

GETUIGSCHRIFT

ACADEMISCH ONDERWIJS

De examencommissie van de bacheloropleiding

Industrieel Ontwerpen

aan de Faculteit **Construerende Technische Wetenschappen** van de Universiteit Twente te Enschede, verklaart dat

- **Klaas J. Schut** -

geboren op 29 september 1989 te Utrecht, Nederland

het afsluitend examen van de opleiding met goed gevolg heeft afgelegd en daarmee bij wet recht heeft op de graad

Bachelor of Science

De geëxamineerde voldoet aan de bekwaamheidseisen, bedoeld in artikel 36 van de Wet op het voortgezet onderwijs, voor zover van toepassing op het geven van onderwijs in het middelbaar algemeen voortgezet onderwijs en de eerste drie leerjaren van het hoger algemeen voortgezet onderwijs en van het voorbereidend wetenschappelijk onderwijs

Enschede, 31 augustus 2012

De geëxamineerde



De examencommissie



Dit getuigschrift vormt één geheel met het diplomasupplement
NVAO geaccrediteerd: 1 januari 2009.

UNIVERSITEIT TWENTE.

Universiteit Twente.

Diploma Supplement Bachelor

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Family name(s):	Schut
1.2	Given name(s)	Klaas Joris
1.3	Date of birth (day/month/year):	29/09/1989
1.4	Student identification number or code:	0175293

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1	Name of qualification and (if applicable) title conferred: Bachelor of Science in Industrieel Ontwerpen
2.2	Main field(s) of study for the qualification: Industrial Design
2.3	Name and status of awarding institution: Universiteit Twente (public university, state recognized)
2.4	Name and status of institution (if different from 2.3) administering studies:
2.5	Language(s) of instruction/examination: Dutch

3. INFORMATION ON THE LEVEL OF THE QUALIFICATION

3.1 Level of qualification:
Bachelor's Degree (First cycle study)
Research University

3.2 Official length of programme:
Three years (180 EC)

3.3 Access requirement(s):
According to The Higher Education and Research Act (Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek, WHW), article 7.24 through 7.29, access to a university programme in the Netherlands can be obtained in one of the following ways:

- a. With a diploma of the concluding examination of University Preparatory Education;
- b. With a certificate of the propaedeutic examination of an Academic Programme;
- c. With a certificate of the propaedeutic examination of a Higher Vocational Programme;
- d. With a certificate of the concluding examination of an Academic Programme;
- e. With a certificate of the concluding examination of a Higher Vocational Programme;
- f. With a certificate that has been approved by the Minister and that is at least equal to the diploma of the concluding examination of University Preparatory Education - the diploma may have been issued in the Netherlands or abroad;
- g. With a certificate that has been approved by the Executive Board and that is at least equal to the diploma of the concluding examination of University Preparatory according to the judgement of the Executive Board - the diploma may have been issued in the Netherlands or abroad;
- h. With a decision of colloquium doctum; to pass a colloquium doctum, a candidate should be at least 21.

4. INFORMATION ON THE CONTENTS AND RESULTS GAINED

4.1 Mode of study:
Fulltime

4.2 Programme requirements:

Relevant information regarding modules and grades obtained is provided in the transcript of records (see 4.3). Programme requirements as described in the Bachelor Teaching and Examination Regulations (TER). The programme is theme-based and project-oriented. In every period, the students participate in theory courses and work on design projects within a theme. Typical themes are design and construction, design of smart products, design and production of consumer products and (re)designing for specific target groups.

Apart from these group projects, every student conducts an individual assignment and a final Bachelor's assignment on a topic of his/her choice.

Theory courses focus on the fundamentals of different technical disciplines, such as mechanical engineering, electrical engineering and software design, as well as those of social and behavioural sciences like marketing, ergonomics and psychology.

4.3 Programme details: (e.g. modules or units studied) and the individual grades/marks/credits obtained:

The following list shows all the subjects completed by the student as part of the degree course. It states the subject name, number of credits and the final mark awarded to the student.

