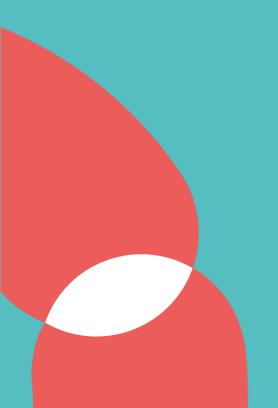# PEER REVIEW NEW PROGRAMME
BACHELOR PROGRAMME
BUSINESS ANALYTICS
University of Amsterdam

SUMMARY REPORT
27 November 2020

1 Peer Review

The quality of a new programme is assessed by means of peer review. A panel of independent peers including a student reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The focus is on the curriculum, the teaching and learning environment, and student assessment.

The Accreditation Organisation of the Netherlands and Flanders (NVAO) takes a formal decision on the quality of the new programme based on the outcome of the peer review. This decision can be positive, conditionally positive or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme. Upon completion of the programme graduates are entitled to receive a legally accredited degree.

This summary report contains the main outcomes of the peer review. A full report with more details including the panel's findings and analysis is also available. NVAO bases an accreditation decision on the full report.

Both the full and summary reports of peer reviews are published on NVAO's website www.nvao.net. There you can also find more information on NVAO and peer reviews of new programmes.

Because of COVID-19 temporary measures apply for this peer review.

2 Panel

Peer experts
1. Prof.dr.ir. K.I. (Karen) Aardal (*chair*);
2. Prof.dr.ir. H. (Hennie) Daniels;
3. L.R.J. (Lieven) Quitens;
4. D. (Duco) Mülder (*student*).

Assisting staff
– Dr. B.M. (Barbara) van Balen, secretary
– Drs. F.J.M.(Frank) Wamelink, NVAO policy advisor and process coordinator

Site visit: 29 October 2020

3 Outcome

The NVAO approved panel reaches a conditionally positive conclusion regarding the quality of the Bachelor programme Business Analytics offered by University of Amsterdam. The programme will be a three-year, 180 EC, full-time English-taught and government-funded initial Bachelor programme. It aims to offer a balanced curriculum in accordance with the ABC philosophy, consisting of courses in Analytics, Business and Computer Science as well as the links between the three.

The panel judges that the Bachelor's programme Business Analytics meets the standards 1 for intended learning outcomes and 3 for student assessment. The programme aims to offer students a programme built on three components: Analytics (A), Business (B) and Computer Science (C), in which they learn to analyze as well as solve complex business problems with the help of theories, methods and techniques from business, data science, artificial intelligence as well as econometrics. The intended learning outcomes are well formulated, realistic and clear. They reflect the ambition and the objectives of the programme and are in line with the level that can be expected of an academic bachelor programme. It is clear to the panel that the programme fulfils a need for both the labour market as well as students interested in data science and business analytics.

The programme will be taught in an adequate student centered teaching environment with teaching forms aimed at activating students. The teaching staff is qualified, has a good academic reputation in the disciplines taught and is sufficient in number. Students will be adequality advised and guided and the facilities are good. The panel is positive about the outlines of the curriculum, which will touch upon each of the ABC components. Outlines of the new courses do indicate that this will be a challenging and difficult programme. However, the curriculum still needs further development to meet the intended learning outcomes and the intended interdisciplinarity. At this moment the panel was not convinced that the courses are sufficiently aligned with the intended learning outcomes. This alignment should be improved.

The programme has an adequate assessment policy and assessment system and it uses a variety of assessment forms. Each course has at least two, mostly different forms of assessments, like a presentation and a final exam with open questions, or group assignment and an individual exam. The assessment policy guarantees reliability, validity and transparency. The Examinations Board has reliable procedures and fulfills its legal tasks thoroughly.

Considering the partially positive judgement on standard 2 and the positive judgement on standard 1 and 3 and following the decision rules of the NVAO accreditation framework the panel is conditionally positive about the Bachelor's programme Business Analytics.

