



HAN UNIVERSITY OF APPLIED SCIENCES

Degree Statute and Education and Examination Regulations of the Master's Degree

Applied Science 24-25

Academie IT & Mediadesign

Academic year 2024-2025

Vastgesteld per 21 mei 2024

Instemming academieraad per 14 mei 2024

Instemming opleidingscommissie per 14 mei 2024

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PART 1 General part

Adoption

This degree statute was adopted by the dean on May 21 2024, after consent was received from the degree committee on May 14 2024 and consent from school council on May 14 2024.

1 About the degree statute

This degree statute has been formulated according to the model degree statute for master programmes of HAN University of applied Sciences. The courses described in this degree statute consist of units of learning outcomes.

"Unit of learning outcomes is a legal term. This degree statute will use the term "course" from this point onward.

The Higher Education and Research Act stipulates in article 7.59 that an institution such as HAN University of Applied Sciences (hereafter HAN) is obliged to adopt and publish a student charter. The Student Charter consists of two parts: the institution-specific part (which we call the 'Student Charter') and the degree-specific part (which we call the 'Degree Statute').

The degree statute consists of three parts:

- Part 1: General part.
- Part 2: The Education and Examination Regulations, which outline the education, final assessment, exams and modular exams for your degree programme.
- Part 3: Other regulations.

Part 1 is purely informative. No rights can be derived from it. Rights and obligations can be derived from the other parts; these are legally applicable regulations.

1.1 Which degree programme(s) does this degree statute apply to?

This is the Degree Statute for the following HAN degree programme(s):

Degree programme	Degree format	CROHO number	Degree after graduation
Applied Data Science	part-time	49164	Master of Science

This degree statute contains information on the structure, organisation and execution of the degree programme, education, student facilities, counselling and study coaching, the education and examination regulations and the other degree-specific regulations that describe student rights and responsibilities. When this document subsequently refers to 'the degree programme', we mean the above degree programme(s).

1.2 How do you read this degree statute?

We use regular UK spelling rules.

When we use 'you', we mainly mean you as an internal or external student enrolled in this degree programme at HAN. But we also mean others, such as prospective students.

When we use 'the student' we refer to all students: male, female and non-binary.

1.3 How long is the degree statute valid for?

A new degree statute is written for each HAN degree programme every academic year. The degree statute for a certain academic year applies to everyone enrolled in the degree programme for that academic year. It does not matter which phase of your degree programme you are in, whether you are an internal or external student, or when you started. You can find the digital version of the degree statute here: <https://www.han.nl/opleidingen/master/applied-data-science/deeltijd/praktische-info/degree-statute-and-educati>

on-and-examination-regulations-of-the-master-s-degree-applied-science-24-25_DEF.pdf.

This degree statute applies to the 2024-2025 academic year: from 1 September 2024 to 31 August 2025. For students starting their degree programme on 1 February 2025, two different degree statutes apply consecutively during their first 'year': the current one and that of the next academic year.

Did you enrol in the degree programme in a previous academic year? And is the degree programme working with a renewed curriculum or modifications in the education and examination regulations? Then certain provisions in the education and examination regulations may apply from a degree statute form a previous academic year.

1.4 How does the degree statute come about?

The degree statute for the degree programme is adopted by the dean each year. It is based on the model degree statute: a model that applies for the entire HAN.

The school council exercises the participation rights on the degree statute, but only in so far as the HAN participation council has not already exercised these rights through the model degree statute and in so far as these rights have not been conferred to the degree committee. How this works exactly is set out in the Participation Council Regulations and the Regulations of the Degree Committee.

Advice is requested in advance from the degree programmes board of examiners.

The relevant HAN organisational bodies strive to publish the new degree statute each year before 1 July.

1.5 Consistency of degree statute, student charter and enrolment regulations

The Degree Statute is part of the Student Charter. The Student Charter applies to the entire HAN. The Student Charter lists all the rights and obligations of students and HAN.

The Student Charter can be found here: [Student Charter | HAN University of Applied Sciences](#).

You can find the rules for application, admission, educational requirements, selection and enrolment in the Enrolment regulations. The degree statute only contains a number of specific additions to this. These additions may not contradict the rules from the enrolment regulations.

The enrolment regulations can be found at: [Inschrijvingsreglement-2024-2025_MADS.pdf \(han.nl\)](#) .

2 Education at HAN

Your degree programme is part of the HAN educational offerings. HAN has an overarching mission and vision on higher education. Your degree programme embodies this vision in its own way. HAN's mission and vision are described in the HAN Institutional Plan. You can find this plan on [han.nl](https://www.han.nl)

The HAN goals for the period from 2022-2028 are described in the HAN Institutional Plan: "For a smart, green and social world of tomorrow". You can find this plan on [han.nl](https://www.han.nl)

3 Information about your degree programme

3.1 Mission and vision of your degree programme

Our mission is to support professionals in their quest to grow in competence and social responsibility. We achieve this by aligning our educational programme with the current and future demands of the (international) profession and society.

Our vision is to add value by working with young professionals, organisations and society in the field of data science.

We aim to create a learning environment where students, lecturers and external experts work together on practical problems in the field of data science. In this learning environment, the focus is on the students' learning process. The students develop into data science experts in a largely self-directed manner. The lecturers act as coaches and expert partners who support and accompany the development of the students.

3.2 Content of your degree programme

This section gives a broad description of your degree programme. You can find the rules and details in Part 2, the education and examination regulations, and in the regulations in Part 3.

3.2.1 Scope

The scope of the degree programme is represented in courses and study load. This is also stipulated as such in the Higher Education and Research Act. Your master degree programme has a study load of 60 credits.

In the part time degree format, these are grouped in 4 modules

3.2.2 Degree content

The Master's degree in Applied Data Science gives you the expertise to address real-world problems with Data Science. You develop, apply, and deploy data-driven solutions. You work in a team with professionals from other disciplines to design solutions that fit the project requirements and can be safely deployed. Acting at master's level gives you the research and communication skills needed to get things done.

The degree programme is offered on a part-time basis and spans two years of study. In Year 1, you gain knowledge and skills in Data Science and Machine Learning concepts and technologies. In the second year, you apply datadriven solutions to real-life problems and conduct your own research project (Figure 1).

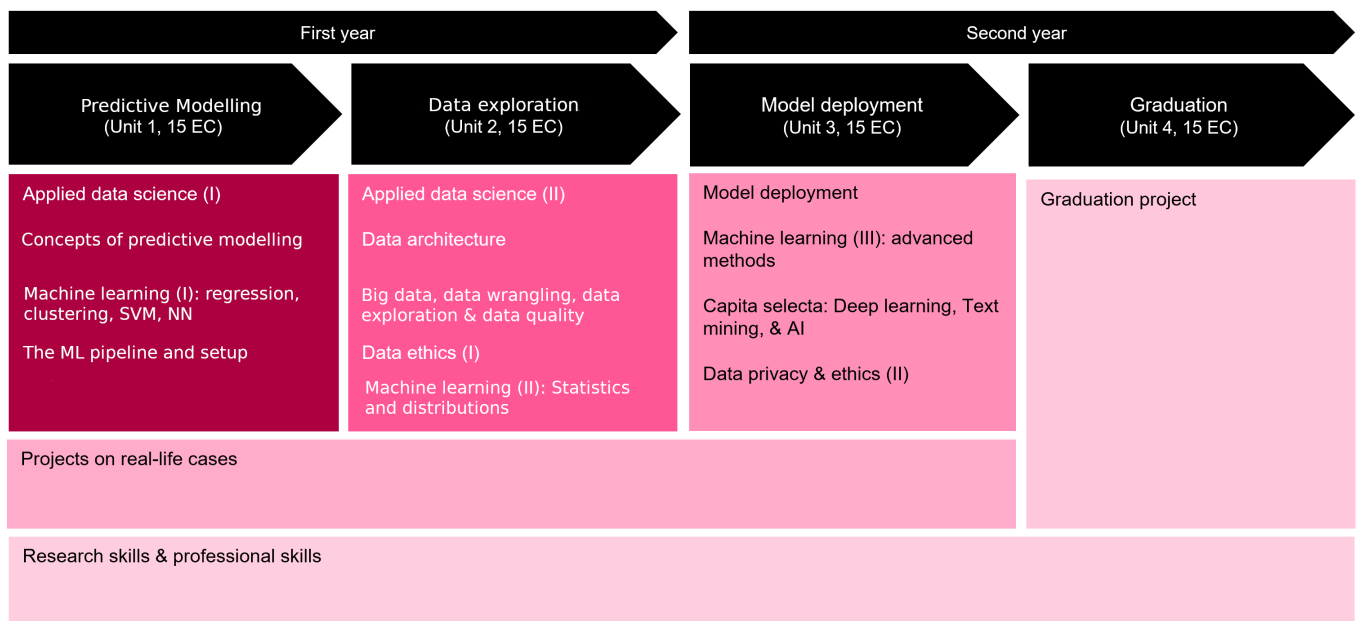


Figure 1: Outline of the content of the degree programme.

3.3 Organisation of your degree programme

The degree programme falls under the responsibility of the School of IT and Media Design. Lecturers and professors from the following schools participate in the organisation of this programme: School of IT and Media Design, School of Applied Biosciences and Chemistry, School of Engineering and Automotive, School of Law, School of Organisation and Development.

The content of the degree course is designed and organized by a core team. The core team is responsible for continuity, content, coherence, and coordination of the programme.

Information about the structure, organisation and people at your education programmes and schools can be found on: www.han.nl/insite

3.4 How we educate and supervise

Theory and practice come together in the various projects organised in each semester of this degree programme. You work in groups on real data science problems. You learn how to conduct research and communicate your results to a wider audience. You will gain experience in the effective use of Data Science, in interpreting and evaluating results, and in advising others on the effective use of data-driven solutions.

We support and guide your development and learning process through feedback. Professors, lecturers and peer students give you feedback during your project work and on your result.

3.5 Internships and/or workplace

In our programme, you must have a suitable workplace or internship for your graduation project. We have set this requirement because our education is designed to develop the learning outcomes of your graduation in a work environment. If you lose your job or change jobs during your studies, it does not mean that you will not be able to complete the programme. In this case, we will work together to find a solution, which may be an internship. Part 2 contains more information on these requirements.

3.6 How the professional field is involved

The professional field is involved in various ways:

- Representatives of the (inter)national and regional professional field advise and give feedback on the Master's programme.
- Representatives of the professional field participate in the programme through guest lectures and provide feedback and guidance to the students, e.g. on their research projects.

3.7 Research groups and research centres

The following research groups and research centres are involved in the programme:

School of IT and Media Design:

- Lectoraat 'Data & Knowledge Engineering'
- Lectoraat 'Applied Data Science & AI'
- Lectoraat 'Simulation & Virtualization' (in formation)

School of Engineering and Automotive:

- Lectoraat 'Lean & World Class Performance'

School of Applied Biosciences and Chemistry:

- Lectoraat 'Biodiscovery' & competence centre HAN BioCentre'

Together with education and the field, research groups and research centres explore applied design and innovation development with key technologies and methodologies. These stem from the national top sector policy and the schools' Knowledge and Innovation Agendas.

The research groups unlock key technologies and develop key methodologies for specific domains, such as (manufacturing) industry, sustainable energy or health. In doing so, they implement the HAN Centres of Excellence Smart, Clean and Social. Within HAN, the research groups drive the application of these key technologies. Outside HAN, they mainly work on regional issues, but from an international perspective. Where possible, the research groups contribute to projects and agendas at national, European and global level.

Connection with education

The research groups strengthen HAN's social role as a knowledge institution. In research projects, various professors, researchers, field partners, lecturers and students therefore work closely together. The interaction between research groups and study programmes provides teachers and students with knowledge of research skills

and a contribution to curriculum innovation. The research groups participate in the Master's degree programme in Applied Data Science. This interweaving with education strengthens the training of future-proof young professionals and safeguards the schools' innovative capacity.

3.8 Other

Not applicable.

4 Exit qualifications and professional requirements

4.1 The professional field

Digitization in industry, organisations and society lead to an increasing demand for developing solutions that handle large, diverse amounts of data and support decision-making or provide new insights.

Data Scientists are specialists who generate new knowledge and insights from data. They do this by applying Data Science and Machine Learning techniques. Data Science knows various applications. For example, to better predict the effects of a medical treatment, estimate the expected need for waste collection in a municipality or plan routes for trucks more efficiently. Data Scientists know how to translate such questions into data-driven solutions.

4.2 Professional requirements

Not applicable

4.3 Exit qualifications

This section describes your exit qualifications at the end of the degree programme. These exit qualifications are formally set in the education and examination regulations.

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When you graduate, you conform to the exit qualifications of the degree programme. In other words, you have certain (required) knowledge, understanding, skills and (if relevant) attitude, for the profession you have been educated for. The exit qualifications for your degree programme are outlined below.

Nr.	Exit qualification	Description
A	Problem understanding	The Master's graduates translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner. They take into account (business) requirements and assess potential risks. They derive relevant data requirements from problem insight.
B	Data understanding	The Master's graduates identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders. They apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality.
C	Data analytics	The Master's graduates apply appropriate data science and machine learning algorithms and techniques for complex data analysis. They prepare data, including selecting, cleaning, and combining data from various sources. They determine algorithms suitable for data analysis and establish the test design. They build models and evaluate them by interpreting model results, predefined success criteria, and the test design. They decide on follow-up actions based on the evaluation results of the model.

Nr.	Exit qualification	Description
D	Deployment	The Master's graduates advise on the deployment of data analytics solutions, also taking into account ethical and privacy concerns, as well as on their monitoring and maintenance. They critically discuss (business and data) consequences for an organization or society by evaluating and assessing the possibilities and use of data analytics solutions.
E	Professional skills	The Master's graduates reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner. They build and maintain a network of professionals inside and outside their organisations. They are in regular dialogue with relevant stakeholders and communicate their work appropriately. They determine objectives, approach, and project plan for a data science project.
F	Research skills	The Master's graduates purposefully apply a range of research and analytics techniques in a systematic and rational way. They critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant. They read and understand scientific and professional literature and communicate according to professional standards.

The level of the exit qualifications is geared to the Dublin Descriptors Long Cycle.

As a result, our degree programmes are guaranteed to be at the correct national and international level. The degree certificates meet all legal requirements and are therefore comparable with and equal to similar degree certificates from other universities of applied sciences in the Netherlands and abroad.

Dublin descriptor	
1.	Knowledge and understanding provides a basis or opportunity for originality in developing or applying ideas often in a research context
2.	Applying knowledge and understanding through problem solving abilities applied in new or unfamiliar environments within broader (or multidisciplinary) contexts
3.	Making judgements demonstrates the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete data
4.	Communication of their conclusions and the underpinning knowledge and rationale (restricted scope) to specialist and non-specialist audiences (monologue)
5.	Learning skills study in a manner that may be largely self-directed or autonomous.
Final qualifications and how they are related to Dublin descriptor(s)	
	The Master's graduates:
A.	<ul style="list-style-type: none"> - translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner (1, 2, 3). - take into account (business) requirements and assess potential risks (1, 2, 3). - derive relevant data requirements from problem insight (1, 2, 3).

B.	<ul style="list-style-type: none"> - identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders (1, 2, 3). - apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality (2, 3).
C.	<ul style="list-style-type: none"> - apply appropriate data science and machine learning algorithms and techniques for complex data analysis (1, 2, 3). - prepare data, including selecting, cleaning, and combining data from various sources (2, 3). - determine algorithms suitable for data analysis and establish the test design (1, 2, 3). - build models and evaluate them by interpreting model results, predefined success criteria, and the test design (2, 3). - decide on follow-up actions based on the evaluation results of the model (1, 2, 3).
D.	<ul style="list-style-type: none"> - advise on the deployment of data analytics solutions, also taking into account ethical and privacy concerns, as well as on their monitoring and maintenance (1, 2, 3). - critically discuss (business and data) consequences for an organization or society by evaluating and assessing the possibilities and use of data analytics solutions (1, 2, 3).
E.	<ul style="list-style-type: none"> - reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner (5). - build and maintain a network of professionals inside and outside their organisation (4). - are in regular dialogue with relevant stakeholders and communicate their work appropriately (4). - determine objectives, approach, and project plan for a data science project (4).
F.	<ul style="list-style-type: none"> - purposefully apply a range of research and analytics techniques in a systematic and rational way (1, 3). - critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant (1, 3, 5). - read and understand scientific and professional literature and communicate according to professional standards (1, 4, 5).

For an explanation of the NLQF levels see: <https://nlqf.nl/english>.

5 Academic calendar

This chapter outlines the lecture days, lecture times and the holidays and lecture-free weeks.

5.1 Lecture days and lecture times

The HAN timetable is published on HAN Insite.

Regular tuition day of the programme is a weekday on average.

The dates of the programme-specific holidays, contact days and deadlines for assignments are provided as a preliminary schedule at the beginning of the programme.

The definitive dates, including lecture times and deadlines for assignments are provided at the beginning of each semester.

5.2 Holidays and lecture-free weeks

The calendar for this academic year can be found on HAN Insite. It gives the lecture weeks and holidays.

6 HAN organisation

This chapter gives information about the organisation of HAN. Here you also find information on participation, quality assurance and the facilities you as a student can use.

6.1 Schools

At HAN, the degree programmes are divided over 14 schools.

Your degree programme belongs to School of IT and Media Design.

Below is a list of all the schools.

School	Academie (NL)	Abbreviation
School of Allied Health	Academie Paramedische Studies	APS
School of Applied Biosciences and Chemistry	Academie Toegepaste Biowetenschappen en Chemie	ATBC
School of Built Environment	Academie Built Environment	ABE
International School of Business	International School of Business	ISB
School of Business and Communication	Academie Business en Communicatie	ABC
School of Education	Academie Educatie	AE
School of Engineering and Automotive	Academie Engineering en Automotive	AEA
School of Finance	Academie Financieel Economisch Management	AFEM
School of Health Studies	Academie Gezondheid en Vitaliteit	AGV
School of IT and Media Design	Academie IT en Mediadesign	AIM
School of Law	Academie Rechten	AR
School of Organisation and Development	Academie Organisatie en Ontwikkeling	AOO
School of Social Studies	Academie Mens en Maatschappij	AMM
School of Sport and Exercise	Academie Sport en Bewegen	ASB

6.2 Management and organisation of the school

On HAN Insite you can find information about the set-up, organisation and staff of your degree programme, and about the school they belong to.

6.2.1 Board of examiners and examiners

The members of the board of examiners can be found on: Examencommissie (han.nl)

You can contact the board of examiners for your degree programme via the board of examiners secretarial office Examencommissie.AIM@han.nl

The members of the board of examiners are appointed by the HAN Executive Board.

The tasks and responsibilities of our board of examiners can be found in the Regulations of the Board of Examiners. These include additional rules regarding final assessment and examination in so far as these are within the powers of the board of examiners. See also the Regulations of the Board of Examiners in Part 3 of this degree statute.

The board of examiners decides, amongst other things, whether you meet the conditions set out in the education and examination regulations.

