BSc Informatica
University of Amsterdam

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Project code P2409

Contents

Summary

Standard 1. Intended learning outcomes

The panel appreciates the clear and well-founded vision of the programme. It is satisfied with the formulation of the intended learning outcomes, which are appropriate in level and orientation, aligned with national and international standards, and responsive to the expectations of the professional field. Moving forward, the panel sees an opportunity for the programme in updating the ILOs to reflect developments in GenAI.

Standard 2. Teaching-learning environment

The panel values the well-organized and coherent teaching-learning environment, and the structured curriculum which facilitates the achievement of the intended learning outcomes. The curriculum's foundation on six comprehensive learning lines effectively balances theoretical and applied computer science, and offers students a strong base while allowing clear pathways for specialization through electives. The recently introduced course Turning Points in Informatics is seen as a valuable addition by providing students with a broad perspective on the evolution of the field. The block system strategically enables students to focus on complementary courses such as programming and mathematics simultaneously, and the balance of foundational knowledge and practical creativity is seen by the panel as a significant strength of the programme. Moving forward, the panel recommends to continuously invest in updating the curriculum and incorporating emerging technologies and industry trends, and to expand curriculum coverage of ethical and societal aspects.

The panel commends the programme's clear and realistic admission requirements, ensuring students enter the programme well-prepared. Student guidance and supervision are robust, with proactive measures such as early trajectory monitoring and tailored accommodations for additional support needs underscoring the programme's commitment to accessibility and creating a supportive learning environment. The highly motivated and qualified teaching staff in the programme is a key strength to sustain. They foster a culture of educational improvement and didactic innovation. While the student-to-staff ratio is somewhat high, potentially limiting personalized attention, the programme maintains a strong support system that students find demanding yet manageable.

Standard 3. Student assessment

The panel values the programme's assessment system for being robust and multifaceted, emphasizing validity, reliability, and transparency. The bachelor thesis assessment is detailed and constructive. The programme's proactive stance toward the challenges posed by generative AI underscores its commitment to maintaining academic standards and assessment integrity in a changing educational landscape. The panel recommends continuous attention for clear and uniform procedures to address the use of GenAI, and to maintain a systematic record of all suspicious cases. It pleases the panel to see that the Examination Committee is proactively reviewing all course assessment plans, and that support for the Committee has improved.

Standard 4. Achieved learning outcomes

The panel is content to see that the students achieve the intended learning outcomes of the programme. This is evidenced by the quality of the theses and the successful performance of graduates in both professional practice and graduate education. The positive feedback from the professional field underscores the programme's success in aligning its learning outcomes with the expectations of the discipline and the job market. The continued engagement of many alumni speaks strongly to the quality of the programme.

Score table

The panel assesses the programme as follows:

B Informatica

Standard 1: Intended learning outcomes	meets the standard
Standard 2: Teaching-learning environment	meets the standard
Standard 3: Student assessment	meets the standard
Standard 4: Achieved learning outcomes	meets the standard
General conclusion	positive

The assessment panel has reviewed the report and agrees with its contents. On behalf of the panel,

Prof. dr. ir. Bart Preneel,	Dr. Rik Ligthart,
Panel chair	Secretary

Date: 16 March 2026

Introduction

Procedure

Assessment

On 26 and 27 November 2025, the bachelor's programme Informatica of the University of Amsterdam (UvA) was assessed by an independent peer review panel as part of the cluster assessment WO Informatica groep 3. The assessment cluster consisted of 25 programmes, offered by the Open Universiteit, Leiden University, the University of Groningen, Utrecht University, Radboud University, Eindhoven University of Technology, Delft University of Technology, Vrije Universiteit Amsterdam, the University of Amsterdam, and the University of Twente. The assessment followed the procedure and standards of the NVAO Assessment Framework for the Higher Education Accreditation System of the Netherlands (April 2024).

Quality assurance agency Academion coordinated the assessment upon request of the cluster WO Informatica groep 3. Peter Hildering and Yannick Slagter acted as coordinator in the cluster assessment. Rik Ligthart acted as secretary for the assessment of the programmes of the University of Amsterdam. They have been certified and registered by the NVAO.

Panel composition

Academion composed the peer review panel in cooperation with the institutions and taking into account the expertise and independence of the members. In order to strengthen the mutual consistency between the assessment panels within the cluster, the coordinator from Academion ensured joint instruction for the panel members and a comparable assessment method for all site visits. This consistency was also a point of attention at all concluding panel meetings during the site visits. Finally, overlap in assessment panels of the various site visits in the cluster further strengthened the consistency. The composition of the panels was designed in such a way that at least three panel members also participated in another assessment panel in the cluster. On 30 April 2025, the NVAO approved the composition of the panel. The coordinator instructed the panel chairs on their role in the site visit according to the Panel chair profile (NVAO 2016) on 9 December 2024.

Preparation

The programme composed a site visit schedule in consultation with the coordinator (see appendix 3). The programme selected representative partners for the various interviews. It was also determined that the development dialogue would be made part of the site visit. A separate development report was made based on this dialogue.

The programme provided the coordinator with a list of graduates over the period 2023-2024. In consultation with the coordinator, the panel chair selected 15 theses. They took the diversity of final grades and examiners into account. Prior to the site visit, the programme provided the panel with the theses and the accompanying assessment forms. It also provided the panel with the information file and additional materials (see appendix 4).

