

Education and Examination Regulations 2018-2019 (EER)

Maastricht University, Faculty of Science and Engineering, Department of Data Science & Knowledge Engineering

Master programmes Artificial Intelligence and Data Science for Decision Making

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Section 1 General provisions

Article 1.1 Applicability of the regulations

These regulations apply to the education and exams and examinations of each of the two master's programmes Artificial Intelligence and Data Science for Decision Making, each referred to as 'the programme' in the remainder of this document. The programme is offered by the Faculty of Science and Engineering, hereafter called the faculty, at the Department of Data Science & Knowledge Engineering, hereafter to be called the department.

The regulations were adopted by the Faculty Board and the School Board of the School of Information Technology, after advice and consent of the programme committee and after the consent from or in consultation with the faculty council. The regulations will take effect on 1 September 2018 for the 2018-2019 academic year.

These regulations also apply to students from other programmes, faculties or institutions of higher education, insofar as they follow components of the programme to which these Education and Examination Regulations apply.

For components of the programme that students follow at another degree programme, faculty or institution of higher education, the Education and Examination Regulations for the other programme, faculty or institution apply to the component in question.

Article 1.2 Definitions

In these regulations, the following definitions apply:

- a. The Act: the Higher Education and Scientific Research Act (*Wet op het hoger onderwijs en wetenschappelijk onderzoek*);
- b. Student: a person who is registered at the university for education and/or to take exams and the examination of the programme;
- c. Course: a study unit of the programme within the meaning of the Act;
- d. Course year: year 1 or year 2 of the programme;
- e. Academic year: the period from 1 September of a calendar year up to and including 31 August of the following calendar year;
- f. Programme: each of the master's programmes referred to in Article 1.1 of these regulations, consisting of a coherent whole of study units;
- g. Exam: a component of the examination as referred to in Article 7.10 of the Act;
- h. Practical: exercise as referred to in Article 7.13(2)(d) of the Act, in one of the following forms:
 - writing a thesis;
 - carrying out a (group) project;
 - performing a research assignment;
 - developing a software program;
 - writing a paper, creating a technological design or performing another written assignment;
 - participating in field work or a field trip;
 - completing an internship;
 - participating in an activity intended to develop certain skills
- i. Examination: the final examination for the master's programme;
- j. Credit: a unit expressed in ECTS credits, with one credit equalling 28 hours of study;
- k. Board of Examiners: the board referred to in Article 7.12 of the Act;

- l. Board of Admission: the board responsible for judging the admissibility of the candidate to the programme;
- m. Programme Committee: the representation and advisory body that carries out the duties described in Article 9.18 and 9.38c of the Act.
- n. Examiner: the person designated by the Board of Examiners to administer exams and to determine the results of such exams;
- o. Faculty Board: the faculty board referred to in Article 9.12 of the Act;
- p. Semester: part of an academic year, either starting first of September and running for 20 educational weeks, or starting first of February running for 21 educational weeks.
- q. Block: part of a semester during which educational activities take place;
- r. AI: Artificial Intelligence;
- s. DSDM: Data Science for Decision Making;
- t. KE: Data Science & Knowledge Engineering;
- u. DKE: Department of Data Science & Knowledge Engineering;
- v. UM: Maastricht University;
- w. Student handbook: the programme guide which include further details about programme-specific provisions and information.
- x. Non-EU request: A request from either 1) a person that does not hold the nationality of a European Union Country, 2) a person that is not a resident of a European Union country, 3) a person that applies to the program based on a diploma that is not issued by an educational institution from a European Union country.

The other terms have the meaning given to them by the Act.

Section 2 Admission Master Programme

Article 2.1 Admission

Candidates who have obtained either:

- the Bachelor of Science degree in Data Science and Knowledge Engineering at the UM, or
- the Bachelor of Science degree in Computer Science at Hasselt University,
- the Bachelor of Science degree in scientific programming at Aachen University

are eligible for admission to the programme.

Article 2.2 Eligibility for admission

Those students that did not obtain the degree referred to in Article 2.1, but who satisfy the requirements referred to in Article 2.3 and have received a certificate of admission, are eligible for admission to the programme.

Article 2.3 Certificate of admission

The certificate of admission referred to in Article 2.2 will be issued if the candidate concerned satisfies the following admission requirements;

Degree

- A Bachelor of Science degree in Data Science and Knowledge Engineering or an equivalent diploma in a related field to Data Science and Knowledge Engineering.
- Students having a professional Bachelor of Science degree in Data Science and Knowledge Engineering or a related field from a Dutch HBO study or equivalent, and successfully completed a tailored bridging programme as referred to in Article 2.7.

Additional requirements

- Candidates must provide a curriculum vitae and write a motivation essay of 2 pages in A4 format.
- Candidates with a non-EU/EEA diploma should show proof of English proficiency referred to in Article 2.4.
- The Board of Admission can additionally request as proof of analytical writing and quantitative reasoning abilities, a satisfactory Graduate Record Examination (GRE) score. A satisfactory GRE score implies a score of 4 or higher on the analytical writing section and 80% in the quantitative reasoning section (In case of a lower score, the Board of Admission can still decide that a candidate is admissible).

Article 2.4 Language requirement with non-EU/EEA diplomas

Holders of a non-EU/EEA diploma may only register:

- a. if they have met the requirement concerning a sufficient command of English by passing one of the following language proficiency tests before the programme begins:
 - IELTS (international English Language Testing System) with a score of at least 6.5 or
 - TOEFL (Test of English as a Foreign Language) with a score of at least 575 (TOEFL paper), 232 (TOEFL computer) or 90 (TOEFL Internet), or
 - A Cambridge certificate: CAE (Certificate in Advanced English) grade C.
- b. if they have been exempted from the language proficiency test referred to under (a) based on the diplomas referred to in Appendix 3.
- c. if they have received an exemption for one of these tests referred to under (a) from the Board of Admission.

