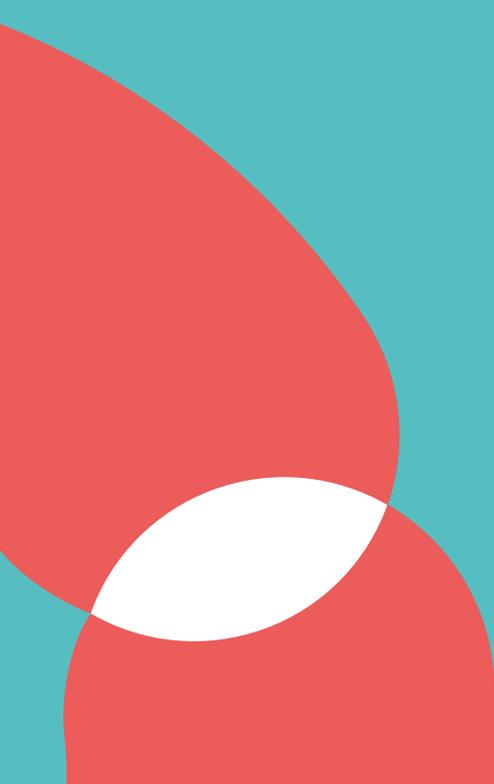# PEER REVIEW NEW PROGRAMME
PROFESSIONAL MASTER DIGITAL TECHNOLOGY ENGINEERING

Fontys Hogescholen

SUMMARY REPORT
1 September 2021

1 Peer Review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) takes a formal decision on the quality of the new programme based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme. Upon completion of the programme graduates are entitled to receive a legally accredited degree.

This summary report contains the main outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases an accreditation decision on the full report.

Both the full and summary reports of peer reviews are published on NVAO's website www.nvao.net. There you can also find more information on NVAO and peer reviews of new programmes.

Because of COVID-19 temporary measures apply for this peer review.

2 Panel

Peer experts
1. Dr. Ir. Peter Joore (chair), Professor Open Innovation, NHL Stenden University of Applied Sciences, Leeuwarden;
2. Prof. dr. Regina Bernhaupt, Professor Measuring and Analysing Quality of Dynamic Real Life Systems, Eindhoven University of Technology;
3. Dr. ir. Guido Stompff, Professor Design Thinking, Inholland University of Applied Sciences, Eindhoven;
4. Evi Sijben (student) recently graduated from MSc Computing Science, Radboud University.

Assisting staff
– Yvet Blom MSc, secretary;
– Drs. Frank Wamelink, NVAO policy advisor and process coordinator.

Site visit (online)
8 July 2021

3 Outcome

The NVAO approved panel reaches a positive conclusion regarding the quality of the Master of Science in Digital Technology Engineering offered by Fontys University of Applied Sciences. Students who successfully complete the master will be digital technology engineers who can properly implement digital technology solutions to contribute to the digital transformation of organisations. The profile has been drafted with industry professionals and is in line with master level frameworks. Even so, the panel recommends simplifying the description of the programme to ensure that incoming students fully understand what the master entails.

Students with a technical bachelor's degree in engineering or IT can join the programme. The programme focusses on design-based working to transform digital challenges into digital technology solutions. The programme covers a wide range of topics. Students will learn via real-life challenges in a stimulating learning environment using skills such as collaboration, feedback and reflection. Design-based working allows students to experience the problems the industry faces and to gain insight into the phases a digital technology solution goes through from start to finish. An experienced and well-qualified team of lecturers is responsible for guiding students and teaching classes in a student-centred learning environment. The programme offers a well-balanced mix of assessments to test competencies, knowledge, and skills. The assessment system also has an extensive coaching component. This time-consuming assessment might be at risk if the number of students increases. All in all, Fontys University of Applied Sciences introduces an inspiring new study in an attractive learning environment. The panel concludes that this new programme meets the required quality level.

4 Commendations

The programme is commended for the following features of good practice.

1. Involved professional field – The professional field has played a large role in developing the programme.

2. Design-based working – The core of the master is working design-based. This method runs through the entire programme and helps students create viable digital technology solutions.

3. Learning by doing (experiential learning) – Students learn and work in the already existing Fontys PULSED environment. Students work on so-called challenges in real-life situations.

