

## Besluit

### Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-bachelor Technische Innovatiewetenschappen van de Technische Universiteit Eindhoven

	<b>Gegevens</b>	
datum	31 augustus 2017	
onderwerp	Naam instelling	: Technische Universiteit Eindhoven
Besluit	Naam opleiding	: wo-bachelor
accreditatie wo-ba		Technische Innovatiewetenschappen (180 EC)
Technische Innovatie- wetenschappen van de Technische Universiteit Eindhoven (005705)	Datum aanvraag	: 1 mei 2017
uw kenmerk	Variant opleiding	: voltijd
CvB 2017/1649237	Afstudeerrichtingen	: Psychology and Technology; Sustainable Innovation
ons kenmerk	Locatie opleiding	: Eindhoven
NVAO/20172261/ND	Datum goedkeuren panel	: 19 december 2016
bijlagen	Datum locatiebezoeken	: 14 en 15 februari 2017
	Datum visitatierapport	: 20 april 2017
	Instellingstoets kwaliteitszorg:	ja, positief besluit van 6 mei 2014

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#### Beoordelingskader

Beoordelingskader voor de beperkte opleidingsbeoordeling van de NVAO (Stcrt. 2014, nr 36791).

#### Bevindingen

De NVAO stelt vast dat in het visitatierapport deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding voldoende heeft bevonden.

#### Advies van het visitatiepanel

Samenvatting bevindingen en overwegingen van het panel.

In this executive summary, the panel presents the main considerations which have led to the assessment of the quality of the programme Bachelor Innovation Sciences of Eindhoven University of Technology. The programme was assessed according to the NVAO Assessment Framework.

Pagina 2 van 6 The panel observed programme management has taken up the recommendations made in the previous assessment in 2011. Programme management, among others, managed to increase the student influx and raised the number of lecturers having obtained the University Teaching Qualification.

The panel supports the objectives of the programme to study innovation processes and innovations from a number of different angles and to take technological, socio-economic and user dimensions into account. The objectives of the majors Psychology & Technology and Sustainable Innovation are tailored to the distinct characteristics of these majors. The panel recommends programme management to pay attention to the coherence between the majors. The panel supports the programme goal to primarily prepare students for master programmes. The panel very much appreciates the efforts of management of the Vrije Universiteit, Utrecht University and Eindhoven University of Technology programmes to draft the domain-specific framework of reference. Through this framework, the programme is definitely linked to international concepts, notions and trends in the innovation sciences domain. The Advisory Board is instrumental in keeping the programme aligned with trends in the professional field.

The panel observed the programme intended learning outcomes to meet the programme objectives, exhibiting, among others, knowledge and understanding of relevant disciplines, research skills and academic skills. The learning outcomes of the majors in the programme share the same structure, address the same categories of competencies and have been formulated at the same level, but differ with regard to subjects and methodologies to be studied. The panel regards the intended learning outcomes to be highly structured, to be very well-elaborated and to be very ambitious, definitely meeting and in a number of cases surpassing the bachelor level. The panel ascertained the intended learning outcomes to correspond to the domain-specific framework of reference for innovation sciences.

The panel is positive about the number of students enrolling. The panel, however, shares programme management's concern about the relatively low number of students entering the Sustainable Innovation major and recommends to increase this number. The panel is content with the proportion of female students in the Psychology & Technology major and regards the proportion of female students in the Sustainable Innovation major to be in line with those of technical studies in the Netherlands.

In the panel's opinion, the admission requirements and processes for the programme are adequate.

The panel feels the curriculum to be well-structured, covering all of the intended learning outcomes and addressing for this programme relevant subjects. In the panel's opinion, the level of disciplinary and interdisciplinary knowledge and understanding in the curriculum is adequate. To further improve the curriculum, the panel recommends to strengthen the application of the research methods and techniques and to implement the professional skills training more clearly and more distinctly.

The teaching concept and study methods of the programme are appropriate and promote, among others, active learning and self-reliance in the learning processes by the students. The panel approves of design-based learning as an effective study method to teach students to work on design assignments in teams.

Pagina 3 van 6 The panel advises to smoothen the transition from group assignments to the individual Bachelor Final Project. The study load of the programme is satisfactory, especially since programme management balances the study load in the Sustainable Innovation major. The number of contact hours and the student-to-staff ratio are appropriate. The panel advises, however, to maintain a favourable student-to-staff ratio in the Psychology & Technology major, especially when student numbers will continue to rise. The study guidance in the programme is adequate. The panel recommends to inform students of the Sustainable Innovation major more clearly about their career perspectives.

The panel is positive about the lecturers' research track records and about their educational track records. The panel applauds programme management intentions to pursue a 50 % proportion of female lecturers in the set of yearly appointments of new staff. The panel advises to monitor the work load of the lecturers.

