NVAO THE NETHERLANDS

# INITIAL ACCREDITATION

## PROFESSIONAL MASTER DIGITAL TECHNOLOGY ENGINEERING

Fontys Hogescholen

FULL REPORT
1 September 2021

# Content

# 1 Peer review

The Accreditation Organisation of the Netherlands and Flanders (NVAO) determines the quality of a new programme on the basis of a peer review. This initial accreditation procedure is required when an institution wishes to award a recognised degree after the successful completion of a study programme.

The procedure for new programmes differs slightly from the approach to existing programmes that have already been accredited. Initial accreditation is in fact an ex ante assessment of a programme. Once accredited the new programme becomes subject to the regular review process.

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 agenda for the panel visit and the documents reviewed are available from the NVAO office upon request.

The outcome of this peer review is based on the standards described and published in the limited NVAO Assessment framework for the higher education accreditation system of the Netherlands (Stcrt. 2019, nr. 3198). Each standard is judged on a three-point scale: meets, does not meet or partially meets the standard. The panel will reach a conclusion about the quality of the programme, also on a three-point scale: positive, conditionally positive or negative.

This report contains the findings, analysis and judgements of the panel resulting from the peer review. It also details the commendations as well as recommendations for follow-up actions. A summary report with the main outcomes of the peer review is also available.

NVAO takes an accreditation decision on the basis of the full report. The NVAO 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.

Both the full and summary reports of each peer review 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 New programme

## 2.1 General data

| | | |
|---|---|---|
| Institution | : | Fontys University of Applied Sciences |
| Programme | : | professional master Digital Technology Engineering |
| Mode of study | : | full-time |
| Degree | : | Master of Science |
| Location | : | Eindhoven |
| Study load | : | 120 ECTS[1] |
| Field of study | : | Technology (confirmed by panel) |

## 2.2 Profile

The Master of Science in Digital Technology Engineering offered by Fontys University of Applied Sciences (Fontys) gives students the opportunity to gain extensive knowledge and skills in the digital technology industry. The 2-year programme covers a total of 120 European Credits (ECTS). The programme is set up to develop solutions for implementing complex and digital technologies at the level of the invention of new products and/or services, as well as the change of internal production and organisational processes. After successfully completing the master, graduates will be able to contribute to a rapidly changing digital society, keeping in mind aspects such as social impact, sustainability, and ethics. The programme is linked to the lectorates People and Technology, Health Innovations and Technology, AI & Big Data, and Business Entrepreneurship. The Master of Science in Digital Technology Engineering forms part of the Fontys School of Engineering and is implemented by the Fontys PULSED education department. This is the first full-time master's programme offered by the School of Engineering.

## 2.3 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

[1] European Credits

# 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. The programme complies with all standards of the limited NVAO framework.

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.

| **Standard** | **Judgement** |
|---|---|
| 1 Intended learning outcomes | meets the standard |
| 2 Teaching-learning environment | meets the standard |
| 3 Student assessment | meets the standard |
| **Conclusion** | **positive** |

# 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 Assessment

## 6.1 Standard 1: Intended learning outcomes

*The intended learning outcomes tie in with the level and orientation of the programme; they are geared to the expectations of the professional field, the discipline, and international requirements.*

**Judgement**
Meets the standard.

**Findings, analysis and considerations**
The programme's main objective is to develop knowledge and skills which students need to apply and implement when developing digital technology solutions. This will allow students who successfully complete the master to be part of digital transformations within a wide range of organisations. The programme formulated 6 final qualifications: Digital Technologies, Systems Engineering, Practice-Based Research, Leading development, Communication & Team work, and Personal & Professional Identity. For these 6 final qualifications, Fontys drafted 12 intended learning outcomes with 52 indicators. As will be problematised under standard 2, the translation of these final qualification to the curriculum results in 4+1 learning lines. This structure is confusing. For this standard the panel limits itself to the intended final qualifications.

Fontys has drafted a profile for the Master of Science in Digital Technology Engineering with the help of lecturers from various study programmes, industry representatives, lectors, education experts and a testing expert. The final qualifications, that indicate the required level to graduate, are set up like a matrix and describe the intended learning outcomes. Before finalising the profile, industry professionals were asked their opinion to ensure the skills and overall level of the programme meet their expectations. The panel believes that the process of developing the programme's profile has resulted in final qualifications that meet industry's requirements. The final qualifications describe learning outcomes that comply with national and international frameworks such as the professional master standard, the EUR-ACE[2] and the European Qualification Framework (EQF).