The panel members studied the information and sent their findings to the secretary. The secretary collected the panel's questions and remarks in a document and shared this with the panel members. In a preliminary meeting, the panel discussed the initial findings on the self-evaluation report and the theses, as well as the division of tasks during the site visit. The panel was also informed on the assessment framework, the working method and the planning of the site visits and reports.

Site visit

During the site visit, the panel interviewed various programme representatives (see appendix 3). The panel also offered students and staff members an opportunity for confidential discussion during a consultation hour. No consultation was requested. The panel used the final part of the site visit to discuss its findings in an internal meeting. Afterwards, the panel chair publicly presented the preliminary findings, general observations of the panel and suggestions for development themes.

Report

The secretary wrote a draft report based on the panel's findings and submitted it to the coordinator for peer assessment. Subsequently, the secretary sent the report to the panel for feedback. After processing this feedback, the secretary sent the draft report to the programme in order to have it checked for factual irregularities. The secretary discussed the ensuing comments with the panel chair and changes were implemented accordingly. The panel then finalized the report, and the coordinator sent it to the University of Amsterdam.

Panel

The panel assessing the B Informatica at UvA consisted of the following members:

- Prof. dr. ir. B. (Bart) Preneel, Full Professor Computer Security and Industrial Cryptography at the Faculty of Engineering, KU Leuven [Chair];
- Prof. dr. M. (Marieke) Huisman, Professor Software Reliability at the Faculty of Electrical Engineering, Mathematics and Computational Sciences at the University of Twente);
- Prof. dr. F. (Fabiano) Dalpiaz, Professor Software Production at the Faculty of Beta Sciences, Utrecht University;
- Em. prof. dr. B. (Bastien) Chopard, Emeritus professor (since 2025) at the Computer Science Department of the University of Geneva;
- I. (Imane) el Caïdi BSc, Master student Computer Science (track Algorithm Design and Analysis & Operations Research at Utrecht University [Student member].

Each panel member, the panel secretary and the programmes have filled out the Statement of Impartiality and non-disclosure agreement, as required by the NVAO. They can confirm that the assessment was carried out in complete independence.

Information on the programme

Name of the institution:	University of Amsterdam
Address:	Nieuwe Achtergracht 166, 1018 WS, Amsterdam
Website:	www.uva.nl
BRIN-number:	21PK
Status of the institution:	Publicly funded institution
Result institutional quality assurance assessment:	Positive
Programme name:	Informatica
ISAT number:	56978
Orientation of the programme:	Academic
Level of the programme:	Bachelor (NLQF 6)
Number of credits:	180 EC

Language of instruction:	Dutch
Professional requirements:	No
Location:	Science Park, Amsterdam
Mode(s) of study:	Fulltime
Assessment group:	Informatica groep 3
Awarded degree:	BSc
Submission date NVAO:	1 May 2026

Description of the assessment

Organization

The bachelor's programme Informatica (BI) is offered at the University of Amsterdam, a publicly funded institution located in Amsterdam. The university provides education in computer science, social sciences, humanities, communication and media studies, psychology, law, and economics. UvA hosts a diverse population of over 40,000 students, including a high proportion of international students. Many bachelor's programmes are taught in Dutch, while most master's programmes are delivered in English.

The BI programme aims to provide students with a solid theoretical foundation in computer science to understand computing systems from microchips to large-scale networks. It is part of the Faculty of Science (FNWI) and is situated within the College of Informatics, which also houses the bachelor's programmes in Information Science and Artificial Intelligence. The College is based in the Lab42 building, which connects students with a vibrant informatics ecosystem in Amsterdam and which emphasizes research-based teaching aligned with the expertise of the Informatics Institute and the Institute for Logic, Language and Computation.

Recommendations previous panel

The previous accreditation panel issued several recommendations for the programme. The panel recommended the programme, among others, to attract more female students, to better embed research-intensive education, and to improve thesis assessment quality by requiring independent second reader evaluations. The panel finds that these advices have been considered carefully, leading to further improvement of the programmes. See, for further discussion, the respective sections in the report on these topics.

Standard 1. Intended learning outcomes

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

Findings

Vision and intended learning outcomes

The vision of the BI programme is to establish and sustain a high-quality computer science curriculum that responds to the evolving demands of research, innovation, and the skills required by both the job market and society. The vision emphasizes a robust theoretical foundation in computing theories, technologies, and systems, in combination with practical skills for analyzing and solving complex computing problems and evaluating system performance. The programme integrates research-based education through the involvement of teaching staff from the Informatics Institute and the Institute for Logic, Language and Computation. Emerging technologies, such as Generative Artificial Intelligence (GenAI), gain continuous attention from the programme, in order to remain aligned with technological advancements. The programme aims to equip students with the ability to critically assess the social significance and ethical aspects of computer science and to engage in lifelong learning and professional development. It prepares students for research careers and professional roles in software development and business services.