Article 2.5 Board of Admission

1. The Board of Admission for the programmes is responsible for assessing eligibility for admission and issuing the certificate of admission to the programme. The Board of Admission consists of three members appointed from the academic staff responsible for the programme curriculum, under which one chair.
2. The student adviser for the programme concerned is appointed as an adviser, also the Secretary.
3. The Faculty Board appoints the members after consulting with the Programme Committee.

Article 2.6 Admissions test dates

1. The admissions test takes place twice a year.
2. A request for admission to a programme must be submitted to the Board of Admission before 1 May, for a non-EU request, or before 1 July, for an EU request.
3. In special cases, the Board of Admission can take up a request submitted after the closing date referred to in paragraph 2.
4. The Board of Admission decides on the request as soon as possible.
5. The candidate will be admitted subject to the condition that, by the relevant start date for the programme, he/she will have satisfied the requirements stated in Article 2.3 and 2.4 regarding knowledge, understanding and skills, as evidenced by the certificates for the programmes taken by him/her.

Article 2.7 Bridging Programme

1. Students having a professional Bachelor of Science degree in Knowledge Engineering or a related field (e.g., Mathematics, Computer Science or Artificial Intelligence) from a Dutch HBO study or equivalent have the possibility to meet the requirements as referred to in Article 2.3 by successfully completing a tailored bridging programme.
2. The bridging is composed of key courses taken from the second and third year of the Bachelor of Science in Data Science and Knowledge Engineering together worth 30 ECTS and decided upon by the Board of Examiners after advice of the Board of Admissions.
3. The bridging programme must be successfully completed within 12 months. After this term has expired or in case of unsatisfactory participation either in a qualitative or quantitative way, he/she may be debarred from further participation.

Section 3 Content and Structure of the Programme

Article 3.1 Programmes

The master's programme is one of the two following programmes:

1. the Artificial Intelligence programme;
2. the Data Science for Decision Making programme;

Article 3.2a Objectives of the programme Artificial Intelligence

The Master's programme Artificial Intelligence at DKE intends to provide the student with the following learning outcomes:

1. A university education within the framework of Project-Centred Learning (PCL) and the UM teaching philosophy.
2. Added depth to the student's knowledge in the chosen academic field.
3. The opportunity to broaden his/her education into other disciplines.
4. Specialised knowledge, skills and understanding in the field of Artificial Intelligence.
5. A preparation for the research programmes in the field of Artificial Intelligence.

The programme includes sufficient aspects furthering the student's university education, in particular regarding:

- independent academic thinking and conduct;
- academic communication in the English language;
- application of the knowledge gained in the discipline in a broader social context.

Specifically, the Master's programme in Artificial Intelligence provides a thorough knowledge of algorithms, methods, and techniques from the fields of artificial intelligence and data science, such as agent technology, search techniques, machine learning, text & data mining, and computer games to model, analyse and implement intelligent software in a variety of contexts.

Article 3.2b Objectives of the programme Data Science for Decision Making

The Master's programme Data Science for Decision Making at DKE intends to provide the student with the following learning outcomes:

1. A university education within the framework of Project-Centred Learning (PCL) and the UM teaching philosophy.
2. Added depth to the student's knowledge in the chosen academic field.
3. The opportunity to broaden his/her education into other disciplines.
4. Specialised knowledge, skills and understanding in the field of Data Science, Applied Mathematics and Operations Research.
5. A preparation for the researcher programmes in the fields of Data Science, Applied Mathematics and Operations Research.

The programme includes sufficient aspects furthering the student's university education, in particular regarding:

- independent academic thinking and conduct;
- academic communication in the English language;
- application of the knowledge gained in the discipline in a broader social context.

Specifically, the Master's programme in Data Science for Decision Making provides a thorough knowledge of relevant algorithms, methods, and techniques from the fields of Data Science, Applied Mathematics, Operations Research, Artificial Intelligence and Machine Learning to model, analyse, optimise and implement (intelligent) software in a variety of contexts.

Article 3.2c Qualifications of the programme Artificial Intelligence

The qualifications of the programme Artificial Intelligence are as follows:

I. Knowledge and understanding

The student/graduate demonstrates knowledge and understanding in a field of study that builds upon and supersedes the Bachelor degree. Knowledge, understanding, and abilities are typically at a level at which the student/graduate is able to formulate a feasible research plan in one's own specialisation.

Qualifications:

1. Advanced understanding of key areas in Artificial Intelligence, in particular in the subfields of machine learning, agent technology and search techniques.
2. Specialist knowledge of at least one of the key areas in Artificial Intelligence, up to a level that the Master can appreciate the forefront of research in that field.

II. Applying knowledge and understanding

Students/graduates can apply their knowledge and understanding in a manner that shows a scientific approach to their work or vocation. They are able to handle complex and ill-defined problems for which it is not a priori known if there is an appropriate solution, they know how to acquire the necessary information to solve the sub-problems involved, and they know how to proceed with problems for which there is no standard or reliable route to the solution.

Qualifications:

3. The ability to formulate a project plan for an open problem in a field related to Artificial Intelligence in general and to one's own specialisation in particular.
4. The ability to judge the feasibility of a proposal to lead to a solution or design as specified.
5. The ability to contribute autonomously and with minimal supervision to an interdisciplinary project team and to profit from the abilities, the knowledge, and the contributions of other team members.
6. The ability to choose, apply, formulate, and validate models, theories, hypotheses, and ideas from the key areas of Artificial Intelligence.
7. The ability to submit an argument in the exact sciences (or humanities) to critical appraisal and to incorporate its essence in the solution of Artificial Intelligence problems.
8. The ability to translate academic knowledge and expertise into social, professional, economic, and ethical contexts.
9. Awareness of, and responsibility concerning, the ethical, normative and social consequences of developments in science and technology, particularly resulting from original contributions.

