem.	Code	Units of study	Credits	Type	Language	C1	C2	C3	C4	C5
1	ECO1	Economics 1	2	LI	NL/G/EN	x				
	ENG1	English 1	2	LTI	EN				x	
	QUM1	Quantitative methods 1	2	LI	NL/D/EN	x				
	LOG1	Logistics 1	2	LI	NL/G/EN	x				
	SKI1	Soft Skills 1	2	LTI	NL/G/EN				x	
	TEC1	Technology 1	2	LI	NL/G/EN	x				
	PO1	Project 1: The Company	3	P	NL/G/EN	x	x	x	x	x
	ECO2	Economics 2	2	LI	NL/G/EN	x				
	ENG2	English 2	2	LTI	EN		x	x	x	
	QUM2	Quantitative methods 2	2	LI	NL/G/EN	x				
	LOG2	Logistics 2	2	LI	NL/G/EN	x				
	SKI2	Soft Skills 2	2	LTI	NL/G/EN			x	x	x
	TEC2	Technology 2	2	LI	NL/G/EN	x				
	PO2	Project 2: Production 1	3	P	NL/G/EN	x	x	x	x	x
2	ECO3	Economics 3	2	LI	NL/G/EN	x				
	ENG3	English 3	2	LTI	EN				x	
	QUM3	Quantitative methods 3	2	LI	NL/G/EN	x				
	LOG3	Logistics 3	2	LI	NL/G/EN	x				
	SKI3	Soft Skills 3	2	LTI	NL/G/EN				x	
	TEC3	Technology 3	2	LI	NL/G/EN	x				
	PO3	Project 3: Warehousing	3	P	NL/G/EN	x	x	x	x	x
	ECO4	Economics 4	2	LI	NL/G/EN	x				
	ENG4	English 4	2	LTI	EN				x	
	QUM4	Quantitative methods 4	2	LI	NL/G/EN	x				
	LOG4	Logistics 4	2	LI	NL/G/EN	x				
	SKI4	Soft Skills 4	2	LTI	NL/G/EN				x	
	TEC4	Technology 4	2	LI	NL/G/EN	x				
	PO4	Project 4: Transport	3	P	NL/G/EN	x	x	x	x	x
3	ECO5	Economics 5	2	LI	NL/G/EN	x				
	ENG5	English 5	2	TI	EN				x	
	QUM5	Quantitative methods 5	2	LI	NL/G/EN	x				
	LOG5	Logistics 5	2	LTI	NL/G/EN	x				
	SKI5	Soft Skills 5	2	LTI	NL/G/EN					x
	M&O5	Management & Organisation 5	2	LI	NL/G/EN		x			

[12] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

	PO5	Project 5: Production 2	3	P	NL/G/EN	x	x	x	x	x
	ECO6	Economics 6	2	LI	NL/G/EN	x				
	ENG6	English 6	2	TI	EN				x	
	QUM6	Quantitative methods 6	2	LI	NL/G/EN	x				
	LOG6	Logistics 6	2	LI	NL/G/EN	x				
	SKI6	Soft Skills 6	2	LTI	NL/D/EN		x		x	
	M&O6	Management & Organisation 6	2	LI	NL/G/EN	x	x	x		
	PO6	Project 6: Distribution	3	P	NL/G/EN	x	x	x	x	x

Table 4f. Curriculum by semester – Semesters 4–8 LM, old curriculum.

Semesters 4 to 8 LM						Logistics competencies				
Sem.	Code	Units of study	Credits points	Type	Language	C1	C2	C3	C4	C5
4	D&S7	Demand & Supply 7	2	LI	EN	x				
	ECO7	Economics 7	2	LI	EN	x				
	LOG7	Logistics 7	2	LI	EN	x				
	ORGA7	Organisation 7	2	LTI	EN	x			x	
	SUR7	Surroundings 7	2	LI	EN	x	x			
	SKI7	Soft Skills 7	2	LTI	EN		x		x	x
	PO7	Project 7	3	P	EN	x	x	x	x	x
	D&S8	Demand & Supply 8	2	LI	EN	x				
	ECO8	Economics 8	2	LI	EN	x				
	LEAN8	LEAN Management 8	2	LI	EN	x				
	LOG8	Logistics 8	2	LI	EN	x				
	CHM8	Change Management 8	2	LI	EN	x			x	
	SKI8	Soft Skills 8	2	LTI	EN	x			x	x
	PO8	Project 8	3	P	EN	x	x	x	x	x
5	STG	Internship	30	I	NL/G/EN	x	x	x	x	x
6	MNR	Minor	30		NL/G/EN	Dependent on minor				
7	LAW9	LAW 9	2	LI	EN	x				
	ECO9	Economics 9	2	LI	EN	x				
	LOG9	Logistics 9	2	LI	EN	x				
	ORG9	Organisation 9	2	LTI	EN	x	x	x		
	SCM9	Supply Chain Management 9	2	LI	EN	x				
	SKI9	Soft Skills 9	2	LTI	EN	x		x	x	
	PO9	Project 9	3	P	EN	x	x	x	x	x
	LOG10	Logistics 10	2	LI	EN	x				
	ECO10	Economics 10	2	LI	EN	x				
	SCM10	Supply Chain Management 10	2	LI	EN	x				
	SCRM10	Supplier & Customer Relationship Management	2	LI	EN	x		x		
	STRAT10	Strategy 10	2	LI	EN	x				
	SKI10	Soft Skills 10	2	LTI	EN	x				x
	PO10	Project 10	3	P	EN	x	x	x	x	x
8	AFST	Graduation project	30	I	NL/G/EN	x	x	x	x	x