The conditions to be met within a period of 12 months are the following:
1. The curriculum should be reviewed to make sure that the A, B, C components are attuned to each other and that each component contains the relevant building blocks for the subsequent courses. Moreover, each course and their assessment should be aligned with the intended learning outcomes of the programme.
2. The table 'connection between the intended learning outcomes and the curriculum components' should be renewed in line with the alignment mentioned under condition 1.

4 Commendations

The programme is commended for the following features of good practice.

1. Intended learning outcomes – The intended learning outcomes are well formulated realistic and clear.
2. Intended learning outcomes – The objectives of the programme are in line with the expectations of the professional field. The programme fulfils a need for the labour market.
3. Intended learning outcomes – An advisory board with representatives from the professional field was involved in the development of the programme.
4. Teaching Learning Environment – Integration of knowledge and insight in the three components of the programme: Analytics, Business and Computer Science is achieved by working on business cases.
5. Teaching Learning Environment – The academic and didactic quality of the teaching staff is good.
6. Student Assessment – The programme uses a variety of assessment forms.

5 Recommendations

For further improvement to the programme, the panel recommends a number of follow-up actions.

1. Intended learning outcomes - The panel appreciates the involvement of the Advisory Board with the programme and encourages the programme management to keep a good and close connection with this board.
2. Teaching learning environment – The panel advises to incorporate an introductory integrative course in the first year to inform the students about the utility of each of the courses in relation to the A,B,C components. Furthermore, such an introductory course helps to build an academic learning community, which is identified as an important condition for intellectual growth and development of higher cognitive skills.
3. Student assessments – The panel recommends the team involved in the development of the programme to ask the Examination Board to give their view on the alignment between intended learning outcomes, courses and assessments.

6 What comes next?

NVAO grants initial accreditation to a new programme on the basis of a panel's full report. The decision is valid for a maximum of six years. For conditional accreditation other regulations apply. Upon accreditation the new programme will follow the NVAO review procedures for existing programmes. NVAO publishes the accreditation decision together with the full report and this summary report.[1]

Each institution has a system of quality assurance in place ensuring continuous follow-up actions and periodic peer-review activities. Peer reviews help the institution to improve the quality of its programmes. The progress made since the last review is therefore taken into consideration when preparing for the next review. The follow-up activities are also part of the following peer-review report. For more information, visit the institution's website.[2]

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[1] https://www.nvao.net/nl/besluiten
[2] www.uva.nl

7 Summary in Dutch

Het panel oordeelt positief onder voorwaarden over de kwaliteit van de bacheloropleiding Business Analytics van de Universiteit van Amsterdam. Dit is de uitkomst van de kwaliteitstoets uitgevoerd door een panel van *peers* op verzoek van de Nederlands-Vlaamse Accreditatieorganisatie (NVAO). Voor deze beoordeling heeft het panel gesprekken gevoerd met de opleiding op 29 oktober 2020.

De Universiteit van Amsterdam wil een driejarige voltijdse Engelstalige bacheloropleiding Business Analytics aanbieden met de omvang van 180 EC. Het curriculum wordt opgebouwd uit drie componenten: Analytics (A), Business (B) en Computer Science (C) en de relaties tussen deze drie. De beoogde leerresultaten zijn goed geformuleerd, realistisch en duidelijk. Ze geven de ambities en de doelstelling van het programma goed weer en zijn in lijn met het niveau dat verwacht kan worden van een academische bacheloropleiding. Het programma voorziet duidelijk in een behoefte van zowel de arbeidsmarkt als studenten die geïnteresseerd zijn in data science and business analytics.

Iedere cursus wordt afgerond door minimaal twee verschillende toetsen, zoals een presentatie en een tentamen met open vragen of een groepsopdracht en een individueel tentamen. Er is een toetsbeleid dat zorgt voor de betrouwbaarheid, validiteit en transparantie van de toetsing en beoordeling. De Examencommissie ziet er op toe dat de kwaliteit van de toetsing en beoordeling gehandhaafd wordt.