III. Making judgements

The student/graduate is able to formulate an opinion or course of action on the basis of incomplete, limited and in part unreliable information.

Qualifications:

10. Competence in the search and critical processing of all sources of information that helps to solve an open and ill-defined problem.
11. The ability to demonstrate a professional attitude conform the (international) scientific conduct in Artificial Intelligence.
12. The ability to provide and receive academic criticism conform the standards in one's own specialism of Artificial Intelligence research.

13. The ability to formulate an opinion and to make judgements that include social and ethical responsibilities related to the application of one's own contributions.
14. The Master is able to judge the quality of his or her work or the work of others from the scientific literature.

IV. Communication

The student/graduate can communicate information, ideas, problems and solutions to audiences of specialists in (other) research areas and to a general audience.

Qualifications:

15. The student/graduate has academically appropriate communicative skills; s/he can:
 1. Communicate original ideas effectively in written form,
 2. Make effective oral presentations, both formally and informally, to a wide range of audiences
 3. Understand and offer constructive critiques of the presentations of others.

V. Learning skills

The student/graduate has developed those learning skills that are necessary for a successful further career at the highest professional level. The Master is able to detect missing knowledge and abilities and to deal with them appropriately.

Qualifications:

16. Being able to reflect upon one's competences and knowledge and, if necessary, being able to take the appropriate corrective action.
17. The ability to follow current (scientific) developments related to the professional environment.
18. Showing an active attitude towards continued learning throughout a professional career.

Article 3.2d Qualifications of the programme Data Science for Decision Making

The qualifications of the programme Data Science for Decision Making are as follows:

I. Knowledge and understanding

The student/graduate demonstrates knowledge and understanding in a field of study that builds upon and supersedes the Bachelor degree. Knowledge, understanding, and abilities are typically at a level at which the Master is able to formulate a feasible research plan in one's own specialization.

Qualifications:

1. Advanced understanding of key areas in Applied Mathematics and Data Science, in particular in the subfields Data Mining, Pattern Recognition, Operations Research, Mathematical Systems and Control Theory, and Intelligent Decision Making.

2. Specialist knowledge of at least one of the key areas in Data Science and Decision Making, up to a level that the Master can appreciate the forefront of research in that field.

II. Applying knowledge and understanding

Students/graduates can apply their knowledge and understanding in a manner that shows a scientific approach to their work or vocation. They are able to handle complex and ill-defined problems for which it is not a priori known if there is an appropriate solution, they know how to acquire the necessary information to solve the sub-problems involved, and they know how to proceed with problems for which there is no standard or reliable route to the solution.

Qualifications:

3. The ability to formulate a project plan for an open problem in a field related to Applied Mathematics (Operations Research, Mathematical Systems Theory, Signal Processing and Data Analysis, Modelling, Optimisation, and Decision Making) in general, and to one's own specialization in particular.
4. The ability to judge the feasibility of a proposal, taking into account the availability of data, to lead to a solution or design as specified.
5. The ability to contribute autonomously and with minimal supervision to an interdisciplinary project team and to profit from the abilities, the knowledge, and the contributions of other team members.
6. The ability to choose, apply, formulate, and validate models, theories, hypotheses, and ideas from the key areas of Applied Mathematics and Operations Research.
7. The ability to transform, analyse and interpret data and to extract information from it, using techniques from Data Science.
8. The ability to submit an argument in the Exact Sciences (or Humanities) to critical appraisal and to incorporate its essence in the solution of problems in Applied Mathematics and Data Science.
9. The ability to translate academic knowledge and expertise into social, professional, economic, and ethical contexts.
10. Awareness of, and responsibility concerning, the ethical, normative and social consequences of developments in science and technology, particularly resulting from original contributions.

III. Making judgements

The student/graduate is able to formulate an opinion or course of action on the basis of incomplete, limited and in part unreliable information.

Qualifications:

11. Competence in the search and critical processing of all sources of information that helps to solve an open and ill-defined problem.
12. The ability to demonstrate a professional attitude conform the (international) scientific conduct in Data Science for Decision Making.
13. The ability to provide and receive academic criticism conform the standards in one's own specialism of Applied Mathematical and Data Science research.

14. The ability to formulate an opinion and to make judgements that include social and ethical responsibilities related to the application of one's own contributions.
15. The Master is able to judge the quality of his or her work, or the work of others from the scientific literature.

IV. Communication

The student/graduate can communicate information, ideas, problems and solutions to audiences of specialists in (other) research areas and to a general audience.

Qualifications:

16. The Master has academically appropriate communicative skills; s/he can:
 - a. Communicate original ideas effectively in written form,
 - b. Make effective oral presentations, both formally and informally, to a wide range of audiences
 - c. Understand and offer constructive critiques of the presentations of others.

V. Learning skills

The student/graduate has developed those learning skills that are necessary for a successful further career at the highest professional level. The Master is able to detect missing knowledge and abilities and to deal with them appropriately.

Qualifications:

17. Being able to reflect upon one's competences and knowledge and, if necessary, being able to take the appropriate corrective action.
18. The ability to follow current (scientific) developments related to the professional environment.
19. Showing an active attitude towards continued learning throughout a professional career.

Article 3.3 Form of the programme

This is a full-time programme. The programme commences twice a year, in September and February of the following calendar year.

Article 3.4 Language of instruction

1. The programme is given in English (accountability for this language of instruction is given in Appendix 5). Components of the programme may be in Dutch or in another common language in the EU.
2. Dutch, English, French and/or German texts may be used in the education and exams in the programme.