Table 4g. Curriculum by semester – Semesters 4–8 LE, old curriculum.

Semesters 4 to 8 LE						Logistics competencies				
Sem.	Code	Units of study	Credits	Type	Language	C1	C2	C3	C4	C5
4	INF7	Information Systems 7	2	TI	EN	x				
	LOG7	Logistics 7	2	LI	EN	x				
	TEC7	Technology 7	2	LI	EN	x				
	TLS7	Tools 7	2	LTI	EN	x				
	QUM7	Quantitative Methods 7	2	LTI	EN	x				

	SKI7	Soft Skills 7	2	LTI	EN	x			x	x
	PO7	Project 7	3	P	EN	x	x	x	x	x
	INF8	Information Systems 8	2	TI	EN	x				
	LOG8	Logistics 8	2	LI	EN	x				
	TEC8	Technology 8	2	LTI	EN	x				
	TLS8	Tools 8	2	LTI	EN	x				
	QUM8	Quantitative Methods	2	LTI	EN	x				
	SKI8	Soft Skills 8	2	LTI	EN	x	x	x	x	x
	PO8	Project 8	3	P	EN	x		x	x	x
5	STG	Internship	30	I	NL/G/EN	x	x	x	x	x
6	MNR	Minor	30		NL/G/EN	Dependent on minor				
7	ECO9	Economics 9	2	LI	EN	x				
	INF9	Information Systems 9	2	LTI	EN	x				
	ITR9	International Transport 9	2	LTI	EN	x				
	LOG9	Logistics 9	2	LI	EN	x				
	QUM9	Quantitative Methods 9	2	LTI	EN	x				
	SKI9	Soft Skills 9	2	LTI	EN	x	x	x	x	x
	PO9	Project 9	3	P	EN	x	x	x	x	x
	ECO10	Economics 10	2	LI	EN	x				
	INF10	Information Systems 10	2	LTI	EN	x				
	ITR10	International Transport 10	2	LTI	EN	x				
	LOG10	Logistics 10	2	LI	EN	x				
	QUM10	Quantitative Methods 10	2	LTI	EN	x				
	SKI10	Soft Skills 10	2	LTI	EN					x
	PO10	Project 10	3	P	EN	x	x	x	x	x
8	AFST	Graduation project	30	I	NL/G/EN	x	x	x	x	x

3. Assessment

See OER Article 18

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The tables below show the type of assessment and the marking method for each unit of study, as well as the language in which will be offered.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment* W Written O Oral	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 5a. Assessment by semester.

Sem	Units of study	Assessment						Marking		
		Test	Type			Weighting	Entry requirements	Who		How
			K	S	IA			I	G	
1	PRO1	PRO1REP			W	1		W	W	1..10