Het programma biedt een student-gecentreerde onderwijsleeromgeving met onderwijsvormen die er op gericht zijn studenten te activeren. Het onderwijs wordt verzorgd door goed gekwalificeerde docenten en er wordt voldoende ondersteuning en begeleiding van studenten ingezet. Het curriculum is naar het oordeel van het panel echter niet voldoende afgestemd op de beoogde leerresultaten en biedt nog onvoldoende samenhang. De afstemming tussen de beoogde leerresultaten en het programma moet nog worden verbeterd.

Het panel komt tot het advies om bij een positief besluit voorwaarden te stellen waaraan de opleiding binnen een jaar moet hebben voldaan. De opleiding kan van start gaan onder de voorwaarden dat de: Analytics (A), Business (B) en Computer Science (C) componenten in het curriculum worden versterkt en in samenhang gebracht. De cursussen moeten een opbouw van deze componenten laten zien. Dat moet blijken uit de aanpassingen in de matrix waarin wordt beschreven hoe de onderdelen van het programma bijdragen aan de beoogde leeruitkomsten.

Sterke punten van het programma zijn:
- Afstemming op de vraag uit de arbeidsmarkt.
- De kwaliteit van de docenten.

Aanbevelingen:
- Voer een inleidende cursus in die de samenhang tussen de verschillende componenten van het programma: Analytics, Business en Computer Science verheldert voor de beginnende studenten.
- Onderhoud goed contact met de Adviesraad en het beroepenveld om de opleiding up to date te houden.

Meer informatie over de NVAO-werkwijze en de toetsing van nieuwe opleidingen is te vinden op www.nvao.net. Voor informatie over de Universiteit van Amsterdam verwijzen we naar de website van de instelling.[3]

Als gevolg van de beperkende omstandigheden door COVID-19 geldt voor deze kwaliteitstoets een tijdelijke en versnelde procedure.

[3] https://www.uva.nl

NVAO

INITIAL ACCREDITATION
BACHELOR PROGRAMME
BUSINESS ANALYTICS
University of Amsterdam

Content

1   Peer review

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

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

The quality of a new programme is assessed by means of peer review. A panel of independent peers, including a student, reviews the plans during a site visit to the institution. A discussion amongst peer experts forms the basis for the panel's final judgement and the advisory report. The agenda for the panel visit and the documents reviewed are available from the NVAO office upon request.

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

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

NVAO takes an accreditation decision on the basis of the full report. The NVAO decision can be positive, conditionally positive, or negative. Following a positive NVAO decision with or without conditions the institution can proceed to offer the new programme.

Both the full and summary reports of each peer review are published on NVAO's website www.nvao.net. There you can also find more information on NVAO and peer reviews of new programmes.

Because of COVID-19 temporary measures apply for this peer review.

2 New programme

2.1 General data

Institution	: Universiteit van Amsterdam
Programme	: Bachelor Business Analytics
Mode of study	: full time
Degree	: Bachelor of Science
Tracks	: n.a.
Location	: Amsterdam
Study load	: 180 EC[1]
Field of study	: Economics

2.2 Profile

The programme in Business Analytics will be a three-year full-time English-taught and government-funded initial Bachelor's programme. It aims to offer a balanced and interdisciplinary curriculum in accordance with the ABC philosophy, consisting of courses in Analytics (A), Business (B) and Computer Science (C), as well as the links between the three. The lecturers have the ambition to combine theory with practical applications. The students will be taught to apply advanced methods and techniques from computer science as well as Artificial Intelligence/Machine Learning (AI/ML) to complex business issues, in order to take better business decisions in all areas of business. The programme follows an interdisciplinary approach between the A, B and C areas. The programme will be offered by the Faculty of Economics and Business (EB) of the University of Amsterdam (UvA).

Panel

Peer experts
1. Prof.dr.ir. K.I. (Karen) Aardal (*chair*);
2. Prof.dr.ir. H. (Hennie) Daniels;
3. Dr. L.R.J. (Lieven) Quintens;
4. D.T. (Duco) Mülder (*student*).