The intended learning outcomes (ILOs) of the programme (see appendix 1) are formulated using the Dublin descriptors and are mapped to the Dutch Qualifications Framework (NLQF). The ILOs include knowledge and

insight into core computer science concepts and methods, problem-solving skills, learning and development capabilities, information skills, communication skills, and professional responsibility and independence. The ILOs are aligned with the Computer Science Curricula endorsed by internationally recognized bodies such as ACM, IEEE-CS, and AAAI. The programme maintains close ties with the industry to ensure relevance and responsiveness to labor market demands. This connection is facilitated through a professional advisory board, which includes senior industry representatives, often alumni of the programme, who provide input on professional field and industry demands. In addition, the programme collects alumni feedback to inform curriculum development and meet industry requirements.

Based on the documentation and discussions during the site visit, the panel finds that the BI programme has a clear and well-defined profile and that the programme effectively balances research and application. It distinguishes itself by placing more emphasis on mathematics and theoretical foundations compared to other bachelor programmes in computer science, while simultaneously maintaining attention to practical aspects such as software engineering. The panel notes that the ILOs are well defined, aligned with the general objectives of the BI programme, and consistent with the level and orientation expected from a bachelor programme according to the Dutch Qualifications Framework and international standards.

The panel notes that while the programme recognizes the importance of emerging topics such as the impact of GenAI, this area has not yet been fully integrated into the learning outcomes. Therefore, the panel recommends updating the ILOs in view of GenAI developments. This will ensure that the curriculum remains relevant and prepares students for emerging industry demands. The panel believes that, with the expertise of the teaching staff, the programme could be a university frontrunner in shaping the future of computer science education in the light of GenAI.

The panel finds that there is evident awareness of the professional context, and that the programme is in sync with industry demands. The professional advisory board currently functions with involvement from a limited diverse range of industry partners. The panel suggests the programme to broaden the advisory board's membership to include a wider variety of industry partners across the full domain of computer science. Additionally, mechanisms could be established to enhance the frequency and quality of information exchange between the advisory board and teaching staff, in order to make sure that all involved in the programme remain closely aligned with professional and industry developments.

Considerations

The panel appreciates the clear and well-founded vision of the programme. It is satisfied with the formulation of the intended learning outcomes, which are appropriate in level and orientation, aligned with national and international standards, and responsive to the expectations of the professional field. Moving forward, the panel sees an opportunity for the programme in updating the ILOs to reflect developments in GenAI.

Conclusion

The panel concludes that the programme meets standard 1.

Standard 2. Teaching-learning environment

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

Findings

Curriculum

The programme is a full-time, three-year curriculum totaling 180 EC. It consists of 22 mandatory courses (mostly 6 EC each), five elective courses of 6 EC which allow students to deepen or broaden their knowledge, and an 18 EC graduation project. The curriculum balances theory and practical skills across six thematic learning trajectories: Computer Systems, Software Systems, Data and Information Systems, Model Based Systems, Mathematics and Computer Science Theory, and Academic Skills. The programme continuously refines these trajectories to maintain alignment with course objectives and emerging topics such as GenAI and security. The curriculum structure offers a mix of eight-week and four-week courses, with the latter often focusing on project-based learning that encourages collaboration and application of theoretical knowledge.

In the first year, students take foundational courses, including Introduction to Programming, Computer Architecture and Organisation, and Discrete Mathematics and Logic. These courses establish core competencies in programming, system architecture, and mathematical reasoning. Additionally, the course Turning Points in Informatics, introduced in 2024, offers an overview of key developments in information technologies. During the second year, the curriculum advances into more specialized areas such as Programming Languages, Operating Systems, and Linear Algebra. The courses are designed to deepen students' understanding of theoretical computer science, networked systems, and parallel computing. In the third year, students select five electives in the first semester, and two compulsory electives in the second semester. This allows students to specialize or broaden expertise in areas such as Computational Science, Computer Vision, and Networks and Network Security. The curriculum culminates with the graduation project, which serves as a capstone experience where students demonstrate their ability to integrate the acquired knowledge and skills to solve real-world problems posed by research groups or external partners. Given that over half of the graduates end up in software development jobs, the BI programme aims to proactively update its curriculum to equip students with skills to interpret and critically evaluate AI outputs and verify high-level system designs, skills that are essential in the evolving technological landscape. Optionally, ambitious students can follow an honours programme, a 30 EC trajectory involving self-proposed projects and extra-curricular research activities.

Based on the documentation and the discussions during the site visit, the panel finds that the intended learning outcomes are adequately translated into curriculum components. The curriculum is well-organized and well-structured around six learning lines that balance theoretical and applied computer science topics effectively. The programme offers a strong foundation in computer science and clear elective pathways. The recently introduced course "Turning Points in Informatics" provides students with a broad perspective on the evolution of the field. The programme provides students with sufficient room in the curriculum to pursue their own interests, which students view as one of the strong points of the programme.

It is clear to the panel that students appreciate the curriculum. Students mention the strong foundation provided by the math courses, which effectively complement the practical and creative aspects of courses such as Internet of Things and programming. They value the well-balanced curriculum structure, particularly the block system that allows them to focus on one programming course and one math course simultaneously. This approach helps students develop broad, versatile skills that are applicable across

multiple fields. Additionally, students find the course “Programming Languages” engaging and dynamic, as they learn a new programming language every week and gain insight into how different languages relate to one another, which enhances their overall understanding and adaptability in computer science.