After speaking to the programme management it became clear to the panel that the programme aims to train students to become 'integrating engineers'. These 'technical-savvy' professionals will be able to integrate digital solutions in organisations. The master has been developed to deliver highly skilled digital technology engineers who can fulfil a leading role in solving complex digital challenges. Graduates will be T-shaped professionals with in-depth knowledge on data, Artificial Intelligence (AI) and smart devices as well as extensive expertise on systems engineering, practice-based research and design-based working.

During the online site visit the panel was assured of the urgent need for T-shaped professionals in the digital technology industry. The current shortage, according to industry representatives, is inherent to the pace in which digital technology changes on a day-to-day basis. These changes are due to the speed in which innovations follow each other up and the increasing connectivity of digital technologies. Companies are therefore continuously looking for professionals who are able to create innovative digital technology solutions and who are also capable of liaising with stakeholders from different stakeholders and be agile team leaders. The panel was given an example, related to the health care industry, of what this

[2] European Accredited Engineer

means from a business perspective. It is no longer sufficient to just find a technical solution for a problem with, for example, an MRI scanner. Instead, a digital technology professional has to weigh the needs and wants from the entire radiology department and find a balanced design that suits everyone involved. As there can be opposing needs, this process could be very challenging.

The panel is impressed by the way Fontys has worked collaboratively with regional industry professionals to develop the programme. The programme is closely linked to businesses within the Brainport area as well as relevant global networks consisting of educational institutions and international companies. Representatives of these businesses have played an active role in developing the programme's profile. This has allowed the programme's development team to design a profile that lives up to the expectations of the (international) digital technology industry. The representatives confirmed their willingness to hire graduates from the master because of its current set-up and intended learning outcomes. As the master fits their needs so well, they believe it can contribute to solving the shortage of skilled T-shaped digital technology engineers. The programme management intends to continue seeking advice, through a professional platform, from industry representatives for further development of the programme. The panel is positive about the programme's intention to utilise the connection with the industry to see if it meets expectations. It advises to get the industry involved with the master's programme as much as possible, as this results in a strong connection between the intended learning outcomes and industry needs.

The professional master in Digital Technology Engineering consists of an ambitious set of learning outcomes that gives students the opportunity to contribute to the digital transformation of organisations. Industry professionals have contributed significantly to the content of the master as have a variety of educators, professors and education experts. That ensures that the learning outcomes are aligned with industry needs and are of a sufficient (master's) level. Representatives of the professional field are very positive about the programme. The new master fulfils their need for innovative, agile engineers who can effectively communicate and cooperate with various stakeholders across different fields when designing solutions. Based on the above, the panel concludes this standard has been met.

## 6.2 Standard 2: Teaching-learning environment

*The curriculum, the teaching-learning environment and the quality of the teaching staff enable the incoming students to achieve the intended learning outcomes.*

**Judgement**
Meets the standard.

**Findings, analysis and considerations**
Fontys has put together an inspiring 2-year programme of 120 European Credits. The six intended learning outcomes will be achieved in a curriculum that consists of the 4 separate learning lines *Digital technologies*, *Systems engineering*, *Practice-based research*, and *Design-based working*. The learning lines describe the level of knowledge and skills students need to attain the final qualifications. Other, more personal development-oriented qualifications are covered in a separate coaching line. This coaching line has been set up to structure the master's guidance and support facilities for students. This line has students formulate their personal learning goals and integrate the knowledge and (personal development) skills, gained from the 4 learning lines.

The programme aims to create a hands-on learning environment where students learn by doing. Students work design-based on four so called open-ended challenges. These challenges have been designed to train students how to transform problems into digital technology solutions. This process, from problem to solution, is divided into the stages of understanding, defining, ideating, creating and testing of prototypes. Each challenge consists of four courses (one per learning line) that focus on academic knowledge as well as skills training. The theory, that students must familiarise themselves with, is used to design an adequate solution to the given challenge. At the end of each challenge students must hand in a product that forms an answer to the problem and meets the requirements as set out in the learning outcomes. Challenges 1, 2 and 4 deal with fictional problems, whereas challenge number 3 is a real company problem that has been put together by Fontys and industry professionals. As the programme progresses, the challenges become more complex[3].