Assisting staff
– Dr. B.M. (Barbara) van Balen, secretary
– Drs. F.J.M.(Frank) Wamelink, NVAO policy advisor and process coordinator

Site visit
Online, 29 October 2020

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[1] European Credits

3   Outcome

The NVAO approved panel reaches a conditionally positive conclusion regarding the quality of the plans for the Bachelor's programme Business Analytics issued for assessment by the University of Amsterdam. The programme complies with two standards of the limited NVAO framework and partially complies with one standard.

The panel judges that the Bachelor's programme Business Analytics meets the standards 1 for intended learning outcomes and 3 for student assessment. The programme aims to offer students a programme built on three components: Analytics (A), Business (B) and Computer Science (C), in which they learn to analyze as well as solve complex business problems with the help of theories, methods and techniques from business, data science, artificial intelligence as well as econometrics. The intended learning outcomes are well formulated, realistic and clear. They reflect the ambition and the objectives of the programme and are in line with the level that can be expected of an academic bachelor programme. It is clear to the panel that the programme fulfils a need for both the labour market as well as students interested in data science and business analytics.

The programme will be taught in an adequate student centered teaching environment with teaching forms aimed at activating students. The teaching staff is qualified, has a good academic reputation in the disciplines taught and is sufficient in number. Students will be adequality advised and guided and the facilities are good. The panel is positive about the outlines of the curriculum, which will touch upon each of the ABC components. Outlines of the new courses do indicate that this will be challenging and difficult programme. However, the curriculum still needs further development to meet the intended learning outcomes and the intended interdisciplinarity. At this moment the panel was not convinced that the courses are sufficiently aligned with the intended learning outcomes. This alignment should be improved.

The programme has an adequate assessment policy and assessment system and it uses a variety of assessment forms. Each course has at least two, mostly different forms of assessments, like a presentation and a final exam with open questions, or group assignment and an individual exam. The assessment policy guarantees reliability, validity and transparency. The Examinations Board has reliable procedures and fulfills its legal tasks thoroughly.

Considering the partially positive judgement on standard 2 and the positive judgement on standard 1 and 3 and following the decision rules of the NVAO accreditation framework the panel is conditionally positive about the Bachelor's programme Business Analytics.

The conditions to be met within a period of 12 months are the following:
1) The curriculum should be reviewed to make sure that the A, B, C components are attuned to each other and that each component contains the relevant building blocks for the subsequent courses. Moreover, each course and their assessment should be aligned with the intended learning outcomes of the programme.
2) The table 'connection between the intended learning outcomes and the curriculum components' should be renewed in line with the alignment mentioned under condition 1.

Based on the discussions with the programme management during the online site visit and the state of development of the curriculum the panel is convinced that the programme can meet the conditions within the proposed period of 12 months.

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

4   Commendations

The programme is commended for the following features of good practice.

1. Intended learning outcomes – The intended learning outcomes are well formulated realistic and clear.

2. Intended learning outcomes – The objectives of the programme are in line with the expectations of the professional field. The programme fulfils a need for the labour market.

3. Intended learning outcomes – An advisory board with representatives from the professional field was involved in the development of the programme.

4. Teaching Learning Environment – Integration of knowledge and insight in the three components of the programme: Analytics, Business and Computer Science is achieved by working on business cases, as assignments in the courses.

5. Teaching Learning Environment – The academic and didactic quality of the teaching staff is good.

6. Student Assessment – The programme uses a variety of assessment forms.

5   Recommendations

For further improvement to the programme, the panel recommends a number of follow-up actions.

1. Intended learning outcomes - The panel appreciates the involvement of the Advisory Board and encourages the programme management to keep a good and close connection with this board.

2. Teaching learning environment – The panel advises to incorporate an introductory integrative course in the first year to inform the students about the utility of each of the courses in relation to the A, B, C components. Furthermore, such an introductory course helps to build an academic learning community, which is identified as an important condition for intellectual growth and development of higher cognitive skills.

