Assessment plan for the curriculum of the Master's degree programme in Computing Science, 2026-2027

Programme director: Vasilios Andrikopoulos

Date advice Board of Examiners: May 4, 2026

Submission date to Faculty Board:

1. Vision on assessment

1. to enable students to independently show academic skills in a professional context (why), assessment will include activities that require individual and collaborative performance, which each have a substantial contribution to the final grade (what)
2. to equip students with the scientific skills essential for contributing to one of the research themes on which the associated research groups are working (why), authentic assessment will be implemented where possible (what)
3. to prepare students for a career in research or design at academia or in an (internationally operating) company (why), assessment is designed to test students independent ability to design and evaluate new computer systems and software in an international and pluricultural context (what)

2. Assessment guidelines

1. Every course has at least one mandatory summative element onsite.
2. The formative and summative assessments are designed by the course coordinator in such a way that all intended learning outcomes of the course are covered.
3. Summative assessments are designed by the course coordinator and are peer reviewed by the second examiner in order to ensure that the course learning outcomes are representatively and sufficiently assessed.
4. Assessment in the form of an oral exam or project presentation is always carried out in the presence of at least 2 examiners (or an examiner and at least one additional expert in the corresponding discipline) or the session is recorded and kept archived for at least two years.
5. All practical work of students should establish a quick (e.g., weekly) feedback loop via formative or summative assessment.
6. Practical work of students should also assess their teamwork and collaboration skills where applicable.
7. Automated testing should be used to increase the amount of formative assessment whenever possible.
8. Courses that have graded elements such as assignments that are affected by the use of Generative AI models should incorporate the adoption of these models in the design of the assignments and/or in the ILOs for the course; in any case, the grading of these elements has to be in compliance with the rules and regulations on the topic as defined by the BoE.
9. The use of Generative AI by examiners is at all times in compliance with the policies on the matter defined by the University and Faculty.

3. Learning outcomes of the degree programme

	Learning Outcome (General) *At the end of the programme, the graduate …*
G1	Is fully acquainted with the basic terms and techniques used in Computing Science, and is familiar with a number of classical problems and their solutions;
G2	Is experienced in the effective use of the tools available in solving Computing Science problems, such as compilers, theorem provers, visualisation software, case-tools and domain specific software and hardware;
G3	Is familiar with Computing Science applications in several other scientific fields of study;
G4	Is capable of clear communication (both oral and in writing) on the subject of Computing Science and its applications;
G5	Is capable of working in a team and in various projects;
G6	Is sensitive to the social aspects of Computing Science applications and their own responsibilities therein;
G7	Has specialized knowledge of theories, methods and techniques in one of the following subfields of Computing Science: a. Machine Learning and Visual Computing b. Software Engineering and Distributed Systems c. AI Engineering d. Science, Business & Policy;
G8	Is able, by using scientific data and assessments, to analyse problems in Computing Science or a related scientific field of study, to provide specified solutions to the problem, and – if possible – to materialise these solutions (in the shape of an algorithm or program or an implementation in software or hardware);

G9	Is able to critically read professional literature and to assess its correctness, usability and relevance;
G10	Is able to contribute to the enhancement of scientific understanding in a subfield of Computing Science;
G11	Has a proper understanding of the scientific relevance of problem definitions and results, and of the validity of the scientific method used.
G12	Has the ability to design and implement software, integrating and reusing existing components where necessary, into a solution or system that meets quality criteria agreed upon with interested parties.