As a general recommendation, the panel encourages the programme to continuously invest in updating the curriculum and to incorporate emerging technologies and industry trends. More specifically, the panel welcomes expanding curriculum coverage of security topics. The panel encourages the programme to move the Discrete Mathematics course (which was pushed to the second semester of year 1) back to the first semester, so that foundational mathematical concepts are taught earlier in the programme. Also, the panel sees room to improve the academic skills learning line by paying attention to communication to a broader audience (outside of computer science) and by aligning this learning line better with the courses.

The panel finds that the emphasis on societal and ethical aspects within the curriculum could be increased. Therefore, the panel recommends to strengthen the integration of societal and ethical considerations throughout the curriculum, with particular attention to embedding these aspects explicitly in the graduation project.

Admission requirements and language
Prospective students must hold a VWO diploma with Mathematics B, to ensure that they possess the necessary mathematical foundation to succeed in the programme. The programme has been attracting approximately 80 to 100 new students each year in recent years. Student numbers have increased, although a slight decline was noted in 2024 (attributed to demographic factors and high living costs in Amsterdam). The programme acknowledges the relatively low proportion of female students and aims to improve local enrollment through enhanced promotion efforts at local high schools.

The bachelor is registered as a Dutch programme, although students encounter a mixture of Dutch and English instruction. The partial use of the English language reflects the programme’s international and research-based character, and the diverse international teaching staff from research groups. In about half of the courses, materials, lectures, and assignments are in English, though teaching assistant support is predominantly in Dutch. Also, students are allowed to write assignments and reports in Dutch if they prefer. The programme management considers this multilingual approach a strength of the programme.

The panel asserts that the programme has clearly defined admission requirements which align realistically with its intended learning outcomes, and which ensure incoming students are adequately prepared. The panel believes that the programme's language policy reflects a unique selling point, with Dutch as the official teaching language, accompanied by English instruction. From the discussion with the students, it becomes clear that they value the bilingual approach, and that they are content with the level of English of the teaching staff. Even though students are satisfied with the language approach, the panel feels that the programme should be careful in its communication to prospective students. It should be fully clear that, even though it is formally a Dutch-language programme, students can expect part of their education to be in English.

The previous panel recommended to search for ways for attracting more female students. The current panel believes the programme has properly addressed this recommendation, among others by specifically inviting female students as ambassadors to communicate with potential candidates. This has led to an increase in female students from 8% to 14%. The panel, acknowledging that all Computer Science programmes are facing this challenge, suggests intensifying outreach efforts to attract even more female students. This could be achieved by emphasizing the societal relevance of computing and software engineering, and by

increasing the visibility of female role models among teaching staff and alumni. Collaboration with secondary schools and targeted information sessions could also help.

Learning environment
Students experience an average of twelve to sixteen contact hours per week, which includes lectures, tutorials, and practical sessions. The programme applies varied and interactive teaching methods to engage students actively and to foster a research-oriented learning environment. Teaching methods include traditional instruction, interactive lectures, flipping the classroom, and collaborative and project-based learning. Guidance and supervision are integral to the programme's design. A dedicated study advisor supports students with questions related to study planning, programme progression, and potential changes. The study advisor actively monitors student progress and offers tailored advice, with a knowledge base developed to share best practices for handling diverse student cases. The programme also benefits from an active student association, VIA, which organizes academic and social events to grow a supportive community. Multiple channels such as study guides, sounding board meetings, and digital platforms provide students with information related to their studies, programme developments, career opportunities, and support services.

The average graduation rate within three years is almost 70%. Most students perceive the study load as (very) satisfactory. Dropout generally occurs in three main phases: approximately two months after registration, after the Binding Study Advice (BSA) at the end of the first year, and during failures in graduation projects. The programme continues to address dropout rates through enhanced guidance.

For students with additional support needs, the programme benefits from the university's student counsellors who assess individual requirements such as dyslexia, neurodiversity, or physical impairments. Advice or guidance provided by a student counsellor are coordinated with the programme to provide appropriate accommodations. Customized solutions are available for non-standard cases, and the university offers facilities like quiet rooms and contemplation rooms to support students' well-being. A faculty coordinator for study facilities has been appointed to better organize complex support needs.

Based on the documentation and the discussions during the site visit, the panel believes that the programme offers students good guidance and supervision. Students find that the programme is demanding but feasible, among others thanks to strong support, and overall properly balanced. The programme demonstrates proactive measures such as early monitoring of student trajectories and accommodations for students with additional support needs, which are both highly appreciated by the students. The measures demonstrate the programme's commitment to accessibility. The information provision to students considers the panel to be adequate.

Teaching staff
The teaching staff of the programme is diverse and qualified. Over 90% of the teaching staff hold a PhD and more than 70% serves as assistant, associate, or full professor affiliated with various research groups within the Informatics Institute. A smaller portion of lecturers comes from research groups in the Institute for Logic, Language and Computation. The University Teaching Qualification (UTQ) is mandatory for new faculty, and about 15% of staff members pursue further teaching qualifications, such as the Senior Teaching Qualification (STQ). More than half of the lecturers are international. Dutch language training is in place for international staff. Teaching assistants, primarily students who have completed the relevant courses earlier, support teaching activities. They receive training before the semester starts in collaboration with the Teaching and Learning Centre. The programme uses a lecturer remuneration model to quantify educational efforts, including course coordination, teaching, and thesis supervision.