3. Student assessments – The panel would recommend the team involved in the development of the programme to ask the Examination Board to give their view on the alignment between intended learning outcomes, courses and assessments.

6 Assessment

6.1 Standard 1: Intended learning outcomes

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

Judgement
Meets the standard.

Findings, analysis and considerations
The Bachelor´s programme in Business Analytics is initiated in answer to the high demand from the national as well as international labour markets for data scientists and business analytics experts, as well to the demand from students currently following other programmes at the Faculty of Economics and Business (UvA EB) of the University of Amsterdam (UvA). The programme will be offered as a joint project between the two schools of UvA EB: the Amsterdam School of Economics (ASE) and the Amsterdam Business School (ABS). The programme aims to offer students a challenging programme in which they learn to analyze as well as solve complex business problems with the help of theories, methods and techniques from business, data science, artificial intelligence as well as econometrics. The programme fits in the current portfolio of Bachelor's programmes at the Faculty of Economics and Business, and prepares students to the planned new Master's programme
in Data Science and Business Analytics.

The main objective of the Bachelor's programme in Business Analytics is to teach students how to model, analyze and solve complex business problems using business analytics: econometrics, computer science, artificial intelligence/machine learning (AI/ML) and business administration. This objective is translated into nine intended learning outcomes, which describe what students should have obtained after completion of the programme. These intended learning outcomes are described along the lines of the international standards for academic bachelor´s programmes, the Dublin Descriptors. They are aimed at knowledge and understanding in the areas of Analytics (mathematics, statistics, econometrics, operations research), Business (accounting, entrepreneurship, finance, human resource management, marketing, operations management and strategy) and Computer Science (programming, AI/ML techniques, data-analysis), as well as abilities like modelling business problems, conducting research at an academic level, functioning within a team and effectively interacting and communicating. After finishing the programme students should have, according to these intended learning outcomes, obtained insights in the ethical, legal and societal aspects of data science applied to business, as well as the ability to incorporate them in decision making. Furthermore they should have acquired academic and professional skills to think critically.

The panel finds the intended learning outcomes (ILO's) well formulated, realistic and clear. They reflect the ambition and the objectives of the programme and are in line with the level that can be expected of an academic Bachelor´s programme. It is clear to the panel that the programme fulfils a need for both the labour market as well as students interested in data science and business analytics. The panel had an interview with the Advisory Board connected to the programme and learned that the objective of the programme and the ILO's that are derived from these objectives are discussed with and in line with the expectations of the professional field. The panel is convinced that there is a demand for this programme and

its graduates and that the programme is geared to the expectations of the professional field. The panel appreciates the involvement of the Advisory Board with the programme and encourages the programme management to keep a good and close connection with this board.

Conclusion
The panel concludes that the intended learning outcomes formulated for the Bachelor's programme Business Analytics tie in with the level expected for an academic bachelor's programme and are tuned to international requirements. The intended learning outcomes are in line with the academic and professional domains the programme intends to cover. Strong aspects of the programme are, in the opinion of the panel, the involvement of a dedicated Advisory Board and the orientation of the programme. The panel encourages the programme management to maintain these ties with the professional field. Based on these conclusions the panel finds that the Bachelor programme Business Analytics meets Standard 1 Intended Learning Outcomes.

6.2   Standard 2: Teaching-learning environment

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

Judgement
Partially meets the standard.

Findings, analysis and considerations

Curriculum
The curriculum of the Bachelor programme in Business Analytics, as described in the application dossier, is built around three components or learning pathways: Analytics (A), Business (B) and Computer Science (C). Apart from these content-oriented learning pathways, the programme also contains the following pathways:
• Academic and Research Skills;
• Professional Skills;
• Ethics and Society.
The curriculum consists of 25 courses. The panel noted that on first sight the curriculum seems to be rather traditionally developed with already existing courses like Mathematics 1, 2 and 3 and Introduction to Programming from other bachelor programmes. During the interviews the programme representatives explained that integration of the components A, B and C is stimulated by the assignments in several courses. These assignments are usually based on business cases and give the students the opportunity to apply knowledge and insight they acquired in the previous courses.
The panel advises to incorporate an introductory integrative course in the beginning of the curriculum to inform the students about the utility of each of the courses in relation to the A,B,C components. Furthermore, such an introductory course helps to build an academic learning community, which is identified as an important condition for intellectual growth and development of higher cognitive skills.[2]