The board of examiners appoints examiners for each exam and modular exams. One or more appointed examiners administer that exam or modular exam and determine the result.

Other duties and powers of the board of examiners include:

- Assuring exam quality.
- Granting exemptions.
- Handling requests for an extra opportunity for an exam or a modular exam.
- Handling requests for modified exam or modular exam formats.
- Handling complaints.

You can find all the further rules on exams, modular exams and the final assessment that apply to you in the education and examination regulations (see Part 2). For rules on how these are organised, please refer to the Exam Regulations (see Part 3).

6.2.2 Participation and consultation

Below is a short overview of the HAN committees and councils. They discuss and also influence the policies and decisions made at HAN.

Degree committee

There is a degree committee for each degree programme or group of programmes. A degree committee consists of an equal number of staff members and students. The degree committee advises the course department about promoting and guaranteeing the quality of the degree programme. Each year it also evaluates the degree programme's compliance with the education and examination regulations. The degree committee also has a right of consent and advisory rights. Through this committee, you can contribute ideas and make decisions about the education and organisation of your degree programme.

Would you like to become a member of the degree committee? You can request more information from Academieraad.AIM@han.nl. The degree committee has its own regulations (see Part 3).

School council

Each school has its own school council. This council has the right to discuss all matters concerning the school and to ask the dean about these matters. The council also has the right to be consulted on school policies. The school council gives you the opportunity to contribute ideas and decide on school policies.

Would you like to know more about the school council? Contact the school council secretarial office: Opleidingscommissie.AIM@han.nl

Participation council

The participation council allows staff and students to participate at HAN level. This council has a right of consent on certain aspects of policy, on the main features of the institution budget, the general applicable part of the education and examination regulations and more. The participation council has an equal number of students and staff. The participation council deals with general HAN policy.

Would you like to join the participation council? You can ask for more information from the secretarial office for the participation council: secretariaat.mr@han.nl. Would you like to learn more about the participation council? Go to <https://www.han.nl/over-de-han/organisatie/bestuur/medezeggenschap/index.xml>

6.3 Student facilities

As a student, you can rely on good coaching and guidance during your academic career. Within your degree programme, you and your study coach look at what coaching you need, your study progress and your career development. We look at your talents, ambitions and support needs.

In addition to the coaching offered within your degree programme, you can use the services offered by HAN Student Support Centre. This is a team of experts who work together on one goal: your growth as a student.

On hanuniversity.com, under the 'Study and living' tab, you will find all information about the facilities that are offered in- and out-of-school. The right of students to the various facilities is regulated in section 3.1 of the Student Charter. The various contact details are included in chapter 5 of that statute. The Student Charter can be found at: hanuniversity.com

The main facilities are briefly summarized below. For more information about these facilities, see [HAN University of Applied Sciences - Open up new horizons](#) .

SUPPORT

HAN Student Support Centre

All HAN students can contact HAN Student Support Centre for support, advice, training and coaching. This is a network of experts in various areas of student supervision. They have expertise in:

- Study skills, language skills and personal development.
- Degree transfers and study delays.
- Psychological support.
- Student finance, support funds and support and questions about finances.
- Studying with special circumstances, chronic illness or pregnancy.
- Course selection and further studies.
- Various statutory and university of applied sciences regulations.
- Complaints, objections and appeals procedures.
- Studying as an elite athlete.
- Purpose and spirituality.

HAN Language Centre

HAN Language Centre can help you with all your language and translation needs. You can also sign up for various language courses, coaching sessions or workshops. HAN students receive a discount on all foreign language courses.

At HAN Language Centre you can also take a writing or spelling course. There is also a special course (in Dutch) for students with dyslexia. The courses are intended for both Dutch and international students.

Confidential counsellors

At HAN we treat each other respectfully. Unfortunately, incidents can occur in which you as a student or staff member has to deal with unacceptable and/or disruptive behaviour. If this happens, contact one of the confidential counsellors to discuss what you can do about it. You can choose which confidential counsellor you speak to. More information and the contact details of the confidential counsellors can be found on HAN Insite.

Complaints and Disputes Office

Do you have a complaint, dispute, objection or appeal? The first step is to try to work it out together, possibly with the support of the study coach. If this does not help, you should submit your complaint to the Complaints and Disputes Office. The Complaints and Disputes Office ensures that complaints and letters of appeal are delivered to the right persons within the HAN organisation. The office also takes care of the secretarial duties of the Examination Appeals Board.

E: Bureau.klachtengeschil@han.nl

T: 026-3691504

A: Verlengde Groenestraat 75 Nijmegen / Postbus 6960, 6503 CD NIJMEGEN

I: [Klacht en bezwaar \(han.nl\)](#)

INFORMATION FACILITIES

Student Affairs Enquiry Desk via ASK@han.nl

Do you have questions about your degree programme? For example, about enrolment, payment of tuition fees, examinations, lecture timetables or OSIRIS? You can ask the staff at the Student Affairs Enquiry Desk via ASK@han.nl.

Study and Multimedia Centres

The Study and Multimedia Centres offer a physical library collection at diverse HAN locations. The locations also have places to study and quiet zones.

On the website [HAN Study Centres - HAN Study Centres](#) you can find the digital collection, which you can also consult at home. Here you can also find study materials for the Information Skills lessons.

More information about the services, opening hours and contact details can be found on the website of the Study and Multimedia Centres: [HAN Study Centres - HAN Study Centres](#).

HAN Information Centre via ASK@han.nl

The staff at the HAN Information Centre can tell you everything about degree courses, forms of collaboration, promotional activities and the organisation of the entire HAN.

I: [Contact form \(hanuniversity.com\)](#)

International Office

HAN is also active internationally. The activities are extremely varied. For example, the International Office works on internationalisation of the curriculum, expanding the international network of partner universities, studying abroad for HAN students and lecturer exchanges. The International Office also coordinates HAN's efforts in three important internship projects for community work in South Africa, India and Curacao. Finally, the International Office offers practical support regarding scholarships (including Erasmus+) and filling in forms such as the Learning Agreement. The International Office is also the first point of contact for international students. The International Office is located in Arnhem (Ruitenberglaan 31) and Nijmegen (Kapittelweg 33). Drop by to ask your questions or visit the Insite page

of the International Office.

I: [International office \(hanuniversity.com\)](mailto:International.office@hanuniversity.com)

OTHER FACILITIES AND SERVICES

Sports facilities

As a HAN student you can purchase a sports card. This allows you to use the sports facilities of HAN Seneca (the HAN centre for sport and health), the sports facilities of the Arnhem council and the sports facilities of Radboud University Nijmegen.

HAN Employment

HAN Employment mediates between employers and jobseekers doing a work-study or part-time degree course. HAN Employment also publishes vacancies for alumni.

HAN Employment offers companies the opportunity to post vacancies on the job bank.

Students doing work-study and part-time degree courses are offered training sessions (SollicitatieBoost) and network sessions (Meet & Match).

Entrepreneurship

Students with entrepreneurial ambitions can come here for coaching/starter supervision, entrepreneurship education, help in applying for financing, networking and entrepreneurial events.

You can also contact the centre about doing an internship or graduation assignment in your own company. And HAN offers various minors on entrepreneurship.

Health and safety for students

Would you like to know more about the rules for safe and healthy work practices at HAN? Or do you want to know which resources we have in this area? Visit the special health and safety pages for students on Insite.

PART 2 Education and Examination Regulations

1 About the education and examination regulations

These education and examination regulations are included in the degree statute that applies to your degree programme. The education and examination regulations are adopted each academic year.

The education and examination regulations cover the education, exams, modular exams and final assessment for your degree programme and your rights and obligations.

The educational arsenal is also described in these regulations.

1.1 Terms and definitions

The terms and definitions used in these education and examination regulations are given below.

The Dutch term is given between brackets.

Academic year (<i>Studiejaar</i>)	The period starting on 1 September and ending on 31 August of the following calendar year.
Assessment criteria (<i>Beoordelingscriteria</i>)	Clearly defined and unambiguous standards that can be used to give a motivated assessment of whether and to what extent a student meets the required level of knowledge, understanding and skills and (if relevant) attitude assessed in an exam or modular exam.
BRIN number (<i>BRIN-nummer</i>)	The Basisregistratie Instellingen (BRIN) is a database for educational institutions that is published by the Dutch Ministry of Education, Culture and Science. It contains all schools and related institutions. Each educational institution is identified in the database with a number. The BRIN number for HAN is 25KB.
Course (<i>Cursus</i>)	The term "Course" refers to a unit of study or a unit of learning outcomes and is used for all types of education and corresponding educational concepts.
Credit (<i>Studiepunt</i>)	Official term: Education Credit (EC). The study load of a course is measured in credits. For degree programmes that consist of courses one credit equals a normative study load of 28 hours of study. For degree programmes that consist of units of learning outcomes a credit expresses the comparative study load of a course compared to the study load of the degree programme.....
CROHO (<i>CROHO</i>)	CROHO is the central register for degree programmes in higher education.
Degree committee (<i>Opleidingscommissie</i>)	The statutory public participation body as referred to in article 10.3c of the Higher Education and Research Act, which is responsible for eg. guaranteeing the quality of the degree programmes listed in Part 2, chapter 1.
Degree format (<i>Inrichtingsvorm</i>)	The manner in which a degree programme is organised: full-time, part-time or work-study.

Deregister (<i>Uittekenen</i>)	Sign out of participation in educational activities, exams and modular exams after registering.
D-stream (<i>D-Stroom</i>)	This is a customised study programme that has the same exit qualifications and assessment criteria for courses as the regular stream (A-stream). It allows a student to following their own study track in continuous consultation with examiners, lecturers and classmates.
Educational arsenal (<i>Onderwijsarsenaal</i>)	The educational and coaching activities offered to students by a unit of learning outcomes programme with the aim of supporting the student in gaining the course exams and exam modules.
Elective course (<i>Keuze-cursus</i>)	A course that can be chosen from two or more courses. Once selected, a course becomes part of the student's study programme and final assessment. The exams and modular exams for the non-mandatory courses that the student did not select do not need to be taken for the degree certificate.
Exam (<i>Tentamen</i>)	A test of the student's knowledge, understanding, skills and (if relevant) attitude in conjunction with each other. Also, the assessment of the results of that test. The exam is the concluding component of a course .
Exam opportunity (<i>Tentamengelegenheid</i>)	An opportunity offered in the degree programme to sit for an exam or modular exam.
Exam sitting (<i>Tentamenmoment</i>)	The sitting/time at which an exam or modular exam is administered/held.
Examination Appeals Board (<i>College van Beroep voor de examens</i>)	This is the board referred to in article 7.60 of the Higher Education and Research Act. The board deals with appeals submitted by students against decisions made by HAN.
Exams taken independently of the standard programme (<i>Leerwegaafhankelijk tentamen</i>)	An exam or modular exam that the student can take without having participated in the educational activities linked to that exam or modular exam.
Exemption (<i>Vrijstelling</i>)	A decision made by the board of examiners that a student does not have to take the exam(s) relating to one or more specific courses. This decision is based on the board's opinion that the student already sufficiently masters the required knowledge, understanding, competences and/or skills and (if relevant) attitude.
Exit qualifications (<i>Eindkwalificaties/Eindtermen</i>)	Well-defined outcomes regarding the knowledge, understanding and skills and (if relevant) the attitude a student should acquire by the time they complete their degree programme.
External student (<i>Extraneus</i>)	A person enrolled at a university of applied sciences or university who can participate in exams, modular exams and final assessments but not in the education or supervision.
Graduation specialisation (<i>Afstudeerrichting</i>)	A specialisation within a degree programme as defined in the education and examination regulations.

HAN (<i>HAN</i>)	HAN University of Applied Sciences. This abbreviation is used in internal documents to improve the readability of documents.
Head examiner (<i>Hoofdexaminator</i>)	Appointed by the board of examiners as the head examiner responsible for the results of examination and assessment in cases where more than one examiner has been appointed for an exam or modular exam.
Higher Education and Research Act (<i>WHW</i>)	Higher Education and Research Act (in Dutch: <i>Wet op het Hoger Onderwijs en Wetenschappelijk Onderzoek</i>).
Honours programme (<i>Honoursprogramma</i>)	A specialisation or differentiation programme for students who are capable of and want to do more than what is offered in the regular study programme. An honours programme has an additional study load of 22.5 credits or more.
Learning outcome (<i>Leeruitkomst</i>)	Learning outcomes are what a student knows, understands and is able to apply after a period of study (NVAO 2019). Learning outcomes are derived from exit qualifications and are linked to professional practice.
Major (<i>Major</i>)	The core 210 credits of a bachelor degree programme. During the major a student acquires the qualifications needed to graduate for a university of applied sciences bachelor degree and meet the professional requirements.
Minor (<i>Minor</i>)	The part of the post-propaedeutic phase of the bachelor degree programme that is aimed at specialisation or differentiation. The minor has a study load of 30 credits.
Model degree statute (<i>OER</i>)	Education and examination regulations.
Module (<i>Module</i>)	An internally coherent and to some extent independent part of the part-time and work-study degree programme. A module consists of one or more courses and is aimed at a realistic cluster of qualifications derived from professional practice.
Module certificate (<i>Modulecertificaat</i>)	Written statement by the board of examiners that a student has successfully completed a module in the part-time or work-study degree format.
OSIRIS	The HAN student information system.
Premaster (<i>Premaster</i>)	Opportunity to resolve deficiencies when failing to meet the admission requirements of master degree programmes
Professional requirements (<i>Beroepsvereisten</i>)	Well-defined qualifications regarding the knowledge, understanding and skills and (if relevant) the attitude a student needs to carry out the profession they are studying for.
Professional task (<i>Beroepstaak</i>)	A meaningful, complete task as carried out in all its complexity by a professional practitioner in an actual professional setting with all its complexities.

Recognition of Prior Learning (<i>Erkenning Verworven Competenties, EVC</i>)	Recognition of prior learning gained outside the degree programme that leads to a Certificate of Prior Learning from the Nationaal Kenniscentrum EVC, the national research centre for the recognition of prior learning. Recognition of prior learning can lead to exemption from exams and modular exams for courses that focus on the competences already gained through the prior learning.
Register (<i>Intekenen</i>)	Registering for participation in educational components, exams and modular exams in OSIRIS.
School (<i>Academie</i>)	An organisational unit with interconnected degree programmes, research and knowledge services.
Student (<i>Student</i>)	A person enrolled as a student in a degree programme at HAN with the aim of participating in education, exams and modular exams.
study coach (<i>Studentbegeleider</i>)	A staff member responsible for the study coaching of one or more students.
Study load (<i>Studielast</i>)	The time and effort required for a course.
Study plan (<i>Studieplan</i>)	The contract between a student and HAN at courses that consist of units over learning outcomes. Also called the education contract.
Study progress requirement (<i>Studievoortgangsnorm</i>)	The standard that the course department sets and that the student must meet in order to receive positive study advice.
Talent programme (<i>Talentedprogramma</i>)	A specialisation or differentiation programme for students who are capable of and want to do more than what is offered in the regular study programme. A talent programme has an additional study load of fewer than 22.5 credits.
Track with special feature (<i>Traject met bijzondere eigenschap</i>)	A degree track that distinguishes itself from the standard track because of a different duration, intensity, language or format. In all cases, the study load and the qualities in the area of knowledge, understanding and skills that a student has to acquire by the end of the track are the same as those of the degree programme.
Unit of Learning Outcomes (<i>Eenheid van leeruitkomsten</i>)	A measurable result of learning outcomes that a student may gain without having participated in the educational activities linked to said learning outcomes, the command of which the student is able to demonstrate independently of regular in-class educational activities. A unit of educational outcomes comes with a final examination that may consist of more than one module of exams. In the model degree statute a unit of learning outcomes is called a course.
Unit of study / study unit (<i>Onderwijseenheid</i>)	A basic unit of HAN education that is aimed at achieving clearly defined objectives in terms of knowledge, understanding, skills and (if relevant) attitude. These are assessed in an exam and awarded a certain number of credits.

Workplace learning agreement (<i>Praktijkleervereenkomst</i>)	Agreement between HAN, the student and a company or organisation regarding work-study placement in the part-time or work-study courses as described in article 7.7,
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1.2 Which degree programme(s) do these education and examination regulations apply to?

These are the education and examination regulations, as defined in article 7.13 of the Higher Education and Research Act, for the following HAN degree programme(s):

Degree programme	Degree format	CROHO number	Location of the degree programme
Applied Data Science	Part-time	49164	Master of Science

1.3 Which education and examination regulations apply to you?

At HAN, the education and examination regulations are renewed every year. This does not mean everything changes each year. Generally only a small number of changes are made to the educational programme and the organisation.

These education and examination regulations apply to the 2024-2025 academic year, so from September 2024 to 31 August 2025.

Amendments made to the education and examination regulations do not apply to events or matters in the past, but only to the new academic year. Special rules may apply when switching from 'earlier' education and examination regulations to new education and examination regulations. These rules can be found in the transition regulations: Part 2, chapter 8.

In exceptional cases the education and examination regulations must be amended during an academic year. Amendments can only be made during an academic year if this is reasonably necessary and does not disadvantage the students. Transition regulations may also apply in these cases: see Part 2, chapter 8. The overview of adopted amendments is included in Part 2, section 8.5.

In cases not provided for in these education and examination regulations, the dean will decide. If a case is subject to the authority of the board of examiners, a decision will be made by the chair of that board of examiners. Those with an interest in the decision will be informed of that decision within four weeks.

2 Regulations concerning admission

The rules concerning application, admission, admission requirements, selection and enrolment for all degree programme(s) to which this degree statute applies, can be found in the Enrolment Regulations: <https://www.han.nl/opleidingen/master/applied-data-science/deeltijd/praktische-info/>.

This chapter contains the applicable rules for admission into the degree programme, which by law must be included in the education and examination regulations.

2.1 Maximum number of admissions

A maximum of 30 persons will be enrolled for this degree programme in the 2024-2025 academic year. If the number of applicants is higher than this maximum, the following will apply for admission: <https://www.han.nl/opleidingen/master/applied-data-science/deeltijd/praktische-info/>.

2.2 Admission requirements

A requirement for admission to a master degree programme is holding a bachelor degree from a university of applied sciences or university or possessing knowledge, understanding and skills at the level of a bachelor degree from a university of applied sciences or university.

The following specific requirements also apply to this degree programme:

- A sufficient level of programming (e.g. Python, R or comparable) and a sound background in mathematics and statistics. For the specific entry level of the applicant's knowledge of programming, statistics and mathematics for the Master's degree programme see table below.
- A suitable workplace (for at least 8 hours per week) to carry out assignments and the graduation project. The workplace should enable the student to work effectively on the graduation project. Additional requirements may depend on the content of the project.
- English at level B2 (or above) (European Framework of References).
- An admission interview with the degree programme. The degree programme organises an interview with all students who want to enrol. During the admission interview, we assess whether the potential student can, in principle, complete our programme successfully.