The panel recognizes the teaching staff as being enthusiastic, highly qualified, and motivated, with diverse expertise and strong ties to research groups. There is an increase in junior lecturers with research positions and a stronger involvement of full professors, and an active culture among staff aimed at improving education and adopting new didactic methods. The student-to-staff ratio remains on the high side, potentially limiting personalized supervision and the capacity to support bachelor projects and honours students.

The previous panel recommended to improve the embedding of research-intensive education by increasing involvement of senior research staff. The current panel believes the programme has made progress in addressing this recommendation. The new joint introductory course, Turning Points in Informatics, is taught by full professors from various research groups. The panel believes this is a step in the right direction and suggests, moving forward, to search for ways to further increase senior staff involvement.

The panel sees that the teaching staff composition is diverse but still male-dominated, which reduces the presence of female role models that are crucial for attracting and retaining female students. Female visibility among lecturers, especially in core courses and leadership roles, remains limited. The programme could actively recruit and support female academic staff, encourage female faculty to take visible teaching and coordination roles, and promote their achievements in university events and communications, to foster an inclusive environment and inspire female students.

Considerations

The panel values the well-organized and coherent teaching-learning environment, and the structured curriculum which facilitates the achievement of the intended learning outcomes. The curriculum's foundation on six comprehensive learning lines effectively balances theoretical and applied computer science, and offers students a strong base while allowing clear pathways for specialization through electives. The recently introduced course Turning Points in Informatics is seen as a valuable addition by providing students with a broad perspective on the evolution of the field. The block system strategically enables students to focus on complementary courses such as programming and mathematics simultaneously, and the balance of foundational knowledge and practical creativity is seen by the panel as a significant strength of the programme. Moving forward, the panel recommends to continuously invest in updating the curriculum and incorporating emerging technologies and industry trends, and to expand curriculum coverage of ethical and societal aspects.

The panel commends the programme's clear and realistic admission requirements, ensuring students enter the programme well-prepared. Student guidance and supervision are robust, with proactive measures such as early trajectory monitoring and tailored accommodations for additional support needs underscoring the programme's commitment to accessibility and creating a supportive learning environment. The highly motivated and qualified teaching staff in the programme is a key strength to sustain. They foster a culture of educational improvement and didactic innovation. While the student-to-staff ratio is somewhat high, potentially limiting personalized attention, the programme maintains a strong support system that students find demanding yet manageable.

Conclusion

The panel concludes that the programme meets standard 2.

Standard 3. Student assessment

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

Findings

System of assessment

The programme's assessment policy is in line with the test policy framework provided by the Faculty of Science. It is designed to accommodate a valid, reliable, and transparent system of assessment. Course coordinators have the autonomy to select appropriate assessment methods tailored to the specific learning outcomes of their courses. These methods include a variety of formats such as written exams (including partial exams and midterms), practical and home assignments (e.g., programming tasks), reports, literature studies, and oral presentations. Each course provides a standardized study guide that outlines learning objectives, teaching methods, assessment strategies, and re-sit opportunities, all accessible through the DataNose digital educational system.

The assessment of the graduation project is structured around three main dimensions: execution, thesis, and presentation. These are evaluated using detailed rubrics to ensure that students are assessed in a consistent and fair way. The project supervisor assesses the execution, looking at, among others, the student's understanding of the field, independence, and literature usage. The thesis and the presentation are jointly evaluated by the supervisor and an independent second assessor, who provide separate, independent judgments. The weighing of the three components (execution, thesis, and presentation) varies slightly depending on whether the project is theoretical or implementation based. Theoretical projects emphasize the thesis more heavily than the execution component.

Regarding the impact of GenAI, the programme acknowledges its profound influence on teaching, learning, and assessment. The programme is actively adapting the curriculum and assessment methods to integrate AI tools responsibly and effectively. This includes developing guidelines for students on the ethical and appropriate use of AI and redesigning assessments to address challenges posed by AI-generated content, especially for programming and writing assignments. An in-depth study conducted in collaboration with the master's programme Software Engineering has helped identify both threats and opportunities that GenAI presents. It guides ongoing efforts to maintain the quality and integrity of assessments in an evolving landscape.

Based on the documentation and discussions during the site visit, the panel recognizes that the programme employs an adequate system of student assessment that supports the students' learning process. The programme employs diverse assessment methods, including written exams, practical assignments, presentations, and reports, which combined create a valid assessment of learning outcomes. Assessment is also reliable and sufficiently independent, and the assessment requirements are transparent to students. The panel came to understand that the UvA and the Faculty of Science have had a conservative approach toward GenAI in education. Recent developments show a more proactive stance, including pilot projects, policy frameworks, and the rollout of GenAI services such as the UvA Chat. The programme is engaging with the challenges and opportunities posed by generative AI in assessment through updating assessment policies and guidelines and through researching assessment implications. This reflects an understanding that the programme must adapt its assessment practices to maintain validity and reliability in the context of emerging AI technologies. The panel encourages the programme to continue working on clear and uniform procedures to address the use of GenAI. Additionally, maintaining a systematic record of all suspicious cases of fraud or plagiarism could strengthen academic integrity controls.