		PRO1TEST			O	1	Grade of 6 or higher for PRO1REP	O	O	P/F
	CAS1.1		W			1		W		1..10
	CAS1.2		W O			1		W	O	1..10
	CAS1.3		W			1		W		1..10
	CAS1.4	CAS1.4a	W			0.5		W		1..10
		CAS1.4b	W			0.5		W		1..10
2	PRO2	PRO2REP			W	1		W	W	1..10
		PRO2TEST			O	1	Grade of 6 or higher for PRO2REP	O	O	P/F
	CAS2.1		W			1		W		1..10
	CAS2.2		W			1		W		1..10
	CAS2.3		W			1		W		1..10
	CAS2.4		W			1		W		1..10
3	PRO3	PRO3REP			W	1		W	W	1..10
		PRO3TEST			O	1	Grade of 6 or higher for PRO3REP	O	O	P/F
	CAS3.1		W			1		W		1..10
	CAS3.2		W			1		W		1..10
	CAS3.3	CAS 3.3a			W	0.2			W	1..10
		CAS 3.3b	W			0.8		W		1..10
	CAS3.4	CAS3.4a	W			0.5		W		1..10
		CAS3.4b	W			0.5		W		1..10
4LM	PRO4 LMLE	PRO4-IL			W,O	2/3		W,O	W, O	1..10
		PRO4-SEL			W,O	1/3		W,O		1..10
	CAS 4.1	CAS 4.1 TEST	W			0.5		W		1..10
		CAS 4.1 REP			W	0.5			W	1..10
	CAS 4.2LM	MADAS			W,O	0,2			W, O	1..10
		EXAM	W			0,8		W		1..10
	CAS 4.3LM	CAS 4.3LM	W			1		W		1..10
4LE	PRO4 LMLE	PRO4-IL			W, O	2/3		W, O	W, O	1..10
		PRO4-SEL			W,O	1/3		W,O		1..10
	CAS 4.1	CAS 4.1 TEST	W			0.5		W		1..10
		CAS 4.1 REP			W	0.5			W	1..10
	CAS 4.2LE	DATS	W			0,4		W		1..10
		IMERP	W			0,4		W		1..10
		KPI			W,O	0,2			W, O	1..10
	CAS 4.3LE	CAS 4.3LE	W			1		W		1..10
5LE &LM	STAGE	Internship			W, O	1	See regulations	W		1..10
6LE &LM	MINOR	MINOR	Dependent on choice of minor							
7LM	PRO7 LMLE	PRO7SCM			W, O	0,5	P passed	W, O	S, M	1..10
		PRO7SUP1			W, O	0,25	P passed	W, O		1..10
		PRO7SUP2			W, O	0,25	P passed	W, O		1..10
	CAS7.1	CAS7.1			W, O	1	P passed	W, O	W, O	1..10
	CAS7.2LM	CAS7.2LM			W, O	1	P passed	W, O	W, O	1..10
7LE	PRO7 LMLE	PRO7SCM			W, O	0,5	P passed	W, O	W, O	1..10
		PRO7SUP1			W, O	0,25	P passed	W, O		1..10
		PRO7SUP2			W, O	0,25	P passed	W, O		1..10
	CAS7.1	CAS7.1			W, O	1	P passed	W, O	W, O	1..10

	CAS7.2LE	CAS7.2LE			W, O	1	P passed	W, O	W, O	1..10
ST	AFST	Graduation			W, O	1	See regulations	W, O		1..10

Table 5b. Assessment by semester – Semesters 4–8 LM, old curriculum.

Sem.	Unit of study	Assessment							Marking		
		Test	Type			Weighting	Entry requirement		Who		How
			K	S	IA				T	G	
5	STG	Internship			W	1	See regulations		X		P/F
6	MNR	Minor	Depends on choice of minor								
7	LAW9	LAW 9	W			1			X		1..10
	ECO9	Economics 9	W			1			X		1..10
	LOG9	Logistics 9	W			1			X		1..10
	ORGA9	Organisation 9	W			1			X		1..10
	SCM9	Supply Chain Management 9	W			1			X		1..10
	SKI9	Soft Skills 9		W		1			X		1..10
	PO9	Project 9: report			O	1				X	1..10
		Project 9: test			W	1			X		P/F
	LOG10	Logistics 10	W			1			X		1..10
	ECO10	Economics 10	W			1			X		1..10
	SCM10	Supply Chain Management 10	W			1			X		1..10
	SCRM10	Supplier & Customer Relationship Management 10	W			1			X		1..10
	STRAT10	Strategy 10	W			1			X		P/F
		Strategy 10	W			1			X		P/F
	SKI10	Soft Skills 10		W		1			X		1..10
	PO10	Project 10: report			O	1				X	1..10
		Project 10: test			W	1			X		P/F
8	AFST	Graduation project			W	1	See regulations		X		1..10 P/F

Table 5c. Assessment by semester – Semesters 4–8 LE, old curriculum.

Sem.	Unit of study	Assessment							Marking		
		Test	Type			Weighting	Entry requirement		Who		How
			K	S	IA				T	G	
5	STG	Internship			W	1	See regulations		X		P/F
6	MNR	Minor	Depends on choice of minor								
7	ECO9	Economics 9	W			1			X		1..10
	INF9	Information Systems 9	W			1			X		1..10
	ITR9	International Transport 9	W			1			X		1..10
	LOG9	Logistics 9	W			1			X		1..10
	QUM9	Quantitative Methods 9	W			1			X		1..10
	SKI9	Soft Skills 9		W		1			X		1..10
	PO9	Project 9: report			O	1				X	1..10
		Project 9: test			W	1			X		P/F
	ECO10	Economics 10	W			1			X		1..10
	INF10	Information Systems 10	W			1			X		1..10
	ITR10	International Transport 10	W			1			X		1..10
	LOG10	Logistics 10	W			1			X		1..10
	QUM10	Quantitative Methods 10	W			1			X		1..10
	ECO10	Economics 10	W			1			X		1..10
	SKI10	Soft Skills 10		W		1			X		1..10
	PO10	Project 10: report			O	1				X	1..10
		Project 10: test			W	1			X		P/F
8	AFST	Graduation project			W	1	See regulations		X		1..10 P/F

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Study programme	MECHANICAL ENGINEERING
Variant	FULL TIME
Academic year	2020/2021

Contents
1. Exit qualifications (see OER Article 12)
2. Curriculum (see OER Articles 14 and 16)
3. Assessment (see OER Article 18)

1. Exit qualifications

Back to Article 12

See OER Article 12

This section contains information about the set of qualifications for the study programme, and indicates how this set is linked to national and international standards.

