Doc. 300.1.1

Date: 5 April 2024

# **External Evaluation Report**

# (Conventional-face-to-face programme of study)

 Higher Education Institution: University of Nicosia

• Town: Nicosia

 School/Faculty (if applicable): School of Sciences and Engineering

• Department/ Sector: Computer Science

• Programme of study- Name (Duration, ECTS, Cycle)

In Greek:

EΠΙΣΤΗΜΗ ΔΕΔΟΜΕΝΩΝ (4 ETH, 240 ECTS, ΠΤΥΧΙΟ) In English:

- DATA SCIENCE (4 YEARS, 240 ECTS, BACHELOR OF SCIENCE)
- Language(s) of instruction: English
- **Programme's status:** Currently Operating
- Concentrations (if any):

In Greek: Concentrations
In English: Concentrations

KYNPIAKH AHMOKPATIA

The present document has been prepared within the framework of the authority and competencies of the Cyprus Agency of Quality Assurance and Accreditation in Higher Education, according to the provisions of the "Quality Assurance and Accreditation of Higher Education and the Establishment and Operation of an Agency on Related Matters Laws" of 2015 to 2021 [L.136(I)/2015 – L.132(I)/2021].

# A. Introduction

This part includes basic information regarding the onsite visit.

Following an invitation by the Cyprus Agency of Quality Assurance and Accreditation in Higher Education (CYQAA), the External Evaluation Committee (EEC) evaluated the BSc Programme in Data Science (E-Learning) offered by the University of Nicosia. The evaluation of the programme took place physically on site on 3 April 2024. Prior to the visit, the EEC was supplied with relevant documentation. On the day of the visit, the EEC met with the senior management team and academic faculty responsible for delivering the BSc programme, as well as with administrative and other support staff, students and graduates from this and other programmes in the same department. The EEC had the opportunity to ask questions and request further information.

The meetings and provision of all material under assessment were facilitated by Dr Lefkios Neophytou from CYQAA. The EEC wrote this report on 5 April 2024.

This report contains the findings of the visit and the resultant evaluation of the EEC. Based on the examination and evaluation of the accreditation material and the visit, the EEC concludes that some required standards are met, and others are partially met. This report elaborates on this and makes recommendations for improving the programme under evaluation.

# **B. External Evaluation Committee (EEC)**

Name	Position	University
Christina Lioma	Professor	University of Copenhagen, Denmark
Konstantinos Stefanidis	Professor	Tampere University, Finland
Jordi Conesa i Caralt	Professor	Open University of Catalonia, Spain
Maria Antoniadou	Student	University of Cyprus
Name	Position	University
Name	Position	University

#### C. Guidelines on content and structure of the report

- The external evaluation report follows the structure of assessment areas.
- At the beginning of each assessment area there is a box presenting:
  - (a) sub-areas
  - (b) standards which are relevant to the European Standards and Guidelines (ESG)
  - (c) some questions that EEC may find useful.
- The questions aim at facilitating the understanding of each assessment area and at illustrating the range of topics covered by the standards.
- Under each assessment area, it is important to provide information regarding the compliance with the requirements of each sub-area. In particular, the following must be included:

# **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

#### Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

#### Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

- The EEC should state the compliance for each sub-area (Non-compliant, Partially compliant, Compliant), which must be in agreement with everything stated in the report. It is pointed out that, in the case of standards that cannot be applied due to the status of the HEI and/or of the programme of study, N/A (= Not Applicable) should be noted.
- The EEC should state the conclusions and final remarks regarding the programme of study as a whole.
- The report may also address other issues which the EEC finds relevant.