Programming skills (in Python)

The student applicant is able to

- set up his/her own development environment to program, test, and run simple Python scripts
- work with integrated development environments such as Python IDE, Jupyter Notebook, PyCharm, VisualStudio Code
- install Python packages
- use Python data types correctly, e.g. numbers, strings, arrays, lists
- apply standard operations on variables
- explain the different types of variables and data structures in Python
- use and write conditional operators e.g. if-else statements, control and loop statements, and own functions
- use modules and packages
- explain the scope of variables
- use basic functionality of NumPy arrays, Pandas data frames, matplotlib plots
- write Python scripts to load and save data, retrieve data from tab-, or comma-delimited files, store data in data objects, visualize data using scatter plots, box plots, histograms.

Statistics

The student applicant

- Is able to use data visualization
- knows mean, median, mode, modal, range, quartile, mean deviation, standard deviation
- knows univariant, bivariant data, scatter plots, outliers, correlation, variance, (co)variance
- knows concepts of probability, relative frequencies, independent and dependent events
- knows concepts of distribution (discrete and continuous)
- knows concepts of sampling, hypothesis testing, statistical tests, and p-value

Mathematics

The student applicant

- knows and correctly applies methods of differential calculus: limits, slope of a function, derivatives, finding minima/maxima, concept of integration
- knows and correctly applies equations and formulas, exponents, logarithm, polynomials, summation and product symbols, function of one or more variables
- knows and correctly applies vector operations and notation
- knows and correctly applies matrix operations and notation

2.3 Employment requirements for part time degree programme(s)

Not applicable

2.4 Workplace-learning agreement for the work study degree format

Not applicable

2.5 Study plan

Before you start a module, we record an agreement on how you will prepare for the exams and modular exams of

said module. This agreement will be laid down in a study plan. The study plan will be signed by both yourself and HAN. The study plan must confirm to requirements as laid down in the HAN model.

2.6 Extra contribution

Not applicable

3 Description of the degree programme

In this chapter you can read about the format and structure of the degree programme. You can also read about the study load of the different courses and modules offered in the degree programme. This chapter contains a general description. Part 2, chapter 6 describes the exact content of the degree programme and the educational arsenal that comes with it.

3.1 Structure and format of the degree programme.

3.1.1 Structure of the degree programme

The degree programme consists of a coherent set of courses. In the part-time and/or work-study degree format, courses are grouped in modules.

In schematic form your programme looks like this. For the numbering of the exit qualifications, see Part 1, Chapter 4 The exit qualifications for your programme and professional requirements.

	Period 1	Period 2	Period 3	Period 4
Y1	Predictive Modelling - Exit qualifications: A, B, C, E, F	Predictive Modelling 15 EC Exit qualifications: A, B, C, E, F	Data Exploration - Exit qualifications: A, B, C, E, F	Data Exploration 15 EC Exit qualifications: A, B, C, E, F
Y2	Model Deployment - Exit qualifications: A, B, C, D, E, F	Model Deployment 15 EC Exit qualifications: A, B, C, D, E, F	Graduation Project - Exit qualifications: A, B, C, D, E, F	Graduation Project 15 EC Exit qualifications: A, B, C, D, E, F

The study load of a degree programme is represented in credits. The study load of a course is at least one credit. The study load of this master degree programme is 60 credits.

Each year of study is structured so that the standard study load for a full-time degree format is 60 credits.

You can follow the degree programme in the following degree formats:

Part-time

At location: Arnhem.

The part-time degree format has a standard scheduled duration of 2 years of study.

The structure of the educational programme for this degree programme is provided in Part 2, chapter 6.

3.1.2 Structure of the work-study degree format

Not applicable

3.1.3 Elective courses

Not applicable

3.1.4 Graduation specialisation

Not applicable

3.2 Tracks with special features

3.2.1 Combined track

Not applicable

3.2.2 Other track with special feature

Not applicable

3.3 Language in which the courses are offered

The degree programme Applied Data Science is offered in English.

3.4 Extra educational components

As a student you can take one or more extra modules or courses at HAN. If you choose to do this, you will be expanding your study load. You can do this at HAN by:

- taking one or more extra modules,
- taking one or more extra courses.

You do not need approval from the board of examiners to participate in an extra module or one or more extra courses.

Capacity limits may apply for participation in an extra courses or an extra module.

Extra educational components are not part of the degree programme. The results of extra educational components will be listed separately on the degree certificate.

3.5 If the content or structure of your degree programme changes

We regularly change or update components of the degree programme so we can guarantee the quality of the degree programme and the value of your degree (certificate). This means the education and examination regulations for a following academic year may contain amendments to the course programme you will follow.

Changes to the degree programme can have certain consequences. If you have a study delay, for example, you may need to pass a different exam or modular exam than you initially thought. A change may also mean an exam or modular exam is still offered, but you can no longer follow the educational activities for that particular component.

A change cannot mean that courses or exams and modular exams you have already passed no longer count towards the final assessment. The law only allows this in highly exceptional cases.

The transition regulations in Part 2, chapter 8, stipulate, for every change to the degree programme, where needed, what the consequences are for students who are registered for the study programme at the time of said change. .

3.6 Registering for educational activities

To participate in educational activities you must register for these educational activities. You can do this in Osiris. If you do not register for an educational activity, you may not participate. The only exception to this rule are the educational activities at the start of your degree programme. Your programme will register you for those educational activities.

Your degree programme may choose to have students register for certain courses in a manner other than Osiris.

Your degree programme has chosen an alternative manner of registering for the following courses. For these courses you do not have to register via Osiris and your degree programme will register you instead.

Course name and code

You can register for educational activities from 20 to 10 work days before the start of the educational activities. After this period you cannot register anymore. After this period you may submit a request for a late registration. If your request for a late registration is granted, you will be registered for the educational activity.

Such a request may be submitted no later than 9.00 AM on the work day before the start of the educational activity. For educational activities at the start of an academic year you may submit a request for a late registration up until and including the last work day of the first educational week.

A request for a late registration will be granted if the educational activity allows such a late registration and if there is no maximum number of students set for the educational activity or if the maximum number of students has not been exceeded.

Deregistering for educational activities is possible until a day before the start of the educational activity at the latest.

4 Study coaching and study facilities

The learning objective and basic principle at HAN is that you take charge of and are responsible for your own learning process.

We want you to feel acknowledged during your entire time as a student. You are entitled to good study coaching. Each degree programme offers support for this. If needed, HAN can also offer you academic, psychological and financial support. The HAN Student Support Centre network offers you support for successful study progress.

4.1 What does HAN offer to assist you with your studies?

HAN offers facilities that enable you to do well in your studies. Examples of these are:

1. Facilities for students with a disability;
2. Facilities for pregnant students and students with informal care tasks;
3. Special support for international students;
4. Special support for students from minority groups.

HAN Student Support Centre also offers support for successful study progress. Students who need this can get extra support. You can contact your study coach or HAN Student Support Centre for more information about the facilities and coaching offered at HAN. See also Part 1, chapter 6.

4.2 How is study coaching organised?

The study coaching starts with the introduction to the study coach at the start of the academic year. In the first year of study, your personal study coach will invite you to come and talk with them at least 1 times. Furthermore, study coaching is integrated in the education in the courses.

Conversations with your study coach are confidential. You can use these conversations to discuss your personal progress and graduation trajectory during the Masters and any personal issues that might influence your studies.

5 Exams and final assessment

This chapter covers, in general terms, the exams, modular exams and final assessment for your degree programme.

Each course has a related exam. An exam can consist of two or more modular exams that have a predetermined weight factor and jointly determine the result for the exam of the course.

5.1 Exams and modular exams

5.2 Exam

The result of an exam for a course is used to determine whether the student has the knowledge, understanding and/or skills and (if relevant) attitude required to successfully complete that course. The learning outcomes and assessment criteria of the exams and modular exams are set out in Part 2, chapter 6.

5.2.1 Entry requirements

Some courses have qualitative entry requirements for participating in educational activities, exams and modular exams for that course. The entry requirements are provided in the course descriptions in Part 2, chapter 6. You can submit a well-reasoned request to the board of examiners for permission to deviate from these entry requirements.

The following entry requirements may apply to your degree programme:

- You need to have passed one or more other specific exams or modular exams.
- You need to sufficiently master the language in which the course is taught.

5.2.2 Mandatory participation

Not applicable

5.2.3 Exam format

The format of an exam or modular exam is specified in Part 2, chapter 6, in the description of the course concerned. The board of examiners may deviate from this format in special cases, on request or at their own initiative.

The following exam formats can be used:

Format	Description
GESP-F	Meeting on location
GESP-O	Online/digital meeting
KENN-F	Knowledge exam on location/written
KENN-M	Oral knowledge exam
KENN-O	Online/digital knowledge exam
PART-F	Participation on location
PART-O	Online/digital participation

PERF-F	Performance on location/written
PERF-O	Online/digital performance
PORT-F	Portfolio on location/written
PORT-O	Online/digital portfolio
PRES-F	Presentation on location
PRES-O	Online/digital presentation
PROD-F	(professional) Product on location/written
PROD-O	Online/digital (professional) product

Oral examinations are public. The exam commission may, in special cases, deviate from this rule. This decision will be communicated with a motivation to all interested parties.

5.3 The examiner

Each exam and modular exam is assessed by one or more examiners, as decided and appointed by the board of examiners.

The examiner determines the outcome of the exam or modular exam and the result. If more than one examiner is appointed, the head examiner sets the final result.

5.3.1 When have you passed an exam?

The examiner gives the result of an exam as a grade, a word qualification or a pass/fail qualification.

The **grade** of an exam is expressed in one of the following numbers: 1, 2, 3, 4, 5, 6, 7, 8, 9 or 10.

A **word** qualification can be given in one of the following terms: outstanding, good, more than satisfactory, satisfactory, almost satisfactory, unsatisfactory, poor.

The conversion chart below must be used:

Word qualification	Abbreviation word qualification	Conversion
Outstanding (<i>excellent</i>)	O	10
Good (<i>goed</i>)	G	8
More than satisfactory (<i>ruim voldoende</i>)	MS	7
Satisfactory (<i>voldoende</i>)	S	6
Almost satisfactory (<i>onvoldoende</i>)	AS	5

Unsatisfactory (<i>ruim onvoldoende</i>)	U	4
Poor (<i>slecht</i>)	PR	2

You have passed an exam if you receive a grade of 6 or higher, a word qualification of satisfactory or higher or a Pass.

You have failed an exam if you receive a grade of 5 or lower, a word qualification of almost satisfactory or lower or a Fail.

In the course descriptions in Part 2, chapter 6, is described if an exam is graded with a grade, a word qualification or a pass/fail.

In the case of fraud, an F is recorded for the exam result in OSIRIS.

5.3.2 When have you passed a modular exam?

The examiner gives the result of a modular exam as a grade, a word qualification or a pass/fail qualification as described in art. 5.3.1. The same conversion chart applies.

A grade for a modular exam is rounded to a number with 1 decimal place.

Grades with the decimals 1, 2, 3 or 4 are rounded down.

Grades with the decimals 5, 6, 7, 8 or 9 are rounded up.

You pass a modular exam if you earn a grade of 5.5 or higher, a word qualification of satisfactory or higher or a 'pass' qualification.

You fail a modular exam if you earn a grade of 5.4 or lower, a word qualification of almost satisfactory or lower or a 'fail' qualification.

In the course descriptions in Part 2, chapter 6, is described if a modular exam is graded with a grade, a word qualification or a pass/fail.

In the case of fraud, an F is recorded for the modular exam result in OSIRIS.

5.3.3 How is the overall grade calculated for an exam with modular exams?

When the overall grade for the exam is calculated, the grades earned for the modular exams are weighted as specified in the course descriptions given in Part 2, chapter 6. In case of word qualifications the conversion chart above applies. The final exam grade is then rounded as follows:

Exam grades with the decimal 1, 2, 3 or 4 are rounded down to whole numbers.

Exam grades with the decimal 5, 6, 7, 8 or 9 are rounded up to whole numbers.

5.3.4 Applicable result

The final grade for an exam or modular exam is the highest grade achieved. You are allowed to resit an exam or modular exam even if you pass it.

5.4 How often can you take an exam or modular exam each academic year

All degree programmes must allow you the chance to take an exam or modular exam at least twice in each academic year. The degree programme may conduct an exam or modular exam more than twice each academic

year. The descriptions of the courses in Part 2, chapter 6, specify how many exams and modular exams are conducted each academic year and in which term. In case the degree programme conducts exams or modular exams more than twice in an academic year, the degree programme decides how often they are conducted. Your degree programme allows you to sit exams and modular exams at most 2 times per academic year.

In the following exceptional situations, the course description in Part 2, chapter 6, may stipulate that fewer opportunities than mentioned above will be offered each academic year for students to take the exam or modular exam. This may occur in the following situations:

- the nature of the educational activities and assessment for the course make it impossible. Each academic year at least one opportunity must be given to sit an exam or modular exam,
- physical reasons (such as the use of actors) or logistic reasons (such as the inability to offer an extra opportunity at the end of the academic year) make an extra opportunity impossible.

The student will be informed of this exception when they apply for the course and, if possible, before the start of the academic year.

5.4.1 Registering for exams and modular exams

To participate in exams or modular exams you must register for these exams or modular exams. If you do not register for an exam or modular exam, you cannot participate in it. The only exception to this rule are the exams and modular exams that take place in the first month after the start of your programme. Your programme will register you for those exams and modular exams.

You can register for exams and modular exams from 20 to 10 work days before exam or modular.

After this period you cannot register anymore. After this deadline you may submit a request for a late registration.

Such a request may be submitted no later than 9.00 AM on the work day before the exam or modular exam. A request for a late registration will be granted if it is your last modular exam before an exam or if an exam is conducted for the last time before a change in the degree curriculum. A request for a late registration will not be granted if it is impossible to arrange for the necessary resources, facilities or support.

If you have registered for an exam or modular exam but do not wish to take the exam or modular exam you must deregister for the exam or modular exam. Deregistering for an exam or modular exam is possible up to and until a work day before the exam or modular exam is conducted. If you don't deregister and don't participate in an exam or modular exam, the examiner will register a ND (niet deelgenomen/did not participate) for you result and you will have used one of your allowed exam or modular exam opportunities.

Should you be unable to deregister on time due to exceptional circumstances you may request an extra exam or modular exam opportunity to the board of examiners.

5.4.2 Request for extra exam opportunity or different exam format

You can submit a request to the board of examiners for an extra opportunity to sit an exam or modular exam. The request must include a good motivation and at least a description of the reason and importance. In the Regulations of the Board of Examiners (see Part 3) gives further details on the procedure are explained.

5.5 Modified exam format

Do you have a disability or chronic illness, or is there another reason that means you cannot participate in the regular format of the exam or modular exam? Then you can ask the board of examiners to conduct the exam or

modular exam in a format adjusted to your situation.

The board of examiners will decide, if needed after consultation with you and the examiner, which format can reasonably be used for the exam or modular exam, which facilities will be offered and which different rules will apply.

5.6 Oral (modular) exam

An oral (modular) exam is a conversation between the examiner(s) and the student. Oral (modular) exams are public. The exam comity may depart from this rule in exceptional circumstances. The decision to do so will be substantiated and communicated to all involved.

5.7 When is the result of an exam announced?

It depends on the exam format when the result of an exam or modular exam is announced:

- You will be informed of the result of a written exam or written modular exam within at least 15 working days. This result will be recorded in OSIRIS.
- The result of an oral exam or oral modular exam will be decided directly after the exam and announced within no more than five days. This result will be recorded in OSIRIS.
- You will be notified of the result of a practical exam or practical modular exam immediately after the exam, or if that is not possible, within five working days. This result will be recorded in OSIRIS.

A result entered into OSIRIS may only be changed in the following cases:

- If a demonstrably incorrect result has been entered into OSIRIS.
- In cases of fraud, deceit or impersonation.
- If an examiner has revised their assessment for well-founded reasons.
- If you have lodged an appeal to the Examination Appeals Board or the Higher Education Appeals Tribunal against an assessment, the appeal is judged to be valid and the result has been revised by the examiner.

Has a result changed after being entered into OSIRIS? Then you will be notified.

5.8 Exams: review and discussion rights

You are entitled to receive further explanation about the assessment of your exam or modular exam. This is set out in the HAN rules on discussion and review rights below. Both the discussion and individual review are closely monitored to ensure no fraud takes place.

Discussion and review rights are organised as follows:

5.8.1 Group discussion

Within 10 working days at the latest after the results of an exam or modular exam are announced the examiner(s), or someone mandated by the examiner(s), will organise a group discussion, unless it is clear that the students don't find this necessary.

5.8.2 Review and discussion of individual work

As an interested party you are entitled to review and discuss your own work with your lecturer and the examiner, unless you could reasonably have already done this during the group discussion. You are allowed to review and discuss everything: the assessed exam or modular exam, the questions, assignments and grading system. Students must have the option to review and discuss their own work within 6 weeks after the result is announced.

Here you can read how the procedure for review and discussion of individual work is organised.

5.9 Exams taken independently of the standard programme

All exams and modular exams for this degree programme are offered as exams taken independently of the standard programme. The exam format is described in Part 2, chapter 6. There you will also find the times at which exams and modular exams are planned.

5.10 When and how can you request exemption from an exam or modular exam?

Part 2, chapter 6 describes for each exam and modular exam which knowledge, understanding, skills and attitude you need to demonstrate and how they will be examined and assessed. You can request an exemption from the board of examiners for one or more exams or modular exams if you demonstrate that you already master the knowledge, understanding, skills and attitude associated with the exam or modular exam.

You can demonstrate this with:

- evidence showing you previously passed an exam in higher education;
- an official report showing recognition of prior learning;
- evidence that you gained the required knowledge, the required understanding and/or the required skills elsewhere.

The learning outcomes and assessment criteria of the exams and modular exams as specified in Part 2, chapter 6, form the guidelines for the board of examiners to grant the exemption.

Instead of a grade, a word qualification or the 'pass' qualification, you receive the qualification of 'exemption' for an exam or modular exam.

Further rules for granting exemptions can be found in the Regulations of the Board of Examiners (Part 3).

The board of examiners may designate certain previously passed exams and modular exams and/or any previously earned credits and degree certificates as entitling students to exemption from one or more exams or modular exams.

The designated exams, credits and certificates are outlined in an appendix to the Regulations of the Board of Examiners. The board of examiners may also consider these as grounds for exemptions from one or more exams or modular exams for courses that are part of abridged tracks.

5.11 The final assessment

You pass the final assessment of the master degree programme if you have passed all of the exams related to that final assessment.

This will differ if the board of examiners has specified that an extra assessment is needed of your knowledge, understanding and skills. In that case, you will also need to pass that extra assessment (exam). Only then will you pass the final assessment.

5.11.1 Cum laude

If you pass all the exams that count towards the final assessment with a grade of 8 or higher, you will pass that assessment 'cum laude'. The grades that count here are the overall exam grades for each course; separate grades for the modular exams are not taken into account.

Exams that have a word qualification will be converted using the table in 5.3.1.

Exams that are part of an increase of your study load, as described in Part 2, chapter 3, are not taken into consideration when determining the 'cum laude' distinction.

You may earn no more than 15 credits in exemptions or 'pass' qualifications in the degree programme.