1.1 Set of qualifications

The study programme's set of exit qualifications is based on the national degree programme profile, which contains eight engineering competences ('the BEng competences'). The study programme defines its profile by placing an emphasis on researching, designing, constructing and producing. The set of exit qualifications is validated in the table below by linking it to national and international standards.

An 'x' means that all behavioural characteristics for the field competence concerned contribute to the implementation of the Dublin Descriptor. A letter (e.g. 'a') indicates that the specific behavioural characteristic for that field competence contributes to the implementation of the Dublin Descriptor. For an explanation of the letters, see pages 17–19 of the national Bachelor's profile.

Table 1. Study programme competences.

Competence from the national profile	Profile	Validation against Dublin Descriptors				
		Knowledge and understanding	Applying knowledge and understanding	Making judgements	Communication	Lifelong learning skills
	Connection with HBO Standards	St1, st3	St2, st3	St2, st4	St3	St2
BE1. Analysing	none	X	X	A, B	C, D	
BE2. Designing	Designing/developing new products and tools for a production process Mechanical Engineers with a Higher Professional Education degree can, on the basis of customer requirements and wishes, or on the basis of market research or a preliminary study, establish a product definition and a development approach, set out in a project plan for the product to be delivered, and can generate creative concepts.	X	X	A, E	F	
	Constructing: The further development of the chosen product concept Mechanical Engineers with a Higher Professional Education degree can examine, analyse and set up a technical system. They calculate and determine whether components should be made or purchased. They also make a considered choice about the associated production technology for each component.					

BE3. Implementing	Producing: Preparing for the manufacture of products (devices and systems) and for the commissioning and optimisation of the production systems. Mechanical Engineers with a Higher Professional Education degree can make products and prepare, install and monitor the production process.	X	A, B	C	D	
BE4. Controlling	none	X	X	C	D	
BE5. Managing	none	X	A	B	C, D, E	
BE6. Advising	none	X	D	C	A, B, D, E	
BE7. Researching	Conducting research Mechanical Engineers with a Higher Professional Education degree are active in the field of applied research focusing on mechanical engineering products, methods and systems, including facilities and components.	X	A	B	C, D, E	E
BE8. Professional development	none	X	X	A, B, C	D, F	X

1.2 Levels

Diversity in qualifications, and in the desired level of proficiency in the different phases of the study programme (the programme has a first-year phase, a core phase and an engineer phase), requires the details of each level to be specified. The programme is committed to the nationally-defined level descriptions (HBO Engineering, 2016). Each level is explained with reference to three factors. The levels (1, 2, 3) are set out below, together with a brief explanation. (Source: Bachelor of Engineering).

Table 2. Description of levels.

Factors	Intake level	Level 1	Level 2	Level 3
Nature of the task	HAVO 5 / MBO 4 exit level	Simple, structured, applies familiar methods directly in accordance with accepted standards	Complex, structured, applies familiar methods in changing situations	Complex, unstructured, improves methods and applies standards to the situation
Nature of the context		Familiar, simple, monodisciplinary, in a classroom setting	Familiar, complex, monodisciplinary, in a practical setting under supervision	Unfamiliar, complex, multidisciplinary, in a practical setting
Level of independence		Supervised	Supervision if required	Independent

For each year of study, the programme has determined the level at which students must demonstrate the competences (through their professional tasks). The programme is committed to the national guidelines concerning levels: 'The level of each competence can vary from 1 to 3 depending on the nature of the task, the nature of the context and the level of independence. In determining the programme profile, for a particular field each competence must be classified at Level 1 as a minimum, and the sum of all levels must be at least 18. Programmes can define their profile by classifying one or more competences at a higher level.' (Werktuigbouwkunde, 2014). See the table below for the level distribution across each year of study.

Table 3. Level distribution by year of study.

Field competence	Year 1	Year 2	Year 3	Exit level
Analysing	1	2	2+	3
Designing	1	2	2+	3
Implementing	1	1+	2	2
Controlling	1	1+	2	2
Managing	1	1	1	1
Advising	1	1+	2	2
Researching	1	2	2	2
Professional development	1	2	2+	3
Totals	8	12	15	18

1.3 Justification

The study programme is committed to complying with national and international standards and guidelines concerning level and content:

Level

- Dublin Descriptors

- Higher professional education (HBO) standards[13]

Contents

- National Bachelor's profile: Bachelor of Engineering(BEng)
- National degree programme profile: National competence profile for Mechanical Engineering
- Study programme profile: Available from the relevant department on request.

2. Curriculum

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See OER Articles 14 and 16

The tables below set out the units of study for each semester, how many credits[14] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Teaching methods key

L	Lecture = Teaching theory to large groups
T	Tuition / Tutorial = Practising learning tasks in small groups
P	Project = Individuals or small groups working independently on a problem
I	Independent study = Individuals studying learning materials independently
E	Exercise/Lab = Lab in small groups

Table 4. Curriculum by semester.

