

Besluit

Besluit strekkende tot een positief oordeel van een aanvraag toets nieuwe opleiding van de wo-master Spatial Engineering van de Universiteit Twente

Gegevens

datum	Instelling	: Universiteit Twente
30 maart 2018	Opleiding	: wo-master Spatial Engineering
onderwerp	Variant	: voltijd
Besluit	Locatie	: Enschede
Toets nieuwe opleiding	Studieomvang (EC)	: 120
wo-master	Datum macrodoelmatigheidsbesluit	: 5 oktober 2017
Spatial Engineering van de	Datum aanvraag	: 20 november 2017
Universiteit Twente		
(006302)	Datum locatiebezoek	: 5 en 6 februari 2018
uw kenmerk	Datum paneladvies	: 8 maart 2018
CVB-UIT-3024/S&B	Instellingstoets kwaliteitszorg	: ja, positief besluit van 2 mei 2014
ons kenmerk		
NVAO/20180753/ND		

bijlage **Beoordelingskaders**

- 2 Beoordelingskader voor de beperkte toets nieuwe opleiding van de NVAO (Stcrt. 2016, nr 69458).
Protocol cursusduur masters, NVAO 8 oktober 2003.

Bevindingen

De NVAO stelt vast dat in het adviesrapport deugdelijk en kenbaar is gemotiveerd op welke gronden het panel de kwaliteit van de opleiding voldoende heeft bevonden en heeft geadviseerd tot een cursusduur van 120 EC.

Advies panel

Samenvatting bevindingen en overwegingen van het panel.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) received a request for an initial accreditation procedure regarding a proposed MSc Spatial Engineering at the University of Twente (UT). The master's programme Spatial Engineering is a two-year full-time (120 EC) curriculum. NVAO convened an expert panel, which studied the information available and discussed the proposed programme with representatives of the institution and the programme during a site visit.

Standard 1. Intended learning outcomes

The Faculty of Geo-information Science and Earth Observation ITC adequately describes the aim of the programme: educating professionals who are able to address wicked

Pagina 2 van 6 problems in the fields of climate resilience, sustainability and legitimacy. At face value, such problems seem unsolvable, because of the entanglement of complex societal as well as technological aspects. Spatial engineers should be equipped with strategies to tackle these problems on regional, national and international levels. The panel agrees that this requires academic level thinking and analytical skills, a multidisciplinary approach and international experience. Engineers are expected to be aware that technological and engineering solutions must function within diverse societal, political, economic and cultural contexts. Therefore, spatial engineers should combine technical engineering, spatial information sciences and spatial planning and governance. For each of these disciplinary fields, the programme is based on international reference frameworks. Based on these frameworks and on the criteria for academic curricula the programme has adequately described the final qualifications to be achieved upon graduation. The external stakeholders, represented in the professional advisory board, find the programme to be up to date and appreciate especially its integrative and multidisciplinary approach. The panel agrees that the programme succeeds in striking a good balance between academic orientation and practical approach, and that the final qualifications are geared to the aim to educate reflective practitioners and empathic engineers. They tie in with the disciplinary requirements and national and international qualification frameworks. The panel recommends rephrasing part of the first final qualification, in order to do justice to the nature of the programme: teaching an interdisciplinary approach to solving problems instead of educating a mono- or multidisciplinary expert. The programme meets standard 1.

Standard 2. Teaching-learning environment

The panel considers the curriculum to be well designed. Year 1 consists of three case study projects (15 EC each) and electives, year 2 is spent on a field trip, an MSc proposal and research project (leading to an MSc thesis) and an internship. Matrices clearly show how the final qualifications are addressed in each study unit. Strong elements are the progress in complexity and independence from one case study project to another and from year 1 to year 2 and the project-led education approach with a high degree of guidance and tutoring. The admission criteria and procedure are suitable to attract the right group of students. The Personal Development Portfolio (PDP) is a key asset of the programme, making the individual student's progress visible throughout the programme. The panel believes that the combination of PDP, mentor system and assessment system (see standard 3) guarantees a balanced development of knowledge and skills in all disciplinary areas and competences. For year 2, the panel recommends renaming the field trip in order to reflect more clearly that this study unit is an important component for institutional, cultural and technical experience and learning. Similarly, the panel recommends clarifying in its title that the MSc preparation includes methodological training. The internship at the end of the programme is not only legitimate in terms of the final qualifications aimed for, but will also be a good quality indicator to find out from the host institutions if the programme is achieving its aims. Host institutions may be (international) companies or organisations, e.g. those that are represented in the professional advisory board or are partners in ITC projects.

The programme staff is well placed to further develop and implement the programme. The three knowledge areas are evenly distributed among them. The staff members have a diverse background in international research experience, nationality and gender. Multidisciplinarity is extended by cooperation with other faculties at UT. The staff development programme shows that it is not taken for granted that staff will be able to execute the programme and its specific didactic approach without additional training.

