

Report on the outcome

of the accreditation procedure for:

- MSc in Social Data Science (Two-Year)
- MSc in Social Data Science (One-Year)

to be offered in Vienna by Central European University
Private University (CEU PU)

1 Subject of the application

The Agency for Quality Assurance and Accreditation Austria (AQ Austria) conducted a procedure for the accreditation of the MSc in Social Data Science (Two-Year) and the MSc in Social Data Science (One-Year) to be offered in Vienna by the Central European University Private University (CEU PU) in accordance with § 24 Act on Quality Assurance in Higher Education (HS-QSG) BGBl I Nr. 74/2011 as amended in conjunction with § 2 Private Universities Act (PUG) BGBl. I No. 74/2011 as amended and § 17 Decree on Accreditation of Private Universities 2019 (PU-AkkVO) as amended. In accordance with § 21 HS-QSG, AQ Austria publishes the following report on the outcome of the procedure:

2 Procedural steps

The accreditation procedure comprised the following procedural steps:

Procedural step	date
Accreditation application of the two programmes received	12.09.2022
Request for modification of the application materials	12.10.2022

Decision on the expert panel taken by the Board of AQ Austria	12.10.2022
Information on expert panel submitted to applicant institution	12.10.2022
Amended application of the two programmes received	27.10.2022
Complete and formal correct applications confirmed	10.11.2022
1 st preparatory virtual conference with the expert panel	18.11.2022
Additional application materials received before site visit	30.11.2022
Site visit	06.12.2022
Additional application materials received after site visit	12.12.2022
Expert panel's report finalised	23.02.2023
Expert report submitted to CEU PU for comment	23.02.2023
Statement of costs submitted to CEU PU	23.02.2023
CEU PU's statement on the statement of costs received	23.02.2023
CEU PU's comment on the expert report received	06.03.2023
CEU PU's comment on the expert report submitted to experts	07.03.2023

3 Accreditation decision

The Board of AQ Austria decided on 15 March 2023 to grant accreditation to the above mentioned degree programmes to be offered in Vienna by CEU PU according to § 24 Act on Quality Assurance in Higher Education (HS-QSG) section 4 in conjunction with § 2 Private Universities Act (PUG) in conjunction with § 9 section 1 Decree on Accreditation of Private Universities 2019 (PU-AkkVO), due to fulfilment of the criteria according to § 17 PU-AkkVO.

The Federal Minister of Education, Science and Research approved the decision on 26 April 2023.

4 Annexes

- Expert report (23.02.2023)
- Comment on the expert report (06.03.2023) by CEU PU

Expert report on the accreditation procedure for the master programmes Social Data Science (one-year) and Social Data Science (two-year), conducted in Vienna by the CEU GmbH

pursuant to § 7 of the Accreditation Decree on Private Higher Education 2021 (PrivH-AkkVO 2021)

Vienna, 20.02.2023

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1 Overview of the accreditation procedure

Information on the applicant institution	
Applicant institution	CEU GmbH
Sites of the higher education institution	Vienna
Legal status	Gesellschaft mit beschränkter Haftung
Initial institutional accreditation	GZ: I/A24-30/2019, 04.07.2019
Number of students	1.302 (academic year 2021/22)
Accredited study programmes	49

Information on the accreditation application	
Programme title	Social Data Science (one-year) Social Data Science (two-year)
Type of study programme	Master programme
ECTS credit points	60 ECTS/120 ECTS
Standard duration of studies	1 academic year (3 trimester) 2 academic years (6 trimester)
Planned number of students per academic year	10 students (one-year programme) 20 students (two-year programme)
Academic degree	Master of Science, short form: M. Sc.
Organizational form	full time
Language/s	English
Sites of the study programme	Vienna
Tuition fee	10.000-14.000 € per year

The applicant institution submitted the accreditation application on 12.09.2022. According to the decision of AQ Austria's board on 05.10.2022, the following experts were nominated for this procedure:

Name	Function and Institution	Area of competence
Prof. Dr. Thomas Grund	RWTH Aachen University	scientific qualification
Dr. Lorien Jasny	University of Exeter	scientific qualification
Prof. Dr. Beate Völker	Utrecht University, NSCR	scientific qualification
Dipl.-Ing. Kevin Winter , MA, MSc, BSc, BSc	Invenium Data Insights GmbH, TU Graz	qualification in the practical field and student expert

On 06.11.2022, a site visit on the applicant institution's premises took place, at their Vienna location.

2 Preliminary remarks

Central European University Private University (CEU PU) applied for the accreditation of two master programmes: Social Data Science (one-year) and Social Data Science (two-year). The Board of AQ Austria decided to conduct a joint accreditation procedure due to the strong similarities of the submitted applications for the accreditation procedure. For this purpose, a team of experts was appointed, a site visit was carried out and a joint expert report was prepared. The report identifies and takes into account the differences between the two programmes where necessary and assesses them accordingly.

Unless otherwise specified, the experts' evaluation in the report refers to both, the one-year and the two-year programme. If an evaluation only refers to one of the two programmes, it is explicitly noted in the report.

The material for the application was carefully prepared and the two programmes complete and fill the gap in the study path in the relevant field offered by CEU PU, that is a Bachelor programme and a PhD programme related to social data science.