The panel found the literature used in the courses state-of-the art and of a good level. It noted, however, that the set of courses as a whole tend to present widely different

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[2] Science Guide, 2 November 2020.

perspectives and methods. This might be rather challenging for the students at bachelor level. Also, some of the subjects taught in the courses did not seem appropriate for this programme. During the site visit the panel also discussed several innovative recent developments in the field that ought to be considered in the further development of the programme. The panel understood that it is the intention to develop new courses and in the process of developing and delivering this programme the interdisciplinarity will be brought further.

In the application file a table is presented indicating the courses and relation of these courses to the intended learning outcomes. The panel compared the information in the table and the course descriptions in the appendices to the dossier and found some inconsistencies. The intended learning outcomes indicated in the table are, in the view of the panel, not in line with the content of the courses. It is not clear for the panel why some of the listed courses are included in the curriculum. Furthermore some intended learning outcomes are overrepresented in the table and other rarely ticked. The panel finds it necessary to tune the curriculum to the intended learning outcomes, reconsider the structure of the curriculum, and in particular take a second look at the mentioned table.

Teaching methods
The application dossier describes that the teaching methods to be used in the programme are aimed at activating students as much as possible. Courses are taught in the classroom in a mixed format, combining lectures and seminar-like classes, practice classes or computer lab sessions. The aim is to offer students at least 12 classroom or other 'contact hours' per week. The programme will also use blended learning approaches, in which online learning is introduced to supplement and support the primary face-to-face learning in classrooms. The teaching forms the programme intends to use are according to the panel adequate to activate the students. The Entrepreneurship Hackathon in the third year will challenge students to integrate the ABC aspect of the programme. The teaching-learning environment is centered around the students, who will be challenged to work on business cases and apply knowledge and insight in assignments.

The panel did not have the opportunity to visit the building and facilities for the students of this programme. However, all of the classes will be organized in assigned classrooms, student workplaces and IT facilities for students at Roeterseiland Campus of the University of Amsterdam, which have been judged in other programme assessments as meeting the standard.

Teaching staff
This new programme fits within the strategy of the Faculty and the UvA as a whole to strengthen the areas of artificial intelligence and data science. The UvA launched an Innovative Centre for Artificial Intelligence (ICAI) and the Faculty also appointed its own AI experts. UvA EB has launched many programmes in data science and business analytics to anticipate the development of this field in business as well as society.

The expected staff-student ratio for the Bachelor's programme Business Analysis can be illustrated by the average staff-student ratio across all Bachelor's programmes of UvA EB which was 1 to 22 in 2018-2019. The panel has seen an overview of all teachers involved in the programme and interviewed a selection of them during the site visit. The teaching staff have their base in both the Amsterdam Business School and the Amsterdam School of Economics. The staff have academic experience in the fields of data science and/or business

and economics. All course coordinators are senior staff members who have academic teaching experience in the subjects that they teach in the Bachelor's programme. The teaching staff of the programme possess the University Teaching Qualification (Basiskwalificatie Onderwijs, BKO). All lecturers are experienced in teaching in English and have an international, scientific orientation. Many staff members have obtained the Cambridge Proficiency in English qualification. The Programme Director has an advisory function in relation to the students. The director provides information on the study programme as well as the courses and advises students on practicalities, where necessary. Furthermore, there are seven academic study advisers available in the Faculty of Business and Economics. The panel has established that the Faculty has sufficient qualified staff to offer a high academic quality Bachelor's programme Business Analytics. The panel finds the academic and didactic quality of the teaching staff good.