Pagina 3 van 6 The panel is convinced that the programme offers a strong teaching-learning environment. The programme meets standard 2.

Standard 3. Assessment

The assessment system is guided by the UT assessment guidelines and framework. The Programme Committee assures the alignment of the assessment system with the final qualifications. The assessment plan, to be approved by the Examination Board, makes this explicit for each study unit and provides information on the assessment formats, modality, marking system and weight and the required level of competence. Different types of tests are used, including peer review. Based on the intended learning outcomes, a type of test is chosen and rubrics for assessment are described. Reliability and validity are enhanced in various ways.

The panel finds that the programme has set up a good combination of individual and group assessments in the first year. The combination of tests, PDP and the oral exams guarantees that the intended level of learning outcomes will be achieved. Furthermore, formative and summative assessment activities are well planned and balanced through courses, terms and years. The panel advises to closely monitor that this will work out as planned and to check if the desired level on all three disciplines is achieved. The assessment system in year 2 is equally well organised. The systematic approach and clear rubrics ensure that the student assessments are reliable and valid. The Examination Board plays an important role in the quality assurance of assessment. The panel appreciates its overall philosophy of assessment. The panel is convinced that the programme has an adequate system of student assessment in place. The programme meets standard 3.

Conclusion

The panel concludes that the programme meets all assessment standards. Given these considerations, the panel advises NVAO to take a positive decision regarding the quality of the proposed programme MSc Spatial Engineering at the University of Twente.

Programme extension

UT proposes that the programme has a duration of two years (120 EC). The programme management's arguments regard the range of disciplines, the required level of scientific knowledge to underpin suitable designs and interventions, and the necessary competences and skills to work effectively in multidisciplinary international environments with project teams and stakeholders. The panel agrees that the qualifications the graduates should have in order for them to be competitive in the international academic job market, cannot be achieved in a programme of less than two years. The panel advises to grant the programme the right to offer a two-year master's programme (120 EC).

De NVAO onderschrijft de aanbevelingen van het panel.

Besluit

Ingevolge het bepaalde in artikel 5a.10, derde lid, in verbinding met artikel 5a.11, achtste lid, heeft de NVAO het college van bestuur van de Universiteit Twente te Enschede in de gelegenheid gesteld zijn zienswijze op het voornemen tot besluit d.d. 19 maart 2018 naar voren te brengen. Bij e-mail van 23 maart 2018 heeft het college van bestuur ingestemd met het voornemen tot besluit.

De NVAO besluit de aanvraag toets nieuwe opleiding wo-master Spatial Engineering (120 EC; variant: voltijd; locatie: Enschede) van de Universiteit Twente te Enschede als positief te beoordelen.

Graad: Master of Science.
Advies Croho-onderdeel: techniek.
Advies: cursusduur 120 EC.
Visitatiegroep: nader te bepalen¹.

Van kracht tot en met 29 maart 2024

Den Haag, 30 maart 2018

De NVAO
Voor deze:



R.P. 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.

¹ De opleiding dient ten minste twee jaar voor de vervaldatum gebruik te maken van de zogenoemde aprilronde om zelf zorg te dragen voor een indeling in een visitatiegroep. Daarna neemt de NVAO het besluit over de indeling in een visitatiegroep.

Standaard	Oordeel
<p><u>Beoogde leerresultaten</u> <i>Standaard 1: De beoogde leerresultaten passen bij het niveau en de oriëntatie van de opleiding en zijn afgestemd op de verwachtingen van het beroepenveld en het vakgebied en op internationale eisen.</i></p>	Voldoet
<p><u>Onderwijsleeromgeving</u> <i>Standaard 2: Het programma, de onderwijsleeromgeving en de kwaliteit van het docententeam maken het voor de instromende studenten mogelijk de beoogde leerresultaten te realiseren.</i></p>	Voldoet
<p><u>Toetsing</u> <i>Standaard 3: De opleiding beschikt over een adequaat systeem van toetsing.</i></p>	Voldoet
<p>Algemene conclusie</p>	Positief

Pagina 6 van 6 **Bijlage 2: Samenstelling panel**

- Prof. dr. Martin de Jong, Professor of Urban and Infrastructure Development, Multi-Actor Systems Department, Delft University of Technology, Netherlands (chair);
- Prof. dr. David E. Goldberg, Professor Em. Entrepreneurial Engineering, Department of Industrial and Enterprise Systems Engineering (IESE), University of Illinois, Urbana-Champaign, Illinois, USA;
- Anna-Karin Högfeldt, Lecturer and Director of Faculty Training, Royal Institute of Technology, Stockholm, Sweden;
- Lennart van Doremalen MSc, PhD candidate in Subatomic Physics, Utrecht University, Netherlands.

Het panel is bijgestaan door Michèle Wera MA, beleidsmedewerker NVAO en procescoördinator, en dr. Marianne van der Weiden, secretaris (gecertificeerd).