3 Assessment and evaluation according to assessment criteria specified in PrivH-AkkVO 2021

3.1 § 17 para. 1 subpara. 1-2: Development and quality assurance of the degree programme

1. The degree programme was developed using a predefined procedure for the systematic development and establishment of degree programmes and involving the relevant stakeholders.

The development of both degree programmes, the one-year as well as the two-year master programme, depart from the observation that the digital era in which we live offers new scientific and social opportunities, but also poses a challenge for higher education. CEU PU observed a lack of programmes that equip students with knowledge, competencies and skills on a master's level that are necessary to face current and upcoming social developments. Notably, these new developments are grounded in data generation and in the ways data influences human lives and well-being.

From the provided documents (amongst others the CEU Degree Programs Policy Document), it could be learned that CEU PU's application was very well prepared. The established procedure to develop the study programmes was very thoroughly designed. It involved relevant stakeholders such as students, scientists/teachers, as well as different levels of the university's administration. The programme development went through several stages of criticism and comments by these relevant stakeholders.

Additionally, the panel learned that the future situation on the labour market and the demand for students with a master's degree in social data science has been thoroughly considered.

The development procedure was sound, structured and involved all relevant parties and stakeholders from students, teachers to potential employers.

The experts consider the criterion to be **fulfilled**.

2. Following its accreditation, the degree programme is incorporated into the private university college's quality management system. Using an established process for quality assurance and enhancement and involving the relevant stakeholders, the private university college ensures ongoing compliance with the accreditation criteria.

CEU PU has well established procedures for quality assurance of study programmes. These procedures allow for changes if they are needed once the programmes are implemented and running. This could be learned from the application documents, especially in the "Institutional Assessment and Quality Assurance (IAQA) Policy". The procedure includes self-assessment of the programme's performance in the annual reports of the departments, as well as evaluations of the individual faculty members. Students' anonymous evaluations are taken seriously and open meetings with students are organized to assess the quality of the courses. In general, it is emphasized that criticism and openness are important values at CEU PU and in the programmes under consideration.

In addition to this, quality is guaranteed through a continuous monitoring process. At the end of each academic year, the programmes are reviewed by the board and it is examined whether small adaptations are necessary.

The programmes are neatly incorporated into CEU PU's quality management system and procedures are well established and transparent. The experts consider the established

procedures for monitoring quality at CEU PU as adequate and effective for ensuring ongoing compliance with the accreditation criteria of the study programmes in question.

The experts consider the criterion to be **fulfilled**.

3.2 § 17 para. 2 subpara. 1–9: Degree programme and degree programme management

Taking into account a heterogeneous student body, the following criteria shall apply. In the case of degree programmes with special profile elements, the descriptions shall address these characteristics defining the profile. Special profile elements are, for example, access to a regulated profession, mandatory vocational practice, study formats alongside professional activity, dual degree programmes, distance-learning degree programmes, joint study programmes or jointly offered study programmes.

1. The degree programme is oriented towards the profile and the strategic objectives of the private university college.

CEU PU aims to promote the values of an open society and self-reflective critical thinking. The private university aims for new directions and scientific knowledge in the humanities, while also considering practical aspects of the relevant fields and related policy implications.

Currently, CEU PU offers a bachelor programme in Quantitative Social Sciences and a PhD programme in Network Science. According to the accreditation application, the applicant institution also plans "to introduce university-wide courses on data science" and to launch "Advanced Certificate Programmes in Data Analysis and Data Science". The two master programmes will consequently fill the gap in CEU PU's academic trajectory in data science.

According to the accreditation application, the degree programmes are clearly oriented towards the profile and the strategic objectives of CEU PU. CEU PU has a multidisciplinary profile; not only in the sense that the university offers different degree programmes but also in the sense that students within a programme learn to consider a research topic from different angles. All this is reflected in the new degree programmes. This impression was also confirmed during the site visit.

The experts consider the criterion to be **fulfilled**.

2. The profile and intended learning outcomes of the degree programme
 - a. have been clearly defined;
 - b. comprise discipline-specific-scientific and/or scientific-artistic as well as personal and social skills;
 - c. comply with the requirements of the aspired professional fields of activities and
 - d. comply with the respective qualification level of the National Qualifications Framework.

From the provided documents, especially the course syllabi, the panel could learn that the intended learning outcomes of the degree programmes are clearly defined. They cover the range that is necessary regarding the discipline-specific skills as well as more general skills, such as training in academic writing.

Students can choose different specializations in fields of the social sciences, which include political science/policy, environmental sciences, economics or applied social data science. The programmes will provide the following knowledge, skills, and competences:

Graduates of the Social Data Science programmes have acquired knowledge on the relevant tools of quantitative data-driven approaches to study social phenomena. They know about issues regarding biases and fair data in the social sciences as well as about the legal and ethical frameworks of data collection. Additionally, they learned about questions related to big data. More generally, graduates of the master's programmes have acquired knowledge about the basic concepts, the state-of-the-art quantitative methods, and the challenges in the social sciences. They have more specialized knowledge in at least one field.

As stated in the application documents, students in the programmes in question acquire skills regarding modelling complex systems, and they can critically reflect on the advantages and threats of data-driven methodologies. They also have skills in the use of data science tools, programming languages, designing and undertaking data collections and, of course, analysing diverse kinds of data with advanced methods.

The programmes in question strive for conveying competencies concerning managing ethical aspects when processing social science data. Graduates of the programmes can work in interdisciplinary teams consisting of people with different backgrounds and scientific approaches.