Article 3.5 Communications and announcement of decisions

1. The Faculty board, the Board of Examiners, the DKE Management Team and the examiners may use the Student Portal and email via the UM account for communications relating to the education and examinations.

2. The Faculty Board, the Board of Examiners, the DKE Management Team and the examiners may use the Student Portal and email through the UM account to announce decisions.
3. The student must regularly check his/her university e-mail address, the Faculty website and the digital learning environment. Information disseminated via e-mail, the digital learning environment or the website will be assumed to be known.

Article 3.6 Study load

The programme has a study load of 120 credits (ECTS), with one credit equalling 28 hours of study.

Article 3.7 Content of the Programmes

The components of the Artificial Intelligence programme are listed in Appendix 1a. The components of the Data Science for Decision Making programme are listed in Appendix 1b. The student's choice of electives is subject to the Board of Examiners' approval.

Article 3.8 Electives

The first semester of year 2 of the programme contains electives:

1. The student selects one or more components with a total study load equal to 30 ECTS.
2. The components mentioned in Appendix 1, may be chosen as electives.
3. The student may - subject to prior approval by the Board of Examiners of the other programme - choose to take components given by another UM department/faculty, another Dutch university or a foreign university.
4. The Board of Examiners may withhold the approval referred to in paragraph 3. A particular reason for withholding is if, in its judgement, the proposed elective is in terms of content similar to components taken previously by the student and would result in duplication. If components of the electives overlap in whole or in part, the Board of Examiners can decide to limit the contribution of these components towards the overall assessment by deducting of ECTS in proportion to the overlap.
5. To attain the certificate for the examination for the master's programme, the student must have obtained at least 78 ECTS of the educational programme through components provided by DKE.
6. For courses passed at a higher education institute prior to the start of the master's programme, an exemption may only be granted on the basis of Article 5.15.

Article 3.9 Flexible programme and flexible master's

1. A student registered for one of the programmes may, under certain conditions, formulate an educational programme of his/her own which is different from the educational programme stated in Article 3.7. The composition of such a programme must be approved beforehand by the Board of Examiners.
2. The flexible programme must have a study load of 120 credits.

Article 3.10 Honours programme Premium

Article cancelled

Article 3.11 Study Abroad

1. Students can apply to study abroad for a semester, at another University with whom Maastricht University has an Agreement of Exchange.
2. Nomination is decided on by the Board of Examiners based on study progress as mentioned in Article 5.3.1 and motivation of the student.
3. This study abroad will take place in Semester 1 of year 2 and has a study load of 30 ECTS.
4. The selected course programme has to be approved by the Board of Examiners.
5. Further regulations can be found in Appendix 4.

Article 3.12 The examination

The examination for the master's programme Artificial Intelligence consists of the following components:

- a. Course year 1, offered from September 2011 or later:
exams in blocks 1.1, 1.2, 1.4, 1.5, listed in Appendix 1a;
research projects in blocks 1.3 and 1.6.
- b. Course year 2, offered September 2011 or later:
internship, or research project, or electives, with a total of 30 ECTS;
master thesis, with a total of 30 ECTS

The examination for the master's programme Data Science for Decision Making consists of the following components:

- a1. Course year 1, offered September 2011 or later:
exams in blocks 1.1, 1.2, 1.4, 1.5, listed in Appendix 1b;
research projects in blocks 1.3 and 1.6.
- b. Course year 2, started September 2011 or later:
internship, or research project, or electives, with a total of 30 ECTS;
master thesis, with a total of 30 ECTS.

Section 4 Education

Article 4.1 Courses; composition; actual design

1. For the programme components, courses are given with the study load stated in Article 3.6.
2. The education is given in the form of classes, project groups, practical training, lectures, individual supervision, or otherwise. On average, the student has 13 hours of face-to-face time per week, but this can differ per period. For further details, please see the student handbook.
3. The educational programme includes 41 weeks per year. During this period students are expected to be available for educational activities.

Article 4.2 Prior knowledge

The desired prior knowledge to successfully participate in each course is indicated in the student handbook.

Article 4.3 Course registration

The student may participate in a course after he/she has timely registered for it through the Student Portal.

Article 4.4 Attendance and best-efforts obligation

1. Project skill trainings and project meetings are mandatory. In addition, each student is expected to participate actively in doing tasks with respect to the project and to cooperate actively with their group in order to successfully finish the project.
2. Students who have not met the requirements in paragraph 1 and/or students whose absence or inactivity during the project has been marked as inexcusable by the project coordinator and/or students that have a substandard contribution to the group work will not receive a pass for the project concerned.
3. Attendance and participation in other education activities may be part of an exam when announced in the student handbook or student portal and prior approval of the Board of Examiners.

Article 4.5 Participation

The blocks mentioned in Appendix 2 are available to a limited number of students enrolled at UM, provided that the students enrolled in the programme will anyhow be placed in the blocks belonging to the compulsory part of their programme, in compliance with the periods the faculty designated to them. For blocks belonging to the optional parts of the master's programme, most places will be reserved for students enrolled in the programme.

Article 4.6 Practical training

Some courses indicated in Appendix 1 include practical training for which additional regulations apply as specified in the Rules and Regulations.

Section 5 Assessment

Article 5.1 General

1. During a course, the student will be tested for academic training and the extent to which the student has sufficiently achieved the stated learning objectives.
2. The student handbook describes the achievements the students must make to pass the course and the criteria on which the student is assessed. Any amendments are published on student portal.
3. The Rules and Regulations describe the assessment procedure.

Article 5.2 Marks

1. Marks are awarded on a scale of 1 to 10. Whole grades are awarded to exams. Both half and whole grades can be awarded for study components of at least 10 ECTS as well as for projects
2. The student must receive a final mark of 6.0 or higher to pass the component.
3. The highest result attained determines the final mark.
4. NG (no grade) can be assigned as a result of plagiarism or academic dishonesty; or when assessment is incomplete and no grade can be assigned. An NG automatically constitutes a fail and no credit is awarded.