The panel understands that group projects are an integral part of the programme and important for developing collaboration skills. The panel notes that each course features some individual assessments, ensuring that students cannot pass solely based on group work. However, the issue of free-riders remains a concern, as it affects team dynamics and perceived fairness in grading. Students and staff recognize the need for improved strategies to address this problem. The panel suggests further developing and implementing policies and procedures to identify and mitigate free-riding. These may include peer evaluations, individual assessments within group projects, and explicit communication of expectations.

Before the site visit, the panel reviewed fifteen thesis assessments. The panel considered the thesis assessment procedure to be thorough and careful. The use of clear rubrics and extensive textual feedback to guide students and assessors, lead to a consistent and transparent evaluation process. The panel suggests to consider an update of the thesis assessment rubric to better reflect the specific characteristics of software development projects (if relevant).

The panel largely concurred with the grades awarded, finding that these grades were generally well supported by the accompanying assessment forms. One of the recommendations from the previous site visit was to enhance the quality of thesis assessment by requiring independent second reader opinions. The programme has responded to this recommendation effectively, by having each thesis reviewed by an independent second reader who joins the final defense and provides input. Moving forward, the panel invites the programme to consider improving the mechanisms to verify the independence of second examiners, especially in case of a hierarchical relationship between first and second examiner, and to further clarify procedures for resolving disagreements between examiners.

The panel observes that course evaluations and feedback mechanisms are used by the programme, yet sometimes students would like more timely or transparent feedback on assignments and exams. The panel suggests better equipping and supporting teaching staff in providing clear and timely feedback to students. Establishing shared best practices and intensified training for lecturers and teaching assistants could help close the feedback loop and enhance the students' learning experience.

Examination Committee
There is a faculty-wide Examination Committee at the Faculty of Science that oversees the quality of examinations and thesis projects for all programmes within the faculty. The BI programme has an Examination Committee (EC) which is also part of a joint EC together with the master's programme Computational Science. The members meet monthly and are responsible for reviewing and approving individual study plans, addressing exam and assessment issues, handling academic integrity cases such as fraud and plagiarism, evaluating appeals, and validating external courses as part of students' academic programmes. The EC also performs quality control on courses and graduation theses by reviewing assessment outcomes and pass rates, and by engaging in ongoing quality assurance activities. To improve its efficiency and independence, the EC has gained direct access to assessment data through close collaboration with the DataNose maintenance team.

The panel finds that the EC fulfils its legal duties in a professional manner. It functions well and possesses the appropriate expertise to oversee the quality and fairness of assessments across the programme effectively. Support from teaching staff and course coordinators was suboptimal, but has improved over the years, among others by conducting systematic course evaluations. This has led to better detection and resolution of issues during courses. The EC demonstrates a commitment to maintain assessment quality, actively reviewing all course assessment plans, taking into account the opportunities and pitfalls of GenAI. The panel

advises the committee to set clear and uniform procedures for GenAI-based fraud and to keep track of all suspicious cases.

Considerations

The panel values the programme's assessment system for being robust and multifaceted, emphasizing validity, reliability, and transparency. The bachelor thesis assessment is detailed and constructive. The programme's proactive stance toward the challenges posed by generative AI underscores its commitment to maintaining academic standards and assessment integrity in a changing educational landscape. The panel recommends continuous attention for clear and uniform procedures to address the use of GenAI, and to maintain a systematic record of all suspicious cases. It pleases the panel to see that the Examination Committee is proactively reviewing all course assessment plans, and that support for the Committee has improved.

Conclusion

The panel concludes that the programme meets standard 3.

Standard 4. Achieved learning outcomes

The programme demonstrates that the intended learning outcomes are achieved.

Findings

Theses

Between 2019 and 2024, 402 students completed their bachelor thesis, with an average score of 7.9. The panel finds the quality of the reviewed bachelor theses solid. The thesis assessments indicate that students achieve the intended learning outcomes. In their theses, students demonstrate a good command of the learned material, with varied topics that effectively combine theoretical concepts with practical goals. Some theses result in publications in peer-reviewed journals, which is an indication of strong research skills and academic rigor. The panel expresses a mild expectation for slightly more substantial thesis projects, although the panel acknowledges that the limited time frame available to students likely constrains the depth and scope of these projects. The panel encourages continuous support for high-quality graduation projects, as this enhances the research-based nature of the programme and student engagement.

Performance of graduates

Career prospects for BI graduates are very strong. According to the UWV, the professional field of computer science exhibits a significant shortage of qualified personnel, which benefits BI graduates entering the job market and partially explains why most graduates start working upon graduation. The programme conducted an alumni survey with 32 respondents in 2025. The survey revealed that nearly 60% of graduates work in software development, 22% in business services, and 10% in academia and research. Many alumni remain connected to the programme (through alumni network events and guest lectures, among others) and contribute to curriculum improvements in advisory roles.

Based on the documentation and discussions during the site visit, the panel finds that graduates are well-prepared for diverse career paths and for continuation in master's programmes. Alumni generally express high satisfaction with the curriculum, especially with programming, project management, and core computer science principles. They highlight the strong foundation they gain in software development skills and practical experience through collaborative lab work, which equips them with a comprehensive understanding of computing building blocks. This background, combined with the development of

intercultural thinking skills, empowers them to navigate complex, diverse environments effectively, an advantage one of the alumni describes as having a superpower. Alumni find employment quickly after graduation, and are valued by employers for being capable and well-prepared for their roles. Feedback from alumni and the professional advisory board reflects a high level of satisfaction with the programme, and confirms the programme's relevance and alignment with professional and academic expectations.