Consequently, the programmes closely comply with the field-specific requirements on a master programme level. As such, the programmes comply with qualification level 7 of the National Qualifications Framework. The experts are under the impression that CEU PU strives for scientific excellence, by neat monitoring and supervision of students and course quality.

The one and the two-year programmes are very similar in terms of their structure and learning outcomes. The main difference is that the one-year programme assumes more prior knowledge and hence can achieve comparable outcomes with fewer courses.

The acquired knowledge, skills and competencies enable students to pursue a career in academia, data industry or related professions.

As the intended learning outcomes of both study programmes fulfil the set requirements, the experts consider this criterion to be **fulfilled**.

Recommendations:

- The expert panel recommends making clear to potential students that the one-year programme is more demanding in the sense that it assumes more prior knowledge from a previous study programme and cannot offer time for recapitulation.
- Since the focus of the programmes is clearly towards quantitative analysis of data, there will be very little time to acquire knowledge on qualitative methods and analysis. The related learning outcome should be omitted, especially because there is no specific course offered in this regard.
- The provided documents do not differentiate the learning outcomes of the different specialisations. This might lead to the misconception, that all listed learning outcomes would be achieved by every student of the programmes. However, this would only be

the case if a student follows all specializations. This distinction should be made clearer in the presentation of the learning outcomes.

3. The name of the degree programme and the academic degree correspond to the degree programme's profile and intended learning outcomes.

From the accreditation applications and during the site visit, the experts were able to gain a thorough understanding of the content of the programmes. In general, the contents fit well with the name of the master programmes 'Social Data Science'. Students learn about the many application possibilities of data science in the social domain, or, in general in society. For that matter, the programmes offer courses on data science as well as on different fields in the social sciences (political science, policy, environmental science, economics, applied data science).

The profile of the programmes also corresponds with the envisaged degree 'Master of Science' (MSc), since acquired skills and knowledge are on the level of master programmes.

The panel's assessment of this criterion is positive, since the name of the programmes, the academic level and degree that is aimed to be acquired all correspond with the intended learning outcomes and the courses offered.

The experts consider this criterion to be **fulfilled**.

4. The degree programme

a. complies with the scientific and/or scientific-artistic and didactic requirements of the respective subject or subjects;

b. comprises defined core subject areas which represent the most important subjects of the degree programme and thus the main competences to be acquired;

c. ensures by its content and structure the achievement of the intended learning outcomes;

d. comprises modules and/or courses with learning and teaching as well as examination methods suitable for the achievement of the intended learning outcomes and build on the overall concept of the degree programme;

e. takes into account the connection of research and teaching and/or research and the appreciation of the arts and

f. encourages the active involvement of students in the learning process.

The programmes are composed of three main modules, covering the "Fundamental Methods of Data Science", "Advanced Methods & Concepts" and a "Specialisation". Students can choose one of four different specialisations, namely:

- Economics
- Environmental Science
- Political Science and Policy

- Applied Social Data Science

There is not much specialisation, or other coursework in the field of sociology, even though CEU PU offers corresponding degree programmes. At the site visit, CEU PU explained that the sociology programmes are part of the Department of Sociology and Social Anthropology, with a historical and mostly qualitative methodological focus, which does not match with the new programmes. The Department of Network Science, which these new programmes will be a part of, does currently not offer enough sociology courses to form a more in depth specialisation, although the knowledge acquired in network theory and methods of analysis makes a lot of sense.

Each specialisation has a catalogue of mandatory elective courses students can choose from. In both, the one-year and two-year programme, a total of 12 ECTS credit points is assigned to mandatory electives in the specialisation.

In the last two terms of each programme, students must complete a capstone project, where they apply their acquired skills in a real-world scenario. Depending on the chosen specialisation and preference, they work in cooperation with an academic research group or a data-oriented company. Students are supervised by an internal adviser at CEU PU. If the project is with an industry partner, a company supervisor is assigned as well. The project starts with a literature survey in the winter term, supported by the thesis seminar course. In the following spring term, they will stay with the company/research group for three months, completing their project. Finally, the students write a 20-25 page master thesis, describing their research question, related literature, methodology, results and conclusion.

According to the application documents, the programmes balance research-based and application-oriented teaching. From a didactic standpoint, lectures and seminars are used to impart sound methodological knowledge that is directly applied in corresponding use cases from both, science and practice. The intended learning outcomes are accomplished using case studies, real-world data sets, and particularly the capstone project.

The majority of the faculty, especially the permanent faculty, are engaged in research, and it is clear from the syllabi that the courses adhere to the most recent scientific and educational standards in the field. As a result, the panel comes to the conclusion that the programmes comply with scientific and didactic requirements.

The curricula include a set of core subject areas that are clearly defined. The individual course syllabi include intended learning outcomes that correspond to the programme's overall learning objectives and the essential learning skills that it aims to convey to its students.

The assessment techniques include homework, in-class presentations, exams, and more engaging practical projects (capstone). The programmes incorporate research in the form of pertinent readings, case studies and real world data sets. In various courses, students are presented with the current topics in research (e.g. Big Data for Public Policy) and are encouraged to develop research questions themselves. Gaining understanding of applied research is possible through the capstone project.