	Learning Outcome (Science, Business & Policy) *At the end of the programme, the graduate ...*
M1	Has a full understanding of the way in which businesses and policy organisations are functioning (governments and nongovernmental organisations, NGO's);
M2	Understands the connections between natural science research, trade and industry and governmental policies;
M3	Is able to integrate aspects of natural science, business and management;
M4	Is able to translate a concrete problem definition in business or management into a natural science problem definition;
M5	Is able to connect problem aspects of natural sciences to other relevant subject fields;
M6	Is able to put research data and conclusions into a business or policy context;
M7	Has developed their social and communicative skills;
M8	Is able to write texts that are effective and to the point;
M9	Is able to draw up an innovation plan or management plan for either a business or a government organisation;
M10	Is able to give convincing oral presentation;
M11	Is able to deliver an active contribution to plenary discussions;
M12	Familiar with techniques used in business meetings and is capable of chairing a meeting;
M13	Is able to work on a project as part of a team;
M14	Is able to give and receive feedback concerning their way of functioning in a team;
M15	Can work in a project;
M16	Is able to fully consider the interests or objectives of the ordering customer;
M17	Is able to plan a project independently;
M18	Is able to cooperate with the relevant parties involved in the project;
M19	Is able to adequately deal with limitations in time, information and means;
M20	Is able to prepare the implementation of a project result;
M21	Is capable of taking professional responsibility;
M22	Is able to take responsibility on behalf of the organisation;
M23	Is able to recognize the strategic aspects of their own project;
M24	Is able to provide practical solutions in matters concerning the ethical and professional codes of their own field of expertise and of the professional organisation.

4. Overview of assessment methods, test moments for course units, and examiners

This table shows all the course units for each year of the programme and assessment methods.

Period	Course	Code	EC	Assessment methods	Does (part of the) assessment have a formative function?	Test moment(s) Multiple answers may apply	First examiner	Second examiner
1A	Models and Semantics of Computation	WMCS026-05	5	R, P, AST	Yes	Start, halfway, end	Perez	Frumin
1A	Cloud Computing and Cloud-based Applications	WMCS032-05	5	WE, PR	No	End	Andrikopoulos	Lazovik
1A	Software Architecture	WMCS004-05	5	P, PR, R	Yes	Halfway, end	Avgeriou	Feitosa
1A	Data Privacy	WMCS052-05	5	WE, AST	No	Start, halfway, end	Turkmen	Mohsen
1A	Network Security Analytics	WMCS036-05	5	R, P, AST	Yes	Halfway, end	Mohsen	Turkmen
1A	Introduction to Data Science	WMCS002-05	5	WE, AST	Yes	Halfway, end	Dustegor	Bunte
1A	Social Network Analysis	WMCS028-05	5	R, P	Yes	End	Riveni	Azzopardi
1A	Modelling and Simulation	WMCS003-05	5	WE, R	Yes	End	Wilkinson	Biehl
1B	Scientific Visualization	WMCS018-05	5	WE, AST, R	No	End	Frey	Kosinka
1A	Robotic State Estimation	WMCS040-05	5	WE, AST	No	Halfway, end	Li (Kailai)	Guo
1A	Performance Engineering	WMCS045-05	5	WE, AST, R	Yes	End	Pleiter	Lazovik
1A	Embedded Systems	WMCS050-05	5	WE, AST, PR	Yes	Halfway, end	Zare Hassanpour	Pleiter
1B	Kernel Engineering and Security	WMCS051-05	5	OR, AST	Yes	Halfway, end	Westerman	Pleiter
1B	Modal Logic and Proof Theory	WMCS027-05	5	AST, WE	Yes	Halfway, end	Hansen	Ramanayake
1B	Software Maintenance and Evolution	WMCS013-05	5	AST, R	No	Halfway, end	Capiluppi	Rastogi
1B	Evidence-Based Software Engineering	WMCS024-05	5	P, PR, R	Yes	Halfway, end	Avgeriou	Rastogi
1B	Enterprise Application Integration	WMCS007-05	5	P, AST	Yes	Halfway, end	Riveni	Karastoyanova
1B	Information Systems	WMCS009-05	5	PR	No	End	Karastoyanova	Riveni
1B	Ethical Hacking	WMCS030-05	5	R, PR, WE	Yes	Halfway, end	Mohsen	Turkmen
1B	Pattern Recognition for CS	WMCS011-05	5	WE, AST	No	Start, halfway, end	Guo	Biehl
1B	Neural Networks and Computational Intelligence	WMCS010-05	5	WE, R	No	End	Biehl	Guo
1B	Advanced Computer Graphics	WMCS006-05	5	PR, AST, P	Yes	End	Kosinka	Frey
1B	Machine Learning Systems Deployment and Operations	WMCS039-05	5	P, AST	Yes	Start, halfway, end	Feitosa	Dustegor
1B	Intelligent Mobile Perception in Practice	WMCS042-05	5	R, P	No	Halfway, end	Li (Kailai)	Guo
1B	Hardware Security	WMCS043-05	5	R, P	No	End	Merchant	Turkmen
1B	Multi-scale and Advanced Image Analysis	WMCS047-05	5	WE, R	Yes	End	Wilkinson	Babai
1B	Data Challenges in AI Systems	WMCS048-05	5	WE, R, P, AST	Yes	Halfway, end	Dustegor	Feitosa
2A	Student Colloquium	WMCS019-05	5	P, AST	Yes	Halfway, end	Frumin	[supervising lecturers]