Alumni report that the programme might benefit from a stronger integration of professional field demands, particularly in fostering cross-disciplinary competencies. The panel considers this a potential area for development, and suggests to incorporate interdisciplinary teamwork skills more prominently in the programme, in order to further enhance career preparation.

Considerations

The panel is content to see that the students achieve the intended learning outcomes of the programme. This is evidenced by the quality of the theses and the successful performance of graduates in both professional practice and graduate education. The positive feedback from the professional field underscores the programme's success in aligning its learning outcomes with the expectations of the discipline and the job market. The continued engagement of many alumni speaks strongly to the quality of the programme.

Conclusion

The panel concludes that the programme meets standard 4.

General conclusion

The panel assesses that the bachelor Informatica meets all four standards. Therefore, the panel's assessment of the programme is positive.

Recommendations

1. Update the intended learning outcomes in view of GenAI developments.
2. Continuously invest in updating the curriculum and incorporating emerging technologies and industry trends.
3. Strengthen the integration of societal and ethical considerations throughout the curriculum, with particular attention to embedding these aspects explicitly in the graduation project.
4. Continue working on clear and uniform procedures to address the use of GenAI, and maintain a systematic record of all suspicious cases of fraud or plagiarism.

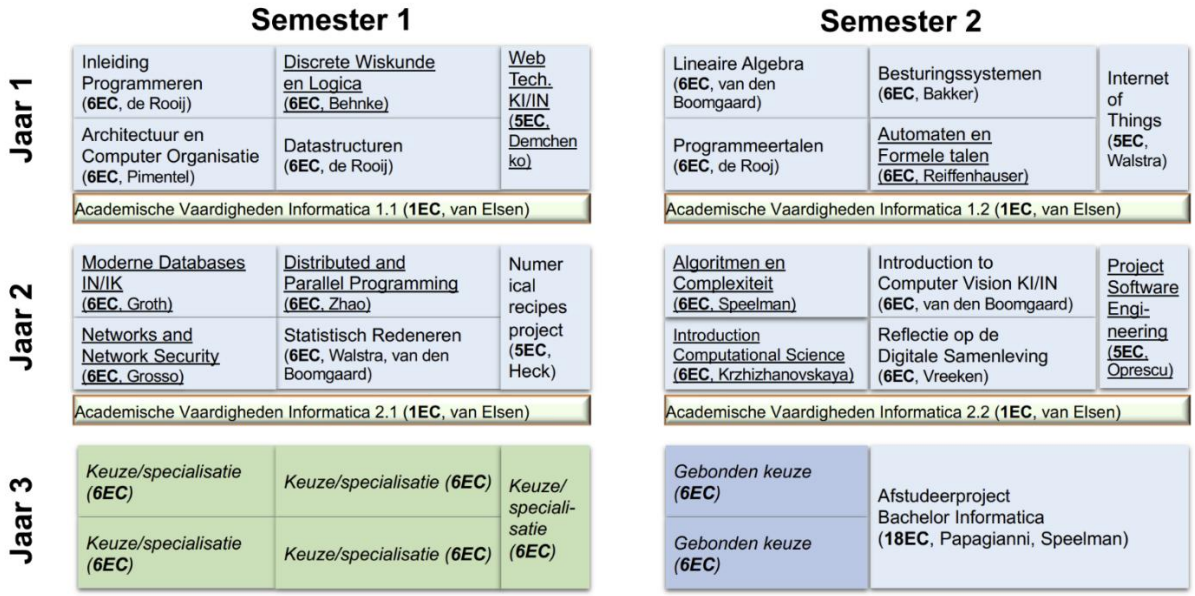
Appendix 1. Intended learning outcomes

NLQF		
Context	BI aims to effectively combine research and education to establish and maintain a high-quality curriculum in computing theories, technologies and systems, aligned with the evolving research and innovation, as well as skill demands of the job market and society.	
	Dublin Descriptors	**Exit Qualification (EQ)**
Knowledge	Knowledge & Understanding	**K1** (EQ1) has knowledge of and insight into the core concepts and basic methods of computer science: algorithms and complexity, data structures, theory of computer science, architecture of systems, networks, programming, programming languages, software engineering, databases, information systems, and of simulation and modelling;
Applying Knowledge	Applying Knowledge & Understanding	**AK1** (EQ2.a) has knowledge of and insight into a range of subjects from mathematics and statistics and their application within computer science;
Problem-solving skills	Applying Knowledge & Understanding	**PSS1** (EQ2.b) has the skills to analyse computer problems of a technical or scientific nature, to design solutions and to validate them;
Learning and development skills	Learning skills	**LDS1** (EQ5) can follow developments in the field, assess their relevance and integrate them into their own professional development.
Information skills	Making judgment	**IS1** (EQ4.a) can reflect critically on the social significance and ethical aspects of Computer science and the responsibilities of experts in this field within science and society;
		IS2 (EQ4.b) can arrive at well-considered and reasoned considerations, judgments and decisions;
Communication skills	Communication	**CS1** (EQ3.a) has the written and oral skills to communicate at a scientific level;
		CS2 (EQ3.b) has the skills to work independently and in a team;
Responsibility and independence	Learning skills	**RI1** (EQ5) can follow developments in the field, assess their relevance and integrate them into their own professional development.