5.11.2 With merit

If you pass all the exams that count towards the final assessment with a grade of 7 or higher, you will pass that assessment 'with merit'. The grades that count here are the overall exam grades for each course; separate grades for the modular exams are not taken into account.

Exams that have a word qualification will be converted using the table in 5.3.1.

Exams that are part of an increase of your study load, as described in Part 2, chapter 3, are not taken into consideration when determining the 'with merit' distinction.

You may earn no more than 15 credits in exemptions or 'pass' qualifications in the degree programme.

5.12 Overview of results, supporting documents, and declarations

5.12.1 How to request a - certified - overview of your study results

You can make a printout of your exam results as recorded in OSIRIS. If you want to use this overview as an official document outside HAN, you can submit a request to the Student Affairs Enquiry Desk, via ASK@han.nl for a certified overview of study results. This certification does not guarantee that the relevant authorities will also consider the document official.

5.12.2 Exam documentation

You will receive a digital document from the examiner for each exam or modular exam you take. It gives the name and code of the exam or modular exam, the course and your result. The examiner is required to provide you with this documentation.

Keep these documents in a safe place.

5.12.3 Statement

Are you dropping out of the degree programme and not entitled to a master degree certificate? If you have passed more than one exam, you can ask the board of examiners for a statement listing the exams you passed, for which degree programme, how many credits you earned for those exams and, if applicable, the programme for which the statement is being issued.

5.12.4 Module certificate

You can request a statement from the board of examiners for each module you have passed.

This statement specifies the name of the module, the courses within the module, the accompanying number of credits and the results you earned for the exams.

5.13 Degree certificate, degree and diploma supplement

5.13.1 Master degree certificate and diploma supplement

In the month when you expect to have passed all the exams for the degree programme, you can apply for your certificate through OSIRIS. Only after you apply, does the board of examiners check whether you have indeed

passed all exams for the degree programme, whether you are enrolled in the degree programme, and whether you have met all your financial obligations towards HAN.

Following this, the board of examiners will award the degree certificate and the accompanying diploma supplement in English. The official date of graduation is the day the board of examiners determines that you have earned all the required credits.

5.13.2 Degree and degree title

Once the board of examiners has confirmed you have passed the final master assessment, the HAN Executive Board will award you the degree for your degree programme. This degree comes with an official abbreviation you can place after your surname in the Netherlands and abroad.

Degree programme	Degree and degree title	Official abbreviation
Applied Data Science	Master of Science	MSc

This degree title is also stated on the certificate.

5.13.3 Postponement of the degree certificate

You are allowed to postpone the request for your master degree certificate. The maximum period for a postponement is two years.

5.14 Appeal

You can lodge an appeal with the HAN Examination Appeals Board against a decision concerning education, exams, modular exams and final assessments within 6 weeks based on the education and examination regulations.

For more information about which decisions you can appeal and how, go to HAN Insite Complaints and Disputes Office.

6 Description of the educational programme

This chapter describes your degree programme.

If extra programmes, tracks in a language other than English or tracks with a special feature are offered, these are also described.

This chapter also specifies whether the degree programme offers modules and/or elective courses.

In the educational arsenal the programme describes which educational activities are offered for the attending courses. You will discuss with your degree programme if you will or won't take part in the educational activities that are offered. This choice will be registered in your study plan.

Below you will find, for each degree programme, its structure, its courses and its educational arsenal.

Name of degree programme: Applied Data Science	
CROHO number: 49164	
Degree format	Part-time
Language	English

6.1 Courses

See Appendix to chapter 6 description of the educational programme.

6.2 Graduation specialisations

Not applicable

6.3 Other

Not applicable

7 Evaluation of the degree programme

7.1 Evaluation structure

A quality framework has been adopted for all HAN degrees. This is in line with the accreditation framework of the Accreditation Organisation of the Netherlands and Flanders (NVAO) and the education policy formulated by HAN. This framework stipulates, among other things, that regular evaluations must be held among students, graduates, the professional field and staff.

Assessments are also held by HAN to support the evaluations at the level of the degree programme.

Each year all HAN degree programmes participate in the National Student Survey (NSE) in which students indicate how satisfied they are with different aspects of their degree programme.

Every year an alumni survey is held via the HBO-monitor. This evaluates for each degree programme how alumni look back on their degree programme and how well it was geared to the labour market in their experience.

HAN students who leave a degree programme without a degree certificate are contacted to enquire about their reason for leaving. Also, study progress and drop-outs are monitored for each degree programme.

Every six years an accreditation is held by the NVAO, with external reviews beforehand by a committee of experts. Halfway through the accreditation cycle, an audit is conducted by an internal committee complemented by an external expert in the relevant field. The aim is to monitor and test the progress of improvement measures relating to the last external assessment of the degree programme. This internal audit results in a report with improvement recommendations for those responsible for the content of the degree programme, the degree committee and the dean.

The audit is conducted according to HAN guidelines and it includes quality assurance with regards to administrative and educational law and good implementation of the education and examination regulations.

7.2 Evaluation by the degree programme

The dean is responsible for the structure and the quality of the degree programme.

Each year the dean adopts an annual quality assurance report on the degree programme. This document, along with the internal audit report or review report, forms the basis for dialogue about the quality of the degree programme. This report concerns the improvement activities that were agreed on for the reported year, how they were executed and what results they delivered.

Based on the analysis of evaluation data for the reported year, a description follows of the improvement activities to be implemented in the current year. The evaluation data come about through evaluations of courses, annual evaluations and curriculum evaluations by lecturers, students, alumni and the professional field. Also through evaluation studies conducted centrally by HAN.

The dean and/or the degree committee, curriculum committee and the board of examiners are involved in this cycle at degree programme level by means of a brief response to this. Their responses are included in the appendixes to the annual report.

7.3 Role of the degree committee

The tasks, role and responsibilities of the degree committee in the evaluation are set out in the Regulations of the Degree Committee (see Part 3). The degree committee can also take the initiative to conduct specific evaluations.

7.4 Degree-specific quality assurance

The quality of our curriculum is continuously monitored and improved by regularly collecting feedback from students and other stakeholders on the curriculum. Feedback is collected both orally and in writing. The programme applies the quality assurance cycle, PDCA, of HAN University and evaluation results and actions are published in the school's quality assurance plan. Evaluation results are used to improve our education programme in dialogue with all stakeholders and actions are communicated transparently.

8 Transition regulations

8.1 Effective date for amendments

An amendment to the education and examination regulations can only become effective as of 1 September in the following academic year. Exceptions to this rule are clerical error, force majeure, fulfilment of legal regulations or when the amendment is in your favour.

This chapter sets out the rules for respecting acquired rights and legitimate expectations.

8.2 Validity certificate

A successful master degree certificate is inviolable, except in the case of proven fraud in the process of earning this.

8.3 Obtained credits and study results

The result of an exam and its corresponding credits remain valid until the board of examiners has made a substantiated decision that the examined material is so outdated that it can no longer be used in the profession and the term of validity has expired as of a date stipulated by the board of examiners.

Results obtained for modular exams remain valid and may – if they still fit in the new programme – lead to exemptions for modular exams. A modular exam can, if possible, be added to another course to replace a different modular exam that had the same learning outcomes or learning goals.

8.4 Participation in education, but not in exam or exam not passed

A student who has participated in the educational activities for a course or module in the academic year prior to the programme change, but who has not completed an exam or modular exam or has not passed an exam or modular exam, is entitled to at least two more opportunities to take the modular exam. The student is also entitled to participate, if necessary for another time, in the repeated educational activities in order to prepare for the modular exam.

The board of examiners can deviate from this in exceptional cases, in the favour of the student.

If you like, you can directly choose the new programme structure and register for a renewed or modified course. By doing so, you waive your rights concerning the transition rules.

8.5 Degree-specific transition regulations

Not applicable

8.6 Adopted amendments to this degree statute

Not applicable

PART 3 Other regulations

1 Exam regulations

These regulations set out:

1. The rules of conduct for students in exam and modular exam sessions, insofar as these are not laid down in the Student Charter, the Education and Examination Regulations or related regulations.
2. The rules of conduct for students in review sessions and discussions of exams and modular exams, insofar as these are not laid down in the Student Charter, the Education and Examination Regulations or related regulations.

1 Code of conduct for students during exam sessions

The facilities provided by HAN for students with respect to exams and modular exams are laid down in the Student Charter and Education and Examination Regulations or related regulations. HAN also has a general code of conduct for students. In addition to general provisions, this code of conduct contains provisions governing the conduct of students at exam venues. These exam regulations contain additional provisions regarding student behaviour during written and digital exams in particular.

Behaviour

The student:

1. must follow the instructions given by the supervisor and treat the supervisor with respect;
2. must behave in such a way that they do not disturb other students at any time during the exam or when entering or leaving the exam venue. The student must be silent before, during and after the exam when in and near the room where the exam is being held;
3. must contact the supervisor as soon as possible if anything is unclear before and/or during the exam.

Identification and admission

The student:

1. must report to the supervisor at the exam room 15 minutes before the start of the exam;
2. will only be admitted to the HAN exam if they can identify themselves with a valid HAN student card or a valid proof of identity. This includes:
 - a passport;
 - a European identity document;
 - a Dutch driving licence;
 - a European driving licence;
 - a Dutch residence permit;
3. may only use an identity document to identify themselves if they are sitting for a national exam;
4. must place their valid student card or proof of identity at the top right-hand corner of the desk during the exam so the supervisor can check their identity;
5. will have their name checked off the attendance list by the supervisor to confirm their participation in the exam.

Theft/loss of identification

If the student cannot show identification due to theft or loss, they can participate in the exam using an original police report of the theft and/or official request to the municipal authorities for new identity papers. The supervisor should

contact the coordinator when determining whether to approve. This is then noted on the official report/attendance list.

Extra requirements for computer-based exam

1. When taking a computer-based exam, the student is expected to have actively participated in the mock exam organised by the degree course and to have been informed about the exam application, about the fraud prevention application and about the use of personal data;
2. The laptop the student brings with them for the computer-based exam or modular exam must meet the HAN requirements. These can be found at HAN Insite;
3. If the student's laptop is not compatible with the exam and fraud prevention software, the student may request a loan laptop from the degree course/school before participating in the exam or modular exam.

Before the start of the exam

The student:

1. may only place items needed to complete an exam on or next to the table;
2. may not – unless expressly stated otherwise – be in possession of any digital data carriers during the exam other than those expressly permitted and necessary for taking the exam or modular exam. This includes equipment with integrated digital data carriers, such as USB flash drives, calculators, special watches, special glasses, special earphones, etc.;
3. may not wear a watch. A clock is provided in all exam venues;
4. may not – unless expressly stated otherwise – use the following resources during the exam: hard-copy or digital versions of dictionaries, law books, textbooks, etc. If these resources are permitted, the hard-copy or digital resources will be made accessible and may be checked by the supervisors;
5. must put their coat, scarf, hat, bags, cases, mobile phone(s), smartphone(s), digital data carrier(s) and any equipment with integrated digital data carrier(s) in the place specified by the supervisor;
6. must turn off mobile phones, smartphones, etc. before putting them away;
7. must write their name, student number, class/group and other details requested by the supervisor on all written exam documents at the start of the exam. The student must also write these details on any note paper they use;
8. will not have direct access to the exam venue after the actual start of the exam. Students who do not make it to the exam venue on time are allowed to enter the exam venue when 30 minutes of the exam have passed and are allowed to sit the exam for the remainder of the exam time. The supervisor makes a note of which students are late. Students must strictly observe any instructions given by the supervisors regarding where they are allowed to sit and they may not disturb students who have already started the exam;
9. may log into the exam application prior to a computer-based exam, identify themselves via SURF-connext or Microsoft Azure, and wait at the cover sheet for the exam or modular exam until the supervisor signals that students may start the exam or modular exam.

During the exam

The student:

1. may not take toilet breaks during exam sessions of 120 minutes or less. During exams that last longer than 120 minutes, students may take a toilet break after 120 minutes if accompanied by a supervisor. Exceptions are possible for all exams in cases of physical discomfort, provided the supervisor is notified no later than 15 minutes before the start of the exam or immediately upon entry when arriving 30 minutes after the start of the exam;

2. may not leave or submit their work during the first 30 minutes of the actual start of an exam (to prevent disruption to other students and/or irregularities). If there are any students who enter the exam venue 30 minutes after the start, any students who want to leave may only do so after the late students have started their exam;
3. will be given access to additional exam facilities if they are entitled to those facilities according to OSIRIS or a decision to that effect by the board of examiners. These facilities are applicable if the student indicated when registering for the exam that they wanted to use these facilities;
4. may not consume any food during exams that are shorter than 150 minutes; students may consume food during exam sessions of 150 minutes or longer if this does not cause a nuisance to fellow students;
5. may only consume drinks from a resealable bottle/container;
6. must use the writing materials specified on the cover sheet (black or blue pen or lead pencil) to complete the written exam;
7. must ensure that multiple-choice forms are filled in correctly and according to the instructions given by the supervisor;
8. may not copy or scan a written or computer-based exam or parts thereof in any way or take the exam or its contents outside the exam venues in any manner;
9. may not use unauthorised digital resources, facilities or functions.

Resources

The student:

1. may not use resources other than those permitted. The permitted resources will be announced in advance by the department and will be listed on the exam cover sheet;
2. must ensure that resources do not have notes, etc. on them unless the exam cover sheet states that this is permitted;
3. must make sure that the laptop and accompanying mouse and earplugs they bring for computer-based exams meet the requirements set by HAN. These can be found at HAN Insite.

Suspected irregularity

The student:

1. will be referred to Part 2 of the degree statute (the education and examination regulations), and Part 3, chapter 3, of the degree statute (the regulations of the board of examiners) for provisions concerning irregularities or fraud, penalties for irregularities or fraud, and confiscation of evidence;
2. will be permitted by the supervisor to complete the exam in the event of reasonable suspicion of an irregularity or fraud and will sign to confirm they have seen the 'Official exam report form' that has been filled in by the supervisor. This form is appended to these regulations.

Handing in exam documents

The student:

1. must check before handing in the exam script and assignment(s) whether their name, student number, class/group number and any other details requested by the supervisor have been written correctly on all of the exam documents to be submitted;
2. must submit all the exam documents including used and unused note paper to the supervisor and sign the attendance list for confirmation;
3. must make sure everything is left neat and tidy before leaving the exam venue;

4. must make sure they close down the exam application and blocking software for the computer-based exam.

2 Code of conduct for students during review/discussion sessions of assessed exam work

There is a code of conduct for students. In addition to general provisions, this code of conduct contains provisions governing the conduct of students at exam venues.

Below are additional regulations regarding the review of assessed exam work, hereafter referred to as a 'review session'.

Before the review session: Only students who have taken part in the exam for which the review session is organised may be present in the classroom. A lecturer and a supervisor will be present during the review session.

Behaviour

The student:

1. must follow the instructions given by the supervisor and treat the supervisor with respect;
2. must behave in such a way that they do not disturb other students at any time during the review session or when entering or leaving the room where the review session takes place (hereafter referred to as the 'room');
3. must contact the supervisor a.s.a.p. if anything is unclear during the review session.

Identification and admission

The student:

1. must show the supervisor a valid HAN student card or another valid form of identification:
 - a passport;
 - a European identity document;
 - a Dutch driving licence;
 - a European driving licence;
 - a Dutch residence permit.

If the student cannot show a HAN student card or a valid form of identification, they will not be allowed to take part in the review session/discussion;

2. In the case of theft or loss of the identity document, the student can apply for a certificate of enrolment at the exams office, which will give them admittance to the room. This certificate will only be issued if the student can show the original police report and/or official request to the municipal authorities for new identity papers;
3. must write their name on the attendance list provided by the supervisor to confirm their participation in the review session/discussion;
4. must place their valid student card or other form of identification at the top right-hand corner of the desk during the review session/discussion so the supervisor can check their identity;
5. will only be admitted to a digital review session if they have a laptop with them that meets the requirements set by HAN. These can be found at HAN Insite.

Start and resources

The student:

1. must ensure they have a copy of their answer sheet (yellow carbon copy) when reviewing a multiple-choice exam with OMR answer sheet;
2. must log in to the exam application when reviewing a digital exam or modular exam, and identify themselves via SURF-connect or Microsoft Azure;

3. may only place on the table the permitted resources listed on the review cover sheet or announced by the supervisor at the start of the review session;
4. may not – unless expressly stated otherwise – have any of the following in their possession during the review session: digital data carriers or equipment with an integrated digital data carrier, such as mobile phone, smartphone, USB flash drive, calculator, special watch, special glasses, special earphones, etc.;
5. must put their coat, scarf, hat, bags, cases, mobile phone(s), smartphone(s), digital data carrier(s) and any equipment with integrated digital data carrier(s) in the place specified by the supervisor;
6. must ensure their mobile phone(s), smartphone(s) or other digital data carrier(s) and any equipment with integrated digital data carrier(s) are switched off before putting them away.

During the review session/discussion

The student:

1. may not take a toilet break during the review session;
2. may not eat anything during the review session;
3. may only consume drinks from a resealable bottle/container;
4. may only place one or more of the following permitted documents on the table in the case of written exams:
 - a. assessment form
 - b. yellow carbon copy (of the multiple-choice exam with OMR answer sheet)
 - c. exam script
5. may not make any annotations or amendments to the exam script. If the student does this anyway, this is reported to the board of examiners as an irregularity;
6. may not copy, scan or take with them any model answers or assignments. Neither may students copy their own exam scripts and/or those of other students;
7. may not copy or scan a written or computer-based exam or parts thereof in any way or take the exam or its contents outside the exam venues by any other means;
8. may not use unauthorised digital resources, facilities or functions.

In the case of protest

The student:

1. must carefully complete all requested details on the protest form.

Submitting reviewed (assessed) exam work

The student:

1. must submit all the exam documents received for the review session to the supervisor and sign the attendance list to confirm this;
2. must make sure they close the exam application and blocking software for the computer-based exam;
3. must make sure everything is left neat and tidy before leaving the room.

3 Final provisions

Unforeseen circumstances

In exceptional situations and cases not provided for by these regulations and in which an immediate decision is necessary, the decision will be taken by:

- a. the head of the exams office (in so far as this is within the powers of the exams office);

- b. the examiner (in so far as this is within their powers);
- c. the chair of the board of examiners (in so far as this is within their powers);
- d. the supervisor, in consultation with the coordinating supervisor if it is not possible to wait until one of the above authorised people is present.

The interested parties will be informed of the decision as soon as possible.

Complaints and appeals concerning decisions and procedures of the exams office

For more on this, see these HAN regulations:

- ‘Complaints Regulations’;
- ‘Regulations for Legal Protection of Decisions Concerning Education’.

4 Appendix: Official exam report

Naam surveillant *Name of supervisor:*

.....

Code/naam tentamen *Code/name of exam*

.....

Tentamendatum en tentamentijdstip *Date and time of exam*

.....

Tentamenlokaal *Exam room:*

.....

Plaats *Place:*

.....

PART 1: UITREIKEN VAN HAN LAPTOPS / LOAN OF HAN LAPTOPS

Totaal aantal uitgeleende HAN laptops *Total number of loaned HAN laptops*

.....