At the site visit, the teaching staff added that research is incorporated in their teaching in nuanced ways. By encouraging active participation (participation and attendance are graded), giving regular assignments, and encouraging attendance, students are engaged in the learning process.

Only for the one-year programme:

According to the curriculum outlined in the application documents and the elaborations given during the site visit, the one-year programme is very similar to the second year of the two-year programme. Consequently, students that apply for the one-year programme are required to be proficient in the main concepts taught in the first year, comprising fundamentals in Data Science like applied statistics, machine learning, social networks and data visualisation techniques. According to information received from representatives of CEU PU during the site visit, this is the only way students in the one-year programme will be able to reach largely similar learning outcomes to the ones in the two-year programme. The panel shares this assessment and emphasizes the importance of careful screening and expectation management of applicants.

The experts consider the criterion to be **fulfilled** for both programmes.

5. The European Credit Transfer and Accumulation System (ECTS) is applied correctly to the degree programme. The workload related to the individual modules and/or courses, expressed in ECTS credits, makes it possible that the intended learning outcomes are achieved within the stipulated duration of studies. In the case of degree programmes for working professionals, the professional activity is taken into account.

The curriculum is divided into modules and courses. Most courses are worth 4 ECTS credit points. Each academic year at CEU PU is divided into three terms (fall, winter and spring). Fall and winter terms each consist of 24 ECTS within a period of twelve weeks. Given the conversion rate of 30 hours / ECTS credit point, this results in a weekly workload of about 60 hours. The spring term, which is ten weeks long, consists of 12 ECTS credit points, resulting in a weekly workload of 36 hours.

The workload related to the modules and the distribution thereof across the terms, although rather intense in the fall and winter terms, allow for the achievement of the intended learning outcomes within the period of one or two years, respectively.

The experts consider the criterion to be **fulfilled**.

6. The Diploma Supplement is specific to the respective degree programme and suitable to support international mobility of students as well as graduates and facilitates academic and professional recognition of the acquired qualifications.

From the CEU PU application documents, it can be learned that the respective degree programmes are fully described in the Diploma Supplement. The document is provided in both, German and English. It will support the international mobility of students as well as graduates, and it facilitates academic and professional recognition of the acquired qualifications.

The experts consider the criterion to be **fulfilled**.

7. The requirements for admission to the degree programme

- a. have been clearly defined and
- b. contribute to the achievement of the qualification objectives.

According to CEU PU's application, and documented on the programme website, the conditions for admission are clearly defined. These qualifications include a strong interest in interdisciplinary research, demonstrated ability to do quantitative studies, proof of GMAT exam or equivalent (except for students with a degree from quantitative programmes like Mathematics, Physics, Computer Science, Statistics, Economics, etc.).

For the one-year programme:

For enrolment in the one-year programme, proof of previous training in data science and programming, proof of English proficiency, detailed account of earlier studies, two recommendation letters and a motivation letter (max. 2 pages) are required. Furthermore, a minimum of 240 ECTS in undergraduate studies or a 4 years BSc or BA degree in one of a broad range of related disciplines, including Quantitative Social Science; Philosophy, Politics and Economy; Computer Science; Sociology; Economics, Physics, etc. is required. This is all appropriate for the programme of study in question.

For the two-year programme:

A minimum of 180 ECTS undergraduate studies or a 3-year BSc or BA degree in one of a broad range of related disciplines, including Quantitative Social Science; Philosophy, Politics and Economy; Computer Science; Sociology; Economics, Physics, etc. is required. This is appropriate for the programme of study in question.

8. The admission procedure to the degree programme

- a. has been clearly defined;
- b. is transparent for all involved and
- c. ensures a fair selection of the applicants.

The accreditation application materials included the document "Admissions Policy and Procedure of Central European University" as well as a paragraph on programme specific admission in the programme proposals.

a) Together, these two documents clearly define the admission process, which includes general admission requirements, deadlines and a description of all stages in the admission process.

b) The admission process is transparent for all involved. This was confirmed during the site visit in talks with students and staff.

c) The criteria as outlined in the programme proposals are fair. The criteria include language skills, academic and intellectual excellence, career promise, contribution to course diversity as well as personal interviews.

The prior knowledge of the cohort of incoming students, who are admitted to the programmes, is reviewed at the beginning of the study programmes and it is discussed in advance whether special support might be needed.

The admission process is clearly defined, transparent and ensures a fair selection of the applicants. It is also in line with good practice at other universities.

The experts consider the criterion to be **fulfilled**.

9. The procedures for the recognition of formally, non-formally and informally acquired competences in terms of crediting towards examinations or parts of the degree programme

a. have been clearly defined

b. and are transparent for all involved

The official Student Rights, Rules and Academic Regulations document of CEU PU includes the Annex 1 CEU Credit Transfer Regulations. During the site visit, the panel also learned about students' experiences of the recognition of prior learning. There are procedures in place that allow students to apply for the recognition and the transfer of prior learning, which had been used by one of the students the panel interviewed at the site visit. Students can make an application for the transfer of credits with an application form that is provided in the Student Rights, Rules and Academic regulations document.

As outlined in the Student Rights, Rules and Academic Regulations document, credits must have been granted by a regionally accredited US institution, a recognized university listed by the Database of External Quality Assurance Results (DEQAR) or, in case of institutions that are not based in the US or in the European Higher Education Area, by an institution accredited by the officially recognised quality assurance and accreditation agency in the country where it is based. Furthermore, a student must have earned a grade of B (C or D in ECTS grading system) or a "pass" grade if the course was taken for pass/fail. The credits must not have been used to satisfy the requirements for any other degree.

