nvao
nederlands - vlaamse accreditatieorganisatie

Besluit

Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Mechanical Engineering van de Universiteit Twente

datum
25 maart 2013
onderwerp
Definitief besluit accreditatie wo-master Mechanical Engineering van de Universiteit Twente (001306)
uw kenmerk
S&B/399.280/JB
ons kenmerk
NVAO/20130850/ND
bijlagen
3

Gegevens

Naam instelling	:	Universiteit Twente
Naam opleiding	:	wo-master Mechanical Engineering (120 ECTS)
Datum aanvraag	:	21 december 2012
Variant opleiding	:	voltijd
Afstudeerrichtingen	:	Profiles: Design & Construction Organisation and Management Research and Development
Locatie opleiding	:	Enschede
Datum goedkeuren panel	:	10 juli 2012
Datum locatiebezoek	:	14 september 2012
Datum visitatierapport	:	29 november 2012
Instellingstoets kwaliteitszorg	:	aangemeld en geaccepteerd voor het invoeringsregime van de instellingstoets kwaliteitszorg als bedoeld in artikel18.32 b en c van de WHW

Beoordelingskader
Beoordelingskader voor de beperkte opleidingsbeoordeling van de NVAO (Stcrt. 2010, nr 21523).

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

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Advies van het visitatiepanel

Samenvatting bevindingen en overwegingen panel.

Master programme Mechanical Engineering

This report presents the findings and considerations of the Werktuigbouwkunde 3TU committee on the master's programme Mechanical Engineering at the University of Twente. The committee bases its assessment on information from the self-evaluation report, additional information obtained from the discussions during the visit, the selected theses, and the documentation that was available for inspection during the site visit. For this programme, the committee has identified positive aspects as well as ones that could be improved. After considering them, the committee reached the conclusion that the programme meets the requirements for basic quality that form the condition for re-accreditation.

Standard 1: Intended learning outcomes

The intended learning outcomes of the master programme are based on the internationally accepted ABET standards. In addition, the 3TU have added criteria to this domain-specific frame of reference to emphasise future developments in science and society.

Master graduates have taken the bachelor qualifications a step further and are able to design and conduct research independently, on the basis of extended (inter)disciplinary knowledge and skills. They are able to be the leaders in their field, both in industry and in research contexts. The learning objectives have been formulated in terms of academic competences, an outcome of a 3TU project. In an annex to the self-evaluation report the programme has provided an overview of the intended learning outcomes, the academic competences and how the individual curriculum elements contribute to them. This shows that the final qualifications for the master programme are in line with the international standards as described in the Dublin descriptors.

The committee concludes that the master programme in Mechanical Engineering is clearly designed as an academic programme. It provides a solid disciplinary foundation and has a strong focus on research and on developing a scientific and critical attitude.

Standard 2: Teaching-learning environment

The master programme is an individualised programme. At the start of the programme a student chooses a competence profile and a specialisation area. Together with his/her graduation professor he/she puts together a programme, consisting of courses, an internship, individual space and a graduation project. Many students find an internship abroad. The coherence of the programme is safeguarded by the rules set by the Board of Examiners and by the programme coordinator. The committee considers the learning objectives of an academic master programme to be well reflected into the science based approach of the courses and the graduation project, and in the individualised set-up of the programme.

The committee finds the feasibility of the programme to be realistic even though very few students finish in the nominal time. The structure of the programme allows students who want to obtain their degree within the allotted time to do so. For the master programme the main effect is to be expected from a culture change: students should be aware that 'good' is 'good enough' and that meeting deadlines is a fact of life in a professional career too. Staff should try to fit their expectations of graduation theses to the 40 EC allotted to them.

The committee advises to monitor the time invested by students in their graduation thesis on a regular basis.

The teaching staff of Mechanical Engineering is well qualified and committed, with strong links to industry. They are good teachers, as pointed out by the course evaluations. The staff/student ratio is 1:25 and the teaching load is on average 40%, which the committee considers reasonable.

The department has very good facilities in laboratories, lecture halls and project rooms and they are used intensively. The study guidance and counselling are very well organised.

The quality assurance system works well. All courses are regularly evaluated by student questionnaires and the results, including the lecturer's response, are published and discussed by the Educational Committee. The department has followed up on the recommendations of the previous assessment committee.