The first three challenges take place in the first year of the master. Courses in the Digital Technologies learning line such as *AI: hands on machine and neural networks* and *deep dive into data analysis* have been specifically designed to help students extend their knowledge of digital technologies. Students will however be trained to not only think as an engineer, but as a product user as well. Therefore, students must design an entire system, instead of only the functionality. Being able to take on different roles and create sound solutions is the core aim of the master. A digital technology solution only works if the needs and wants of all parties involved are met. Different aspects of the design process are covered in the systems engineering learning line during courses such as *perspectives in systems engineering* and *optimising and improving product design in an organisational context*. Focusing on academic research methodologies is done within the Practice-Based Research learning line and includes the courses *collecting and analysing data* and *communicating research results*. In the Design-Based Working learning line students will familiarise themselves with the design process during the courses *design thinking* and *human centred approaches*.

The second year of the master consists of the fourth challenge, a preliminary research project plus a graduation project. The fourth challenge is the most complex challenge of the master. Students combine the knowledge and skills acquired in the first year to design a digital technology-based solution. The courses *Smart devices – sensors & embedded software*, *Developing solutions: how to make a product successful*, and *visualising your process* form part of the fourth challenge. The preliminary research project aims to prepare students for their graduation project. In pairs, students will do desk research, establish their design approach, and come up with a conceptual research strategy for their graduation project. During the graduation project, students work in small project groups on an issue introduced by a real organisation that faces a difficult digital transformation. Students will develop a digital solution that provides an appropriate answer to the given problem of the organisation, taking stakeholder and system requirements into account. The representatives of the professional field indicated that they are willing to actively contribute to the programme by, for example, submitting challenges or supervising students during their graduation process.

The panel is confident that the way the programme has been set up enables students to reach the intended learning outcomes. The panel believes that design-based working is an appropriate method to achieve this as it gives students a taste of how to approach problems

[3] The first challenge focuses on *design for yourself*, the second challenge focuses on *design for your peers*, the third on *design for a company* and the fourth on *design for society*.

the actual industry faces. It gives students an insight into the phases the development of a digital technology solution, from start to finish, goes through.

However, as already mentioned, the panel found that the construction of the 6 final qualifications, 4 learning lines, a separate coaching line (including learning outcomes and indicators), 12 intended learning outcomes, and 52 indicators, might be rather complex. Even the panel that was in the position to extensively study the programme's information dossier and the Master Guide[4] had difficulties in finding its way in this structure. This makes the panel wonder if students will be able to readily understand what is expected of them during the programme. The panel therefore recommends simplifying this aspect in the design of the programme, and with it the Master Guide, in order for students to readily know what the master programme entails.

The master programme's learning environment and its didactics are designed by Fontys PULSED. The panel sees PULSED as an inspiring learning environment. The learning environment is designed for design-based education and includes a maker, prototype, concentration, and inspiration space. Students gain knowledge and expertise while they work on realistic challenges in multidisciplinary teams. They learn to make individual as well as collective decisions, monitor and evaluate their personal development, and create and test prototypes. Although the panel has not been able to actually visit the PULSED environment as this assessment has taken place online, because of the COVID-regulations, the panel appreciates the PULSED environment and didactics that provide an excellent environment for students to gain knowledge and expertise in real-life situations.

The fact that the programme is the School of Engineerings' first master programme and the fact that Fontys PULSED has no master level experience in design-based working, has led to the panel's suggestion to organise one or more midterm reviews with external experts during the start-up years of the programme. This will help the programme to assess the progress made towards achieving the programme's planned objectives.

The master is scheduled to start in February 2022 and there are two enrolment dates per year, one in September and one in February. The expectation of Fontys is that the master will start with approximately 12 students. Applicants for the master must have a technical bachelor's degree in Engineering or IT. As the curriculum includes quite some courses that focus on developing a more in-depth knowledge of data and AI, the panel wondered if students with an Engineering background have the same foundation as students with an IT background. Lecturers of the programme clarified that both Engineering and IT bachelor programmes give students a basic understanding of technology. Furthermore, students that want to enrol need to be interested in data science and AI. The programme will interview prospective students as part of the application process to give students the opportunity to explain what their interest in these topics is based on. If the programme thinks that someone does not have the required knowledge of and interest in data science and AI, it will advise this person not to enrol. The programme's representatives convinced the panel that a basic understanding of technology combined with an interest in data science and AI, is sufficient to train technical savvy professionals who, after successfully completing the master, will be able to effectively implement digital technology solutions.

[4] A student guide with a detailed description of the curriculum.