Period	Course	Code	EC	Assessment methods	Does (part of the) assessment have a formative function?	Test moment(s) Multiple answers may apply	First examiner	Second examiner
2A-2B	Master Thesis	WMCS901-30	30	R, P, PR	Yes	Start, halfway, end	[supervising lecturers]	[supervising lecturers]
2A	Software Analytics	WMCS031-05	5	M, AST, R, P	Yes	Start, halfway, end	Rastogi	Avgeriou
2A	Advanced Software Architecture	WMCS025-05	5	R, AST	No	End	Stal	Avgeriou
2A	Scalable Computing	WMCS017-05	5	WE, P, R	No	End	Lazovik	Andrikopoulos
2A	Software and System Security	WMCS034-05	5	WE, AST	No	Start, halfway, end	Turkmen	Mohsen
2A	Theory of Machine Learning	WMCS038-05	5	WE, AST	No	Halfway, end	Bunte	Azzopardi
2A	Multimodal Mobile Sensing	WMCS041-05	5	WE, AST	No	Halfway, end	Li (Kailai)	Guo
2A	Computer Vision	WMCS015-05	5	WE, AST, P	No	Halfway, end	Azzopardi	Wilkinson
2A	Algorithms for Computationally Challenging Problems	WMCS049-05	5	WE, AST	Yes	Start, halfway, end	Bliznets	Frumin
2A	Emerging Computer Architectures	WMCS046-05	5	WE, AST	Yes	Halfway, end	D. Pleiter	Merchant
2B	In-Company or Research Internship	WMCS021-15	15	R, P	Yes	End	[supervising lecturers]	[supervising lecturers]

The abbreviations for the relevant teaching methods are explained in the legend of the table.
Examples of assessment methods include:
Written Exam (WE)
Multiple Choice (MC)
Oral Exam (OR)
Report (R)
Presentation (P)
Practical Work (PR)
Assignment (AST)
Midterm (M)

The assessment method defines the test moments; practical work, assignments are continuous. The rest are final and in some cases halfway.

5. Relationship between course units and details of the learning outcomes

An X means that the learning outcome is explicitly assessed (not merely addressed) in the course.