Naam én studentnummer van de student aan wie de HAN laptop is uitgeleend en de reden van uitleen
Name and student number of the student to who the HAN laptop has been lent and the reason for lending

1. (Naam, studentnummer en reden *name, student number and reason)*

.....

.....

2......

.....

3......

.....

4.....

.....

5.....

**PART 2: MELDING VAN EEN GECONSTATEERDE VERMOEDELIJKE ONREGELMATIGHEID OF FRAUDE /
NOTIFICATION OF A SUSPECTED IRREGULARITY OR FRAUD**

Naam student *Name of student*

.....

Studentnummer *Student number*

.....

Beknopt verslag door de surveillant van de geconstateerde vermoedelijke onregelmatigheid of fraude

Brief written report report of the suspected irregularity/fraud by the supervisor

.....

.....

Korte reactie van de student (je bent niet verplicht dit in te vullen, je krijgt nog de kans je verhaal te doen bij de examencommissie):

Brief response by the student (you are not required to fill out this form, you will still have the opportunity to tell your story to the Board of Examiners):

.....

.....

Handtekening surveillant *Supervisor's signature:*

.....

Handtekening 'voor gezien' van student *Student's signature to confirm he/she has read the form*

.....

The supervisor intervenes immediately in case of a suspected irregularity or fraud. The supervisor provisionally allows the student to finish the exam, and seizes all documents that they suspect are involved in the suspected irregularity/fraud. The supervisor fills in this form and submits it to the coordinating supervisor along with all accompanying items immediately after the exam. The student in question receives a copy of the completed form. The form is then sent to the board of examiners via the exams office. The board of examiners will contact the student.

De surveillant grijpt in geval van een redelijk vermoeden van een onregelmatigheid of fraude direct in. Hij laat de student onder voorbehoud het tentamen afmaken en neemt alle bescheiden in waarmee de vermoedelijke onregelmatigheid/fraude heeft plaatsgevonden. De surveillant vult dit formulier in en levert dit met alle bescheiden na afloop van het tentamen direct in bij de coördinator-surveillant. De student ontvangt een kopie van het ingevulde formulier. Via het Tentamenbureau gaat het formulier vervolgens naar de examencommissie. De examencommissie neemt contact op met de student.

3 Regulations of the Board of Examiners

Section 1: General provisions

Article 1.1 Terms and definitions

The terms and definitions applied in these regulations are those set out in Section 1.1 of the Education and Examination Regulations.

Article 1.2 Status and scope of these regulations

1. These regulations contain rules about the duties and powers of the AIM Board of Examiners and measures they may take in this context, as well as rules about the implementation of those measures.
2. These model regulations are adopted annually as part of the model degree statute by the Executive Board with consent from the participation council.
The board of examiners may amend paragraphs, articles and sections, provided the amendments do not conflict with the education and examination regulations of the degree programme(s), the HAN Student Charter or the Higher Education and Research Act.
3. These regulations have been adopted by the board of examiners and apply to the courses, exams, modular exams and final assessments for the following degree programme(s):
 - Bachelor degree programme(s) in HBO-ICT, CMD
 - Master degree programme(s) in Datascience MADS)

Students of the bachelor degree programmes HBO-ICT and CMD better use the Dutch version of these regulations. The Dutch version contains extra appendices and rules for students that have followed older curricula. These regulations are available in the OSOER documents of HBO-ICT and CMD.

Section 2: Decision-making and mandates, tasks and meetings

Article 2.1 Decision-making and mandates

1. The chair of the board of examiners signs decisions by the board of examiners, unless this duty has been mandated to someone else.
2. The board of examiners can appoint a managing committee for matters concerning day-to-day affairs. This committee is composed of the chair of the board of examiners and another member and – insofar as this function is carried out – is supported by the official secretary. The managing committee is authorised to make provisions for current matters based on a general mandate. Should situations arise in which the managing committee cannot reach a decision, the situation is presented to the board of examiners as soon as possible for a decision.
3. The board of examiners can be supported in its activities by an official secretary.
4. The duties mandated by the board of examiners are listed in appendix 1 to this set of regulations. The board of examiners remains fully responsible for any duties and/or powers it mandates to others.
5. The duties mandated by or on behalf of the Executive Board to the board of examiners are listed in an overview that can be found in appendix 2.

6. The board of examiners ensures that it receives regular reports (in writing) regarding the progress of its mandated duties and/or powers.

Article 2.2 Duties and powers of the board of examiners

The board of examiners has the following duties and powers:

1. Ensuring the quality of exams, modular exams and final assessments.
2. Adopting guidelines and instructions in addition to the EER about assessing exams, modular exams and final assessments in an objective, reliable, valid and transparent manner and determining their result.
3. Deciding that the term of validity of exam or modular exam results and the corresponding credits have expired, from a date determined by the board of examiners. This is only done in cases where reasoned arguments can be given showing that the knowledge, understanding and/or skills are so outdated that they are no longer useful for the profession.
4. Deciding on student requests for exemptions. If a decision is later shown to be based on incorrect evidence submitted by the student, the board of examiners is authorised to withdraw the decision.
5. Deciding that certain previously passed exams and modular exams, certificates and other declarations, diplomas and degree certificates entitle a student to exemptions for one or more exams and/or modular exams. An overview of designation decisions for groups of students is included in appendix 3 of these regulations.
6. Determining further rules and regulations regarding possible fraud and/or irregularities on the part of students, prospective students or external students, including any measures to be taken.
7. Adopting policies and rules about how the duties and powers should be performed as described in paragraphs 1, 2, 3, 4 and 5.
8. Ensuring the quality of the organisation of and the procedures for exams and final assessments.
9. When establishing guidelines and instructions as specified in paragraph 2, protocols are used for assessing (final) projects that meet national requirements as far as possible.
10. Appointing examiners and head examiners to administer exams and modular exams and to determine the results of those exams. The board of examiners sets guidelines about appointing and assigning tasks to examiners for each exam format.
11. Terminating the appointment of examiners.
12. Submitting proposals to the Executive Board for termination of a student's enrolment in the event of serious fraud.
13. Advising the Executive Board on the discontinuation of a student's enrolment in a degree programme as a consequence of the student's behaviour in relation to future practice of the profession.
14. Deciding in the event of a suspicion that a student has committed irregularities and/or fraud and, if necessary, taking measures in that regard, in accordance with the regulations of the board of examiners as laid down by the board of examiners.
15. Deciding on a student's request to take a minor in accordance with the EER.
16. Deciding which HAN minors are approved as minors for the degree certificate of the degree programme(s). The overview of these HAN minors approved by the board of examiners can be found on Onderwijs Online site: 'Minoren - informatie voor AIM-studenten'.
17. Deciding on a student's request for an extra opportunity to take an exam or modular exam.
18. Only for degree programmes composed of units of study: deciding on a student's request to take an exam or modular exam for a course independently of the standard programme.

19. Deciding on a bachelor student's request to take exams and modular exams for the final bachelor assessment before they have passed the final propaedeutic assessment.
20. Deciding on a student's request to take educational components and complete exams and modular exams contrary to the applicable entry requirements.
21. Deciding on a student's request to take exams and modular exams in a different format from what is stipulated in the education and examination regulations.
22. Deciding on a student request, based on a disability or chronic illness or other condition such as pregnancy, to take exams and modular exams in an adapted format.
23. Deciding on a student's requests for an oral exam to be closed to the public. The board of examiners may also decide (in principle) to close certain exams and modular exams to the public without the student's request in cases where there are special reasons such as company confidentiality during a graduation meeting.
24. Issuing documentation, module certificates and declarations.
25. Contributing to the examination policy for the degree programme or group of degree programmes.
26. Advising the dean on the education and examination regulations.
27. Issuing a degree certificate as proof that a final assessment has been passed after the Executive Board has declared that the procedural requirements for issuing the certificate have been met.
28. The requirements for receiving a degree are that:
 - the student is enrolled at HAN University of Applied Sciences;
 - the tuition fees have been paid.
29. Deciding about the term of postponement when a student does not request his Degree Certificate after passing all the components of his final exam.
30. Issuing a statement of successfully completed exams, at the request of a student, in cases where the student has successfully completed more than one exam and to whom a degree certificate as referred to in article 7.11 paragraph 2 of the Higher Education and Research Act cannot be issued.
31. Issuing a competence assessment certificate to persons entering the field of teaching from another career background as evidence that they have passed the competence assessment.
32. Only for degree programmes composed of units of study: Deciding on a request for exemption from mandatory participation, with or without imposing an equivalent substitute requirement.

Article 2.3 Meetings of the board of examiners

1. The board of examiners meets at least 8 times a year.
2. The meetings of the board of examiners are scheduled in such a way that they concur with the scheduling cycles of the degree programme(s) and the school.
3. The board of examiners decides by a simple majority of votes.
4. If the votes are equally divided, the chair has the deciding vote.
5. At each meeting, the board of examiners ratifies decisions taken in the intervening period by the managing committee based on its general mandate regarding day-to-day affairs, as well as any other decisions taken on the basis of mandated duties/powers.
6. The official secretary to the board of examiners ensures that a report is drawn up of every meeting. The report is adopted at the next meeting held by the board of examiners. The report includes a list of decisions made during the meeting.

7. The official secretary to the board of examiners ensures that the dean⁹¹ and any other members of the board of examiners receive a copy of the final report as soon as possible.
8. The official secretary to the board of examiners ensures that the final, anonymised reports of the meetings can be viewed digitally by lecturers/students/professors and others from the degree programme(s) concerned.

Article 2.4 Joint meeting of the dean and board(s) of examiners

1. The chair of the board of examiners meets 2 times each academic year with all chairs of all other boards of examiners within the school.
2. The board of examiners meets with the dean 2 times each academic year.

Section 3: Quality assurance of exams, final assessments and organisation

Article 3.1 Ensuring the quality of exams

1. The board of examiners is responsible for ensuring the quality of exams and modular exams.
2. The board of examiners verifies whether the guidelines and instructions as referred to in article 3.2 are observed in practice and result in high quality exams and modular exams.
3. The board of examiners offers suggestions for improvements where needed.
4. Each year, the board of examiners prepares a monitoring plan / quality control plan to ensure the validity, reliability, feasibility and transparency of examinations. This plan can be consulted via <https://hannl.sharepoint.com/sites/ICA-OT/Examencie/ExICA/SitePages/Introductiepagina.aspx>

Article 3.2 Guidelines and instruction for exams

1. Exams and modular exams are administered and graded by examiners and head examiners appointed by the board of examiners.
2. The examiners and head examiners examine and assess the exams and modular exams based on the criteria listed in the education and examination regulations and the guidelines and instructions adopted by the board of examiners.
3. The board of examiners adopts guidelines and instructions regarding:
 - the construction of exams and modular exams. These can be consulted via site 'TOETSEN en BEOORDELEN' (<https://hannl.sharepoint.com/sites/ICA-OT/Examencie/TenB/SitePages/Introductiepagina.aspx>)
 - the administering of exams and modular exams. These can be consulted via site 'TOETSEN en BEOORDELEN' (<https://hannl.sharepoint.com/sites/ICA-OT/Examencie/TenB/SitePages/Introductiepagina.aspx>)
 - the assessment and adoption of the result of exams and modular exams. These can be consulted via site 'TOETSEN en BEOORDELEN' (<https://hannl.sharepoint.com/sites/ICA-OT/Examencie/ExICA/SitePages/Introductiepagina.aspx>)

Article 3.3 Ensuring the quality of the final assessment

1. The board of examiners is responsible for ensuring the quality of the final assessments. They adopt and follow a policy for this.
2. The board of examiners regularly inspects whether the entirety of exams test all of the intended exit qualifications.
3. The board of examiners determines whether a student has the knowledge, understanding, skills

¹ This means: the person who is in charge of the degree programme and who acts as direct discussion partner for the board of examiners. Due to the new HAN2020 reorganisation, we cannot yet indicate in this model which officials these should be exactly. The board of examiners can adjust this in their own regulations.

and (if relevant) attitude, as described in the EER, that are required for obtaining a degree. The board of examiners also determines whether to award a student a distinction. The board of examiners uses a graduation protocol for this purpose that can be consulted via <https://hannl.sharepoint.com/sites/ICA-OT/Examencie/ExICA/SitePages/Introductiepagina.aspx>

4. The board of examiners is authorised to administer their own further investigation/exam to reach a careful decision about the matters outlined in the previous paragraph.
5. The board of examiners periodically reviews the level of final graduation projects. The board of examiners may have these reviews conducted by other persons, who then submits a report to the board of examiners.
6. The board of examiners will oppose and counteract any unjustified awarding or withholding of credits by examiners.

Article 3.4 Ensuring the quality of the organisation and procedures for exams and final assessments

1. The board of examiners is responsible for ensuring the quality of the organisation and procedures regarding exams, modular exams and final assessments.
2. The board of examiners monitors compliance with the guidelines and instructions regarding the administering of exams and modular exams as set out in article 3.2 paragraph 3. The board of examiners meets periodically with the exams office about this and if needed also with the Executive Board.

Article 3.5 External validation of the quality of final assessments

The board of examiners ensures that the quality of the final assessment is validated by external parties by:

- supporting school-wide and HAN-wide examination;
- using a joint protocol for the assessment of graduation projects;
- hiring external experts to assist in preparing exams and modular exams and assessment procedures;
- hiring external experts to inspect exam results;
- possibly hiring external supervisors to monitor the quality of the assessment of final graduation projects;
- the use of external supervisors (externe toezichthouders) to monitor the quality of the assessment of the final project/dissertations

Section 4: Appointment and expertise of examiners

Article 4.1 Appointing examiners and expertise of examiners

1. The board of examiners appoints (external) examiners to construct, administer, assess and determine the result of exams and modular exams. If there is more than one examiner for an exam or modular exam, the board of examiners also appoints a head examiner.
2. Depending on their role in the examination process, examiners and head examiners are experts in their subject field and possess the necessary knowledge and skills to construct exams and modular exams, set out methods and standards for assessing exams and modular exams, organise exams and modular exams and analyse the results of these based on guidelines and criteria for reliable, valid and transparent examinations and assessments.
3. The board of examiners ensures examiners have sufficient expertise. If necessary, the board of examiners can ask the dean to take the necessary measures to facilitate the professional development of examiners.
4. As a way of ensuring the expertise of examiners and head examiners, the board of examiners has a profile they use when appointing examiners. These profiles can be consulted via <https://hannl.sharepoint.com/sites/ICA-OT/Examencie/ExICA/SitePages/Introductiepagina.aspx>

(Examencommissie | AIM).

5. Examiners are appointed for one or more specific degree components (course, exam or modular exam, phase, specialization) and for a specific period.
6. The board of examiners informs examiners about their appointment and the profile used for their appointment.
7. If necessary, examiners and other parties involved may be heard by the board of examiners and asked to provide the board with specific information and/or advice.
8. If requested, examiners must be able to provide the board of examiners with materials for evaluating the quality of exams, assessment methods and assessment results (such as learning outcomes, test plans, exam matrices, answer keys, assessment schemes, assessment criteria for assignments, the actual exam or modular exam and/or assignments, the exam results and an analysis of these).
9. If an examiner does not or no longer meets the required level of expertise, the board of examiners is authorized to revoke that examiner's appointment.

Section 5: Further rules for decisions regarding individual students

Article 5.1 EER as model document

The EER sets out model provisions regarding exams, modular exams, minors, assessment criteria, exemptions, exams and modular exams taken independently of the standard programme, Dutch proficiency, extended study load, study advice and studying with a disability, chronic illness or other special condition such as a pregnancy.

Article 5.2 General principles for decisions concerning individual students

1. The offered assessment program is the best guarantee for the quality of the assessment. Therefore, there must be compelling reasons to deviate from it.
2. Deviations from regular assessment should not compromise the quality of assessment.
3. Students from a program or profile should be treated as equally as possible.
4. The examination committee may ask the student to provide a medical certificate and/or have the student's situation assessed by a (medical) expert.
5. The student has raised the circumstances and issues at an early stage with their academic advisor or the examination committee.
6. The examination committee may, unless the student objects and explicitly states so, seek information from the student's academic advisor.

Article 5.3 Further rules regarding exemptions from exams and modular exams

1. The procedure for requesting and granting exemption(s) is as follows:
'Vrijstellingen AIM'
(<https://onderwijsonline.han.nl/elearning/content/MNZxReD6>).
2. Designation decisions which offer the prospect of exemptions for special target groups (e.g. as part of an abridged route), can be found in appendix 3.

Article 5.4 Further rules regarding flexible minors

The board of examiners receives documentation from the student showing they passed the exams approved by the board of examiners for a flexible minor. This documentation may comprise a certificate, a statement or other documents showing the student passed the approved exam.

1. The documentation will be archived by the board of examiners.

2. After the board of examiners has received the documentation, the board will record the results of the exam or the exams for the flexible minor in OSIRIS.
3. Students should have access to the main phase before applying. The entrance requirements for the minor still apply. The procedure for approval can be found at onderwijsonline.han.nl 'Minoren - informatie voor studenten AIM' (<https://onderwijsonline.han.nl/elearning/lesson/XNYko0pD>).

Article 5.5 Further rules regarding study advice (if mandated by the dean)

N.v.t.

Article 5.6 Further rules on requesting an extra exam opportunity

A request will be considered if both of the following situations apply:

1. There is a compelling reason. The student is experiencing study delay beyond their control or due to circumstances outside of their own choices. This may include a prolonged illness.
2. The student has not had sufficient opportunities.

A request will not be granted if:

1. The student has had enough opportunity.
2. A partial examination is yet to be conducted within three blocks, or if an alternative assessment can be designated. The latter may involve additional examination requirements.
3. A student misses a partial examination opportunity due to work, internship, or graduation requirements.
4. A student misses an examination opportunity because they were abroad (including for study purposes).
5. A student forgot to register.

Article 5.7 Further rules for requesting a different exam format

An alternative form of examination can only be granted if there is a clear and compelling reason. The underlying idea is that assessment methods should reflect the qualities that a student must possess to successfully complete the study. Assessment methods have been carefully chosen by the program, and it is the defined assessments that are ensured by the examination committee.

The primary requirement for an alternative form of examination is that it fully meets the assessment quality intended by the original assessment. Below are two examples of suitable alternative forms of examination.

Example 1:

Instead of a written exam, the exam will be conducted orally. The number and type of questions will be comparable to those on the regular exam. The answers will be evaluated according to the same assessment model. The oral exam should not be understood as a conversation where the student arrives at an answer with the help of responses from the examiners. To ensure validity and reliability, oral exams are always conducted by at least two examiners appointed by the examination committee.

Example 2:

The student participates in the next administration of the regular exam and then, under the guidance of a teacher with a second teacher as an observer, is given the opportunity to orally explain their exam answers. The purpose of this is twofold:

The teacher obtains additional information from the student regarding their answers. The teacher may potentially ask a question about the student's intended answer.

The teacher gains an extra opportunity to determine which parts the student has not yet mastered and, most importantly, what the cause of this may be.