During the online discussions, the panel met with an enthusiastic and well-qualified staff. The experienced lecturers form a group of wide range experts, most of whom have PhD's. The proposed teaching team consists of 5 lecturers and 2 coaches. The student-teacher ratio is 12:1 in the first year and 17:1 in the second. In line with the design-based learning approach, students receive thorough guidance from coaches[5], tutors[6] and professional experts[7]. Other roles that lecturers can have are those of examiner[8] and learning line coordinator[9]. The panel believes that the 12:1 ratio is sufficient to make the master a success. However, considering the intensive guidance, the number of lecturers is low for a master that could very well be more popular than expected and attract over 12 students. The panel recommends Fontys preparing itself for that scenario. Programme management clarified that for the first year, their marketing is aimed at bachelor students from within Fontys. This should make the number of students that apply easier to control. Fontys however needs to be aware of the possibility of a 'success disaster'. In such a situation, significantly more students apply for the master, resulting in the organisation not being able to provide the personal coaching that the programme claims to offer. Indeed, the training of additional skilful coaches will take ample time.

The panel appreciates Fontys' intentions to invest in its teachers by further improving their design-based learning didactic skills. One of the things Fontys offers is a consultancy programme for lecturers. In this programme, lecturers learn to bring their courses in line with the design-based learning approach. Lecturers also have the opportunity to spend 160 hours a year on developing their design-based teaching skills. The panel believes these different professionalisation options are very important. However, the panel recommends Fontys investing not only in lecturers' teaching skills, but also in their personal development. Lecturers should be encouraged to create a personal learning plan for individual development in the same way as students are supposed to do during the master programme.

The panel is positive about the close relationship with the lectorates. The lectorates contribute to the scientific content of the programme and bring intellectual depth and expertise to the programme. From talking with the programme management, the panel learned that it is Fontys' ambition to strengthen the cross-institutional multidisciplinary collaboration for research. To achieve this ambition, Fontys is forming six Centres of Expertise (CoE), each consisting of multiple lectorates from multiple areas of expertise. At the time of the site visit, the master programme was linked to two separate CoEs. The panel suggests to create a strategic partnership with one or two of the new CoEs. Creating a strategic long-term relationship with one or more of the CoE's, could be a way to ensure the research quality of the master, and ensure that the programme stays well-connected to recent technological and scientific developments.

As the programme is full and potentially demanding, the panel raised some questions about the workload of both students and staff. The lecturers stated that the hours for each course have been carefully calculated and the programme is exactly 120 ECTS. To ensure the workload stays manageable, the programme performs so called spot checks. These checks are

[5] Coaches provide students with development-driven coaching related to personal and professional identity.
[6] Tutors guide the group and learning process of student teams during the challenges and the graduation project.
[7] Professional experts ensure that students are presented with expert subjects to extend their knowledge skills on a specific topic.
[8] Examiners assess students and ensure that the assessment quality is sound.
[9] The learning line coordinator is responsible for the organisation of the learning line.

carried out after each challenge to reflect on the feasibility of the programme. The combination of a small group of students, a good teaching team and the spot checks makes for a workload that can be properly managed. It is important however to keep on top of potential workload issues as these can have a big impact on the quality of the master.

The panel is positive about the curriculum and inspiring teaching-learning environment. The teaching-learning environment consists of design-based challenges that activate students to gain knowledge and expertise in real-life situations. This allows students to experience which problems the industry faces as it gives an insight into the phases that the development of a digital technology solution, from start to finish, goes through. The highly skilled lecturers will guide students in achieving the programme's proposed learning outcomes. However, the panel recommends simplifying the outline of the programme and aligning the current 6 final qualifications, 4 learning lines, the separate coaching line, the 12 intended learning outcomes, and the 52 indicators in such a way that students readily understand what the master programme entails and what is being expected of them. Taking the above into account, the panel is of the opinion that the programme in structured in such a way that the intended learning outcomes are achievable.

## 6.3 Standard 3: Student assessment

*The programme has an adequate system of student assessment in place.*

**Judgement**
Meets the standard.

**Findings, analysis and considerations**
The master has an extensive assessment plan in compliance with the assessment policy of Fontys PULSED. The assessment plan is well-elaborated and is in line with the programme's didactic principles. For nearly every assessment students are assessed individually. In the first year, students have to complete some small assessments to evaluate the learning outcomes related to the Digital Technologies and Practice-Based Research courses. For the three learning outcomes Systems Engineering, Design-Based Working and Personal and Professional Identity students have to create a portfolio per outcome. During the second year, students must complete a challenge report, a design and research strategy, a graduation report and a criterion-based interview[10]. Besides summative assessment methods the programme also uses a wide range of formative assessments. These take place during so-called landing point moments where students have to demonstrate their progress on the learning outcomes to their peers and teachers. This can be achieved by a pitch or presentation, a peer review session, a draft portfolio, a quiz, a debate, or any other formative method. The landing points are meant to provide students with feedback, feed-up and feed-forward from lecturers and peers. The idea is that this helps students achieve the learning outcomes.