# 1. Study programme and study programme's design and development (ESG 1.1, 1.2, 1.7, 1.8, 1.9)

#### Sub-areas

- 1.1 Policy for quality assurance
- 1.2 Design, approval, on-going monitoring and review
- 1.3 Public information
- 1.4 Information management

#### 1.1 Policy for quality assurance

#### Standards

- Policy for quality assurance of the programme of study:
  - o has a formal status and is publicly available
  - supports the organisation of the quality assurance system through appropriate structures, regulations and processes
  - supports teaching, administrative staff and students to take on their responsibilities in quality assurance
  - o ensures academic integrity and freedom and is vigilant against academic fraud
  - guards against intolerance of any kind or discrimination against the students or staff
  - o supports the involvement of external stakeholders

#### 1.2 Design, approval, on-going monitoring and review

#### <u>Standards</u>

- The programme of study:
  - o is designed with overall programme objectives that are in line with the institutional strategy and have explicit intended learning outcomes
  - o is designed by involving students and other stakeholders
  - o benefits from external expertise
  - reflects the four purposes of higher education of the Council of Europe (preparation for sustainable employment, personal development, preparation for life as active citizens in democratic societies, the development and maintenance, through teaching, learning and research, of a broad, advanced knowledge base)
  - is designed so that it enables smooth student progression
  - is designed so that the exams' and assignments' content corresponds to the level of the programme and the number of ECTS
  - defines the expected student workload in ECTS



- o includes well-structured placement opportunities where appropriate
- o is subject to a formal institutional approval process
- results in a qualification that is clearly specified and communicated, and refers to the correct level of the National Qualifications Framework for Higher Education and, consequently, to the Framework for Qualifications of the European Higher Education Area
- is regularly monitored in the light of the latest research in the given discipline, thus ensuring that the programme is up-to-date
- is periodically reviewed so that it takes into account the changing needs of society, the students' workload, progression and completion, the effectiveness of procedures for assessment of students, student expectations, needs and satisfaction in relation to the programme
- o is reviewed and revised regularly involving students and other stakeholders

#### 1.3 Public information

#### Standards

- Regarding the programme of study, clear, accurate, up-to date and readily accessible information is published about:
  - o selection criteria
  - intended learning outcomes
  - o qualification awarded
  - o teaching, learning and assessment procedures
  - o pass rates
  - o learning opportunities available to the students
  - graduate employment information

# 1.4 Information management

#### Standards

- Information for the effective management of the programme of study is collected, monitored and analysed:
  - key performance indicators
  - o profile of the student population
  - o student progression, success and drop-out rates
  - o students' satisfaction with their programmes
  - o learning resources and student support available
  - o career paths of graduates
- Students and staff are involved in providing and analysing information and planning follow-up activities.

### You may also consider the following questions:

- What is the procedure for quality assurance of the programme and who is involved?
- Who is involved in the study programme's design and development (launching, changing, internal evaluation) and what is taken into account (strategies, the needs of society, etc.)?
- How/to what extent are students themselves involved in the development of the content of their studies?
- Please evaluate a) whether the study programme remains current and consistent with developments in society (labour market, digital technologies, etc.), and b) whether the content and objectives of the study programme are in accordance with each other?
- Do the content and the delivery of the programme correspond to the European Qualifications Framework (EQF)?
- How is coherence of the study programme ensured, i.e., logical sequence and coherence of courses? How are substantial overlaps between courses avoided? How is it ensured that the teaching staff is aware of the content and outputs of their colleagues' work within the same study programme?
- How does the study programme support development of the learners' general competencies (including digital literacy, foreign language skills, entrepreneurship, communication and teamwork skills)?
- What are the scope and objectives of the foundation courses in the study programme (where appropriate)? What are the pass rates?
- How long does it take a student on average to graduate? Is the graduation rate for the study programme analogous to other European programmes with similar content? What is the pass rate per course/semester?
- How is it ensured that the actual student workload is in accordance with the workload expressed by ECTS?
- What are the opportunities for international students to participate in the study programme (courses/modules taught in a foreign language)?
- Is information related to the programme of study publicly available?
- How is the HEI evaluating the success of its graduates in the labor market? What is the feedback from graduates of the study programme on their employment and/or continuation of studies?
- Have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?
- What are the reasons for dropping out (voluntary withdrawal)? What has been done to reduce the number of such students?