Article 5.8 Further rules for requesting to take an exam independently of the standard program

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Article 5.9 Further rules for determining the term of postponement if a Degree Certificate is not requested

You are allowed to postpone your graduation for a maximum of two years. If you do not submit an application for the diploma within two years, your diploma will be automatically issued in OSIRIS after the two-year period. The examination committee will include you in the examination procedure two years after you have passed all the exams of the program

and proceed with the diploma issuance.

Section 6: Irregularity and fraud in exams and modular exams

Article 6.1 Definition of irregularities and fraud

1. An irregularity is defined as 'any action or omission by an interested party in which they either intentionally or unintentionally give the wrong impression of their own or one or more other interested parties' knowledge, understanding, skills and (if relevant) attitude.'
2. Fraud is defined as 'any action or omission of which the interested party knew or should have known that this action or omission made it partly or wholly impossible to form a correct judgement of their or someone else's knowledge, understanding and (if relevant) attitude. And/or intentionally influencing (components of) the exam or exemption awarding process with the purpose of influencing the results of the exam or modular exam or decision about exemption or with the purpose of obtaining a different result for the exam or modular exam or request for exemption.'
3. The following situations are in any case considered to be an irregularity or fraud:
 - a. intentionally or unintentionally submitting work in a portfolio and/or presenting or submitting work as a group's or an individual's own work (such as a thesis, project, assignment or other written piece for submission), while it was wholly or partly copied or created by the student in unauthorised collaboration with one or more other students; This also includes the following rules:
 - i. paraphrasing the content of someone else's texts with insufficient references;
 - ii. using or copying someone else's texts, data or ideas without providing the complete and correct references;
 - iii. unclearly indicating in your text, for example without quotation marks or some other formatting, that the text has literally been copied from another author, even if you have provided the right references;
 - iv. submitting text you have previously already submitted or that is comparable to what you have previously submitted for assignments of other exams or modular exams;
 - v. submitting other types of written pieces acquired from a commercial institute or that have been written by someone else (whether or not for a fee).
 - vi. not or barely contributing to a (group) assignment, but placing or having someone else place your name under the (group) work.
 - b. allowing questions and/or answers of an exam or modular exam to be disclosed or obtaining knowledge of these during and/or before the exam or modular exam is administered;
 - c. aiding or assisting another student in a way that gives an incorrect impression of that other student's knowledge, understanding and/or skills;
 - d. seeking and/or receiving aid or assistance from a fellow student or other person in a way that gives an incorrect impression of the student's knowledge, understanding and/or skills;
 - e. having access to unauthorised resources during an exam or modular exam;
 - f. using permitted resources during an exam or modular exam that contain unauthorised notes and/or additions (e.g. margin notes or notes or additions on separate pieces of paper);
 - g. leaving the exam venue and returning to the venue during an exam or modular exam without explicit permission;
 - h. leaving the exam venue with the completed exam or modular exam, or part thereof,

also in cases when that answer sheet is subsequently handed in to the supervisor or their substitute;

- i. altering completed written exams / modular exams that have already been submitted to the examiner or assessed by the examiner.
- j. taking an exam or modular exam under someone else's name, or having another person do this for you;
- k. violating the rules that apply to reviewing and discussing assessed exams;
- l. any other matters or incidents which the board of examiners sees as constituting an irregularity.

Article 6.2 Confiscation of evidence

If there is reasonable suspicion of an irregularity or fraud, the board of examiners, (head) examiner and any other person who is present at an exam or modular exam on the Executive Board's behalf are authorised to confiscate materials that may serve as evidence of the irregularity or fraud. After the decision of the board of examiners as referred to in article 6.5 has become final and conclusive, the board will return the confiscated materials to the student.

Article 6.3 Measures taken in the event of fraud and irregularities

1. The board of examiners may impose one or more of the following measures if a student commits an irregularity or fraud in any part of an exam or modular exam:
 - a. give a written warning;
 - b. give a written reprimand;
 - c. invalidate an administered exam or modular exam and the exam result if the board of examiners is unable to guarantee the quality due to the irregularity or fraud. If an exam or modular exam is invalidated, this will lead to an 'F' being recorded for the exam or modular exam result in OSIRIS;
 - d. withhold a student's degree certificate (if the irregularity or fraud is not discovered until after the exam or modular exam);
 - e. decide the degree certificate can only be awarded after the student resits an exam in a manner, on a date and at a time to be decided by the board of examiners (if the irregularity or fraud was not discovered until after the exam or modular exam);
 - f. revoke the degree certificate after it has been issued (if the serious fraud was not discovered until after the certificate was issued to the student).
2. In the event of an irregularity or fraud, the board of examiners may deny a student access to one or more exams or modular exams for a period not exceeding one year;
3. In the event of serious fraud, the board of examiners may recommend that the Executive Board terminate the student's enrolment for the degree programme concerned.
4. If according to the board of examiners an administered exam or modular exam does not meet the quality criteria for examination as the result of an irregularity or fraud committed by someone other than the student, the board of examiners may decide to annul all or part of the exam or modular exam and/or the exam result. Invalidating a past exam or past modular exam leads to the exam result being annulled or not being awarded. Students affected by this are offered the opportunity to redo the exam or modular exam (or part thereof) concerned.

Article 6.4 Hearing the student, the reporter of the irregularity and one or more third parties

1. The board of examiners will notify the student immediately, if possible orally but always in writing, of any reported irregularity or fraud involving that student at an exam or modular exam.
2. The student will be given the opportunity to be heard by the board of examiners before a final

decision is made.

3. If the student wishes to be heard, he or she must make this known in writing within 8 working days of the date on which he or she was notified of the opportunity to be heard.
4. The student will be heard no later than 10 working days after receipt of their request.
5. The board of examiners can hear the person who reported the irregularity and any third parties before making a final decision on the irregularity or fraud.
6. Before the hearing takes place, the student is informed of their right not to answer the questions posed by the board of examiners.
7. Any third parties brought along by the student may not be refused. They are permitted to be present as an observer.

Article 6.5 Announcement of decision

1. If the student does not respond in writing within 8 working days of being informed about the possibility to be heard, the board of examiners will presume that the student does not wish to be heard. After expiry of this period, the board of examiners will inform the student in writing of the decision or proposal/recommendation to the Executive Board within 10 working days.
2. If the student, reporter and/or one or more relevant third parties are heard, the board of examiners will inform the student in writing within 10 working days after the hearing of the decision or of a proposal/recommendation to the Executive Board.

Section 7: Degree certificate and diploma supplement

Article 7.1 EER as model document

1. The EER stipulates model provisions with regard to units of learning outcomes / units of study, exams and degree certificates.
2. The board of examiners uses the formats for degree certificates, diploma supplements and other certificates adopted by the Executive Board and when awarding certificates ¹⁰follows the principles and procedures set out in the notes of that decision.
3. After the board of examiners has established that a student has passed the final bachelor assessment, that student can submit a request to receive their degree certificate before the set dates. The board of examiners will grant this request, and the student needs to take into account a processing period of at least 10 working days.

Article 7.2 Translation of degree certificate

For translations, graduates can contact a certified translator at their own expense (see: www.ngtv.nl). All costs for the translation are to be paid for by the student.

Section 8: Annual report of the board of examiners

Article 8.1 Annual report of the board of examiners and dean

1. Each year in November, the board of examiners writes a report on its activities during the previous academic year and sends this to the Executive Board and dean.
2. The board of examiners uses the guidelines for the annual report.
3. If applicable: The relevant school manager receives a copy of the annual report.
4. The report is written in Dutch.

Section 9: Final provisions

Article 9.1 Unforeseen circumstances

Matters not provided for by these regulations in which an immediate decision is needed will be decided on by the chair of the board of examiners, provided that doing so falls within the powers of the board of examiners. The chair will communicate their decision to all interested parties as soon as possible.

Article 9.2 Complaints and appeals concerning decisions and procedures of a board of examiners

1. A student can submit an appeal to the Examination Appeals Board against a decision made by the board of examiners or an examiner within 6 weeks after this decision was announced. The procedure is outlined in the 'Regulations for Legal Protection of Decisions Concerning Education' of the HAN Student Charter.
2. Every decision taken by the board of examiners or individual examiner contains a remedy clause. This clause stipulates at least the following:
 - a) an appeal must be made within six weeks of the date of the decision;
 - b) an appeal can be lodged with the Examination Appeals Board;
 - c) the correct and current address details of the Examination Appeals Board.
 - d) a reference – for more information – to the 'Regulations for Legal Protection of Decisions Concerning Education' of the HAN Student Charter.
3. If a student wants to file a complaint against an examiner or member of the board of examiners, they can consult the procedure set out in the complaints regulations of the HAN Student Charter.
4. If a complaint or appeal concerns a member of the board of examiners, this member of the board of examiners does not take part in processing the complaint or appeal on behalf of the board of examiners.

Article 9.3 Adoption, effective date and amendments

1. These regulations were adopted by the AIM Board of Examiners on 12 april 2022 and came into effect on the 1st of September 2023.
2. These regulations replace the Regulations of the AIM Board of Examiners that were adopted on 23 april 2022 (only in Dutch).
3. These regulations will be made available to the students and staff of the degree programme(s) as referred to in article 1.2 paragraph 3 of these regulations by inclusion in the Degree Statute.
4. Amendments to these regulations can be made by the board of examiners in the form of separate decisions. Amendments during the current academic year will be made only if this is necessary for the protection of students' interests.
5. Amendments to these regulations may not have any adverse impact on decisions that were made earlier by the board of examiners and were made based on these regulations.

Arnhem/ Nijmegen 12 april 2024

On behalf of the Board of Examiners for AIM

Jan-Hugo Wijbenga , chair

Appendix 1: Duties mandated by the board of examiners

Overview of duties mandated by the board of examiners (by board of examiners – mandate giver – mandate decision(s) taken)

	Duties mandated by the board of examiners	Mandated body ² , or job title or specific duties of the mandated staff member ³
1	Approval of minors chosen by students, provided that these minors take place abroad and the content of these minors has been coordinated with the Examination Committee.	Bureau Internationalisering
2	Approval of minors chosen by students, as long as the chosen minor is listed in the pre-approved minors list of AIM as described on the Education Online website, under 'Minors - information for AIM students.'	Onderwijsbureau AIM
3	Entering the results of (partial) exams and sending the exam proof related to the exam administered by the examiner, upon specific request of the examiner or assessments from iSAS, with a note made in the study monitoring system in the former case.	Onderwijsbureau AIM
4	Entering the grades for approved free minors in the study monitoring system upon request of the student, only if the request is accompanied by a valid and archived minor certificate.	Onderwijsbureau AIM
5	Generating transcripts and issuing diplomas upon request and under the control of the Examination Committee AIM.	Onderwijsbureau AIM
6	Processing pass statuses in Alluris for the propaedeutic phase and bachelor's degree.	Onderwijsbureau AIM
7	Entering study advice in the study monitoring system, upon request and under the control of the	Onderwijsbureau AIM
8	Signing decisions on individual requests.	Secretaris Examinatoren
9	Entering the grades achieved by students in the study monitoring system.	Examinatoren
10	N/A	
11	Organizing a capacity test in the context of the 21+ regulation, including signing colloquium doctum declarations.	Ambtelijk secretaris

Note:

- The mandate will remain valid unless revoked by the board of examiners and as long as the mandated person remains employed by HAN and performs the duties specified above.
- Unless otherwise explicitly stated, those mandated are not authorized to further mandate their duties.

Arnhem/ Nijmegen 12 april 2024

Board of Examiners AIM

² For example, committee or office (managing committee, assessment committee, examination task team, exams office).

³ The official job titles of employees (e.g. dean, lecturer, senior lecturer, educator, trainer, adviser, secretary) can be found on HAN Insite under 'Our staff'. A duty is a specific work activity carried out by an employee – and may or may not be officially assigned to or requested of them (e.g. chair of the board of examiners, official secretary, study coach, team leader, administrative staff member or examiner). This column lists the specific duties relevant in the context of the mandate given by the board of examiners.

Appendix 2: Duties mandated to the board of examiners by or on behalf of the Executive Board

Overview of duties mandated to the board of examiners

	Duties mandated to the board of examiners
1	Execution of study advice and associated hearings
2	Admissions Committee
3	
4	
5	
6	
7	
8	
9	
10	
11	

Note:

- The mandate will remain valid unless revoked and as long as the mandated party remains employed by HAN and performs the duties specified above.
- Unless otherwise explicitly stated, those mandated are not authorised to further mandate their duties.

Appendix 3: For the right to specific exemption(s) for previously obtained exams and modular exams, degree certificates and other statements, diplomas and certificates

Not applicable for the master Datascience.

4 Regulations of the Degree Committee

Chapter 1 Introductory provisions

Article 1 Status and definitions

1. These regulations are regulations as defined in the administrative and management regulations of HAN University of Applied Sciences (hereafter: HAN).
2. These regulations apply to the degree committee(s) for the bachelor degree programme HBO ICT, the bachelor degree programme CMD and the Master degree programme Applied Data Science.
3. The definitions and provisions from the glossary in appendix 1 to the degree statute apply to these regulations.

Chapter 2 Degree committee

Article 2 Establishing degree committee(s)

1. A degree committee will be established for each degree programme or group of degree programmes.
2. If a school has only one degree programme, the duties and powers of the degree committee will be exercised by the school council.
3. If a degree committee is established for two or more degree programmes, that degree committee will be referred to as a joint degree committee. The decision to establish or dissolve a joint degree committee will be taken by the dean, and it will require the consent of the school council of the relevant school. The school council consults the relevant degree committees with regard to the decision whether or not to give its consent.
4. The provisions in these regulations also apply to joint degree committees, unless the nature of the provision precludes application.
5. One or more divisions may be set up within a degree committee if required. A division can be set up as needed according to the degree format, according to a special feature of the degree programme (e.g. English-taught), according to the location of the degree programme or according to any other special aspect of the degree programme¹².
6. The degree committee for the degree programmes HBO-ICT, CMD and MADS has been established for a group of degree programmes. The degree committee consists of 3 divisions: one division for HBO-ICT, one division for CMD and one division for MADS.

Article 3 Joint Assembly

If the degree programmes of a school do not have a joint degree committee, all of the degree committees within that school will convene in a joint session at least two times a year to discuss shared matters. This will include at least those matters specified in article 27 paragraph 4 of these regulations.

Article 4 Composition of the degree committee

1. The degree committee consists of 14 members. The division of the degree committees HBO-ICT and CMD both have 6 members and the division of the degree committee MADS has 2 member.
2. Half of the members of the degree committee (or division thereof) will be students from the relevant degree programme, with the other half of the members of the degree committee (or division thereof) being staff members from the relevant degree programme.
3. No individual belonging to the school or course management or employed as an education manager can simultaneously be a member of the degree committee.

Article 5 Appointment term

1. The members of a degree committee, division(s) and members of the joint assembly appointed from among and by the student body serve for terms of 2 years. The members of a degree committee, division(s) and members of the joint assembly appointed from among and by staff members serve for terms of 4 years.

2. The term begins on 1 September.
3. All members step down simultaneously at the end of their terms.
4. At the end of their terms, members of a degree committee, division(s) and members of the joint assembly may be re-appointed, on the understanding that members appointed from among and by the staff may serve for two consecutive terms and may not be re-appointed again after those two terms until they have had a one-term break from serving on the committee. After stepping down, members elected from among and by the student body may be re-appointed for a maximum of four consecutive academic years.

Article 6 Termination of membership

1. Membership in a degree committee, *division* and the joint assembly will end:
 - a. when the term expires, unless the member is *re-elected/re-appointed*;
 - b. before the end of the term:
 - in the event of death;
 - in the event the composition of the degree committee no longer meets the requirements specified in these regulations;
 - in the event the lecturer is no longer employed at the relevant school or no longer affiliated with the relevant degree programme;
 - in the event the student member has quit the degree programme.
2. A member of the degree committee may terminate the membership at any time by withdrawing the membership in writing, *stating the reason*, to the relevant dean.

Article 7 Composition

1. The degree committee will be composed by nomination and appointment.
2. A review will be conducted each year to determine whether this method of composition is still appropriate.

If the degree committee has opted for elections in the preceding article, the provisions of chapter 3 will apply. If the degree committee has opted for nomination in the preceding article, the provisions of chapter 4 will apply. A choice for appointment must be reviewed each year to determine whether this method of composition is still appropriate.

Chapter 3 Elections

Not applicable

Chapter 4 Appointment

Article 16 Appointment

The members of the degree committee are appointed by the dean.

Article 17 Procedure

1. Before the end of term, the members of the degree committee's student division will submit seven students from each degree programme (belonging to the group of degree programmes) to the dean for nomination, with due consideration of article 4. The submission will be compiled by the degree committee of the relevant degree programme(s), or on behalf of the dean.
2. Before the end of term, the members of the degree committee's staff division will submit seven staff members from each degree programme (belonging to the group of degree programmes) to the dean for nomination for the coming term, with due consideration of article 4. The submission will be compiled by the degree committee of the relevant degree programme(s), or on behalf of the dean.
3. If no joint degree committee has been established for a school's degree programmes, each separate degree committee belonging to the school will choose one staff member and one student from among its members to be delegated to the joint assembly, together with the chair.

Article 18 Interim appointment

1. In the event of an interim vacancy on a degree committee or division, the dean will appoint a replacement member. The appointment procedure specified in article 17 will be followed.
2. The replacement member must be appointed within 4 weeks of the opening of the interim vacancy.
3. The interim replacement member steps down at the same time that the person being replaced would have stepped down.

Chapter 5 Positions and performance

Article 19 Positions

1. The degree committee and division elect one of their members as chair and one as secretary, in addition to electing two members as deputies.
2. A degree committee (or division thereof) will be represented by either the chair or the deputy.

Article 20 Decision-making

1. The degree committee will take decisions by a simple majority of votes. Abstentions will not be counted. Votes may be held only if a majority of the members are present at the meeting.
2. Voting takes place without the presence of management or the discussion partner.
3. The members of the degree committee advise and vote independently and unbound by any instructions.
4. In the event of absence, the absent member may vote by proxy. Proxies must be submitted in writing at the beginning of the meeting. A member may cast only one proxy vote for another member at a time. The proxy will vote independently and unbound by any instructions. Proxies are counted when determining the quorum for the meeting.
5. Anyone who is involved in performing the duties of the committee and who therefore has access to information that is known to be or could be reasonably expected to be of a confidential nature will be bound to confidentiality.
6. Where applicable, the degree committee will ensure that the viewpoints represented by the minority of the votes cast are also communicated to the dean and/or the school manager.
7. The degree committee will ensure that its resolutions, recommendations and proposals are available for inspection in a place accessible to the lecturers and students of the school or degree programme.

Article 21 Meetings

1. The degree committee will meet at least eight times a year and also at any time at least half of the members of the degree committee request a meeting. Meetings are called by the chair of the degree committee. At the first meeting, a meeting schedule will be compiled in consultation with the dean, and will be posted on the website of the degree programme.
2. The members of the degree committee will receive a written invitation to the meeting no later than five working days before the meeting. The invitation will be accompanied by an agenda.
3. The meeting documents will be sent to the members of the degree committee no later than four working days before the meeting. If the documents are sent later, the members may decide by majority of votes not to address the meeting documents.
4. The degree committee may be advised by an expert at the meeting. The secretary will be informed about the expert at least seven days before the meeting.
5. The degree committee may compose a temporary committee from among its members in order to prepare a topic. This committee will report to the degree committee.