Article 5.3 Order of exams

1. If the student obtained at least 40 ECTS of course year 1, he or she can sit exams of course year 2.
2. If the student has obtained at least 40 credits in course year 1 and at least 60 ECTS overall, he/she may start the master thesis in course year 2.
3. In conformance with article 7.30 paragraph 3 of the Act, the Board of Examiners may grant a student permission to sit other exams than referred to in paragraphs 1 and 2.
4. If a student deviates from the sequence as described in paragraphs 1 and 2, without permission from the Board of Examiners, the result of the component in question can be declared invalid.

Article 5.4 Scheduling and frequency of the exams

1. Students can take exams twice per academic year on dates to be determined by the Board of Examiners: once during or directly after the block (first sit for the exam) and once before the end of the semester in question (resit option).
2. Once a student successfully passes an exam, he/she can resit the exam upon permission from the Board of Examiners.
3. In exceptional cases, the Board of Examiners can decide that an exam may be taken at another time than determined in accordance with the first paragraph.

Article 5.5 Registration for exams

1. The student may take an exam for a course after he/she has timely registered for it through the Student Portal.
2. If a student deviates from the conditions as described in paragraph 1, the result of the component in question will be declared invalid.

Article 5.6 Form of the exams

1. In principle, the exams are written. 'Written exams' also include taking exams by computer.
2. In principle all exams and assignments with the exception of research projects are on an individual basis, unless explicitly announced otherwise.
3. Oral exams can be taken by an examiner only upon approval by the Board of Examiners.
4. The form of the exam is announced by the examiner at the start of the block.
5. Upon request, students with a disability may take exams in a manner which accommodates their specific disability as much as possible. If necessary, the Board of Examiners will obtain expert advice from the faculty's student advisor and/or the student dean at the Student Service Centre (SSC) before taking a decision in such matters.

Article 5.7 Oral exams

1. Oral exams are taken only by one person at a time, unless the Board of Examiners decides otherwise.
2. An oral exam is given by the examiner in the presence of second examiner, unless the Board of Examiners has decided otherwise.
3. Oral exams take place in public, unless the Board of Examiners or the relevant examiner decides otherwise in a special case.

Article 5.8 Assessments in exceptional cases

1. A participant can submit a request to the Board of Examiners for an individual assessment. This request may be granted if the participant has not passed the exam in question due to exceptional circumstances and not granting an individual assessment would result in an unacceptable study delay.
2. The following criteria apply to the granting of an individual assessment for the final component of the programme:
 - It must be the final study result to be obtained.
 - The study delay in case the individual assessment is not granted must be at least one semester.
 - The participant must have taken part in the last two regular exam opportunities for the exam for which he/she is requesting another assessment.

Article 5.9 Practicals and written assignments

1. The Board of Examiners may draw up guidelines for the practicals which include group projects and theses. The guidelines will be included in the Rules and Regulations.
2. The master's thesis project will be evaluated by at least two examiners (the relevant supervisor and a second evaluator), at least two of them are affiliated with the programme for which the student is registered.

Article 5.10 Internships

1. DKE can offer internship vacancies or the student may find a relevant internship and DKE supervisor him/herself. For each internship, an internship proposal must be sent to the Board of Examiners for approval. .
2. The Board of Examiners appoints an examiner for the internship.
3. The student may undertake an internship supervised by DKE at most once during the programme.
4. The Board of Examiners may formulate guidelines for internships. The guidelines will be included in the Rules and Regulations.

Article 5.11 Determination and announcement of exam result

1. The Board of Examiners determines the standards for assessing each examination component. The standards are included in the Rules and Regulations.
2. The examiner determines the result of a written exam within 15 working days of the date on which it was taken and at least 10 working days before the resit, and provides the Student Affairs Office with the necessary information to apprise the student of the result.
3. The examiner determines the result of an oral exam within 24 hours and issues the relevant certificate to the student. If more than one student takes the same exam after each other, this period may be extended by up to five working days.
4. When the result of a written exam is announced, it will be indicated how the student can inspect the exam and file an appeal as referred to in Article 6.6.

Article 5.12 Right of inspection

1. Within 10 working days of the date on which the result of a written exam, including a computer-based exam, is announced, students may inspect their evaluated work.
2. Within the period referred to in paragraph 1, any interested party may, upon request, inspect the questions and assignments for the written exam and, if possible, the standards based on which it was assessed.

Article 5.13 Period of validity

1. Exams which have been passed are valid for an unlimited period. Contrary to the above the Board of Examiners may require the participant to take an additional or replacement exam or examination component for an exam which was passed more than six years ago if the student's knowledge or insight that was examined is demonstrably outdated or the skills that were examined are demonstrably outdated.
2. If exceptional circumstances apply as referred to in Article 7.51 paragraph two of the Act, the period of six years in paragraph one will be extended by the duration of the financial support a student receives from the profiling fund.
3. Sub-tests and assignments that were passed within a component, which was not passed, will lose their validity after the academic year in which they were passed unless the Board of Examiners states otherwise.

Article 5.14 Retention period for exams

1. The exercises, answers and the evaluated work of the written tests will be retained in paper or digital form for two years after the exam/examination result is determined.
2. The master thesis and its evaluation will be kept for at least seven years after the evaluation.