					Profession-specific qualifications – WTB							
Sem.	Code	Unit of study	Teaching method	ECTS	BE1: Analysing	BE2: Designing	BE3: Implementing	BE4: Controlling	BE5: Managing	BE6: Advising	BE7: Researching	BE8: Professional development
1	VIS1	Visualise 1	T	5	X	X					X	
	MAP1	Materials & Production 1	L/E	5	X		X				X	
	MECH1	Mechanics 1	L/T	5	X						X	
	MAC1	Measurement & Control 1	T/E	5	X		X				X	
	PRJ1	Project 1	P	10	X	X	X	X	X	X	X	X
2	MFE2	Mathematics for Engineers 2	L/T	5	X							
	MAP2	Materials & Production 2	L/E	5	X		X				X	
	MECH2	Mechanics 2	L/T	5	X	X						
	CADE2	Computer-Aided Design & Engineering 2	T	5	X	X	X					
	PRJ2ME	Project 2 Industrial Design	P	10	X	X	X	X	X	X	X	X
3	MD3A	Machine Design 3A	L/T/E	5	X	X	X					
	MD3B	Machine Design 3B	L/T/E	5	X	X	X					
	MECH3ME	Mechanics 3 Mechanical Engineering	L/T	5	X	X						
	MAP3ME	Materials & Production 3 Mechanical Engineering	L/T/E	5	X		X				X	
	PRJ3ME	Project 3 Mechanical Engineering	P	10	X	X	X	X	X	X	X	X
4	DC4	Dynamics & Control 4	L/T	5	X	X						
	MS4A	Mechanical Systems 4A	L/T/E	5	X	X	X	X			X	
	MS4B	Mechanical Systems 4B	L/T/E	5	X	X	X	X			X	
	TFD4	Thermo & Fluid Dynamics 4	L/T	5	X	X						
	PRJ4ME	Project 4 Mechanical Engineering	P	10	X	X	X	X	X	X	X	X
5	STG	Internship	P	30	X	X	X	X	X	X	X	X
6	MNR	Minor		30	Depends on student choices: Fontys or elsewhere, type of minor, completion of minor							
7	PPQ*	Production, Process & Quality	L/T/E	5	X	X					X	
	RCNC*	Robotics & Computer Numeric Control	L/T/E	5	X	X					X	
	SLC*	Stiff & Lightweight Construction	L/T/E	5	X	X	X				X	
	PRE*	Precision Engineering	L/T/E	5	X	X	X				X	
	REN*	Renewable Energy	L/T/E	5	X	X					X	
	ADVIS*	Advanced Visualization	P	5		X	X					X
	SMART*	Smart Products and User Interface	P	5	X	X				X	X	X
	CIRC*	Design for Circularity	P	5	X	X				X	X	X
	TOPO*	Topology and Added Manufacturing	P	5	X	X	X				X	X
	MANAG*	Product Management	P	5	X				X	X	X	
	PRJ7ME	Project 7 Mechanical Engineering	P	15	X	X	X	X	X	X	X	X
8	AFST	Graduation project	P	30	X	X	X	X	X	X	X	X

* Semester 7: 3 electives (3x5 = 15 ECTS) + PRJ7ME (15 ECTS). 30 ECTS in total

[13] A comparison between the HBO standards and the Dublin Descriptors can be found here.

[14] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

3. Assessment

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See TER Article 18

The tables below show the type of assessment and the marking method for each unit of study. All units of study are assessed in Dutch, with the exception of units of study which are taught in German; these are assessed in German.

Key 2. Assessment and marking.

Assessment	Marking		
Type of assessment	Who is marked?	How are they marked?	
K Knowledge test S Skills test IA Integrated Assessment*	• I: Individual student • G: Group NB: Where a group of students is assessed, each individual student will receive the same group mark.	Mark	1..10
		In words	Pass (P), Fail (F)
			Very Poor (VP), Poor (P), Mediocre (M), Unsatisfactory (U), Borderline (B), Satisfactory (S), More than Satisfactory (MS), Good (G), Very Good (VG), Excellent (E)
		Feedback	Feedback on content
			Mark
			In words
		Other**	A = Absent
			E = Exemption
			FR = Fraud

* A specific summative assessment. We use this term for project assessments to indicate that application of the relevant competency aspects in the authentic and/or simulated context will be assessed in an integrated way.
** These are not grades, but are used to indicate why a student failed to complete an assessment.

Table 5. Assessment by semester.