In addition, regulations are in place and outlined in the above cited document for the transfer of up to 16 (one-year programme) or 30 (two-year programme) ECTS earned in non-degree programmes (e.g., summer schools).

Lastly, the policy allows for exemptions in exceptional and justifiable cases on the request of the Head of Department and reviewed by the Pro-Rector for Teaching and Learning.

The submitted document a) clearly defines the procedures for the recognition of prior learning and b) the procedures are transparent for all involved. The procedures also follow good practice at other universities.

The experts consider the criterion to be **fulfilled**.

3.3 § 17 para. 3 subpara. 1-2: Research and development and/or the advancement and appreciation of the arts

1. Subject-specific research or development activities, respectively, in compliance with the scientific standards of the respective subject or the respective subjects have been planned for the degree programme.

The research activities of the involved faculty members as evidenced in submitted CVs are very impressive. The Department of Network and Data Science has an ongoing research seminar series and all faculty members are highly research active. During the site visit, it was also

confirmed that these research seminars are open to students. The panel also learned about the Yehuda Elkana Center for Teaching, Learning and Higher Education at CEU PU, which offers courses and support for faculty and doctoral students for the advancement of higher education and excellence in teaching and learning.

In the view of the panel, the institutional structures that are in place at CEU PU meet the international standards for subject-specific research and development activities.

The experts consider the criterion to be **fulfilled**.

Recommendation:

The expert panel has two recommendations for the programme management to consider.

- First, given the scope of the programmes and the discussions in the field, the panel recommends a more systematic involvement of sociological topics and knowledge is to be desired. Social data science touches upon aspects of social theory and the expert panel recommends to teach this also more intensively or to offer an explicit specialization in sociology. As it is now, there is much attention on social networks, which is very important, but it does not cover the range of sociological research and theory related to social data science.
- Second, topics related to data security and privacy are only marginally discussed in the programmes. There is a course about the 'Ethics of Big Data', but it does not cover all aspects that are important and will become even more important in the future. Hence, the panel recommends to have more courses on these and related issues.

2. The permanent research and teaching staff assigned to the degree programme is involved in these research and development activities.

The submitted CVs of the research and teaching staff show participation in international conferences and research activities, but also in teaching and further development activities. Staff members participate in academic exchange as evidenced in presentations at high profile, international conferences and publications in highly reputable academic journals. Staff members also participate in research seminars at CEU PU. Furthermore, staff members are actively taking part in courses offered at the Yehuda Elkana Center for Teaching, Learning, and Higher Education at CEU PU.

All of the research and development activities that permanent staff members actively take part in correspond to international standards and good practice. The degree of involvement in these activities is equivalent to those expected from staff at an excellent university.

The experts consider the criterion to be **fulfilled**.

3.4 § 17 para. 4 subpara 1, 3-7: Staff

1. At all sites at which studies are offered in accordance with the development plan
 - a. sufficient scientific or scientific-artistic teaching and research staff, respectively, has been planned for the degree programme,
 - b. the staff members are subject-specifically as well as didactically qualified according to the requirements of the respective post.

The private university college makes sure that at least 50 per cent of the volume of teaching is covered by permanent scientific or scientific-artistic teaching and research staff, respectively. Permanent teaching and research staff means employees working at least 50 per cent of their working hours (usually at least 20 hours per week) in permanent employment at the private university college.

The CEU PU Programme Application (Table 12: Full-Time Faculty) lists 32 academics who will teach courses planned for the degree programmes. All of these academics have a PhD degree in a relevant subject and have an active publication record.

Many of the courses included in the degree programmes are already being taught at CEU PU, but in other programmes and have been reviewed regularly. Additionally, from the CVs supplied, the experts can see that the faculty are fully qualified with both, many academic distinctions as well as excellent teaching records, both, at CEU PU and other institutions. An additional three faculty listed are part-time faculty, meaning that the majority of teaching is done by permanent staff.

The experts consider the criterion to be **fulfilled**.

Recommendations:

- A recommendation in this regard is to work together with the centre for academic teaching on a structural base in order to monitor didactic quality even more thoroughly, establish courses for teachers and make them mandatory. This way, CEU PU could stand out in teaching as it is already in doing research.

By way of derogation from § 17 para. 4 subpara. 2, the following criterion shall apply to private universities:

3. The subject-specific core competences representing the most important subjects of the degree programme and thus the main competences to be acquired are covered by
 - a. permanent professors corresponding to at least two full-time equivalents as well as
 - b. other permanent scientific or scientific-artistic teaching or research staff corresponding to at least one full-time equivalent.

The private university college or private university shall attach CVs for existing permanently employed teaching and research staff employed to the application for programme

accreditation. Furthermore, proof of this staff's extent of employment and their teaching load shall be provided.

For permanent teaching and research staff still to be recruited, the application for programme accreditation shall be supplemented by job descriptions, stating, at least the respective post, the envisaged extent of employment, the teaching load as well as a date for the appointment.

From the application documents provided, it could be learned that the core competences of the degree programmes - the quantitative analysis of datasets, the provision of knowledge on networks and the application of data analysis to social problems - are clearly covered by multiple permanent professors within the department of Network Science.