English
The Bachelor's programme in Business Analytics will be offered in the English language. The language choice is justified by the internationally oriented research and education in this area as well as the working environment with international lecturers and students. Students are being prepared for the need of the international labour market, which is situated in a professional field that operates in a global environment. They will usually work for internationally oriented companies, institutions or organizations. The panel finds the motivation the programme management has provided for the language choice convincing and endorses the language choice.

Conclusion
The panel concludes that the Bachelor's programme Business Analytics partially meets the standard. The programme will be taught in an adequate student centered teaching environment with teaching forms aimed at activating students. The teaching staff is qualified and sufficient. Students will be adequality advised and guided and the facilities are good.. The curriculum delivers advanced analytic knowledge and computer science skills in a relevant economic context and related to business problems. However, the curriculum still needs further development to meet the intended learning outcomes and interdisciplinarity. At this moment the panel was not convinced that the courses are sufficiently coherent and aligned with the intended learning outcomes. Courses partly are retrieved from other programmes and need further adjustment to this programme. The panel is of the opinion that the alignment between the courses and the intended learning outcomes should be improved in this process.

6.3 Standard 3: Student assessment

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

Judgement
Meets the standard.

Findings, analysis and considerations

Student assessments
The application dossier provides an overview of the forms of assessment used in the programme. Assessment matrices and answer sheets were provided to the panel. The panel appreciates the variety in these assessments.

According to the overview every course has at least two, mostly different forms of assessments, like a presentation and a final exam with open questions, or group assignment and an individual exam. In the overview the weight of each of the assessments is indicated. The weight of the group assignments is maximum 40% of the total grade of the course. The minimum mark to pass each course is given in the respective course description.

The rules and regulations that course coordinators as well as examiners have to follow with regard to assessment are described in an assessment policy document. The main principle underlying the assessment policy is that the assessment methods have to be consistent with the course objectives and fit into the framework of learning outcomes for the programme (constructive alignment). As a supplement to the assessment policy, the Examinations Board sets out assessment guidelines. All course descriptions have to meet these guidelines. The Examinations Board monitors the consistent application of the requirements across courses through these guidelines.

Examinations Board
The programme shares its Examinations Board with UvA EB. This Examinations Board consists of three members: one member of each participating school and an external member who is a specialist in the field of assessment. At least one of the three members is an expert in the field of data science and business analytics.

The Examinations Board monitors the quality of the assessments using a variety of data like evaluation of the pass and fail percentages of each exam and outcomes of student evaluations of the exam. The Examinations Board regularly reviews a sample of marked exams. The complete file to be reviewed contains the course description with the learning outcomes, the prospectus, the test itself including the answer model, as well as students' work. An important quality rule of the assessment is peer review in order to check whether the formulated questions are clear and unambiguous before the distribution of the exam. The panel has established that the assessment and examinations regulations are clearly described. The Examinations Board has reliable procedures and adequately guarantees the quality of examinations.

During the site visit it became apparent that the Examinations Board was not involved in the development phase of the programme. The panel would recommend the team involved in the development of the programme to ask the Examination Board, considering their expertise, to give their view on the alignment between intended learning outcomes, courses and assessments (see conditions).

The panel concluded that the Bachelor's programme Business Analytics meets standard 3 of the accreditation framework. The programme has an adequate assessment policy and assessment system and it uses a variety of assessment forms. The assessment policy guarantees reliability and validity and is transparent. The Examinations Board has reliable procedures and fulfills its legal tasks thoroughly.

6.4   Degree and field of study

The panel advises awarding the following degree to the new programme: BSc
The panel supports the programme's preference for the following field of study: economy.

Abbreviations

A, B, C	Analytics, Business, Computer Science
ABS	The Amsterdam Business School
AI/M	Artificial Intelligence/ Machine Learning
ASE	Amsterdam School of Economics
EC	European Credits
ILO	Intended Learning Outcome
NVAO	The Accreditation Organisation of the Netherlands and Flanders
UvA	University of Amsterdam
UvA EB	Faculty of Economics and Business

NVAO