4. Staff – The programme has an enthusiastic and well-qualified team of educators.

5. Assessment system – The wide range of assessments has been well set up.

5 Recommendations

For further improvement to the programme, the panel recommends a number of follow-up actions.

1. Industry needs - Utilise connections within the industry for future purposes and get them actively involved (e.g. coaching or masterclasses) to guarantee a strong connection between the master and industry needs.

2. Programme description – Simplify the outline of the programme in order for students to readily understand what is expected of them during the programme. Simplify the outline of the programme and align the 6 final qualifications, 4 learning lines, the coaching line, the 12 learning outcomes, and the 52 indicators in such a way that students readily understand what is being expected of them.

3. Research – Create a strategic partnership with one or two of the new Centres of Expertise which are currently being developed within Fontys. This can ensure that the programme remains well-connected to state of the art developments in engineering and science.

4. Success disaster - Prepare for attracting more students than expected; a so-called success disaster. The programme needs to be prepared to provide the individual coaching also in case more than the expected amount of students apply.

5. Midterm review - Organise a midterm review with external experts during the start-up years of the programme. This helps to assess the progress made towards achieving the programme's objectives.

6 What comes next?

NVAO grants initial accreditation to a new programme on the basis of a panel's full report. The decision is valid for a maximum of six years. For conditional accreditation other regulations apply. Upon accreditation the new programme will follow the NVAO review procedures for existing programmes. NVAO publishes the accreditation decision together with the full report and this summary report.

Each institution has a system of quality assurance in place ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. The progress made since the last review is therefore taken into consideration when preparing for the next review. The follow-up activities are also part of the following peer-review report. For more information, visit the institution's website.

7 Summary in Dutch

Het panel oordeelt positief over de kwaliteit van de hbo-masteropleiding Digital Technology Engineering van Fontys Hogescholen. Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van *peers* op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 8 juli 2021. De hbo-masteropleiding Digital Technology Engineering leidt studenten op tot ingenieurs die digitale oplossingen kunnen implementeren en zo bij dragen aan de digitale transformatie binnen organisaties. Het opleidingsprofiel is afgestemd op de verwachtingen van het werkveld en voldoet aan het gestelde (internationale) masterniveau. Toch adviseert

het panel om de beschrijving van het programma te vereenvoudigen om ervoor te zorgen dat instromende studenten volledig begrijpen wat de master inhoudt.

Studenten met een technische bachelor in engineering of ict kunnen deelnemen aan de master. De master biedt een ambitieus curriculum waar studenten design-based werken om problemen om te zetten naar digitale technologische oplossingen. Het programma omvat een breed scala aan relevante onderwerpen. Studenten leren door te werken aan *real-life* uitdagingen. Dit biedt een uitdagende leeromgeving die is gericht op samenwerking, feedback en reflectie. De opleiding gebruikt design-based learning om studenten ervaring op te laten doen in de manier van werken en de uitdagingen waar het werkveld mee wordt geconfronteerd. Ook geeft deze werkwijze inzicht in de fasen die worden doorlopen bij de ontwikkeling van een digitale technologische oplossing.

Het ervaren en goed opgeleide docententeam zal tijdens de opleiding meerdere rollen vervullen. Het docententeam geeft les in een uitdagende leeromgeving en heeft de taak om studenten intensief te coachen. Om het leren van de student te ondersteunen en te bewaken heeft de opleiding een uitgebreid toetsplan. Er wordt een mix van toetsen gebruikt om competenties, kennis en vaardigheden te testen. Positief is dat intensieve reflectie op en begeleiding van de professionele ontwikkeling van de student daar onderdeel van is. Het panel wijst er wel op dat deze bewerkelijke toetsing een risico vormt wanneer de studentenaantallen groeien. Al met al introduceert Fontys Hogeschool een aantrekkelijk profiel en een inspirerende leeromgeving in digital technology engineering. Het panel concludeert dat deze nieuwe opleiding aan het vereiste kwaliteitsniveau voldoet.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op www.nvao.net. Voor informatie over Fontys Hogescholen verwijzen we naar de website van de instelling.[1] Als gevolg van de beperkende omstandigheden door COVID-19 geldt voor deze kwaliteitstoets een tijdelijke procedure.

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[1] https://fontys.nl/

The summary report was written at the request of NVAO and is the outcome of the peer review of the new programme Master Digital Technology Engineering of Fontys Hogescholen

Application no: AV - 1084

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