Article 5.15 Exemption

1. The Board of Examiners may, at a student's request and having heard the relevant examiner, grant the student an exemption from taking an exam if he/she demonstrates that he/she previously:
 - i. either passed an exam for a university or higher professional education programme which was similar in terms of content and level or
 - ii. gained sufficient knowledge and skills relevant to the exam concerned, either through work or professional experience.
2. An exemption may only pertain to an entire course and not a part thereof.
3. At most 40 credits for the programme may be earned based on the exemptions granted.
4. The master's thesis is excluded from this exemption option.
5. The Board of Examiners will not grant any exemption based on exams passed by a student outside the programme during the period in which the student was barred by the Board of Examiners from taking exams for the programme because of fraud.
6. The same period of validity applies to exemptions as to exam results.

Article 5.16 Fraud

1. 'Fraud', including 'plagiarism', means actions or omissions by a student which make it impossible in whole or in part to properly evaluate his/her knowledge, understanding and skills. 'Plagiarism' means the presentation of ideas or words

- from one's own or someone else's sources without proper acknowledgment of the sources.
2. If the Board of Examiners determines that a student has engaged in fraud with respect to an exam or a part thereof, the Board of Examiners can take appropriate measures.
 3. In serious cases of fraud, the Board of Examiners can propose to UM's Executive Board that the student(s) concerned be permanently deregistered from the programme.
 4. The Rules and Regulations include further provisions about what constitutes fraud and which disciplinary measures the Board of Examiners can impose.

Article 5.16A Invalid exam

If an exam involves irregularities that make it impossible to accurately assess the candidate's knowledge, insight and skills, the Board of Examiners may declare the exam invalid for both the examinee and a group of examinees.

Article 5.17 Unsuitability (Iudicium Abeundi)

1. In exceptional cases and after careful consideration of the interests involved, the board of examination or the dean/the faculty board may ask the executive board to terminate or, as the case may be, refuse the enrolment of a student in a programme, if that student, through his behaviour or opinions ventured, has demonstrated his unsuitability for the practice of one or more professions for which he is trained by the programme he follows, or, as the case may be, for the practical preparation for the practice of the profession.
2. The relevant clauses of Maastricht University's Enrolment Provisions apply.

Section 6 Examination

Article 6.1 Examination

1. The Board of Examiners determines the result and date of the examination and issues the certificate as referred to in Article 6.3 as soon as the student has satisfied the requirements for the examination programme.
2. Prior to determining the result of the examination, the Board of Examiners may conduct their own investigation of the student's knowledge regarding one or more components or aspects of the programme if and insofar as the results of the relevant exams give reason to do this.
3. To pass the examination, the student must pass all components referred to in Article 3.12.
4. To pass the examination and receive the certificate, the student must also have been registered for the programme during the period that the tests were taken.
5. A certificate may only be issued after it has been shown that the student has satisfied all the obligations, including paying the tuition fees.
6. The last day of the month in which the student satisfied all the examination obligations will be considered the examination date (graduation date).
7. Students who have passed the examination and who are entitled to the issuance of a certificate may, stating reasons, ask the Board of Examiners not to do this yet. This request must be submitted at least one month before the final assignment is turned in or the final test is taken.
The Board of Examiners in any event grants the request

- if the student is selected by the faculty for a double degree, an extracurricular internship or an extracurricular exchange, or
- if the student holds or has held/will hold a board position for which of at least nine months of financial support is awarded from the profilingfund or holds or will hold a Student Introduction Committee (an 'INKOM') board position.

The Board of Examiners may grant the request if refusal would result in an exceptional case of extreme unfairness because of the fact that the student concerned could not have taken the automatic graduation into account when he/she was planning his/her study.

Article 6.2 Degree

Students who have passed the examination will be awarded the degree 'Master of Science in Artificial Intelligence' or 'Master of Science in Data Science for Decision Making'.

Article 6.3 Certificate and statements

1. As proof that the examination was passed, the Board of Examiners issues a certificate, after it has been stated by or on behalf of UM's Executive Board that the procedural requirements for receiving the certificate have been met. The certificate is based on the model that UM's Executive Board has adopted. One certificate will be issued per programme, even if the student completes several programmes.
2. The certificate that the examination has been passed also indicates:
 - a. the name of the institution;
 - b. the name of the programme;
 - c. the examination components;
 - d. (if applicable) the right to practice a specific profession which is related to the certificate;
 - e. the degree awarded;
 - f. the date on which the programme was most recently accredited or was subjected to the new programme test;.
3. Students who are entitled to the issuance of a certificate may, stating reasons, ask the Board of Examiners not to do this yet (pursuant to Article 6.1(7)).
4. The certificate is signed by the chair of the Board of Examiners and the dean of the faculty.
5. The certificate includes a list of the examination components.
6. The board of examiners includes a diploma supplement as referred to in Article 7.11(4) of the Act with the certificate. This diploma supplement is based on the model adopted by UM's Executive Board, which is in compliance with the agreed European standard format.
7. The Board of Examiners may award the 'cum laude' or 'summa cum laude' designation in accordance with the provisions in the Rules and Regulations.
8. Students who have passed more than one exam and who cannot be issued a certificate will upon request, receive a statement issued by the Board of Examiners which at least indicates the exams which they passed.

Article 6.4 Grade point average (GPA)

The diploma supplement referred to in Article 6.3(7) indicates the final grade point average (GPA) as specified in the Rules and Regulations, to provide a reflection of the student's academic performance.

Article 6.5 Right of appeal

Within six weeks after the decision by the examiner and the Board of Examiners is announced, the student may appeal this decision to UM's Complaint Service Point.

The appeal must be signed, must include a date and the name and address of the party lodging the appeal, must indicate the grounds for the appeal and, if possible, must include a copy of the decision being appealed.

Section 7 Study Guidance

Article 7.1 Study progress administration

The faculty records the students' individual study results and makes them available through the Student Portal.

Article 7.2 Study guidance

1. The faculty will provide the introduction and study guidance for students registered for the programme.
2. The study guidance includes
 - i. an introduction during the first week of the first semester of the first academic year;
 - ii. group and individual advice on possible study paths in and outside the programme, partly with a view to the professional options after the master's programme.