The panel is positive about the set-up of the assessment plan. The programme uses well-developed rubrics for both summative and formative assessments. However, the complexity of the assessment plan, in combination with the complexity of the programme itself, is a concern. Assessing each student individually, plus providing frequent coaching on their

[10] A criterion-based interview is conducted after the initial assessment of the graduation report. During the interview, students can answer questions with regard to the report and reflect on the process.

professional as well as their personal development, is very time consuming and may result in a hefty workload for lecturers. According to the lecturers, the assessment plan is specifically designed to divide the workload. The panel can see the good intentions but worries that if the master attracts more students than expected, too much time will go to the different assessments not towards coaching. The panel advises to manage the complexity of the assessment plan and to create more focus.

During the online discussion with representatives of the Board of Examiners, the panel raised questions about the level of the programme. The panel questioned if the representatives could guarantee that the level is high enough to be called master level. The representatives of the Board of Examiners believe the master level is reached as the Board of Examiners was closely involved in the development of the programme and proactive on establishing the master level. The Board of Examiners stated that they will continue their involvement, by closely monitoring the master level of the programme, and in particular the Design-Based Working learning line. This includes randomly selecting and checking portfolio's and graduation projects. To ensure the quality of assessments, the programme has adopted the four-eyes principle. The master will also organise calibration sessions to ensure the scoring of assessments is as much the same between lecturers as possible. The panel believes suitable procedures are in place to make sure the level and quality of assessments are guaranteed. It is apparent that the Board of Examiners has been closely involved in the development of the programme. The panel sees the adoption of the four-eyes principle as well as the set-up of the calibration process as positive measures, as these help to achieve an effective and reliable assessment system.

The panel is positive about the programme's assessment system. The system appears to be sound and transparent and consisting of a wide variety of summative and formative assessments in line with the didactic principles of the programme. The panel is positive about the expected transparency and reliability of the assessment approach, among others because of the four-eyes principle and the calibration sessions. Based on the above, the panel determines that the assessment component of the programme meets the criteria.

## 6.4 Programme's extension - Two years programme

Fontys proposes the master programme in Digital Technology Engineering to be two years (120 ECTS). The faculty management's arguments are related to the international requirements and the scope and complexity of the programme. These arguments reflect the requirements of the professional field and the multidisciplinary domain of Digital Technologies, Systems Engineering, Design-Based Working and Practice-Based Research. The panel has assessed Fontys' reasoning, via the criteria from the Protocol for programme extension of NVAO, published on 8 October 2003.

**Findings, analysis and considerations**
The panel is convinced that for students to be able to compete internationally in the digital technology industry, they have to truly master a combination of in-depth knowledge on digital technology, and extensive knowledge and skills on systems engineering, design-based working and practice-based research. The wide range of different topics, state-of-the-art technical knowledge, learning to work in multidisciplinary environments, are essential parts of the programme.

The programme management of the Digital Technology Engineering master, has conducted a benchmark study. Engineering master's programmes generally have a duration of two years since the introduction of the bachelor and master system. Academic engineering masters are two years so students can attain an acceptable international level of knowledge. The panel has the impression that the benchmark study has been conducted in relevant and thorough manner, and understands that nearly all similar programmes abroad take two years (120 ECTS). According to the panel, the credentials digital technology graduates need to stand a chance in the international academic job market cannot be achieved in less than two years. The panel is therefore of the opinion that the master should be a two-year programme.

**Conclusion**
Given the strong arguments in favour of a two-year curriculum, the panel advises to grant Fontys the right to offer a two-year master programme (120 ECTS).

## 6.5 Degree and field of study

The panel advises awarding the following degree to the new programme: Master of Science
The panel supports the programme's preference for the following field of study: Technology

## Abbreviations

| | |
|---|---|
| AI | Artificial Intelligence |
| CoE | Centres of Expertise |
| CROHO | Central Register of Higher Education Study Programmes |
| ECTS | European Credits |
| EUR-ACE | European Accredited Engineer |
| EQF | European Qualification Framework |
| NVAO | Accreditation Organisation of the Netherlands and Flanders |

The full 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

NVAO

Nederlands-Vlaamse Accreditatieorganisatie
Accreditation Organisation of the Netherlands and Flanders

Parkstraat 83 · 2514 JG Den Haag
P.O. Box 85498 · 2508 CD The Hague
The Netherlands

T +31 (0)70 312 23 00
E info@nvao.net
www.nvao.net