The core requirements of the degree programmes could each be taught by at least two of the full time faculty listed in the application materials. Additional other staff listed in Table 12 could cover the required material as well. The CVs were also attached demonstrating the excellence of the named faculty members. From the Academic Staff Handbook provided, it could be learned that all staff split their time between research, teaching, and service to the department at approximately 40%, 40%, and 20%. During the site visit, this division was confirmed by the faculty present. From the application documents, it could be learned that there are no teaching and research staff still to be recruited.

In sum, the core competencies of the degree programmes are covered by permanent professors corresponding to at least two full-time equivalents as well as other permanent scientific research staff corresponding to at least one full-time equivalent.

The experts consider the criterion to be **fulfilled**.

4. The composition of the adjunct and permanent teaching and research staff shall ensure a student-teacher ratio appropriate to the profile of the degree programme.

From the discussions at the site visit, it was learned that the current student-teacher ratio is 7.7:1, which is outstanding in comparison to similar institutions. The planned increase in number of students will impact this ratio. Since at most only 30 new students are proposed per academic year (10 in the one-year programme, 20 in the two-year programme), the ratio will still be far lower and consequently allow for a better supervision of students than at most other institutions.

The experts consider the criterion to be **fulfilled**.

5. Adequate measures are planned for the integration of adjunct teaching staff into the organisation of teaching and into programme organisation for the degree programme.

From CEU PU's application documents provided, it could be learned that there are currently no adjunct staff planned for the teaching of these programmes. However, in the site visit the experts asked about the integration of new and junior staff into the organisation of teaching in the department and wider university. The experts learned that all staff have annual reviews that cover their research, teaching, and service at the department as their three main areas of responsibility. Faculty asserted that this fully integrated new staff into the teaching and

organisation needed for CEU PU degree programmes. This is also documented in the Academic Staff Handbook.

The experts consider the criterion to be **fulfilled**.

6. The private university college shall allow for an appropriate balance of teaching, research, and administrative activities of the permanent scientific or scientific-artistic staff to ensure adequate participation in teaching but also leaving sufficient time for research and development and/or the advancement and appreciation of the arts.

From the Academic Staff Handbook provided, it could be learned that all staff roughly divide their time at a balance of 40% research, 40% teaching, and 20% administrative activities. During the site visit, the experts asked academic staff about this division. According to information provided during the site visit, more teaching is done during the fall and winter academic terms with more research during the summer term, but the balance is accurate over the full year. Staff expressed that this was a reasonable division of their time. Additionally, the research portfolios of many of the faculty are outstanding, demonstrating they clearly have the necessary time to produce research outputs at the highest levels.

The experts consider the criterion to be **fulfilled**.

7. Sufficient non-academic staff has been planned for the degree programme.

From the CEU PU application documents provided, it could be learned that some of the administration of the new programmes will be covered by the current departmental administrator (one full-time equivalent). In addition, a 0.5 full-time equivalent position will be recruited to be specifically responsible for the administration of the new one-year and two-year programmes. This is deemed fully sufficient for the size of the planned programmes.

The experts consider the criterion to be **fulfilled**.

3.5 § 17 para. 5: Funding

The degree programme's funding

1. is secured for a period of six years and
2. makes it possible that students complete their degree programme even in the event of its discontinuation.

The financial plan for the degree programme comprises a realistic and plausible balance of all expected revenues and expenses in connection with the planned degree programme.

Financing commitments of all funding bodies listed in the financial plan shall be attached to the application.

The programmes are mainly funded through the CEU PU Endowment Fund, providing the university with Euros per year. The other main contributor is the Open Society Foundation (OSF) Grant, sized at in yearly instalments from 2020 to 2032.

Additionally, the OSF assured a relocation grant of _____ from 2019 to 2025. Revenues from tuition fees only make up a small proportion of the total income. The application documents include signed grant letters confirming said amounts, as well as a credible financial plan for the next six years. The documents also include a brief financial plan for the Department of Network and Data Science, which the degree programmes will be part of. CEU PU also guarantees that students can finish their degree programmes in case of discontinuation.

Since most of the staff as well as the courses are already established in other programmes of the department, little changes to the overall budget of the department are to be expected. The funding for the university, the department and ultimately the programmes is secured. The provided financial plan is realistic.

Overall, all required documents were provided, are plausible and prove adequate funding of the programmes.

The experts consider the criterion to be **fulfilled**.

3.6 § 17 para. 6: Infrastructure

Quantitatively and qualitatively adequate facilities and equipment are provided for the degree programme at all sites at which teaching will be offered. In the case that external resources are required for the degree programme, their right of disposal has been secured and the key points thereof shall be described in the application for programme accreditation.

The programmes will accommodate a maximum of 30 students per year (10 in the 1-year programme, 20 in the 2-year programme). The current CEU PU campus in Vienna occupies around 25,000 m² across 7 floors. During the site visit, the experts were invited to see classrooms, computer labs, lecture halls, the library, the cafeteria as well as various common areas. The classrooms and computer labs are well equipped and can be used by students even outside of classes. Students can also book meeting and study rooms online. Additionally, the university provides students with all software and computing resources (e.g. cloud computing access via Amazon Web Service (AWS)) they need in their courses. The library has a large collection of physical copies. Most of the inventory, however, is still located at the campus in Budapest. CEU PU established a shuttle service that transfers books between Vienna and Budapest twice a week per students or faculties request. Students also have access to a large collection of online resources, including most scientific publishers and various dataset databases. For staff, the campus provides 138 single and 205 shared offices, with a total seating capacity of 831 as well as 15 meeting rooms.

