nvao
nederlands - vlaamse accreditatieorganisatie

Besluit

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

datum
28 april 2017

onderwerp
Besluit accreditatie wo-ba Electrical Engineering van de Technische Universiteit Eindhoven (005347)

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bijlagen
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Gegevens

Naam instelling	:	Technische Universiteit Eindhoven
Naam opleiding	:	wo-bachelor Electrical Engineering (180 EC)
Datum aanvraag	:	19 januari 2017
Graad opleiding	:	Bachelor of Science
Variant opleiding	:	voltijd
Afstudeerrichtingen	:	Electrical Engineering; Automotive
Locatie opleiding	:	Eindhoven
Datum goedkeuren panel	:	22 augustus 2016
Datum locatiebezoek	:	4 oktober 2016
Datum visitatierapport	:	19 december 2016
Instellingstoets kwaliteitszorg	:	ja, positief besluit van 6 mei 2014

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 led to the assessment of the quality of the Bachelor programme Electrical Engineering of the Eindhoven University of Technology, which has been assessed according to the NVAO Assessment Framework.

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The panel noted that the programme management followed up on the recommendations, made during the previous assessment in 2010. The programme management, among others, reorganized the Bachelor curriculum to raise student success rates and to strengthen the electrical engineering, mathematics and physics contents and intensified student guidance.

The programme's name, Bachelor Electrical Engineering, matches its contents and corresponds to the names of similar programmes.

The panel approves of the objectives of this programme. In the panel's view, the programme management made a distinct and clear choice to educate students to proceed and study at Master level in Electrical Engineering, thereby opening up professional and academic careers in this domain.

The panel is particularly positive about the Domain-specific Frame of Reference Electrical Engineering which the management of the Electrical Engineering programmes of the three Dutch Technical Universities drafted. To the knowledge of the panel, this Frame of Reference is the first substantial effort in the Netherlands to define and describe the Electrical Engineering domain. In the panel's opinion, this Frame of Reference presents a sound and insightful description of this domain. Dutch Electrical Engineering programmes are linked to authoritative international concepts, notions and trends in this domain.

The panel welcomes the clear choices the programme management made, to focus on four societal themes, Connected World, Care and Cure, Smart and Sustainable Society and Automotive. In addition, the panel would like to stress the importance of the Automotive programme, to the knowledge of the panel being unique as an academic programme in the Netherlands.

The programme intended learning outcomes meet the objectives. In the panel's view, these learning outcomes specify the competencies of the modern T-shaped engineer. The learning outcomes meet the requirements of the Domain-specific Frame of Reference and comply with the requirements of an academic Bachelor programme.

In the panel's view, the admission requirements are in line with legal regulations and the admission procedures, such as the matching processes, are elaborate and effective. The substantial increase in the student numbers are regarded by the panel as positive. The panel, however, advises in this respect to pay attention to the recruitment of students from abroad, to raise the number of staff positions and to maintain the students-to-staff ratio.

The intended learning outcomes are fully covered in the curriculum. Students acquire knowledge of disciplines like mathematics and physics and knowledge and skills of Electrical Engineering, both at the required level, obtain research and design skills, gain professional skills, such as communication and planning skills and are acquainted with social, ethical and business aspects. The curriculum is coherent and up-to-date.

The study method in the programme, such as lectures, instructions, tutorials, tutor groups and practical training are consistent with the contents. As the panel is very positive about the concept of Design-based learning, the panel advises the programme management to introduce the concept in compulsory courses as well. The panel supports the introduction of digital teaching techniques, supplementing traditional study methods.

The information provided to the students is adequate. Study advisors, coaches and student mentors ensure effective student guidance. The panel welcomes the opportunities for students, failing their first year, to seamlessly continue their studies at professional Universities.

The gradual increase in student success rates in the last few years is regarded by the panel to be positive. The panel encourages the programme management to continue along this path and achieve the Eindhoven University of Technology target figures.

As the panel observed, the lecturers are motivated to participate in the programme. They are experts in their fields, while the vast majority of them have PhD's and many of them participate in research projects in industry, contributing to an outside-in perspective. Although measures are being taken to raise the number of lecturers with BKO-certificates, the panel recommends remaining attentive in this respect. The same applies for the number of lecturers, having English certificates.

The panel is impressed by the facilities for the programme. The lecture rooms and laboratories are state- of-the-art, allowing students and lecturers to participate in up-to-date education and research.

The panel regards the test and assessment policies in the programme to be adequate, as these are directed towards ensuring transparent, valid and reliable tests and assessments. The procedures adopted by the programme management with respect to the information provision to students about tests, the drafting of tests, answering and scoring models and the assessments of tests are appropriate as well. The panel is very satisfied with the procedures for identifying and assessing individual performances of students in group projects.

The responsibilities and tasks of the Examination Committee are up to standard, as this Committee monitors the test and assessment procedures, the quality of tests and the students' achieving the intended learning outcomes of the programme.

The panel studied the tests of a number of courses and concludes these to be satisfactory in breadth and depth and to reflect the learning goals of the courses. In the panel's view, the Bachelor theses demonstrate the students having achieved the intended learning outcomes of the programme.

The assessment of the final projects is adequate, since a panel of lecturers is involved, assessing the projects by means of relevant criteria. One of the theses has been assessed as unsatisfactory by the panel. The panel considers this to be an outlier. About 25 % of the projects were regarded by the panel to be graded somewhat too high.

A number of theses were clearly of good to very good quality. Some were, however, written in rather poor English and lacked a solid structure. The panel, therefore, recommends intensifying the academic English language instruction. The panel also advises to reconsider the paper- format for the Bachelor final project to allow for adequate and substantially underpinning material in the thesis, to support a clear judgement of the individual achievement and for the critical reflection on the results.

Aanbevelingen
De NVAO onderschrijft de aanbevelingen van het panel.

Besluit
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 3 april 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 Electrical Engineering(180 EC; variant: voltijd; locatie: Eindhoven) van de Technische Universiteit Eindhoven te Eindhoven. De opleiding kent de volgende afstudeerrichtingen: Electrical Engineering, Automotive. De NVAO beoordeelt de kwaliteit van de opleiding als voldoende.

Dit besluit treedt in werking op 28 april 2017 en is van kracht tot en met 27 april 2023.

Den Haag, 28 april 2017

De NVAO
Voor deze:

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.

 Bijlage 1: Schematisch overzicht oordelen panel

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

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

 Bijlage 2: panelsamenstelling

- Prof. ir. A. van Ardenne, strategic advisor-ASTRON, director Ardenne Consultancy (panel chair);
- Prof. D. De Zutter PhD, professor Electromagnetics, Ghent University (panel member);
- C.L.M. van der Klauw PhD, director of the research activities and programmes, Philips Lighting (panel member);
- E.E.M. Leo BSc, student Master programme Educational Sciences, University of Amsterdam, (student member).

Het panel werd ondersteund door W. Vercouteren MSc, RC, secretaris (gecertificeerd).