

Besluit

Besluit strekkende tot het verlenen van accreditatie aan de opleiding wo-master Systems Engineering, Policy Analysis and Management van de Technische Universiteit Delft

| | Gegevens | |
|-------------------------|---|---|
| datum | 29 september 2017 | Naam instelling : Technische Universiteit Delft |
| onderwerp | Besluit | Naam opleiding : wo-master Systems Engineering, Policy Analysis and Management (120 EC) |
| accreditatie wo-master | Systems Engineering, Policy | Datum aanvraag : 26 april 2017 |
| Analysis and Management | Technische Universiteit Delft | Variant opleiding : voltijd |
| (005647) | | Locatie opleiding : Delft |
| uw kenmerk | | Datum goedkeuren panel : 10 oktober 2016 |
| - | | Datum locatiebezoeken : 12 en 13 december 2016 |
| ons kenmerk | | Datum visitatierapport : 28 maart 2017 |
| NVAO/20172365/ND | | - Instellingstoets kwaliteitszorg: ja, positief besluit van 7 september 2017 |
| bijlagen | Beoordelingskader | |
| 2 | 2 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.

Standard 1

The master's programme Systems Engineering, Policy Analysis and Management (SEPAM) offered by Delft University of Technology (TU Delft) educates students as designers and managers of large- scale and complex multi-actor systems within a technology domain. The SEPAM programme is meant to give students tools to design solutions for large, complex, contemporary, socio-technical problems that are acceptable to all stakeholders. The programme has a distinctive focus on design for large-scale systems and complex, multi-actor systems. The panel clearly recognised the added value of the combination of

Pagina 2 van 5 engineering, social sciences and management in the programme. The general learning outcomes have been elaborated in well-defined and detailed learning outcomes, which meet the Dutch qualifications framework and tie in with the international perspective of the requirements set by the professional field and the discipline.

The SEPAM programme recently changed from a transfer master's programme for graduates of the bachelor's programme Technische Bestuurskunde into one of the three master's programmes offered by the Faculty of Technology, Policy and Management. This change required rethinking the profile of the programme in order to distinguish it more clearly from the other master's programmes. The panel endorses the Faculty's plan to change the programme's title into 'Complex Systems Engineering and Management'.

SEPAM can compare itself to programmes offered by highly esteemed universities like MIT, Massachusetts Institute of Technology, and is an attractive master's programme for students interested in complex systems, technology and design. The panel assessed standard 1, Intended learning outcomes, as good.

Standard 2

The SEPAM programme is aimed at teaching students to analyse complex, contemporary, socio-technical problems both quantitatively and qualitatively and design new solutions acceptable to all stakeholders. In the first year, the students learn the foundations of design from a systems engineering and multi-actor perspective. The second year focuses on specialisation within the field, and the preparation and writing of the master's thesis. Students can specialise in one of the four tracks offered: Built Environment & Spatial Development, Energy and Industry, Information & Communication, Transport & Logistics.

The panel established that the content and structure of the master's programme Systems Engineering, Policy Analysis and Management enable the students to achieve the intended learning outcomes, while also offering ample opportunity for creating an individual profile based on electives and specialisation tracks. The panel advises broadening the focus of the social sciences courses and adding literature with other perspectives (and schools) to the core of the social sciences syllabi.

The quality of the teaching staff is good. They are accessible and create a good learning environment for the students, supported by the good facilities of the Faculty building.

Almost 50% of the students spend at least one semester abroad as an exchange student. The programme has succeeded in building a stimulating international environment, by attracting foreign students as well as by encouraging Dutch students to take parts of their studies abroad. With the SEPAM programme, TU Delft offers an attractive master's option for both students from the Netherlands as wider afield. Standard 2, the Teaching-learning environment, is assessed as good.

Standard 3

The Faculty of Technology, Policy and Management described its assessment policy in the Assessment Policy 2013-2014 document. The panel studied a selection of test dossiers and master's theses and the accompanying assessment forms. Furthermore, it held a meeting with the Board of Examiners during the site visit. It verified that the programme has an adequate assessment system. The assessments are valid, transparent and reliable. The Board of Examiners is performing its legally mandated tasks adequately. The panel assesses standard 3, Assessment system, as satisfactory.

The panel studied a selection of 15 master's theses to assess whether the graduates had achieved the master's graduation level. It concluded that the graduates had demonstrated that they had achieved the level that can be expected from an academic master. It noticed, however, that the master's thesis topics of this programme were not clearly distinctive from the topics chosen by the master's students Engineering and Policy Analysis.

Furthermore, the panel concluded that master's graduates are highly appreciated in the professional field and that they easily embark on promising professional and academic careers, in which their academic profile and skills are valued.

Standard 4, Achieved learning outcomes, is assessed as satisfactory.

General conclusion

Considering the assessments of the four criteria for the master's programme Systems Engineering, Policy Analysis and Management, the panel assesses the programme as satisfactory.

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 Delft te Delft in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit van 14 augustus 2017 naar voren te brengen. Bij e-mail van 6 september 2017 heeft de instelling gereageerd maar dit heeft niet geleid tot inhoudelijke wijzigingen.

De NVAO besluit accreditatie te verlenen aan de wo-master Systems Engineering, Policy Analysis and Management (120 EC; variant: voltijd; locatie: Delft) van de Technische Universiteit Delft te Delft. De NVAO beoordeelt de kwaliteit van de opleiding als voldoende.

Dit besluit treedt in werking op 29 september 2017 en is van kracht tot en met 28 september 2023.

Den Haag, 29 september 2017

De NVAO
Voor deze:



Dr. A.H. Flierman
(voorzitter)

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.

| 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. | goed |
| 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.

Pagina 5 van 5 **Bijlage 2: Panelsamenstelling**

- Prof. dr ir. Rob van der Heijden, Professor in Innovate Planning Methods, Radboud University Nijmegen [chair];
- Prof. dr. Harrie Eijkelhof, emeritus Professor of Physics Education at the Faculty of Physics and Astronomy, and former Director of the Freudenthal Institute for Science and Mathematics Education at the Faculty of Science, Utrecht University;
- Prof. dr. Arthur Petersen, Professor at the Department of Science, Technology, Engineering and Public Policy, University College London, United Kingdom;
- Prof. dr. Marcel Veenswijk, Professor in Management of Cultural Change, VU University Amsterdam;
- Prof. dr. Hens Runhaar, Special Professor of Management of Biodiversity in Agricultural Landscapes, Wageningen University and Research & Utrecht University
- Maarten van Ruitenbeek BSc, master's student in Industrial Engineering and Management, University of Groningen [student member].

Het panel is ondersteund door dr. Barbara van Balen, secretaris (gecertificeerd).