Propaedeutic courses		EC	Mark
191157051	Mechanics of Materials 1	2.9	6
191157200	Statics	2.1	8
191210380	Electronics	3.6	7
191512101	Mathematics A	4.0	6
191512151	Mathematics B	4.0	C5
192801000	Project Industrial Design 1	2.9	V
192801012	Project Industrial Design 2	12.3	7
192801031	Introduction to Industrial Design	2.1	V
192801073	Project Smart Products	8.0	8
192801091	Human Factors and Ergonomics	2.0	6
192801110	Software Application Development	2.9	8
192801120	Theory of Form	1.4	6
192801130	Product Creation and Realisation	5.0	6
192801220	Schetsen & Concepttekenen	2.5	7
192801280	Product Presentatietekenen	2.5	6
192801300	Vormmethodiek	2.5	7
192899110	Academic Aspects of Industrial Design Engineering	1.9	V
Total EC		62.6	
Courses			
191121121	Processing and Properties of Plastics	3.0	8
192802000	Basic Principles of Physics	3.6	7
194108021	Marketing Intended for Industrial Design	3.0	7
192802021	Design and User-Product Relations	4.3	7
192802102	Project K	11.1	7
192802130	Physical and Cognitive Ergonomics	2.9	8
192802110	Graphic Design	2.1	8
192802150	Project O	10.0	7
191124200	CAD/CAM 1: Process, Principles and Tools	5.0	6
192803510	Psychonomics	2.9	7
192803400	Philosophy of Technology	3.6	6
191511601	Mathematics C	2.0	6
194110140	Cost Management and Engineering - Foundations	3.0	7
191157210	Dynamics	2.9	8
192802320	Manufacturing 4	2.5	6
191531101	Introduction to Statistics	3.0	6
201000016	Design of mechatronics ans systems	5.0	7
192802360	Free Assignment	4.0	7
192803360	Personal Reflection on Free Assignment	0.5	V
192899121	Academic Aspects of Industrial Design Engineering	1.4	V
192802340	Productweergave	2.5	7
192899140	Academic Aspects of Industrial Design Engineering	1.0	V
Minor courses Teaching at Junior High School Level (30EC)			
197493700	Physics Teaching Methodology - Minor	5.0	8
197493550	Knowledge Communication - Introduction	5.0	6
197493800	Physics Teaching Methodology 1 - Minor	5.0	8
197493900	Physics Teaching Practice 1 - Minor	5.0	7

201000064	Physics teaching for junior high	5.0	7
201000059	Physics teaching practice for junior high	5.0	7

Minor courses Aeronautics

191852581	The Aerospace and Aviation Industry	3.0	8
191154500	Aeronautical Engineering - Capita Selecta	2.0	V
194121100	Airport Management: Strategy & Operations	5.0	7
191154390	Aircraftstructures, Loads and Vibrations	5.0	8
191841580	Human Resource Management	5.0	6

Bachelor Assignment

192803102	Bachelor Final Assignment	19.6	7
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Total EC 148.9

Other courses

194113000	Protagonists of the History of Science	3.0	6
191920170	Evaluation	4.0	7
192901070	Social Psychology	5.0	7

Total EC 12.0

Graduation date: 31/08/2012

Total EC: 223.5

4.4 Grading scheme and, if available, grade distribution guidance:**Dutch grading system**

The Dutch grading system, used from elementary through to university education is the 1 to 10 scale given in the following table, in which 10 is the highest grade, 6 the minimum pass, and 1 the lowest grade. However, 10 is rarely awarded.

Mark	Definition
10	Excellent
9	Very good
8	Good
7	Satisfactory
6	Sufficient
5-1	Fail
Special marks	
C4	Compensated 4
C5	Compensated 5
NV	Absent
NVD	Not accomplished
O	Insufficient
V	Sufficient
VR	Exemption

Frequency table of passing grades

Unweighted frequency table of passing grades for all grades obtained by bachelor students in the programme over the academic years 2009 and 2010 (01-09-2009 until 31-07-2011)

Programme (Curriculum)

B-IO

Grade	Number	Percentage
6	2173	28,8%
7	2987	39,6%
8	1881	24,9%
9	449	6,0%
10	54	0,7%
Total number of results :	7544	
Average grade	7,10	100%

4.5 Overall classification of the qualification (in original language).

Graduated

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study:

Holders of a Bachelor's degree in Industrial Design Engineering issued by the University of Twente are eligible for admission to the Master's degree course in Industrial Design Engineering at one of the Universities of Technology in the Netherlands.

Access to other Master's programmes is subject to the conditions stipulated by that specific programme or by the providing institution.

5.2 Professional status *(if applicable)*:

The candidate has successfully completed an education minor with a study load of 30 EC and fulfils the required competences, stipulated in Article 36 of the Secondary Education Act, insofar as it applies to teaching the subject(s) of Physics in junior general secondary education and the first three years of senior general secondary education and pre-university education.

This certificate qualifies the candidate, pursuant to Article 33 of the Secondary Education Act, to work as a teacher of Physics in junior general secondary education and the first three years of senior general secondary education and pre-university education.