Article 22 Public nature of meetings

1. The meetings of the degree committee will be public unless the degree committee decides otherwise. The degree committee will determine whether to hold a closed meeting in preparation for a public meeting. No resolutions may be passed in closed meetings.

2. The degree committee must hold at least two public meetings a year. The dates of the public meetings will be scheduled in consultation with the dean and in concurrence with the official HAN academic calendar.

Article 23 Reporting procedure

1. The secretary of the degree committee will prepare a report of each meeting.
2. This report must contain at least:
 - the date, time and location of the meeting;
 - the names of the members who are present at and absent from the meeting;
 - the agenda items;
 - the main discussion points;
 - any explanations of votes;
 - the advice;
 - the resolutions concerning advice, any votes taken on this advice and the results of the votes;
 -
3. A draft version of the report will be sent to the members of the degree committee no later than 15 working days after the meeting, after which the report will be confirmed in the subsequent meeting.
4. The reports of the public meetings of the degree committee will be made available in digital format to the lecturers and students of the school or relevant degree programme.

Article 24 Contact with management

1. The dean for the relevant degree format/course with special feature will promptly and without request provide the degree committee or division thereof with all information they might reasonably or justly need to fulfil their duties. Upon request, they will promptly provide the degree committee or division thereof with all information the committee may reasonably or fairly deem necessary to fulfil its duties.
2. At least twice a year, the degree committee is authorised to invite the dean to discuss the intended policy based on the agenda that it has prepared.
3. At the opening of the academic year, the degree committee will prepare a policy plan with its key policy points for the coming academic year. The policy plan is then shared with the dean.
4. At the request of the dean, their designated deputy or at the request of the degree committee, the dean or their designated deputy will attend the meetings or parts of the meetings of the degree committee.
5. The dean will be responsible for ensuring the students and staff of the relevant school are sufficiently informed of the existence and performance of the degree committee.

Article 25 Annual reporting procedure

1. No later than November of each year, the chair of the degree committee will submit a written report to the dean concerning the duties and performance of the degree committee during the previous academic year. The chair will forward the report to the school council for inspection.
2. The report will contain information on at least the following points:
 - the composition of the degree committee;
 - the degree committee's vision on its duties and procedures;
 - the degree committee's policy plan and evaluation of its policy plan;
 - the recommendations and resolutions issued by the degree committee, including requests for consent;
 - the board's reaction to the recommendations and resolutions;
 - conclusions and recommendations.
3. The written report referred to in paragraphs 1 and 2 must at any rate be made available digitally and, if requested, in hard-copy format to the staff and students of the school or the relevant degree programme(s).

Article 26 Contact with school council

The chair of the degree committee will ensure that consultation with the school council (or its chair) is held as needed.

Chapter 6

Duties and powers of the degree committee

Article 27 Duties of the degree committee

1. The degree committee has the duty to advise on the promotion and safeguarding of the quality of the degree programme.
2. The degree committee is also charged with the following duties:
 - annually assessing the operational methods of the education and examination regulations (EER) of the relevant degree programme;
 - advising or issuing proposals to the school council and the dean on all other matters concerning education in the relevant degree programme(s) when requested or on its own initiative.
3. A division of the degree committee will be charged with advising the degree committee on the following:
 - promoting and safeguarding the quality of the degree programme;
 - annually assessing the implementation methods of the EER of the relevant degree programme;
 - advising or issuing proposals to the degree committee on all other matters concerning education in the relevant degree programme(s) when requested or upon its own initiative.
4. The joint assembly has the following duties:
 - discussing the separate recommendations about the EER made by the degree committees belonging to a school so they can reach a joint resolution in the event the EER is adopted at school level;
 - discussing the separate evaluations of the degree programmes concerning the implementation of the EER to reach a resolution on the implementation of the EER at the school level;
 - advising or issuing proposals to the dean and/or school council on all other matters concerning education in the relevant degree programme(s) at school level when requested or on its own initiative.

Article 28 Right of consent

1. The degree committee has right of consent concerning the administrative and management regulations in so far as they:
 - specify a manner of composition other than election for the degree committee;
 - concern the annual assessment of the appropriateness of this other method of composition;
2. The degree committee has right of consent concerning the EER of the relevant degree programme in so far as they concern:
 - the manner in which education is evaluated within the relevant degree programme;
 - the content of the graduation specialisations within a degree programme;
 - the quality of the knowledge, understanding and skills that students should have acquired upon completion of the degree programme;
 - where needed, the organisation of practical exercises;
 - the study load of the degree programme and each of its units of study and units of learning outcomes;
 - if applicable, the selection procedure for students applying for a special track within a degree programme that aims at helping students attain a higher level of knowledge;
 - if applicable, the regulation that stipulates that the study load for a fast track aimed at students with a VWO diploma is 240 instead of 180 credits.

Article 29 Advisory rights

The degree committee has advisory rights concerning the EER of the relevant degree programme in so far as it concerns:

- the content of the degree programme and the final assessments associated with it;
- any further rules on issuing study advice for the propaedeutic phase of the bachelor degree programme or the first year of study of an associate degree and further rules on issuing referrals in the propaedeutic phase/first year of study if a degree programme includes more than a graduation specialisation after the propaedeutic phase/first year of study;
- the number and order of exams, as well as the times at which they can be taken;
- the full-time, part-time or work-study structure of the degree programme;
- where necessary, the order in which, time frame within which and number of times each academic year that students are to be offered the opportunity to take exams and final assessments;
- where necessary, the extension of the validity term of passed exams, subject to the authority of the board of examiners;
- the way in which exams are taken, whether orally, in writing or otherwise, subject to the authority of the board of examiners to decide differently in special cases;
- the manner in which students with disabilities or chronic illnesses are reasonably to be given the opportunity to take the exams;
- the public character of exams that are to be administered orally, subject to the authority of the board of examiners to decide differently in special cases;
- the time frame within which the results of an exam are to be posted, and whether and how exceptions may be made to this time frame;
- the manner and term in which individuals who have taken a written exam will be allowed to review their work after it has been assessed;
- the manner and term in which questions and assignments made or given as part of a written exam may be reviewed, as well as the standards according to which the assessment was performed;
- the grounds upon which the board of examiners may grant exemptions for one or more exams based on previously passed exams or final assessments in higher education or based on knowledge and skills acquired outside the context of higher education;
- where necessary, the requirement to pass certain exams before admission can be granted to take other exams;
- where necessary, the requirement to participate in practical exercises for the purposes of admission to taking the relevant exam, subject to the authority of the board of examiners to grant exemptions from this requirement, whether or not that is conditional upon alternative requirements;
- the monitoring of study progress and individual study coaching;
- the actual design of the education.

Article 30 Conditions for consent and advice

1. The dean will ensure that:
 - a. advice is requested at such a time that it can actually bear an influence on the decision-making,
 - b. the committee has the opportunity to consult with the dean before the advice is issued,
 - c. the committee is notified in writing as quickly as possible concerning the manner in which the advice will be acted upon.

Article 31 Procedure for consent and advice

1. The degree committee notifies the dean in writing about whether the degree committee has granted consent or what the degree committee's advice is as soon as possible, but no later than 6 weeks after consent or advice has been requested.
2. The degree committee and the dean may agree to extend the term specified in the preceding paragraph, or to shorten it due to the urgency of the decision to be taken or if the decision to be taken is required in order to comply with a legal prescription.

3. If the degree committee has not notified the dean of its advice or decision concerning the requested consent within the term referred to in paragraph 1 of this article, or within the extended or shortened term, the degree committee will be regarded as not having exercised its powers.

4. The degree committee may consult with students and/or staff members from the relevant degree programme prior to deciding on a request for consent or before issuing advice.

Article 32 Deviating from advice

1. If the dean does not wish to follow all or part of the advice given by the degree committee, the dean will notify the degree committee of this, along with the reasons, within four weeks.

2. The dean will ensure that the degree committee has the opportunity to engage in further consultation with him or her before making a definite decision.

3. The dean will suspend the execution of his decision for 4 weeks after the day on which the degree committee announced its decision, unless the committee has no objection to the immediate execution of the decision.

4. The dean will notify the degree committee and school council in writing of the definite decision, noting that the decision deviates from the degree committee's advice.

Article 33 Right of initiative

1. If the degree committee makes a proposal to the school council or dean as referred to in article 27 paragraph 2 of these regulations, upon request or at its own initiative, the dean will respond to the proposal within two months of receipt. The degree committee will send the advice and proposals to the participation council or the relevant school council for inspection.

Chapter 7 Quality assurance

Article 34

1. At the opening of the academic year, the degree committee and the dean make agreements concerning the manner in which quality assurance is performed.

2. The degree committee and the quality assurance policy advisor maintain continuous contact to ensure the quality assurance.

Chapter 8 Involvement in accreditation

Article 35

In the context and for purposes of the accreditation of the degree programme:

- the degree committee provides a recommendation for the self-evaluation of the degree programme upon request by the dean;
- in certain cases the degree committee has advisory rights with regard to the recovery plan.

Chapter 9 Disputes

Article 36 Access to the Disputes Advisory Committee

The disputes committee for participation will inspect disputes between the degree committee or the dean with regard to:

- a. the application of the regulations of the degree committee;
- b. disputes arising from articles 27 to 30 of these regulations.

Article 37 Amicable settlement

In the event of a dispute between the degree committee and dean, the Executive Board will investigate the possibility of amicable settlement. If this is not possible, the dean or the degree committee will submit the dispute to the Disputes Advisory Committee.

Article 38 Binding judgement of the Disputes Advisory Committee

The disputes committee is authorised to effect an amicable settlement between parties. If they are unable to reach an amicable settlement, the disputes committee will resolve the dispute by issuing a binding judgement after assessing whether:

- a. the dean has adhered to the requirements of the law and the internal regulations for degree committees;
- b. the dean could have reasonably reached the proposal or decision when considering the interests involved;
- c. the dean has acted negligently with regard to the degree committee..

Article 39 Suspended execution of a decision

If the dispute concerns the choice whether or not to follow the advice or part of the advice given by the degree committee, the execution of that decision will be suspended for four weeks, unless the degree committee has no objection to the immediate execution of the decision.

Article 40 Permission in the absence of consent

If the dean has not received consent from the degree committee for an intended decision, the dean may request permission from the disputes committee to make the decision, contrary to the provisions of article 31. The disputes committee will only grant permission if the decision of the degree committee not to provide consent is unreasonable or if compelling organisational, economic or social reasons call for the intended decision of the dean.

Chapter 10 Facilities

Article 41 Facilities for degree committees (and their members)

1. The dean will grant the degree committee the use of facilities that are available and that the committee could reasonably need to fulfil its duties, including at least administrative, financial and legal support.
2. More specifically, the degree committee is entitled to:
 - meeting space;
 - facilities for the reproduction/distribution of meeting documents;
 - secretarial support;
 - catering facilities;
3. The dean will allocate a training budget to the members of the degree committee. The training budget will be determined at the opening of the academic year, in joint consultation between the degree committee and the dean and allows the members of the degree committee to participate in the training and professional development opportunities offered by HAN Academy. The training budget for the degree committee of the degree programme amounts to €2,000 per academic year .
4. The members of the degree committee who are employed as staff members will have the opportunity to participate in this training during working hours and with retention of salary.
5. The dean will give the degree committees the opportunity to meet during working hours whenever possible. Each student and staff member of the degree committee will be facilitated for all degree committee activities for 80 hours each academic year, with the position of chair receiving additional facilitation of 120 hours each academic year.

Chapter 11 Final provisions

Article 42 Legal protection

The Executive Board, the dean and the school manager of the relevant degree format/course with a special feature will ensure that the members of the degree committee, the division and the members of the joint assembly are not disadvantaged in their position and/or interests in relation to the university of applied sciences on account of their membership in the degree committee.

Article 43 Unforeseen circumstances

Matters that are not provided for in these regulations and for which an immediate decision is needed by the degree committee, division or joint assembly will be decided upon by the chair of the degree committee or the chair of the joint assembly. The chair must communicate this decision as soon as

possible to the other members of the degree committee or the other members of the joint assembly, and to the dean and the relevant school manager.

[Article 44 Effective date](#)

These regulations were adopted by the dean on May 21 2024 and will come into effect on 1 September 2024.

PREDICTIVE MODELLING

General information OWE / course	
Long Dutch name of course	Predictive modelling
Long English name of course	Predictive modelling
Short Dutch name of course	Predictive modelling
Short English name of course	Predictive modelling
	PREMOD01
Term	P1A, P2A
Registering for educational activities	Go to Part 3 "Regulations for Education, exams and modular exams OSIRIS" for more information.
Credits	15
Study load in hours	420
Contact hours	120
Course entry requirements	None
Final grade	Exam TOETS-01 (1/3), portfolio TOETS-02 (2/3)
Content and organisation	
General description	<p>Throughout the Master's program we follow the cycle of CRISP-DM: a standard data science methodology. In each unit we will touch upon all aspects of the CRISP-DM cycle (business understanding, data understanding, data preparation, modeling, evaluation, deployment), but with a different focus. In this first unit, you will get acquainted with all aspects of the machine learning setup and pipeline. The focus lies on the elements of data pre-processing, modelling and evaluation: the predictive modelling process.</p> <p>The conversion of huge amounts of data to meaning requires a thorough knowledge of data collection, validation, pre-processing, testing, evaluation, exploration, and classification, or, in short, predictive modelling. You will practice extensively with the various steps in a predictive modelling pipeline and become aware of the various related pitfalls for a data scientist. The focus of attention is on how to avoid these through a rigorous application of rationality and the scientific method.</p> <p>The ability to predict outcomes based on data is one of the main drivers in data science. You will get exposed to the diversity in models that exists to enable prediction. Besides the model input requirements and related prediction boundaries, also the related algorithms and computer implementations are discussed and evaluated in practice. Theory and Practice are illustrated through real-life cases.</p> <p>You get acquainted with value creation through the application of data analytics. You understand how to translate a (business or research) problem into a data science project. You practice with communication and formulating requirements and goals in the context of a project via the Machine Learning Canvas.</p>

	<p>In the research skills line, you practice basic research skills such as peer review, formulation of research questions and literature study skills. Theory and practice come together in the planning of a full research project. You work in groups on an exploratory data analysis project. You talk to stakeholders in order to understand the context of the data and problem. You conduct the exploratory process and present the results. The process will be supervised by an expert data scientist.</p>
<p>Exit qualifications</p>	<p>The Master's graduates:</p> <p>A. Problem understanding translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner. take into account (business) requirements and assess potential risks. derive relevant data requirements from problem insight.</p> <p>B. Data understanding identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders. apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality.</p> <p>C. Data analytics apply appropriate data science and machine learning algorithms and techniques for complex data analysis. prepare data, including selecting, cleaning, and combining data from various sources. determine algorithms suitable for data analysis and establish the test design. build models and evaluate them by interpreting model results, predefined success criteria, and the test design. decide on follow-up actions based on the evaluation results of the model.</p> <p>E. Professional skills reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner. build and maintain a network of professionals inside and outside their organisations. are in regular dialogue with relevant stakeholders and communicate their work appropriately. determine objectives, approach, and project plan for a data science project.</p> <p>F. Research skills purposefully apply a range of research and analytics techniques in a systematic and rational way. critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant.</p>

	read and understand scientific and professional literature and communicate according to professional standards.
Cohesion	In each unit of study, we touch upon all aspects of the data science life cycle, but with a different focus. In this unit, the focus is on predictive modelling.
Mandatory participation	Participation in group activities, e.g. workshops, project work, presentations and assessments, is mandatory. See Part 2, Chapter 8.
Maximum number of participants	30
Activities and/or instructional formats	<ul style="list-style-type: none"> - Lectures on business understanding & value creation, predictive modelling and machine learning. - Workshops on data architecture, data ethics, professional skills and research skills. - Project on model building. - Self-study.
Required literature / description of 'learning material'	- Hands-On Machine Learning with Scikit-Learn and TensorFlow, 3 rd edition. Aurelien Geron. ISBN: 978-1098125974

Examinations	
Dutch name	Exam Predictive modelling
English name	Exam Predictive modelling
OSIRIS code	TOETS-01
Assessment criteria	<p>Examination of knowledge, theoretical background, and skills related to:</p> <ul style="list-style-type: none"> - Linear regression, polynomial regression, logistic regression, support vector machines, decision trees, random forests and ensemble methods - Clustering and unsupervised learning - Overfitting, underfitting, learning curves - The machine learning setup from start to finish. - The different types and tasks of machine learning - Data visualization and the Gestalt principles. - Performance criteria, cost functions, maximum likelihood functions - PCA and dimensionality reduction - Neural networks
Exam and modular exam format(s)	KENN-F
Minimum result	Sufficient (55%)
Exam sittings	P2A, P3A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Written exam

Examinations	
Dutch name	Portfolio
English name	Portfolio
OSIRIS code	TOETS-02
Assessment criteria	<p>Research report and assessment:</p> <ul style="list-style-type: none"> - The business problem is analysed in detail in the business context. - The business problem is translated into a data science problem, naming objectives and challenges. - A clear and quantifiable success criterium is defined. - The value surrounding the problem are identified. - Data requirements are analysed and (issues with) the quality of the data are discussed. - There is a clearly written, unambiguous research question - There are relevant subquestions that can be answered in the scope of the research project. - The subquestions are focused on one specific topic, but together completely cover the main research question. - The ML-techniques used are suitable to solve the problem. - The methods for investigating and answering the subquestions are explained. - The main findings (data exploration) are presented concisely, supported by visualizations supported by the Gestalt principles. - The results are discussed critically, and follow-up steps are suggested - The implications of the results for the business problem are discussed - Relevant references to the literature are listed and discussed - The risks surrounding the problem are identified. - presents results attuned to the problem owner in order to inform project owner. - The student uses a logical structure in the presentation and findings are illustrated in a conclusive manner. - The student discusses results critically and proposes suitable follow-ups. - The student answers questions regarding the project. <p>Reflection report:</p> <p>On the subjects of communication, problem solving skills, planning, vision, and independence, the student:</p> <ul style="list-style-type: none"> - describes an example of the subject in the project and explores and explains what happened. - relates the example to their own actions and explains the motivation behind their actions. - describes a learning takeaway. - critically evaluates their own performance, describing what they did well and what they could have done better using an example, and how this would influence their colleagues, stakeholders, and project success. - relates their critical evaluation to their own strengths and weaknesses on a personal level. - produces a plan on how to avoid pitfalls related to their

	weakness and how to leverage their strengths in future actions involving the subjects.
Exam and modular exam format(s)	PROD-O
Minimum result	Sufficient (55%)
Exam sittings	P2A, P3A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Reflection report (pass/fail), Research report (pass/fail), Assessment (100%)