# **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The BSc programme in Data Science was launched in 2020 and is designed to be delivered in four years (240 ECTS, arranged as 30 ECTS per semester). The programme combines theory and practice, on the topics of Data/Computer Science, Statistics and Mathematics, with a significant component of real world applications. The programme is timely and its content, objectives and learning outcomes are overall in line with the current standards. The objectives of the programme of study are also aligned with the university strategy and have explicit intended learning outcomes. The contribution of each course to the learning outcomes of the programme is clear. Courses are structured coherently across the programme. The course distribution in semesters is clearly and properly identified with a coherent list of compulsory and elective courses, allowing for a smooth learning progression. However, the EEC finds that the programme puts more emphasis on developing computer science competencies and skills through courses, than on teaching students to combine those skills with domain knowledge data science components in the context of practical projects. We elaborate on this point later in this section. In addition, student progression is also supported by tutorials, organized for providing extra help to students who may struggle. The idea is promising. However, the implementation needs some extra work with respect to the selection and training of tutors. We return to this point later in the section.

The program was established with clear motivations and input from external stakeholders in academia and industry, as well as following international standards (e.g. ACM recommendations). The topics offered in the program are appropriate. There is room for improvement with respect to including the latest advances in generative AI in the curriculum. We return to this point later in this section. The intended learning outcomes of the program have been overall clearly defined.

The courses are taught by permanent full time staff and several adjunct staff, all of whom hold a PhD in a relevant subject. External stakeholders from industry and academia are involved in the programme design as well.

The EEC finds the department able to provide good learning opportunities and facilities to the students involved in the programme. All courses are offered in English, providing the opportunity for international students to follow courses. The EEC finds that the design and approval process follows the Bologna requirements.

The EEC found that the policy of quality assurance of the programme has a formal status, appropriate structures and regulations, and supports both staff and students in taking on their responsibilities in quality assurance. The quality assurance committees and procedures provide overall adequate higher level support to ensure the quality and consistency of the study programme. The course design quality control involves staff collaboration, student committee approval and department board approval. The process for establishing courses with various levels of approval seems sufficient. There are mechanisms in place to detect plagiarism and processes to address fraud cases. The programme complies with the quality assurance policies in place at the University. There are a few points of improvement within quality assurance, which are discussed later in this section.

The university has provided to the EEC clear and up-to-date information about the selection criteria of students for this program (75% GPA or 15/20 Apolyterion or equivalent, in addition to English language requirements). The programme offers additional courses and workshops to students with gaps in their knowledge, allowing them to catch up in mathematics so that they can follow the programme. In addition, the intended learning outcomes of each course offered in this program as well as the rationale behind them, and the types of qualification awarded upon completion of this program are clearly communicated. The EEC also received information on the teaching and learning procedures to be used by all staff engaged in this program, the pass grades that students should have in order to progress throughout the program, examples of learning opportunities available to students, and a general overview of the potential graduate employment situation. Some elements in the assessment procedures that should be used by

teaching staff, such as grading rubrics, can be improved. We elaborate on this point further down in this section, and in other sections of this report.

In terms of information management, the university collects and monitors data profiling the student population, student progression, success and drop-out rates, student satisfaction with the program, and the types of learning resources and student support available to students.

Given the limited historical records (the programme ran for the first time in 2020), it is early to assess the dropout rate for students in the programme and the employability prospects.

#### **Strengths**

#### A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

The content and topics covered by the programme are consistent to the objectives of the program, and appropriate to support the development of the students' general competencies, where students not only get the chance to build their academic background, but also have the opportunity to build their communication and teamwork skills. Communication and team skills are in fact shown to be present in many of the courses with a combination of group and individual projects and a clear focus on these skills in the program. These are very good practices. The fact that the program includes a compulsory subject to deal with privacy and ethics, a very relevant aspect in data science, is also considered a good practice.

The EEC has observed various aspects of collaboration with other universities in the form of bilateral exchanges, joint degrees, or alliances. These achievements of outward looking collaboration are a strength. Furthermore, the EEC observed an overall culture of flexibility and willingness to make things work among the staff on all levels (management, teaching, administration) engaged in this course. This is highly commendable.