6. ADDITIONAL INFORMATION

6.1 Additional information:

The programme was accredited by the Accreditation Organisation of The Netherlands and Flanders 1 January 2009 (NVAO: Nederlands-Vlaamse Accreditatie Organisatie).

6.2 Further information sources:

Additional information can be obtained from the following faculty:

University of Twente

Faculty of Engineering Technology

PO Box 217

7500 AE Enschede

The Netherlands

Tel: 053 4892547

Fax:

E-mail:

Internet: www.utwente.nl

www.nuffic.nl

- Netherlands Organization for International Cooperation in Higher Education (Nuffic)

www.vsnu.nl

- Association of universities in The Netherlands (VSNU)

www.minocw.nl

- Ministry of Education, Culture and Science

www.nvao.net

- Accreditation Organisation of The Netherlands and Flanders (NVAO)

www.unesco.nl

- National UNESCO Commission

7. CERTIFICATION OF THE SUPPLEMENT

7.1 Date:
Enschede, 31/08/2012

7.2 Signature:



7.3 Capacity:
Board of Examiners

7.4 Official stamp or seal:



8. INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

8.1 HIGHER EDUCATION IN THE NETHERLANDS

Primary and Secondary Education:

Access to Higher Education :

Children are allowed to begin school at the age of four, but are not legally required to do so until the age of five. Primary education lasts eight years (of which seven are compulsory), in the last year of which pupils are advised as to the type of secondary education they should pursue.

Secondary education, which begins at the age of 12 and is compulsory until the age of 16, is offered in several types at several levels. VMBO programmes (four years) combine general and vocational education, after which pupils can continue in senior secondary vocational education and training (MBO) lasting one to four years. The two programmes of general education that grant admission to higher education are HAVO (five years) and VWO (six years). Pupils are enrolled according to their ability. The last two years of HAVO and the last three years of VWO are referred to as the *tweede fase* (literally, second phase), or upper secondary education. During these years, pupils focus on one of four subject clusters (*profielen*), each of which emphasizes a certain field of study in addition to satisfying general education requirements. Each cluster is designed to prepare pupils for programmes of study at the tertiary level. A pupil enrolled in VWO or HAVO can choose from the following subject clusters:

- 1) Science and Technology (Natuur en Techniek)
- 2) Science and Health (Natuur en Gezondheid)
- 3) Economics and Society (Economie en Maatschappij)
- 4) Culture and Society (Cultuur en Maatschappij)

Only the six-year VWO diploma grants access to the bachelor programmes offered by research universities; the HAVO diploma and the highest level of MBO grant access to the bachelor programmes offered by universities of applied sciences.

Higher Education

Higher education in the Netherlands is offered at two types of institutions: research universities and universities of applied sciences. Research universities include general universities, universities specializing in engineering and agriculture, and the Open University. Universities of applied sciences include general institutions as well as institutions specializing in a specific field such as agriculture, fine and performing arts, or teacher training. Whereas research universities are primarily responsible for offering research-oriented programmes, universities of applied sciences are primarily responsible for offering programmes of higher professional education, which prepare students for particular professions. These tend to be more practically oriented than programmes offered by research universities.

In this binary and three-cycle system, bachelor's, master's and PhD degrees are awarded. Short-cycle higher education leading to the associate's degree is offered by universities of applied sciences. Degree programmes and periods of study are quantified in terms of the EC credit system.

The focus of degree programmes determines both the number of credits required to complete the programme and the degree which is awarded. A research-oriented bachelor's programme requires the completion of 180 credits (3 years) and graduates obtain the degree Bachelor of Arts or Bachelor of Science (BA/BSc), depending on the discipline. A bachelor's degree awarded in the applied arts and sciences requires the completion of 240 credits (4 years), and graduates obtain a degree indicating the field of study (for example, Bachelor of Engineering, B Eng, or Bachelor of Nursing, B Nursing). An associate's degree in the applied arts and sciences requires the completion of 120 credits (2 years), and students who complete the two-year programme can continue studying for a bachelor's degree in the applied arts and sciences.

A research-oriented master's programme requires the completion of 60, 90, or 120 credits (1,

1.5, or 2 years). In engineering, agriculture, and maths and the natural sciences, 120 credits are always required. Graduates obtain the degree of Master of Arts or Master of Science (MA/MSc). A master's degree awarded in the applied arts and sciences requires the completion of 60 to 120 credits and graduates obtain a degree indicating the field of study (for example, Master of Architecture, M Arch).