		Learning outcomes of the degree programme													
		G	G	G	G	G	G	MLVC	SEDS	AI Eng	G	G	G	G	G
		1	2	3	4	5	6	7	7	7	8	9	10	11	12
Period	**Course**	**Year 1 compulsory courses**													
2A	Student Colloquium				X	X	X	X	X	X	X	X	X	X	
2B	Research or In-company Internship	X	X		X	X	X	X	X	X	X		X	X	X
Period	**Course**	**Year 2 compulsory courses**													
2A-2B	Master Thesis	X	X		X			X	X	X	X	X	X	X	X
Period	**Course**	**Elective courses**													
1A	Models and Semantics of Computation	X	X		X				X		X	X		X	X
1A	Cloud Computing and Cloud-based Applications	X	X			X		X	X	X	X			X	X
1A	Software Architecture	X	X		X	X			X		X	X	X	X	X
1A	Data Privacy		X	X	X	X	X		X	X	X	X		X	
1A	Network Security Analytics	X	X			X			X		X			X	
1A	Introduction to Data Science	X		X	X	X	X	X	X	X	X			X	
1A	Social Network Analysis	X				X	X	X	X	X		X		X	
1A	Modelling and Simulation			X	X	X	X	X		X	X	X	X	X	
1B	Scientific Visualization	X	X	X		X		X	X	X	X	X		X	X
1A	Robotic State Estimation	X		X	X			X		X	X	X	X	X	X
1A	Performance Engineering	X	X	X		X			X	X	X			X	
1A	Embedded Systems		X	X		X			X	X				X	X
1B	Kernel Engineering and Security	X	X			X			X			X		X	X
1B	Modal Logic and Proof Theory	X							X				X	X	
1B	Software Maintenance and Evolution	X	X			X	X		X		X			X	X
1B	Evidence-Based Software Engineering				X	X			X		X	X	X	X	
1B	Enterprise Application Integration	X	X			X			X	X	X			X	X
1B	Information Systems	X			X	X			X		X	X	X	X	
1B	Ethical Hacking	X	X	X	X	X	X		X	X	X	X	X	X	
1B	Pattern Recognition for CS	X	X	X		X	X	X		X	X	X	X	X	X
1B	Neural Networks and Computational Intelligence	X	X	X	X	X	X	X		X	X			X	
1B	Advanced Computer Graphics	X	X	X	X	X		X			X	X		X	
1B	Intelligent Mobile Perception in Practice	X	X	X	X	X	X	X		X	X	X	X	X	
1B	Machine Learning Systems Deployment and Operations	X	X			X			X	X	X				

		Learning outcomes of the degree programme													
1B	Multi-scale and Advanced Image Analysis		X	X		X		X		X	X			X	X
1B	Data Challenges in AI Systems	X	X	X	X	X	X	X	X	X	X	X		X	
1B	Hardware Security		X		X				X	X	X	X			
2A	Software Analytics	X			X	X	X		X		X	X		X	X
2A	Advanced Software Architecture				X	X	X		X		X	X	X	X	X
2A	Scalable Computing	X	X			X		X	X	X	X			X	X
2A	Software and System Security	X	X		X	X			X		X			X	X
2A	Theory of Machine Learning	X	X		X	X	X	X			X			X	
2A	Multimodal Mobile Sensing	X	X	X	X	X		X		X	X	X	X	X	X
2A	Computer Vision	X	X	X		X		X		X	X			X	
2A	Algorithms for Computationally Challenging Problems	X							X		X	X	X	X	
2A	Emerging Computer Architectures		X	X		X			X	X		X	X		X

The relation between study components and the learning outcomes in the subfield of Science, Business & Policy (learning outcomes M1-M24) can be found in the assessment plan of the SBP track

6. List of Examiners for the Master Computing Science 2026-2027

Name	Examiner ISP	Course examiner
V. Andrikopoulos	X	X
P. Avgeriou	X	X
G. Azzopardi	X	X
M. Babai	X	X
M. Biehl	X	X
I. Bliznets	X	X
K. Bunte	X	X
A. Capiluppi	X	X
D. Düstegör	X	X
D. Feitosa	X	X
S.D. Frey	X	X
D. Frumin	X	X
J. Guo	X	X
H.H. Hansen	X	X
D. Karastoyanova	X	X
C. Kehl	X	X
J. Kosinka	X	X
A. Lazovik	X	X
K. Li	X	X

Name	Examiner ISP	Course examiner
A. Meijster	X	X
F.A. Merchant	X	X
F.F.M. Mohsen	X	X
R.B. Otoni	X	X
S.K. Pandey	X	X
J.A. Perez Parra	X	X
D.H. Pleiter	X	X
D.R.S. Ramanayake	X	X
A. Rastogi	X	X
M. Riveni	X	X
M. Stal	X	X
prof. dr. T. van der Storm	X	
F. Turkmen	X	X
M.H.F. Wilkinson	X	X
B. Setz	X	
H. Groefsema	X	X
R. Zare Hassanpour	X	X
F.P. Westerman		X
N. Petkov	X	
G.R. Renardel de Lavalette	X	

ISP: Individually supervised projects, such as thesis projects and internships: PhD students and Postdocs cannot serve as first or second examiner.