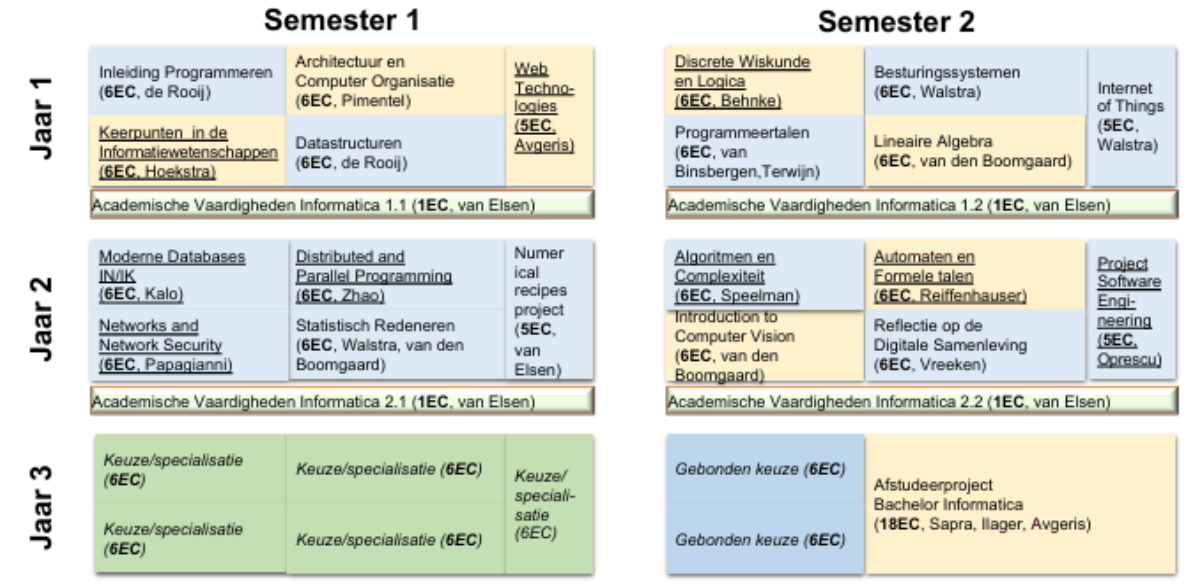
CS2023 standards	**BI Exit qualifications**
Professional knowledge and skills, demonstrating technical expertise, for a technical solution.	**EQ1, EQ2.a, EB2.b, EQ3.a** and **EQ3.b.** BI trains students these skills through practical exercises at various levels: application, analysis, and evaluation.
Professional responsibilities, toward society, ethics, and the profession, for the whole solution.	**EQ4.a** and **EQ4.b.** The ethical, social and professional aspects are embedded in the courses on digital society and academic skills to meet labour market demands.
Professional dispositions, such as persistence and life-long learning, for the whole person view.	**EQ5.** Connecting with most Dutch and international master programmes in computer science, and by life learning in the continuously changing technical ecosystem

Appendix 2. Programme curriculum

Academic year 2023-2024.



Academic year 2025-2026.



Appendix 3. Programme of the site visit

Wednesday 26 November

09.30-10.00	Welcome
10.00-10.30	Preliminary discussion panel
10.30-11.15	Programme management BSc Informatica, MSc Computational Science, MSc Software Engineering
11.15-11.30	Internal deliberation panel
11.30-12.15	Interview BSc Informatica students and alumni
12.15-13.15	Lunch
13.15-14.00	Interview BSc Informatica teaching staff
14.00-14.15	Internal deliberation panel
14.15-15.00	Interview MSc Computational Science students and alumni
15.00-15.15	Internal deliberation panel
15.15-16.00	Interview MSc Computational Science teaching staff
16.00-16.30	Internal deliberation panel
16.30-16.45	Q&A programme management BSc Informatica, MSc Computational Science

Thursday 27 November

08.30-09.00	Welcome and preliminary discussion panel
09.00-09.45	Interview MSc Software Engineering students and alumni
09.45-10.00	Internal deliberation panel
10.00-10.45	Interview MSc Software Engineering teaching staff
10.45-11.15	Internal deliberation panel
11.15-12.00	Interview Examinations Board
12.00-13.00	Lunch
13.00-13.50	Thematic session 1
13.50-14.00	Short break
14.00-14.50	Thematic session 2
14.50-15.00	Short break
15.00-15.30	Final management interview
15.30-16.30	Internal deliberation panel
16.30-17.00	Feedback from the panel

Appendix 4. Materials

Prior to the site visit, the panel studied 15 theses. Information on the theses is available from Academion upon request.

The panel also studied other materials, which included:

- Reading guide and roadmap
- SWOT Analysis
- Student chapter
- Report previous visitation
- Yearly report Examinations Board
- Yearly report Programme Committee
- TER 23-24
- Curriculum overview
- Minutes Professional Advisory Board
- Alumni survey results
- List of teaching staff and examiners
- Thesis assessment rubric
- Statistics and numbers
- Assessment plan
- Thesis supervisor manual
- AI education activities
- Graduation project student manual
- Student support knowledgebase
- Study guide
- Alumni survey
- Course materials for a select number of courses