Standard 3: Assessment and achieved learning outcomes
The assessment policy is very explicit and the assessment system is very well implemented. Test plans are available for courses and projects, response formats are worked out in detail and guide the evaluation of all types of assessments, including oral exams and re-sits. Exams are cross-checked and verified by colleague lecturers prior to the exam date. Elaborate feedback is provided to students. The Board of Examiners is clearly in control.

The master thesis is assessed by a master examination committee consisting of at least three members: the graduation professor, the daily supervisor and an independent examiner from another specialisation area. Marks are given for the thesis, presentation, oral defence, problem-solving approach and mastering of the theory behind the problem. The final mark is not necessarily the average of the five components.

The committee examined a representative sample of master theses and found the marking to be fair and consistent. On the basis of the theses, the committee concludes that graduates achieve an academic master's level.

This conclusion is confirmed by the experiences recounted by the alumni and by the appreciation of students during their internships and of graduates, expressed by companies. Graduates find relevant jobs at an appropriate level within a fairly short time, and they are satisfied with the knowledge basis and engineering skills they learned in the programme, but especially with the mind-set and approach they learned from PLE.

Aanbevelingen

De NVAO onderstreept de constatering van het panel dat de gerealiseerde studieduur aanzienlijk langer is dan de nominale studieduur.

Besluit

Ingevolge het bepaalde in artikel 5a.10, tweede lid, van de WHW heeft de NVAO het college van bestuur van de Universiteit Twente te Enschede in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 26 februari 2013 naar voren te brengen. Bij e-mail van 4 maart 2013 heeft de instelling gereageerd op het voornemen tot besluit. Dit heeft geleid tot aanvulling van bijlage 2 in het definitieve besluit.

Op grond van het voorgaande besluit de NVAO accreditatie te verlenen aan de wo-master Mechanical Engineering (120 ECTS; variant: voltijd; locatie: Enschede) van de Universiteit Twente te Enschede. De opleiding kent de volgende afstudeerrichtingen: Profiles: Design & Construction, Organisation and Management, Research and Development. De NVAO beoordeelt de kwaliteit van de opleiding als goed

Dit besluit treedt in werking op 1 januari 2014 en is van kracht tot en met 31 december 2016 (2019)[1].

Den Haag, 25 maart 2013

Nederlands-Vlaamse Accreditatieorganisatie

Lucien Bollaert
(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.

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[1] Gelet op het bepaalde in artikel 18.32c, derde lid, van de Wet op het hoger onderwijs en wetenschappelijk onderzoek (WHW) bedraagt de geldigheidsduur van de accreditatietermijn van de opleiding maximaal drie jaar zolang de instelling nog niet beschikt over een positieve instellingstoets kwaliteitszorg. Zodra de instellingstoets is verkregen, wordt de accreditatietermijn verlengd naar zes jaar.

 Bijlage 1: Schematisch overzicht oordelen panel

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

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

 Bijlage 2: Feitelijke gegevens

Tabel 1: *Rendement.*

Cohort	2009	2010	2011
Rendement	93%	54%	5%

Tabel 2: *Docentkwaliteit.*

Graad	MA	PhD	BKO
Percentage	37%	53%	30%

Tabel 3: *Student-docentratio.*

Ratio	25:1

Tabel 4: *Contacturen*[2].

Studiejaar	1	2
Contacturen	480	150

[2] Contacturen MSc eerste jaar: ongeveer 480 uur (4 kwartielen*8 weken*15 uren)
Contacturen MSc tweede jaar 30*5 = 150 uur (stage extern = 10 weken en afstuderen intern = 30 weken)

 Bijlage 3: panelsamenstelling

- Prof. dr. J.K.M. De Schutter, professor of Mechanical Engineering, KU Leuven;
- Prof.dr. J.J. ter Meulen; emeritus professor Applied Physics, Radboud University Nijmegen;
- Prof. dr. M. Vantorre, professor of Maritime Technology, Ghent University;
- Ir. G.Calis, former Corporate Head Office Stork B.V.;
- S.E.M. Janssen BSc, master student of Mechanical Engineering, Eindhoven University of Technology.

Het panel werd ondersteund door dr. M.J.H. van der Weiden, secretaris (gecertificeerd).