The programme is timely and well-designed. The programme management and teaching staff are overall of high quality. This can be seen, for instance, by the offering of additional catch-up courses to students with gaps in their knowledge, or the employment of senior students as tutors to aid potentially struggling junior students. Even though the implementation of some of these initiatives leaves room for improvement (see next section), these are still examples of good practices and are commendable.

The programme has close connections with industrial partners offering industrial workshops on the application of data science in real-life environments. In addition, an agreement is in place between the department and the Bank of Cyprus, allowing students to apply for a scholarship from the Bank of Cyprus and a minimum of 2-year employment with the Bank of Cyprus. The EEC commends these excellent initiatives.

Overall, there is a culture of flexibility and a willingness to make things work among the staff on all levels (management, teaching, administration) working on this course. This is highly commendable.

# Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

The BSc programme in Data Science was launched in 2020, with an intake of 8 students. Since then, student intake has been slowly increasing up to 21 students in 2024. From its launch in 2020 until 2024, a total of 49 students have enrolled in this programme, and a total of 7 students have discontinued their enrollment. Based on these figures, the overall dropout rate is approximately 14%. Given the relatively speaking low raw numbers of enrolments, this rate may be cause of concern and requires counter action. The EEC was informed that the department takes action to

reduce dropout, in the form of reaching out to students, offering them tutorials, informing them about their office hours, and so on. Even though these actions are steps in the right direction, they are not enough. This can also be seen by the fact that the dropout rate has been stable in the last three years. The EEC recommends that a long term strategy is designed, aiming to reduce this dropout rate. This strategy should include, for instance, exit interviews (with students leaving the programme), or focus group analysis. This strategy should be communicated to all staff and regularly revised, upon monitoring its impact on reducing student dropout.

The course design approval system is formally sufficient, in terms of its written regulations. However, the EEC observed that adjunct teachers may not be aware of the processes involved. The EEC recommends ensuring that all adjunct teachers are informed and aware of their role, as well as the role of others in the design /design change of a course.

At this time, there is little information available about the graduates of this programme, except that the job market is strong. The EEC recommends that more employment information be obtained over time and applied for recruiting purposes. Particularly, the programme would benefit from stories of graduates displayed on the web site. It is suggested that the usefulness of such marketing requires regular updates with recent graduates and in particular over time to include graduates from this programme.

The mission of quality assurance and the composition of the quality assurance committee is publicly available on the university's website. However, the actual quality assurance policy is not available on the university's website. The EEC recommends that the full policy of quality assurance is made publicly available, not only upon request, but stated openly on the university's website. In addition, even though formally the quality assurance committee includes student members, the EEC was informed that sometimes student members are not present in meetings of the quality assurance committee. The EEC recommends that student presence is made compulsory to all meetings of the quality assurance committee, to ensure that students are always represented in the quality assurance process. The student member of the university quality assurance committee is currently selected by the Student Affairs Committee of the Senate, following consultation with the Student Union. The student member of the school quality assurance committee is currently selected by the Dean of the School, following self-nominations responding to a call sent by the Dean. The student member of the department quality assurance committee is currently selected by the Head of Department, following self-nominations responding to a call sent by the Head of Department. The EEC recommends that the student members of all three quality assurance committees be selected directly and independently by the student body, without any input by any other body of the university, to increase the impartiality of the selection. Lastly, external stakeholders are not represented in the composition of any quality assurance committees. The involvement of external stakeholders is not strong in the overall quality assurance process. The EEC therefore recommends that the quality assurance policy supports the involvement of external stakeholders in an explicit way, for instance by their representation in the quality assurance committees.