The assessment policy of the School of Innovation Sciences which applies to this programme as well, is appropriate, specifying relevant rules and regulations as well as control mechanisms for the examinations and assessments in the programme. The measures taken by programme management to foster the validity of the examinations and reliability of the assessments are satisfactory. The examinations and assessments and the processes in this respect are adequately monitored by the Board of Examiners. The panel approves of the examination methods, programme management has selected. They are in line with the course contents to be assessed. The panel feels the proportion of multiple-choice examinations to be within reasonable bounds, but recommends to keep this at the current level.

For the panel, the supervision and assessment processes for the Bachelor Final Projects are satisfactory. The assessment by two examiners, using forms with relevant criteria leads to reliable assessments. The panel recommends to require all assessment criteria to be satisfactory and not to allow compensation. In addition, the panel advises to introduce rubrics forms for the Psychology & Technology major to calibrate grades, like already has been done for the Sustainable Innovation major.

The examinations of the courses studied by the panel are satisfactory in breadth and depth and reflect the learning goals of the courses. The panel assesses the Bachelor Final Projects to be at least satisfactory. Among the projects of the Sustainable Innovation major, one was below satisfactory. Having reviewed the other projects, the panel regards this project to be an outlier, not representative of the general quality and level of the projects. The grades for the projects of the Psychology & Technology major are adequate. The comments by the examiners on the criteria of the Sustainable Innovation major projects met the panel's valuations, but the grades not always matched the comments and were sometimes too high. The panel, therefore, advises to improve the alignment between the grades for assessment criteria and the comments. The panel recommends to strengthen the reflection on research methodology in the projects. Programme management is advised by the panel to require the students of the Psychology & Technology major to add a section on the technical work, students have done. The panel observed the graduates of the programme to proceed to relevant master programmes.

Ingevolge het bepaalde in artikel 5a.10, derde lid, van de WHW heeft de NVAO het college van bestuur van de Technische Universiteit Eindhoven te Eindhoven in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 17 juli 2017 naar voren te brengen. Van deze gelegenheid heeft het college van bestuur geen gebruik gemaakt.

De NVAO besluit accreditatie te verlenen aan de wo-bachelor Technische Innovatiewetenschappen (180 EC; variant: voltijd; locatie: Eindhoven) van de Technische Universiteit Eindhoven te Eindhoven. De opleiding kent de volgende afstudeerrichtingen: Psychology and Technology; Sustainable Innovation. De NVAO beoordeelt de kwaliteit van de opleiding als voldoende.

Dit besluit treedt in werking op 31 augustus 2017 en is van kracht tot en met 30 augustus 2023.

Den Haag, 31 augustus 2017

De NVAO  
Voor deze:

A handwritten signature in black ink, consisting of a large, stylized loop and a vertical stroke, positioned over the text 'Voor deze:' and partially overlapping the name 'Dr. A.H. Flierman'.

Dr. A.H. Flierman  
(voorzitter)

Paul Zevenbergen  
Bestuurder

Tegen dit besluit kan op grond van het bepaalde in de Algemene wet bestuursrecht door een belanghebbende bezwaar worden gemaakt bij de NVAO. De termijn voor het indienen van bezwaar bedraagt zes weken.

Onderwerp	Standaard	Beoordeling door het panel
<b>1. Beoogde eindkwalificaties</b>	De beoogde eindkwalificaties van de opleiding zijn wat betreft inhoud, niveau en oriëntatie geconcretiseerd en voldoen aan internationale eisen.	<b>Goed</b>
<b>2. Onderwijsleeromgeving</b>	Het programma, het personeel en de opleidingsspecifieke voorzieningen maken het voor de instromende studenten mogelijk de beoogde eindkwalificaties te realiseren.	<b>Voldoende</b>
<b>3. Toetsing</b>	De opleiding beschikt over een adequaat systeem van toetsing.	<b>Voldoende</b>
<b>4. Gerealiseerde eindkwalificaties</b>	De opleiding toont aan dat de beoogde eindkwalificaties worden gerealiseerd.	<b>Voldoende</b>
<b>Eindoordeel</b>		<b>Voldoende</b>

De standaarden krijgen het oordeel onvoldoende, voldoende, goed of excellent. Het eindoordeel over de opleiding als geheel wordt op dezelfde schaal gegeven.

- Prof. dr. ir. P.C. de Weerd-Nederhof, Professor Organizational Studies and Innovation and chair of NIKOS, University of Twente (panel chair);
- Prof. dr. A.M. Bergek, Professor Innovation Systems and Technology Policy, Chalmers University of Technology (panel member);
- Prof. dr. M.S. van Geenhuizen, Professor of Innovation and Innovation Policy in the Urban Economy, Delft University of Technology (panel member);
- Prof. dr. C.M. Jonker, Professor Interactive Intelligence, Delft University of Technology (panel member);
- E.E.M. Leo BSc, student Master Educational Sciences, University of Amsterdam (student member).

Het panel werd ondersteund door drs. W. Vercouteren RC, secretaris (getraind).