Sem.	Unit of study (code)	Assessment						Marking		
		Test	Type			Weighting	Entry requirement	Who		How
			K	S	IA			T	G	
1	VIS1	Visualise 1		X		1		X		1..10
	MAP1	Materials & Production 1 Theory (MAP1T)	X			0.8		X		1..10
		Materials and Production 1 Skills (MAP1S)		X		0.2		X		P/F
	MECH1	Mechanics 1a (MECH1A)	X			0.5		X		1..10
		Mechanics 1b (MECH1B)	X			0.5		X		1..10
	MAC1	Measurement & Control		X		1		X		P/F
	PRJ1	Project 1 (PRJ1)			X	0.8		X		1..10
		Project 1 Professional Practice 1 (PRP1)		X		0.2		X		1..10
2	MFE2	Mathematics for Engineers 2	X			1		X		1..10
	MAP2	Materials and Production 2 Theory (MAP2T)	X			0.8		X		1..10
		Materials and Production 2 Skills 2 (MAP2S)		X		0.2		X		P/F
	MECH2	Mechanics 2	X			1		X		1..10
	CADE2	Computer Aided Design & Engineering 2		X		1		X		1..10
	PRJ2	Project 2 Mechanical Engineering (PRJ2)			X	0.8		X		1..10
		Project 2 Mechanical Engineering Professional Practice (PRP2)		X		0.2		X		1..10
3	MD3A	Machine Design 3A	X			1		X		1..10
	MD3B	Machine Design 3B	X			1		X		1..10
	MECH3	Mechanics 3 Mechanical Engineering	X			1		X		1..10
	MAP3	Materials and Production 3 Mechanical Engineering Theory (MAP3T)	X			0.8		X		1..10
		Materials and Production 3 Mechanical Engineering Skills (MAP3S)		X		0.2		X		P/F
	PRJ3	Project 3 Mechanical Engineering (PRJ3)			X	0.8		X		1..10
		Project 3 Mechanical Engineering Professional Practice (PRP3)		X		0.2		X		1..10
4	DC4	Dynamics and Control 4	X			1		X		1..10
	MS4A	Mechanical Systems 4A	X			1		X		1..10
	MS4B	Mechanical Systems 4B	X			1		X		1..10

	TFD4	Thermo and Fluid Dynamics	X			1		X		1..10
	PRJ4	Project 4 Mechanical Engineering A (PRJ4A)			X	0.2		X	X	1..10
		Project 4 Mechanical Engineering B (PRJ4B)			X	0.6		X		1..10
		Project 4 Mechanical Engineering Professional Practice (PRP4)		X		0.2		X		1..10
5	STG	Stage			X	1		X		1..10
6	MNR	Afhankelijk van minorkeuze								
	PPQ*	Production, Process & Quality			X	1		X		1..10
	RCNC*	Robotics & Computer Numeric Control			X	1		X		1..10
	SLC*	Stiff & Lightweight Construction			X	1		X		1..10
	PRE*	Precision Engineering			X	1		X		1..10
	REN*	Renewable Energy			X	1		X		1..10
	ADVIS*	Advanced Visualization			X	1		X		1..10
	SMART*	Smart products and User interface			X	1		X		1..10
	CIRC*	Design for circularity			X	1		X		1..10
	TOPO*	Topology and added manufacturing			X	1		X		1..10
	MANAG*	Product Management			X	1		X		1..10
	PRJ7	Project 7 Mechanical Engineering A (PRJ7A)			X	6/15			X	1..10
		Project 7 Mechanical Engineering B (PRJ7B)			X	7/15		X		1..10
		Project 7 Mechanical Engineering Professional Practice (PRP7)		X		2/15		X		1..10
8	AFST	Afstuderen			X	1		X		1..10

* Semester 7: 3 electives (3x5 = 15 ECTS) + PRJ7 (15 ECTS). 30 ECTS in total

Study programme	BILL
Variant	Full time
Study year	2020-2021

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Inhoud
2. Programme (bij OER artikel 14 en 16)
3. Assessment (bij OER artikel 18)

2. Curriculum

See TER article 14 and 16

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Explanation BILL Programme
The BILL programme (Business Innovation Learning Lab) is a multidisciplinary hybrid learning environment in which students, lecturers, researchers and entrepreneurs from different disciplines work closely together to solve business challenges. Within the BILL practice based business problems guide the development of the student. The problems are addressed in projects. Within BILL a Community for Design (CfD) is a team composed of at least three students, a project coach, a researcher from the research group and the client. A CfD works together to design a solution to the business problem.

During the third and fourth study year BILL students will work on projects, business problems or research projects, instead of the courses from the regular course based programme. For these students the minor expires.

Every BILL student is guided by a PPD coach: a personal professional development coach. At the start of a project the student describes in a learning plan where he stands with regards to the four units of study and how he wants to further develop on these four pillars in an upcoming project. During a project the student records his development (by means of evidence) how he has worked on on achieving learning outcomes of the BILL profile and what his progress is.

Quality assurance
In order to ensure that students eventually reach the desired final level for the HBO bachelors diploma, the profiles of the programmes involved are compared with each other. In order to be able to compare the profiles, the hbo standards are used as a basis. The Units of Study (BILL-1.1 till BILL-4.2) have been worked out in a BILL profile, in which the learning outcomes are described.