DATA EXPLORATION

General information OWE / course	
Long Dutch name of course	Data exploration
Long English name of course	Data exploration
Short Dutch name of course	Data exploration
Short English name of course	Data exploration
	DATEXP01
Term	P3A, P4A
Registering for educational activities	Go to Part 3 "Regulations for Education, exams and modular exams OSIRIS" for more information.
Credits	15
Study load in hours	420
Contact hours	120
Course entry requirements	None
Final grade	TOETS-01 Exam (1/3), TOETS-02 portfolio (2/3)
Content and organisation	
General description	<p>Throughout our programme we follow the cycle of CRISP-DM: a standard data science methodology. In each unit, we touch upon all aspects of the CRISP-DM cycle (business understanding, data understanding, data preparation, modeling, evaluation, deployment), but with a different focus. In this unit, we focus on the elements of problem understanding, data understanding and data exploration.</p> <p>A prerequisite for the effective use of large amounts of data is a basic understanding of what data is and how data becomes information and ultimately knowledge. Typically a large part of the data science cycle is to prepare data in a meaningful format for problem analysis and identify issues with data and dealing with them accordingly. In this unit, you practice with the process of data wrangling in real-life cases. You acquire a theoretical background in understanding data. You also learn the most important principles of data storage and processing. You conduct exploratory data analysis using techniques such as correlation, regression, and clustering in order to take the first steps in getting from data to information.</p> <p>In the research skills line, you will practice the communication of your research in reports, management summaries and elevator pitches. You will learn how to support your choices with argumentation, how to be honest and aware of the limitations of their approach, and how to translate them into future research.</p> <p>In the professional skills line, theory and practice come together in the planning of a full research project. You work in groups on a data analytics problem with the goal of creating a predictive model for a real-world problem. The process will be supervised by an expert data scientist.</p>

Exit qualifications	<p>The Master's graduates:</p> <p>A. Problem understanding translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner. take into account (business) requirements and assess potential risks. derive relevant data requirements from problem insight.</p> <p>B. Data understanding identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders. apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality.</p> <p>C. Data analytics apply appropriate data science and machine learning algorithms and techniques for complex data analysis. prepare data, including selecting, cleaning, and combining data from various sources. determine algorithms suitable for data analysis and establish the test design. build models and evaluate them by interpreting model results, predefined success criteria, and the test design. decide on follow-up actions based on the evaluation results of the model.</p> <p>E. Professional skills reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner. build and maintain a network of professionals inside and outside their organisations. are in regular dialogue with relevant stakeholders and communicate their work appropriately. determine objectives, approach, and project plan for a data science project.</p> <p>F. Research skills purposefully apply a range of research and analytics techniques in a systematic and rational way. critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant. read and understand scientific and professional literature and communicate according to professional standards.</p>
Cohesion	In each unit of study, we touch upon all aspects of the data science life cycle, but with a different focus. In this unit, the focus is on data exploration.
Mandatory participation	Participation in group activities, e.g. workshops, project work, presentations and assessments, is mandatory. See Part 2, Chapter 8.
Maximum number of participants	30
Activities and/or instructional formats	<ul style="list-style-type: none"> - Lectures on problem understanding, exploratory data analytics & data visualization - Workshops on exploratory data analytics using Python, professional skills, and research skills - Project on data exploration - Self-study
Required literature / description of 'learning material'	- Géron, A. (2022). Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow. 3rd Edition: O'Reilly Media, Inc.

Examinations	
Dutch name	Exam Data exploration
English name	Exam Data exploration
OSIRIS code	TOETS-01
Assessment criteria	<p>Examination of knowledge and skills related to:</p> <ul style="list-style-type: none"> - assess data quality based on own or otherwise obtained data exploration results to evaluate the usability of existing data with respect to the data science problem and make informed recommendations to solve data quality issues. - examine data to prepare a relevant dataset retrieved from various sources for the data analytics project. - apply methods of data exploration (e. g. correlations, PCA) and data visualization (e.g. scatter plots, clustering) to determine data properties (e.g. data types, distribution, correlation) and data quality (e.g. missing values, erroneous data). - data visualization to evaluate and communicate the usability of existing data with respect to the data science problem. - regression and clustering to determine and assess functional relations in data. - pre-defined criteria (e.g. success criteria) and test designs.
Exam and modular exam format(s)	KENN-F
Minimum result	Sufficient (55%)
Exam sittings	P4A, P5A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Written exam

Examinations	
Dutch name	Portfolio
English name	Portfolio
OSIRIS code	TOETS-02
Assessment criteria	<p>Research report and assessment:</p> <ul style="list-style-type: none"> - The business problem is analysed in detail in the business context. - The business problem is translated into a data science problem, naming objectives and challenges. - A clear and quantifiable success criterium is defined. - The value surrounding the problem are identified. - Data requirements are analysed and (issues with) the quality of the data are discussed. - The student prepares, analyses, interprets and evaluates obtained data in a structured way. - There is a clearly written, unambiguous research

	<p>question</p> <ul style="list-style-type: none"> - There are relevant subquestions that can be answered in the scope of the research project. - The subquestions provide sufficient information to answer the main question. - The methods for investigating and answering the subquestions are explained. - The data exploration methods used are presented and well suited for the business problem. - The main findings (data exploration) are presented concisely, supported by visualizations. - The results are discussed critically, and follow-up steps are suggested - The implications of the results for the business problem are discussed - Relevant references to the literature are listed and discussed - The value proposition of the research question with respect to the stakeholder's problem is presented. - The provided data is explained concisely. Potential major data quality issues are identified and a strategy to solve them is presented. - The main findings are clearly summarized and related back to the research question(s). - The findings are convincing and are shown to be conclusive. - The main results are conveyed in an understandable and professional way. - The step-by-step reasoning is logical and easy to follow. - The validity and quality of the results are discussed. - Suitable follow-up steps are suggested. - Questions are answered correctly. <p>Reflection report:</p> <p>On the subjects of communication, problem solving skills, planning, vision, and independence, the student:</p> <ul style="list-style-type: none"> - describes an example of the subject in the project and explores and explains what happened. - relates the example to their own actions and explains the motivation behind their actions. - describes a learning takeaway. - critically evaluates their own performance, describing what they did well and what they could have done better using an example, and how this would influence their colleagues, stakeholders, and project success. - relates their critical evaluation to their own strengths and weaknesses on a personal level. - produces a plan on how to avoid pitfalls related to their weakness and how to leverage their strengths in future actions involving the subjects.
Exam and modular exam format(s)	PROD-O
Minimum result	Sufficient (55%)
Exam sittings	P4A, P5A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Reflection report (pass/fail), Research report (50%), Assessment (50%)

MODEL DEPLOYMENT

General information OWE / course	
Long Dutch name of course	Model deployment
Long English name of course	Model deployment
Short Dutch name of course	Model deployment
Short English name of course	Model deployment
	MODDEP01
Term	P1A, P2A
Registering for educational activities	Go to Part 3 "Regulations for Education, exams and modular exams OSIRIS" for more information.
Credits	15
Study load in hours	420
Contact hours	120
Course entry requirements	None
Final grade	TOETS-01 Exam (50%), TOETS-02 Project proposal grade (50%)
Content and organisation	
General description	<p>Throughout the Master's program we follow the cycle of CRISP-DM: a standard data science methodology. In each unit we will touch upon all aspects of the CRISP-DM cycle (business understanding, data understanding, data preparation, modeling, evaluation, deployment), but with a different focus. In this third unit we focus on analytical aspects after deployment.</p> <p>After initial success of a data science project, you come to the stage of deployment. When a solution is to be integrated in the organisation's workflow the responsibility of the data scientist does not end. Practical aspects such as model complexity and efficiency need to be addressed. Moreover integration in the current workflow can entail integration with other models.</p> <p>In this unit, you will learn to work with application containers for model deployment. Finally, regular re-evaluation of the solution needs to be done in order to maintain an optimal model and deal with aspects such as label drift. Theory and concepts are illustrated through real-life cases. In addition, you will continue to learn and practice with more advanced models and applications such as computer vision, or text mining. Various topics in deep learning will be discussed, including convolutions, hypertuning, recurrent neural networks and transformers. In the professional skills line, you will be introduced to the ethical and privacy considerations involved in data science projects and you will learn to analyse projects on these aspects in practice. Theory and practice come together in an extended research assignment. You will work on a data analytics topic where considerations after deployment are also part of the exercise. The process will be supervised by an expert data scientist.</p>

Exit qualifications	<p>The Master's graduates:</p> <p>A. Problem understanding translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner. take into account (business) requirements and assess potential risks. derive relevant data requirements from problem insight.</p> <p>B. Data understanding identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders. apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality.</p> <p>C. Data analytics apply appropriate data science and machine learning algorithms and techniques for complex data analysis. prepare data, including selecting, cleaning, and combining data from various sources. determine algorithms suitable for data analysis and establish the test design. build models and evaluate them by interpreting model results, predefined success criteria, and the test design. decide on follow-up actions based on the evaluation results of the model.</p> <p>D. Deployment advise on the deployment of data analytics solutions, also taking into account ethical and privacy concerns, as well as on their monitoring and maintenance. critically discuss (business and data) consequences for an organization or society by evaluating and assessing the possibilities and use of data analytics solutions.</p> <p>E. Professional skills reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner. build and maintain a network of professionals inside and outside their organisations. are in regular dialogue with relevant stakeholders and communicate their work appropriately. determine objectives, approach, and project plan for a data science project.</p> <p>F. Research skills purposefully apply a range of research and analytics techniques in a systematic and rational way. critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant. read and understand scientific and professional literature and communicate according to professional standards.</p>
Cohesion	In each unit of study, we touch upon all aspects of the data science life cycle, but with a different focus. In this unit, the focus is on model deployment.

Mandatory participation	Participation in group activities, e.g. workshops, project work, presentations and assessments, is mandatory. See Part 2, Chapter 8.
Maximum number of participants	30
Activities and/or instructional formats	<ul style="list-style-type: none"> - Lectures on problem understanding, machine learning, and model deployment - Workshops on research skills, data privacy, data ethics, professional skills - Project on model building & deployment <p>Capita selecta on advanced machine learning methods</p> <ul style="list-style-type: none"> - Self-study
Required literature / description of 'learning material'	<ul style="list-style-type: none"> - Prince, S.J.D (2023). Understanding Deep Learning. The MIT press,ISBN: 9780262048644 - Schwabish, J. (2021). Better data visualizations. ISBN: 9780231193115

Examinations	
Dutch name	Exam Model deployment
English name	Exam Model deployment
OSIRIS code	TOETS-01
Assessment criteria	<p>Examination of knowledge and skills related to:</p> <ul style="list-style-type: none"> - analyse existing data driven solutions from the perspective of the current business (using a project description that includes objectives, success criteria) to explore possible improvements through the deployment of new data analytics solutions. - systematically analyse data requirements for a new data analytics solution - systematically build advanced models and critically evaluates them. - analyse models through a variety of stakeholders (e. g. problem owner, end-users) input and data analytics techniques to critically evaluate how a model performs and evolves after deployment.
Exam and modular exam format(s)	KENN-F
Minimum result	Sufficient (55%)
Exam sittings	P2A, P3A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Written exam

Examinations	
Dutch name	Project proposal
English name	Project proposal
OSIRIS code	TOETS-02
Assessment criteria	<p>The student writes a project proposal on a detailed analysis of the data science problem focusing on the deployment of data analytics solutions, including the following:</p> <ul style="list-style-type: none"> - Results of a critical analysis of an existing data driven solutions from the perspective of the current business to explore possible improvements through the deployment of new data analytics solutions - The value of the proposed solution based on a detailed analysis of the (business or research) problem considering

	<p>relevant requirements (including data requirements), and success criteria</p> <ul style="list-style-type: none"> - Formulations of realistic business objectives and success criteria in coordination with the problem owner - A clear problem statement in the form of a research question in terms of data and solution. - A research approach (methodology) appropriate with respect to research question. - Realistic assumptions of required resources - Valid estimate business and data requirements, cost-benefits, risks and contingences - Critical analysis of privacy and ethics issues - A description of how the research question fits into the literature. - A proposed plan that seems feasible with respect to the duration of the project.
Exam and modular exam format(s)	PROD-O
Minimum result	Sufficient (55%)
Exam sittings	P2A, P3A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"
Components	Written project proposal

GRADUATION PROJECT

General information OWE / course	
Long Dutch name of course	Graduation project
Long English name of course	Graduation project
Short Dutch name of course	Graduation project
Short English name of course	Graduation project
	GRAPRO01
Term	P3A, P4A
Registering for educational activities	Go to Part 3 "Regulations for Education, exams and modular exams OSIRIS" for more information.
Credits	15
Study load in hours	420
Contact hours	20
Final grade	TOETS-01 Report (1/3), TOETS-03 Presentation (2/3)
Course entry requirements	Successfully completed the following units of study: - Data exploration - Predictive modelling - Passing grade on Project proposal from UOS Model Deployment
Content and organisation	
General description	Throughout the Master's program we follow the cycle of CRISP-DM: a standard data science methodology. In this final unit, you work on the full CRISP-DM cycle. Your graduation project is a combined project at your company or within a project in the HAN, where you work on a real-life business problem. You will work on the full data science pipeline, cleaning and preprocessing data, training, evaluating and revising models, deploying your results and communicating to the stakeholders.
Exit qualifications	<p>The Master's graduates:</p> <p>A. Problem understanding translate a (business or research) problem into a data science project by determining objectives and success criteria in collaboration with the problem owner. take into account (business) requirements and assess potential risks. derive relevant data requirements from problem insight.</p> <p>B. Data understanding identify and collect relevant data using domain knowledge or in collaboration with relevant stakeholders. apply methods of data exploration and visualization to identify data properties and relationships between data and to assess data quality.</p> <p>C. Data analytics apply appropriate data science and machine learning algorithms and techniques for complex data analysis. prepare data, including selecting, cleaning, and combining data from various sources. determine algorithms suitable for data analysis and establish the test design.</p>

	<p>build models and evaluate them by interpreting model results, predefined success criteria, and the test design.</p> <p>decide on follow-up actions based on the evaluation results of the model.</p> <p>D. Deployment</p> <p>advise on the deployment of data analytics solutions, also taking into account ethical and privacy concerns, as well as on their monitoring and maintenance.</p> <p>critically discuss (business and data) consequences for an organization or society by evaluating and assessing the possibilities and use of data analytics solutions.</p> <p>E. Professional skills</p> <p>reflect on their own professional identity and develops their knowledge, skills, and attitude in a self-directed manner.</p> <p>build and maintain a network of professionals inside and outside their organisations.</p> <p>are in regular dialogue with relevant stakeholders and communicate their work appropriately.</p> <p>determine objectives, approach, and project plan for a data science project.</p> <p>F. Research skills</p> <p>purposefully apply a range of research and analytics techniques in a systematic and rational way.</p> <p>critically follow new developments in the field of data science, assess their value for their own profession and master them when relevant.</p> <p>read and understand scientific and professional literature and communicate according to professional standards.</p>
Cohesion	In the graduation project you work on all aspects of the data science lifecycle.
Mandatory participation	Regular contact with the company supervisor and HAN supervisor, graduation project defense.
Maximum number of participants	-
Activities and/or instructional formats	- Graduation project
Required literature / description of 'learning material'	

Examinations	
Dutch name	Report / Portfolio
English name	Report / Portfolio
OSIRIS code	TOETS-01
Assessment criteria	<p>The student presents and defends his/her work through products (e.g., a report and a reflection) as part of his/her Master's portfolio. The following dimensions are assessed:</p> <ul style="list-style-type: none"> - The portfolio shows a good balance between background, methods and findings, conclusions and future directions. The products (e.g. a report) are adequate and readable for the target audience. The presentation is adequate and understandable. - The project displayed a relevant approach for the problem and the project is executed according to plan. - The applied solution contributes to the body of knowledge of data science, a specific domain or organization. - Information presented in the portfolio and defence is supported with acceptable arguments (research question is leading). - The research question(s) is a relevant translation from the problem and requirements - The research question is related to the envisioned value of the research given the problem context. - The methodology and its use is generally acceptable for the research question and is supported by arguments and/or literature. - The embedding (references to relevant sources: scientific and otherwise) is acceptable. - References are used for supporting methods and choices. - The embedding highlights the contribution of the proposed solution with respect to the existing body of knowledge. - The student effectively summarizes his/her own most significant findings. - The student indicates the limitations of his/her research and comes to new insights or a conclusion. - The student had own input and ideas. - The student presented his project and findings to a general audience in a clear and appropriate manner. The student was able to answer questions to the point and correctly.
Exam and modular exam format(s)	PROD-F
Minimum result	Sufficient (55%)
Exam sittings	P4A, P5A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"

Examinations	
Dutch name	Reflection
English name	Reflection
OSIRIS code	TOETS-02
Assessment criteria	<p>On the subjects of communication, problem solving skills, planning, vision, and independence, the student:</p> <ul style="list-style-type: none"> - describes an example of the subject in the graduation project and explores and explains what happened. - relates the example to their own actions and explains the motivation behind their actions. - describes a learning takeaway. - critically evaluates their own performance, describing what they did well and what they could have done better using an example, and how this would influence their colleagues, stakeholders, and project success. - relates their critical evaluation to their own strengths and weaknesses on a personal level. - produces a plan on how to avoid pitfalls related to their weakness and how to leverage their strengths in future actions involving the subjects.
Exam and modular exam format(s)	PROD-F
Minimum result	Pass
Exam sittings	P4A, P5A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"

Examinations	
Dutch name	Assessment / Presentation
English name	Assessment / Presentation
OSIRIS code	TOETS-03
Assessment criteria	<p>The student presents and defends his/her work through products (e.g., a report and a reflection) as part of his/her Master's portfolio. The following dimensions are assessed:</p> <ul style="list-style-type: none"> - The portfolio shows a good balance between background, methods and findings, conclusions and future directions. The products (e.g. a report) are adequate and readable for the target audience. The presentation is adequate and understandable. - The project displayed a relevant approach for the problem and the project is executed according to plan. - The applied solution contributes to the body of knowledge of data science, a specific domain or organization.

	<ul style="list-style-type: none"> - Information presented in the portfolio and defence is supported with acceptable arguments (research question is leading). - The research question(s) is a relevant translation from the problem and requirements - The research question is related to the envisioned value of the research given the problem context. - The methodology and its use is generally acceptable for the research question and is supported by arguments and/or literature. - The embedding (references to relevant sources: scientific and otherwise) is acceptable. - References are used for supporting methods and choices. - The embedding highlights the contribution of the proposed solution with respect to the existing body of knowledge. - The student effectively summarizes his/her own most significant findings. - The student indicates the limitations of his/her research and comes to new insights or a conclusion. - The student had own input and ideas. <p>The student presented his project and findings to a general audience in a clear and appropriate manner. The student was able to answer questions to the point and correctly.</p>
Exam and modular exam format(s)	PORT-O
Minimum result	Sufficient (55%)
Exam sittings	P4A, P5A
Registering and deregistering for exam / modular exam opportunities (via OSIRIS)	See, Part 3 "Regulation for Education, exams and modular exams OSIRIS"