The provided facilities are both, quantitatively and qualitatively more than adequate to accommodate the additional students of the programmes in question. CEU PU also ensures, to a great extent, that faculty and students have all the resources they need.

The experts consider the criterion to be **fulfilled**.

3.7 § 17 para. 7: Co-operation

Co-operation projects with other higher education institutions and, if applicable, partnerships with institutions outside the higher education area in Austria and abroad that match the degree programme's profile are provided for. The mobility of students and staff is being promoted.

Despite the relocation from Budapest to Vienna, CEU PU intends to preserve its existing academic and non-academic connections. During the site visit, CEU PU declared that it plans to construct a similar, high-quality network in Vienna in the long run. Particular effort is expended to find industry partners in Vienna for the capstone projects.

The university is part of the Complexity Science Hub (CSH) Vienna, a Big Data research network of universities and research institutes. CEU PU also co-founded the Open Society University Network (OSUN), a partnership of educational institutions around the world.

The Department of Network and Data Science collaborates with several institutions outside of CEU PU, including Rényi Institute Budapest, Aalto University, University of Pisa, Charles University Prague, Northeastern University US, INRIA Lyon, University of Oxford and RWTH Aachen. Students may use those partnerships for student mobility. The accreditation documents state that master's students can apply for a credit transfer of up to 16 ECTS credits in one-year programmes and 30 ECTS credits in two-year programmes from another university to CEU PU. If there is no credit transfer cooperation agreement, credit transfer requests need to be approved by the provost.

CEU PU is internationally well connected, including both academic and industry partners. Students as well as staff can use those connections for research cooperation and mobility.

The experts consider the criterion to be **fulfilled**.

4 Summary and final evaluation

CEU PU plans to offer a one-year and a two-year master programme in Social Data Science. According to the expert panel's evaluation, all assessment criteria in the accreditation regulation are met.

As to **development of the programmes and quality assurance**, the experts found that the programmes are well structured and that quality assurance follows well-established and proved procedures. Many instruments for monitoring quality are in place. The management structure of the programmes is sound and goal efficient.

As for **degree programme and degree programme management**, the programmes comply with the mission and strategic goals of CEU PU and the intended learning outcomes are clearly defined. It is the aim to educate students on all levels to become interdisciplinary scholars with knowledge about data science. The master programmes complete the already existing educational programmes, i.e. a programme on data science on the Bachelor level and a PhD programme. The defined learning outcomes, which include competencies, knowledge and skills acquired, are highly relevant for both, a career in academia or in a data science profession. The degree programmes are managed in an appropriate way with sufficient administrative support and academic staff members.

The activities in **research and development**, that are carried out by staff members and which are open to students, are appropriate and of very high quality. Students are very much involved in research activities and projects of staff members. The scientific discussions between teachers and students and the very high involvement of students in ongoing research projects is a great way of teaching and serves as a best practice example. Staff members can participate in courses to enhance their didactic qualities and their courses are evaluated on a regular basis.

The permanent and temporary **staff** at CEU PU associated with the degree programmes are clearly of very high calibre, staff members are excellent scientists and it is exceptional that students get education from researchers who have such a high status in the field. Hence, the number and quality of academic and professional staff are fully capable of carrying out the proposed programmes.

Funding for the next six years is guaranteed and it should be noted that the system of providing student aid and support is very well developed and structured. The funding for the programmes as well as CEU PU in general are very solid and there is no reason at all to foresee tightness in budget relevant for education. On the contrary, there is much in place for students who cannot afford the tuition fee to get stipends and waivers.

Last, but not least, the **infrastructure** is excellent. CEU PU also **cooperates** with important other universities and is part of a number of alliances in higher education.

The experts **recommend** the accreditation of the programmes to the board of AQ Austria.

5 Viewed documents

- Application for accreditation of the master programmes Social Data Science (one-year) and Social Data Science (two-year), conducted in Vienna, by CEU GmbH, received on 12.09.2022 in the version of 04.11.2022
- Subsequent documents submitted prior to the site visit, received on 30.11.2022
- Revised application for accreditation of the master programmes Social Data Science (one-year) and Social Data Science (two-year), received on 12.12.2022

The Board of AQ Austria
AQ Austria
Franz-Klein-Gasse 5.
1190 Vienna

Vienna, March 6, 2023

on behalf of CEU GmbH and
Central European University Private University
Quellenstraße 51-55.
1100 Vienna

Dear Members of the Board,

I hereby confirm that we have received and fully accept the assessment of the expert panel regarding the MSc in Social Data Science (one-year) and MSc in Social Data Science (two-year). We are pleased to learn that the report confirms the academic excellence of the programs and that they fulfill all the criteria for accreditation.

We fully accept all the recommendations made in the report. The administration of CEU PU will work closely with the Department of Network and Data Science to address the recommendations. For detailed responses to the recommendations made in the report, please refer to the appendix of this letter.

We would like to thank the expert panel members for their expertise and insights, as well as for the productive and collegial discussions during the site visit. We are grateful to the expert panel members for their hard work, dedication, and enthusiasm with which they approached the task.