The third cycle of higher education, leading to the PhD, is offered only by research universities. The major requirement is completion of a dissertation based on original research that is publicly defended. All research universities award the PhD. In addition to the doctorate, the three engineering universities offer (technological) designer programmes consisting of advanced study and a personal design assignment in a number of engineering fields. The technological designer programme requires two years of study to complete and graduates obtain the degree Professional Doctorate in Engineering (PD Eng). The training of medical specialists is the responsibility of the professional group in an organisational setting at a university hospital.

Requirements for Access to Higher Education

For access to research-oriented bachelor's programmes, students are required to have a VWO diploma or to have completed the first year (60 credits) of a bachelor's programme at a university of applied sciences. The minimum access requirement to universities of applied sciences is either a HAVO diploma or a diploma of secondary vocational education (MBO diploma), provided certain conditions are met. The VWO diploma also grants access to universities of applied sciences. For access to both types of higher education, pupils are required to have completed at least one of the subject clusters that fulfils the requirements for the higher education programme in question. A quota, or *numerus fixus*, applies for access to certain programmes, primarily in the medical sciences, and places are allocated mainly using a weighted lottery. Potential students older than 21 years of age who do not possess one of the qualifications mentioned above can qualify for access to higher education on the basis of an entrance examination and assessment (recognition of prior learning). For access to certain programmes, particularly those in the fine arts, students have to demonstrate the required artistic abilities. The only access requirement for the Open University is that applicants be at least 18 years of age.

For access to all master's programmes, a bachelor's degree in one or more specified disciplines is required, in some cases in combination with other requirements. Graduates with a bachelor's degree in the applied arts and sciences may have to complete additional requirements for access to a research-oriented master's degree programme.

Credit System and Grading

A student's workload is measured in EC credits. According to Dutch law, one credit represents 28 hours of work and 60 credits represents one year of full-time study. The grading system used in the Netherlands is on a scale from 1 (very poor) to 10 (outstanding). The lowest passing grade is 6; 9s are seldom given and 10s are extremely rare and grades 1-3 are hardly ever used. The academic year is 42 weeks long.

Quality Assurance and Accreditation

A guaranteed standard of higher education, and alignment with the Qualifications Framework for the European Higher Education Area, is maintained through a national system of legal regulation and quality assurance, in the form of accreditation. The Ministry of Education, Culture and Science is responsible for legislation pertaining to education and the agriculture and public health ministries play an important role in monitoring the content of study programmes in their respective fields.

Quality assurance is carried out through a system of accreditation, administered by the Accreditation Organisation of the Netherlands and Flanders (NVAO). According to the Dutch Higher Education Act, all degree programmes offered by research universities and universities of

applied sciences must be evaluated according to established criteria. Programmes that meet those criteria are accredited: i.e. recognized for a period of six years. Only accredited programmes are eligible for government funding; students receive financial aid and graduate with a recognized degree only when enrolled in, and after having completed, an accredited degree programme. All accredited programmes are listed in the Central Register of Higher Education Study Programmes (CROHO).

Besides the accreditation of degree programmes, the Netherlands has a system by which the Ministry of Education, Culture and Science recognizes higher education institutions by conferring on them the status of either "funded" or "approved". "Funded" indicates that the institution is fully financed by the government. "Approved" indicates that the institution does not receive funds from the government and has to rely on its own sources of funding. Whether a degree programme is offered by a 'funded' or an 'approved' institution, it must be accredited and registered in CROHO to be considered recognized.

N.B. If a bachelor or master degree programme is not registered in the CROHO, the quality is not assured by the Dutch quality assurance system. The quality may however be assured by another system.

National Qualifications Framework

An important outcome of the Bologna process is the development of a Framework for Qualifications of the European Higher Education Area. This overarching framework provides a general and common structure for qualifications awarded in countries signatory to the Bologna Declaration, and offers recommendations and guidelines for the development of mutually understandable qualifications frameworks at national levels. By the year 2010, all countries in the European Higher Education Area should have a national qualifications framework in place that complies with the goals and criteria of the European framework while describing the specific elements of each individual system.

The Netherlands is one of the first countries in the European Higher Education Area to complete the national qualifications framework, which has subsequently been evaluated by the Verification Committee and found to be compatible with the overarching European Qualifications Framework. The National Qualifications Framework of the Netherlands describes in detail the various levels and learning outcomes associated with higher education qualifications, in terms that are internationally compatible.

The responsibility for overseeing the framework and updating it when necessary has been allocated to the NVAO. Further information on the framework can be obtained on the NVAO website: www.nvao.net/nqf-nl.

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