Section 8 Transitional and Final Provisions

Article 8.1 Amendments

1. Amendments to these regulations may be adopted in a separate decision by the faculty board, after a recommendation and consent from the programme committee and after consent from or consultation with the faculty council.
2. An amendment in these regulations will not pertain to the current academic year, unless the interests of the students will not reasonably be harmed as a result.
3. In addition, amendments may not affect, to the students' detriment, a decision regarding a student which has been taken by the board of examiners pursuant to these regulations.

Article 8.2 Notice

1. The faculty board ensures that proper notice is given of these regulations, the rules and regulations adopted by the Board of Examiners, and any changes to

these documents, by, for example, placing such notice on the faculty website/ and/or? the Student Portal.

2. Any interested party may obtain a copy of the documents referred to in the first paragraph from the Student Affairs Office.

Article 8.2a Evaluation

The Faculty Board will ensure that the education of the programme is regularly evaluated, assessing at least – for the purpose of monitoring and if necessary adapting the student workload – the amount of time students need to complete their duties as set out therein

Article 8.3 Unforeseen cases/safety net scheme

1. In cases not covered or not clearly covered by these regulations, decisions are taken by or on behalf of the faculty board, after it has consulted with the board of examiners.
2. In individual cases in which application of the Education and Examination Regulations, would lead to manifestly unreasonable results, the board of examiners can deviate from the stated regulations in the student's favour.

Article 8.4 Effective date

This Regulation will come into force on 1 September 2018 and will apply for the academic year 2018/2019.

Adopted by the faculty board on 22 May 2018.

Appendix 1a: Master programme Artificial Intelligence

Year 1	ECTS
Block 1	
Foundations of Agents	6
Intelligent Search & Games	6
Block 2	
Multi-Agent Systems	6
Advanced Concepts in Machine Learning	6
Block 3	
Research project	6
Block 4	
Autonomous Robotic Systems	6
1 of the following 3 electives: <ul style="list-style-type: none"> • Algorithms for Big Data • Building & Mining Knowledge Graphs • Dynamic Game Theory 	6
Block 5	
2 of the following 4 electives: <ul style="list-style-type: none"> • Information Retrieval and Text Mining • Deep Learning** • Planning and Scheduling • Computer Vision 	6 + 6
Block 6	
Research Project	6
Year 2	ECTS
Semester 1 Electives	30
<ul style="list-style-type: none"> • Internship • Study Abroad • Elective courses at other UM MSc programmes (at most 13 ECTS) • Elective courses at DKE (for those started in September)*: <ul style="list-style-type: none"> ○ Block 1: 2 out of the following 4 <ul style="list-style-type: none"> ▪ Data Mining ▪ Signal and Image Processing ▪ Mathematical Optimization ▪ Stochastic Decision Making ○ Block 2: <ul style="list-style-type: none"> ▪ Model Identification and Data Fitting ▪ Applications of Image & Video Processing ○ Block 3: <ul style="list-style-type: none"> ▪ Research Project • Elective courses (for those started in February)*: <ul style="list-style-type: none"> ○ Block 4: 2 out of the following 4 electives <ul style="list-style-type: none"> ▪ Algorithms for Big Data ▪ Building & Mining Knowledge Graphs ▪ Dynamic Game Theory ▪ Information Security 	

<ul style="list-style-type: none"> ○ Block 5: 2 out of the following 5 electives <ul style="list-style-type: none"> ▪ Information Retrieval and Text Mining ▪ Symbolic Computation and Control ▪ Planning and Scheduling ▪ Computer Vision ▪ Deep Learning** ○ Block 6: <ul style="list-style-type: none"> ▪ Research Project 	
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**Passed components can only count for one particular year*

*** To register for Deep Learning, the course Advanced Concepts in Machine Learning has to be passed.*

Semester 2	
Master Thesis	30

Appendix 1b: Master programme Data Science for Decision Making

Year 1	ECTS
Block 1	
Data Mining	6
1 of the following 3 electives <ul style="list-style-type: none"> • Signal and Image Processing • Mathematical Optimization • Stochastic Decision Making 	6
Block 2	
Model Identification and Data Fitting	6
1 of the following 2 electives <ul style="list-style-type: none"> • Advanced Concepts in Machine Learning • Applications of Image & Video Processing 	6
Block 3	
Research project	6
Block 4	
Algorithms for Big Data	6
1 of the following 3 electives: <ul style="list-style-type: none"> • Information Security • Building & Mining Knowledge Graphs • Dynamic Game Theory 	6
Block 5	
Planning and Scheduling	6
1 of the following 4 electives: <ul style="list-style-type: none"> • Symbolic Computation and Control • Information Retrieval and Text Mining • Computer Vision • Deep Learning** 	6
Block 6	
Research project	6
Year 2	ECTS
Semester 1 Electives	
<ul style="list-style-type: none"> • Internship • Study Abroad • Elective courses at other UM MSc programmes (at most 13 ECTS) • Elective courses (for those started in September)*: <ul style="list-style-type: none"> ○ Block 1: 2 out of the following 5 electives <ul style="list-style-type: none"> ▪ Signal and Image Processing ▪ Mathematical Optimization ▪ Stochastic Decision Making ▪ Foundation of Agents ▪ Intelligent Search and Games ○ Block 2: 2 of the following 3 electives 	30