We await the decision of the Board with anticipation and looking forward to the opportunity of launching these programs in Vienna.

Sincerely,



President and Rector
Central European University Private University

CEU PU Department of Network and Data Science - Response to AQ Austria Expert Panel on the evaluation of the MS program in Social Data Science

The CEU PU Department of Network and Data Science would like to express its gratitude to the AQ Austria coordinators and expert panel for their thorough work and their cooperation during the accreditation process. After careful evaluation, we summarize below the responses of the Department to the recommendations made in the report.

Recommendation 1 (related to Degree programme and degree programme management):

“The expert panel recommends making clear to potential students that the one-year programme is more demanding in the sense that it assumes more prior knowledge from a previous study programme and cannot offer time for recapitulation.”

As it has been discussed during the site visit, we are making all the efforts to precisely communicate to future candidates the admission requirements and expected prior training for our program. Following up on the actual recommendation, we further modified the program webpage (being the main information source for applicants) and we will make a special effort to precisely communicate these details on all program materials and during the recruitment process. In addition, we modified the program proposal document (in Section 15 in the 1-year proposal) to make clear the difference between the expected skills of students applying for the one- and two-year programs.

Recommendation 2 (related to Degree programme and degree programme management):

“Since the focus of the programmes is clearly towards quantitative analysis of data, there will be very little time to acquire knowledge on qualitative methods and analysis. The related learning outcome should be omitted, especially because there is no specific course offered in this regard.”

Indeed, the goal of the program is not to build skills for qualitative methods and analysis to study social phenomena, but rather provide quantitative training for data driven research. Following the recommendation of the evaluators, we removed any mention of related qualitative learning outcomes.

Recommendation 3 (related to Degree programme and degree programme management):

“The provided documents do not differentiate the learning outcomes of the different specialisations. This might lead to the misconception, that all listed learning outcomes would be achieved by every student of the programmes. However, this would only be the case if a student follows all specializations. This distinction should be made clearer in the presentation of the learning outcomes.”

The fundamental data science training and thus the related learning outcome is the same for all our students, however, as the evaluators remarked, the specialization tracks provide additional and different learning outcomes by training students to approach problems in the different specialization fields. Following up on this recommendation, we modified the webpage of the program and we will be clear on this distinction in any recruitment material of the program.

Recommendation 4 (related to Research and development and/or the advancement and appreciation of the arts):

“First, given the scope of the programmes and the discussions in the field, the panel recommends a more systematic involvement of sociological topics and knowledge. Social data science touches upon aspects of social theory and the expert panel recommends to teach this also more intensively or to offer an explicit specialization in sociology. As it is now, there is much attention on social networks, which is very important, but it does not cover the range of sociological research and theory related to social data science.”

We acknowledge the importance of this comment. As we explained during the onsite meeting, we originally planned to open a specialization in Sociology in the program, however, this has not been possible so far due to teaching capacity limitations at the Sociology and Social Anthropology Department of CEU. As a solution, to provide ground training in social sciences for our students, we designed several elements in our program.

First, for students coming from quantitative undergraduate programs, we provide a bootcamp course on “Conception of Social Dynamics. The goal of this course is to drive the attention of students with quantitative background on methods and concepts common in the social sciences, where they may need to develop themselves further to obtain the full learning outcome of the program. While this course is far from being equivalent to a full undergraduate training in any field of social sciences, it aims to somewhat homogenize students coming from different fields.

Second, we identified and listed fundamental social science courses for each specialization to help students to develop their comprehension about the most important theoretical concepts and methods of their specialization fields. Meanwhile, we keep working actively to find a solution for this problem and we are planning to open a specialization track on Sociology in the future. In fact, we count on increasing student numbers. In the first years, with lower numbers, we should keep the number of specialization tracks low to have sufficient participation. By the time we reach the stationary student numbers, we hope to be able to provide them with a Sociology Specialization Track.

Recommendation 5 (related to Research and development and/or the advancement and appreciation of the arts):

“Second, topics related to data security and privacy are only marginally discussed in the programmes. There is a course about the 'Ethics of Big Data', but it does not cover all aspects that are important and will become even more important in the future. Hence, the panel recommends to have more courses on these and related issues.”

Data security and privacy are fundamental topics of the program. We acknowledge their importance by providing a mandatory course on 'Ethics of Big Data' that will exclusively concentrate on related issues. This is one of the few courses that are mandatory in both the 1-year and 2-year programs. Meanwhile, to reflect to the comment of the evaluators, and to address methodological aspects of data ethic we will adjust the related data methodological courses (Social Data Mining, Digital Data Collection Methods, Data Analysis in Python) to address ethical and privacy-preserving techniques during data collection, curation, and analysis.

Recommendation 6 (related to Staff):

“A recommendation in this regard is to work together with the centre for academic teaching on a structural base in order to monitor didactic quality even more thoroughly, establish courses for teachers and make them mandatory. This way, CEU PU could stand out in teaching as it is already in doing research.”

CEU pays special attention on the training and development of teaching and mentoring skills of the instructors. This is done through the well-established Yehuda Elkana Center for Teaching, Learning, and Higher Education Research. As any other department, we are in strong relation with the academic teaching unit that provides very helpful training opportunities for our faculty. We motivate teaching faculty to get involved in these trainings, not only to improve their teaching capabilities in the classroom, but also because this is an important aspect in their promotion.