The course descriptions currently state the ECTS of each course. The EEC recommends that the following information be included in each course description, so that students can readily see the expected student workload in hours (for the duration of the whole course):

#### Student workload

- Number of lecture hours
- · Number of preparation hours
- · Number of hours spent in coursework
- · Number of hours spent in exam preparation
- · Number of hours spent in exam

Given the fast technological advances in AI, the programme's curriculum should be updated regularly. The students that the EEC interviewed were not familiar with the latest advances in generative AI (e.g. ChatGPT). Given how much this type of technology has spread within society and industry, the EEC recommends that the programme covers generative AI, both theoretically (as is partially done by some of the current courses), but also with practical handson projects and assignments involving, for instance, prompting openly available generative models, or fine-tuning them on large scale datasets requiring GPU computational resources. In addition, upon interviewing students, the EEC observed a clear request for more practical work and practical experience, especially for the courses related to AI and ML. This aligns with the EEC's observation that the programme puts more emphasis on developing computer science competencies and skills through courses, than on teaching students to combine those skills with domain knowledge data science components in the context of practical projects. The EEC therefore recommends that more practical elements, such as practical assignments and projects on data science components on large-scale datasets, be introduced to the programme.

Even though the EEC was informed by the teaching staff that written formative feedback is always provided along with grades to students, the students interviewed did not always receive written feedback with their grades. This is an important point, and the EEC therefore recommends that students always receive some formative written feedback along with their grades.

The programme supports student progression. One means for that is the tutorials organized for providing extra help to the students. In general, this idea of supporting students whose skills need improvement to follow the program is excellent and can help to reduce the dropout rate. However, the implementation needs some extra work. Specifically, the tutors are senior students who do not have any teaching or learning training on the basic didactic skills needed to help their colleagues. In addition, the selection of senior students as tutors appears to be ad hoc. There are no concrete or formalized steps for selecting tutors, or for knowing which students can receive assistance by a tutor. The EEC recommends that formal procedures are in place guiding the selection and basic training of tutors in the programme.

# Please select what is appropriate for each of the following sub-areas:

Sub-a	area	Non-compliant/ Partially Compliant/Compliant
1.1	Policy for quality assurance	Compliant
1.2	Design, approval, on-going monitoring and review	Compliant
1.3	Public information	Partially compliant
1.4	Information management	Compliant

# 2. Student – centred learning, teaching and assessment (ESG 1.3)

#### Sub-areas

- 2.1 Process of teaching and learning and student-centred teaching methodology
- 2.2 Practical training
- 2.3 Student assessment

# 2.1 Process of teaching and learning and student-centred teaching methodology

# <u>Standar</u>ds

- The process of teaching and learning supports students' individual and social development.
- The process of teaching and learning is flexible, considers different modes of delivery, where appropriate, uses a variety of pedagogical methods and facilitates the achievement of planned learning outcomes.
- Students are encouraged to take an active role in creating the learning process.
- The implementation of student-centered learning and teaching encourages a sense of autonomy in the learner, while ensuring adequate guidance and support from the teacher.
- Teaching methods, tools and material used in teaching are modern, effective, support the use of modern educational technologies and are regularly updated.
- Mutual respect within the learner-teacher relationship is promoted.
- The implementation of student-centred learning and teaching respects and attends to the diversity of students and their needs, enabling flexible learning paths.
- Appropriate procedures for dealing with students' complaints regarding the process of teaching and learning are set.

# 2.2 Practical training

# Standards

- Practical and theoretical studies are interconnected.
- The organisation and the content of practical training, if applicable, support achievement of planned learning outcomes and meet the needs of the stakeholders.

#### 2.3 Student assessment

# Standards

• Assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures.

- Assessment is appropriate, transparent, objective and supports the development of the learner.
- The criteria for the method of assessment, as well as criteria for marking, are published in advance.
- Assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved. Students are given feedback, which, if necessary, is linked to advice on the learning process.
- Assessment, where possible, is carried out by more than one examiner.
- A formal procedure for student appeals is in place.
- Assessors are familiar with existing testing and examination methods and receive support in developing their own skills in this field.
- The regulations for assessment take into account mitigating circumstances.