The BILL programme is based on four pillars, which in turn are based on the four HBO standards. Every pillar has 2 levels:
- Level 1: end of study year 3
- Level 2: end of study year 4

In table 2 the number of credits per pillar and level can be found.

Table 2. Overview BILL curriculum

	Pillar	Level 1	Level 2
1	A solid theoretical basis	20 EC	20 EC
2	Research skills	15 EC	15 EC
3	Professional skills	15 EC	15 EC
4	Ethical and social orientation	10 EC	10 EC

• For pillar 1 (theoretical basis) the learning outcomes are programme specific and are in line with the deepening of the knowledge and skills in semester 7.
• For pillars 2, 3, 4, the learning outcomes are formulated generically. The context (e.g. the projects) determines how students develop the necessary knowledge and skills. To distinguish between level 1 and 2, the AUCOM (autonomy and complexity) model is used.

Units of study and credits

The tables below set out the units of study for each semester, how many credits[15] each unit is worth, and how the units are delivered (teaching method). These tables also show the distribution of professional tasks across the curriculum.

Teaching methods key
L Lecture = Teaching theory to large groups
T Tuition / Tutorial = Practising learning tasks in small groups
P Project = Individuals or small groups working independently on a problem
I Independent study = Individuals studying learning materials independently
E Exercise/Lab = Lab in small groups

Table 2.1 Overview BILL-programme_general

semester	Code	Units of Study	Teaching method	EC	Entry requirements
5, 6	BILL-1a	Theoretical basis level 1	P	20	A student may only start in BILL if they have passed the propedeutic phase (60 EC).
	BILL-2a	Research skills level 1	P	15	
	BILL-3a	Professional skills level 1	P	15	
	BILL-4a	Ethical and social orientation level 1	P	10	
7,8	BILL-1b	Theoretical basis level 2	P	20	At least 3 of 4 pillars have been passed at level 1.
	BILL-2b	Research skills level 2	P	15	
	BILL-3b	Professional skills level 2	P	15	
	BILL-4b	Ethical and social orientation level 2	P	10	

Table 2.2 Overview BILL-programme_Mechatronics

semester	Code	Units of study	Study programme competences	EC
5, 6	BILL-1a	Theoretical basis level 1	BE1. Analysing, BE2. Designing, BE3. Realising, BE4. Controlling	20
	BILL-2a	Research skills level 1	BE7. Researching, BE1. Analysing	15
	BILL-3a	Professional skills level 1	BE8. Professional development, BE5. Managing, BE4. Controlling, BE6. Advising	15
	BILL-4a	Ethical and social orientation level 1	BE4. Controlling, BE8. Professional Development	10
7,8	BILL-1b	Theoretical basis level 2	BE1. Analysing, BE2. Designing, BE3. Realising, BE4. Controlling	20
	BILL-2b	Research skills level 2	BE7. Researching, BE1. Analysing	15
	BILL-3b	Professional skills level 2	BE8. Professional Development, BE5. Managing BE4. Controlling, BE6. Advising	15
	BILL-4b	Ethical and social orientation level 2	BE4. Controlling, BE8. Professional Development	10

Table 2.3 Overview BILL-programme Mechanical Engineering

semester	Code	Units of study	Study programme competences	EC
5, 6	BILL-1a	Theoretical basis level 1	BE1. Analysing, BE2. Designing, BE3. Realising, BE4. Controlling	20
	BILL-2a	Research skills level 1	BE7. Researching, BE1. Analysing	15
	BILL-3a	Professional skills level 1	BE8. Professional development, BE5. Managing, BE4. Controlling, BE6. Advising	15
	BILL-4a	Ethical and social orientation level 1	BE4. Controlling, BE8. Professional Development	10
7,8	BILL-1b	Theoretical basis level 2	BE1. Analysing, BE2. Designing, BE3. Realising, BE4. Controlling	20
	BILL-2b	Research skills level 2	BE7. Researching, BE1. Analysing	15
	BILL-3b	Professional skills level 2	BE8. Professional Development, BE5. Managing BE4. Controlling, BE6. Advising	15
	BILL-4b	Ethical and social orientation level 2	BE4. Controlling, BE8. Professional Development	10

Table 2.4 Overview BILL-programme Industrial Design Engineering (IDE)

semester	Code	Units of study	Study programme competences	EC
5, 6	BILL-1a	Theoretical basis level 1	B. Orientation (level 2), C. Analysis (level 2), D. Idea development (level 2), E. Concept development (level 2), F. Materialisation(level 2)	20
	BILL-2a	Research skills level 1	B. Oriëntation (level 2), C. Analysis (level 2)	15
	BILL-3a	Professional skills level 1	A. General / Projectmanagement (level 2)	15
	BILL-4a	Ethical and social orientation level 1	A. General / Projectmanagement (level 2)	10

[15] 1 credit, also known as an ECTS (European Credit Transfer System) credit, is equivalent to 28 study load hours.