<ul style="list-style-type: none"> ▪ Multi Agent Systems ▪ Advanced Concepts in Machine Learning ▪ Applications of Image & Video Processing ○ Block 3: Research Project • Elective courses (for those started in February)*: <ul style="list-style-type: none"> ○ Block 4: 2 out of the following 4 electives <ul style="list-style-type: none"> ▪ Autonomous Robotic Systems ▪ Building & Mining Knowledge Graphs ▪ Dynamic Game Theory ▪ Information Security ○ Block 5: 2 out of the following 4 electives <ul style="list-style-type: none"> ▪ Symbolic Computation and Control ▪ Information Retrieval and Text Mining ▪ Computer Vision ▪ Deep Learning** ○ Block 6: Research Project 	
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**Passed components only count for one particular year*

*** To register for Deep Learning, the course Advanced Concepts in Machine Learning has to be passed.*

Semester 2	
Master Thesis	30

Appendix 2 Blocks with limited capacity (see Article 4.5)

Block	Faculty	Number of participants	Offered in semester
2.1-2.3	FSE/DKE	t.b.a. – Study Abroad	Semester 1 of year 2
2.1–2.3	FSE/DKE	t.b.a. – Premium	Semester 1 of year 2

Appendix 3 Language requirement with non-EU/EEA diplomas

Persons holding one of the following diplomas are exempted from the language proficiency tests (English) referred to in Article 2.3

- a diploma issued in a country in which English is the official language of communication and instruction (Australia, Canada, New Zealand, or United States).

Appendix 4 Regulations for exchange programmes to study abroad

1. Components attained in connection with an exchange programme adopted by the faculty board may be incorporated into the examination for the programme for which the student is registered.
2. In principle, a student pursuing part of his/her studies in a foreign country does this as part of the DKE's exchange programme at one of its exchange partners.
3. Studies in connection with the exchange programme constitute part of the studies at UM.
4. The certificate may not be issued until the exchange programme has been completed and the results in the foreign country have been incorporated. The

results will be taken into account for classification on the same basis as the results attained in the faculty.

5. In connection with the requirements regarding the level and content of the examination for the programme concerned, several conditions apply to incorporation. The Board of Examiners assesses whether a component may be incorporated into the examination. Incorporation is only possible with the Board of Examiners' permission. The following conditions must be satisfied:
 - a. the component is academic in nature;
 - b. in terms of content, the component does not overlap overlaps with other examination components (Article 3.6 of the Education and Examination Regulations for Bachelor's Programmes);
 - c. the component was attained in connection with an exchange programme, except for the situation described below;
 - d. the student requested written permission for incorporation beforehand, in principle, by submitting a request with appendices to the Student Affairs Office, which forwarded the information to the Board of Examiners;
 - e. the student will submit additional information to the Board of Examiners upon request.

6. Point 2 may be deviated from if the student has good substantive reasons for studying in a foreign country at a university which is not an exchange partner. Whether a foreign university is an exchange partner during the current year may be ascertained in the student handbook. The following procedure applies in such a situation:

The student must timely submit (by letter or e-mail) a written request, stating reasons, to the Study Advisor. In addition to the student's personal and study progress information, the request must include information about the university where the student wishes to study, as well as about the student's substantive reasons for the request. These reasons must relate to the student's own programme.

The request is assessed by the Director of Studies. In this assessment, the level and the available courses of the university concerned are compared to the exchange partners'; the Director of Studies does not provide a judgment about the student's specific choice of subject is not be provided, but only about general questions regarding the level and so forth.

If the judgment about the university (regarding its level or otherwise) is favourable, the Study Advisor will notify the student and the Board of Examiners. The student will then follow the normal exchange programme procedure and will also follow the normal approval procedure with the Board of Examiners for incorporation of subjects.

All cost involved for studying at a non- exchange partner is on behalf of the student.

7. The following rules apply to incorporation by the Board of Examiners of results attained in foreign countries:
 - a) results must be provided to the Board of Examiners through clear, original written notices by the university concerned. In addition to personal information about the student and information about the university, these notices should

preferably include the following information: subject code and name; subject level; subject study load; and exam date and result;

- b) incorporation will only be possible if there has been a sufficient assessment. A mere statement that the subject was 'taken' or words to that effect will not be enough.
 - c) A result which constitutes a pass in the country concerned will also be considered a pass here, and a fail in a foreign country will also be considered a fail here;
 - d) the study load conferred by the foreign university will be followed here without adjustment. If, for example, 5 ECTS are conferred by the university concerned for the subject, the subject will also count for 5 ECTS at the faculty, regardless of how difficult or easy the subject was for the student.
 - e) if the study load in the foreign country is not expressed in ECTS units but in other units, the Board of Examiners will convert the study load into ECTS units. The conversion will be based on the study load for a full year of study or a full programme in relation to a study load of 60 ECTS for a year at UM or 180 ECTS for a three-year bachelor's programme.
8. Study delay caused by the study abroad is the responsibility of the student.
 9. Insofar as the Education and Examination Regulations and this appendix do not address matters relating to incorporation of components attained elsewhere, the Board of Examiners will decide on the matter.

Appendix 5 Accountability for the language of instruction

The choice for the language of instruction of the programme is in line with the UM Code of Conduct on language in accordance with the Dutch Higher Education and Research Act (WHW) art. 7.2.

Because of the specific educational nature and profile of the programme, teaching and examinations are conducted in English. This guarantees the quality of education, because:

- The content of the programme has an international orientation and focus. Language of main course materials (handbooks, papers, tools) discussing or supporting the latest advances in AI or Data Science are in English.
- The academic community is internationally oriented and the staff is international. Project-Centred Learning implements the international classroom concept which requires a common international language. Students participate in international collaboration by exchange programmes to study abroad, or conduct their internship and thesis at companies / institutes where English is the lingua franca.
- The labour market demand is internationally oriented (English speaking). Alumni typically end up in jobs at companies / institutes where English is the main language.
- The student intake and current population is internationally diverse and English is the common language. (26% Dutch; 74% non-Dutch in 2017-2018).