#### You may also consider the following questions:

- How is it monitored that the teaching staff base their teaching and assessment methods on objectives and intended learning outcomes? Provide samples of examination papers (if available).
- How are students' different abilities, learning needs and learning opportunities taken into consideration when conducting educational activities?
- How is the development of students' general competencies (including digital skills) supported in educational activities?
- How is it ensured that innovative teaching methods, learning environments and learning aids that support learning are diverse and used in educational activities?
- Is the teaching staff using new technology in order to make the teaching process more effective?
- How is it ensured that theory and practice are interconnected in teaching and learning?
- How is practical training organised (finding practical training positions, guidelines for practical training, supervision, reporting, feedback, etc.)? What role does practical training have in achieving the objectives of the study programme? What is student feedback on the content and arrangement of practical training?
- Are students actively involved in research? How is student involvement in research set up?
- How is supervision of student research papers (seminar papers, projects, theses, etc.) organised?
- Do students' assessments correspond to the European Qualifications Framework (EQF)?
- How are the assessment methods chosen and to what extent do students get supportive feedback on their academic progress during their studies?
- How is the objectivity and relevance of student assessment ensured (assessment of the degree of achievement of the intended learning outcomes)?

#### **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The only written guidelines provided to the EEC regarding procedures of teaching, learning and assessment (namely pedagogical model for e-learning, pedagogical support for distance learning courses, and distance learning faculty handbook) pertain to the MSc programme in Data Science, which is an e-learning programme. No such documentation applying to the BSc programme was provided. We elaborate on this in Section 5. Both formative and summative forms of assessment are accounted for. Development of soft skills and experience in industry is integrated in the programme structure (even though the exposure of students to applied practical elements should be increased, as discussed in the previous section). Several extra-curriculum initiatives are also offered, such as participation in competitions and seminars.

Overall, the EEC found that the process of teaching and learning of this program is appropriate to the topics covered by the program, and the delivery of the program is also appropriate for the expected learning outcomes. Students are provided the opportunity to give their suggestions to the program. The Department provides a supportive and encouraging learning environment to students, where students are not only supported by faculty members but also by the well organized administrative team. The department implements a flexible process of teaching and learning which ensures the quality of the provided program. Student learning takes various forms from lectures to exercises to individual and group projects. The assessment of most courses involves a variety of more traditional and modern elements whilst involving some form of continuous assessment i.e. at least 2 forms of assessment in each course. The assessment methodology and procedures are overall appropriate. However, there is some room for improvement. We discuss this point later in this section. All gradable student submissions are marked by permanent staff or adjunct staff (with PhDs). The marking is carried out by staff with no moderator. Both individual and group work assignments are common. The practical (optional) training in industry via internships supports the goal of practical industry experience for those that select this option.

#### Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

The student-staff ratio is healthy, and there is evidence from interviewing students that the staff are friendly and helpful towards students in achieving the learning outcomes. This is a strength.

The university's close collaboration with industry fosters a dynamic learning environment, where students have the opportunity to gain hands-on experience through industry placements and benefit from the expertise of industry professionals. This collaboration also ensures that the curriculum remains relevant, aligning with industry needs and preparing students for successful careers. Additionally, the institution encourages students to participate in competitions, where they have achieved some success. These are all examples of good practices.

Proactive student welfare mechanisms and support with personal tutors are in place. These initiatives are commendable.

The university seems very well equipped and prepared to deal with online learning in the case of a continuing pandemic, such as COVID-19.

#### Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

Upon examination of the programme documentation provided, the EEC did not find information about the expected feedback to be provided by teachers to students, even though this information was requested by the EEC. Despite the EEC's request, no grading rubric was provided for this programme. The EEC recommends that rubrics are designed and used in all courses, with explicit mappings between the numerical grades and their corresponding textual descriptions of student performance. The EEC also recommends that rubrics are shared with students in the activity guide of each course.

The EEC observed a range of staff training options in terms of teaching and learning. However, the EEC found that it is mostly permanent staff, and less so adjunct staff, who make use of this pedagogical training. The EEC recommends that all staff interacting with students, permanent and adjunct, be trained on their pedagogical and didactic skills.

Occasionally, senior students are selected by staff to act as tutors (upon payment) for junior students who struggle. The EEC commends this practice. However, there is no formal training requirement for tutors. The EEC recommends that tutors receive some basic formal training, before they interact with students.