7,8	BILL-1b	Theoretical basis level 2	B. Orientation (level 2), C. Analysis (level 3), D. Idea development (level 3), E. Concept development (level 3), F. Materialisation(level 3)	20
	BILL-2b	Research skills level 2	B. Oriëntation (level 2), C. Analysis (level 3)	15
	BILL-3b	Professional skills level 2	A. General / Projectmanagement (level 2)	15
	BILL-4b	Ethical and social orientation level 2	A. General / Projectmanagement (level 2)	10

Table 2.5 Overview BILL-programme Logistic Courses

semester	Code	Units of Study	Study programme competences*	EC
5, 6	BILL-1a	Theoretical basis level 1	I Development of a logistic concept (G 1,2,5,6,7) II. Setting up of a logistic concept (G 1,2,5,6,7) III. Implementation of a logistic concept (G 1,3)	20
	BILL-2a	Research skills level 1	I Development of a logistic concept (G 2,3) II Setting up of a logistic concept (G 2,3)	15
	BILL-3a	Professional skills level 1	I Development of a logistic concept (G 4,5,6,7,8) II. Setting up of a logistic concept (G 4,5,6,7,8) III. Implementation of a logistic concept (G 1,3,4)	15
	BILL-4a	Ethical and social orientation level 1	I Development of a logistic concept (G 6,8) II. Setting up of a logistic concept (G 6,8) III. Implementation of a logistic concept (G 2,4)	10
7,8	BILL-1b	Theoretical basis level 2	I Development of a logistic concept (G 1,2,5,6,7) II Setting up of a logistic concept (G 1,2,5,6,7) III. Implementation of a logistic concept (G 1,3)	20
	BILL-2b	Research skills level 2	I Development of a logistic concept (G 2,3) II Setting up of a logistic concept (G 2,3)	15
	BILL-3b	Professional skills level 2	I Development of a logistic concept (G 4,5,6,7,8) II. Setting up of a logistic concept (G 4,5,6,7,8) III. Implementation of a logistic concept (G 1,3,4)	15
	BILL-4b	Ethical and social orientation level 2	I Development of a logistic concept (G 6,8) II Setting up of a logistic concept (G 6,8) III. Implementation of a logistic concept (G 2,4)	10

* the subcompetences can be found in the study profile of the logistic courses. G refers to the use of knowledge and skills, the number to the relevant competence.

3. Assessment

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See TER article 18

Explanation of the method of assessment and test type in the BILL programme:
The BILL programme includes two (summative) test moments: a test moment to demonstrate his/her competence on the pillars for level 1 (end of study year 3) and a test moment to demonstrate his/her competence on the pillars for level 2 (end of study year 4). At these two test moments, the student appears before an assessment committee (usually at the end of an academic year, but this can also be earlier or later depending on the student's development). The independent assessment committee bases its opinion on:

1. the student's portfolio (source 1);
2. the advice of the (BILL) PPD coach (source 2);
3. the interview (approx. 30-45 minutes) with the student using the above sources.

N.B. The advice of the PPD coach is not binding but advisory.

For each unit of study (pillar), the assessment committee can give the following assessment:

result 4 to 5 = insufficient
result 6 to 7 = sufficient
result 8 to 9 = good
result 10 = excellent

Overview assessment
The table below show the type of assessment and the marking method for each unit of study. All units of study are assessed in English.

Table 3. Overview assessment BILL programme

Units of study (code)	Assessment						Marking		
	Test	Type			Weighting	Entry requirements	Who		How
		K	S	IA*			I	G	
BILL-1a	Theoretical basis level 1			X	1	A student may only start in BILL if they have passed the propedeutic phase (60 EC).	X		Grade 4..10
BILL-2a	Research skills level 1			X	1		X		Grade 4..10
BILL-3a	Professional skills level 1			X	1		X		Grade 4..10
BILL-4a	Ethical and social orientation level 1			X	1		X		Grade 4..10

BILL-1b	Theoretical basis level 2			X	1	At least 3 of the 4 pillars have been passed at level 1	X		Grade 4..10
BILL-2b	Research skills level 2			X	1		X		Grade 4..10
BILL-3b	Professional skills level 2			X	1		X		Grade 4..10
BILL-4b	Ethical and social orientation level 2			X	1		X		Grade 4..10

*portfolio assessment through a portfolio-interview

Other provisions

Switching to course-based curriculum during the BILL programme

Students following the learning route 'practice based learning' (BILL programme) have the opportunity to switch to the learning route 'course-based learning' in the first year of the BILL programme. Students can submit a request for exemption for (parts of) the minor and/or the internship to the examination board based on the BILL portfolio. On the basis of the portfolio, the examination board may decide to equate the obtained learning outcomes with either 1) the minor or 2) the internship or 3) both (in case the student decides to make the switch at the end of year 3).

APPENDIX 2 FHTenL Regulations for Internship

APPENDIX 3 FHTenL Regulations for Graduation

APPENDIX 4 Description Program Minors FHTenL

APPENDIX 5 FHTenL Samenstelling examencommissie_Composition Examination Board

Can all be found on the portal.