#### Please select what is appropriate for each of the following sub-areas:

		Non-compliant/
Sub-	area	Partially Compliant/Compliant
2.1	Process of teaching and learning and student- centred teaching methodology	Compliant
2.2	Practical training	Compliant
2.3	Student assessment	Partially compliant

# 3. Teaching staff (ESG 1.5)

#### **Sub-areas**

- 3.1 Teaching staff recruitment and development
- 3.2 Teaching staff number and status
- 3.3 Synergies of teaching and research

#### 3.1 Teaching staff recruitment and development

#### Standards

- Institutions ensure the competence of their teaching staff.
- Fair, transparent and clear processes for the recruitment and development of the teaching staff are set up.
- Teaching staff qualifications are adequate to achieve the objectives and planned learning outcomes of the study programme, and to ensure quality and sustainability of the teaching and learning.
- The teaching staff is regularly engaged in professional and teaching-skills training and development.
- Promotion of the teaching staff takes into account the quality of their teaching, their research activity, the development of their teaching skills and their mobility.
- Innovation in teaching methods and the use of new technologies is encouraged.
- Conditions of employment that recognise the importance of teaching are followed.
- Recognised visiting teaching staff participates in teaching the study programme.

# 3.2 Teaching staff number and status

#### Standards

- The number of the teaching staff is adequate to support the programme of study.
- The teaching staff status (rank, full/part time) is appropriate to offer a quality programme of study.
- Visiting staff number does not exceed the number of the permanent staff.

#### 3.3 Synergies of teaching and research

#### Standards

- The teaching staff collaborate in the fields of teaching and research within the HEI
  and with partners outside (practitioners in their fields, employers, and staff
  members at other HEIs in Cyprus or abroad).
- Scholarly activity to strengthen the link between education and research is encouraged.
- The teaching staff publications are within the discipline.

- Teaching staff studies and publications are closely related to the programme's courses.
- The allocation of teaching hours compared to the time for research activity is appropriate.

# You may also consider the following questions:

- How are the members of the teaching staff supported with regard to the development of their teaching skills? How is feedback given to members of the teaching staff regarding their teaching results and teaching skills?
- How is the teaching performance assessed? How does their teaching performance affect their remuneration, evaluation and/or selection?
- Is teaching connected with research?
- Does the HEI involve visiting teaching staff from other HEIs in Cyprus and abroad?
- What is the number, workload, qualifications and status of the teaching staff (rank, full/part timers)?
- Is student evaluation conducted on the teaching staff? If yes, have the results of student feedback been analysed and taken into account, and how (e.g., when planning in-service training for the teaching staff)?

## **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The teaching staff of the Data Science BSc Programme of the University of Nicosia includes experienced scientists in the data science domain with qualifications that meet the objectives of the programme, and collaborations with both academia and industry. Teaching performance is assessed via questionnaires completed by the students. Staff development discussions take place once per year, for assessing overall staff development and performance. The teaching team includes both males and females, senior and young faculty members at different ranks, but overall, there is a gender imbalance among the teaching staff. We return to this point later in this section.

The department employs 16 full time professors at different ranks and 10 adjunct professors. The employment process between full time and adjunct staff is different, but interviews and transparent evaluation by in-house experts are common to both processes. The teaching staff promotion processes are clear. Regarding the hiring process for new staff, there is no involvement of external evaluators. The conditions of employment recognise the importance of teaching.

All teaching staff have a PhD and competence in the English language, and overall, their qualifications meet the requirements of the programme. There is enough staff to teach the programme's courses. However, the EEC was informed during the meeting with the students that some elective courses had been canceled due to instructor unavailability, despite the fact that the overall number of teaching staff is adequate.

All teaching staff are offered two series of workshops related to education and pedagogy provided by the Pedagogical Support Unit of the university. Part of this training is compulsory to all permanent staff, but not to adjunct staff. We return to this point later in the section.

# Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

Full time professors receive compulsory didactics training in the form of seminars over 12 weeks on Teaching and Learning Theory and Practice, offered by the Pedagogical Support Unit of the university. In addition, they are offered a series of training options on research training, and other topics, including health and safety, GDPR, faculty welfare, diversity, equity and inclusion. These are examples of very good practice and they are highly commendable.

In addition to the development discussions, performed once per year, the teaching performance is also assessed via feedback questionnaires completed by the students of the programme. This is an example of good practice.

The teaching team includes both genders, senior and young faculty members at different ranks. Several members of the teaching staff have established collaborations with both industry and academia internationally, therefore strengthening the outward looking nature of the programme. The network of industrial partners of the staff engaged in this programme includes well known international companies, such as Expedia, NVIDIA, the Deep Learning Institute, Amazon Web Services, Google Cloud, bank of Cyprus, as well as the universities of Arkansas in the USA and of Orebro in Sweden. It is an achievement for such a young programme to have this type of network. This is commendable.

The university offers opportunities for internal seed funding and opportunities for sabbatical leave to permanent staff. These are good practices, aimed to increase both the professional development of the teaching staff, but also their level of job satisfaction. The EEC observed that two faculty members involved in this programme have made of use of these opportunities (one junior member has received seed funding, and one senior member has used a sabbatical leave).

### Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

The synergy between teaching and research should be strengthened. The EEC observed an imbalance in the research engagement of the teaching staff; quite a few of them were not very research active, and a few were minimally research active (in the past 12 months). The overall research output of the teaching staff is not high, in terms of publications or externally funded research projects. Furthermore, the distribution of the research activity among the teaching staff is skewed, with several members of staff having no research publication and no involvement in externally funded research in the last 12 months. For some teaching staff, the EEC observed that the teaching load appeared to leave little available time for research. The EEC further observed that different members of staff had different ways of measuring their teaching versus research time, all of them vague. This discrepancy between the written regulations of the university and the day to day practice should be amended. The EEC recommends that appropriate structures are put in place to ensure that all teaching staff use the same unit for measuring their teaching versus research time on a day to day basis, not only on paper. The teaching to research ratio of the teaching staff workload should be clearly measured and monitored to ensure a healthy proportion of both components.

Also, there appears to be a culture that teaching is compulsory, but research is optional. <u>The EEC recommends that the university takes concrete measures to increase the research engagement of the teaching staff, and following this to boost the link between research and teaching in the programme. Currently, this link is not adequate.</u>

The teaching team includes many adjunct professors. Specifically, the teaching team of the department includes 16 full time faculty members and 10 adjunct professors, which is almost 40%. Having a high number of adjunct staff can be problematic on several levels, such as their engagement to long term strategy and vision, their contribution to managerial and administrative duties outside teaching, their contribution to strengthening the link between research and teaching, and disruptions in the continuity of course design and pedagogical vision across the years. The EEC recommends that efforts are made to lower the number of adjunct staff.

Although the overall number of teaching staff is adequate, the EEC was informed during the meeting with the students that some elective courses had been canceled due to instructor unavailability. The EEC strongly recommends that measures are taken to minimize instructor shortage that leads to canceling courses.

The didactic training is compulsory only for full time permanent staff. The EEC observed that even though adjunct teaching staff is encouraged to make use of the teacher training initiatives of the university, adjunct staff often choose not to. This creates the risk of allowing teaching staff to interact with students without clear pedagogical guidance. The EEC recommends that all teaching staff interacting with students have received compulsory pedagogical training.

There is also a gender imbalance among the teaching staff, where most staff is male. The EEC was informed that gender balance is not taken into account in the composition of internal committees, especially when assessing applicants to open positions at the university. The EEC was also informed that gender balance was not considered when assessing the pools of applicants to the respective positions. Overall the EEC did not observe any strategy or initiatives to reduce gender imbalance among staff. The EEC recommends that a careful long term gender balance strategy is designed, communicated to all staff members, and implemented in practice.

The EEC observed that not all members of the teaching staff are aware of the practices and processes that the university follows or has in place, such as the basic processes on handling student requests for a re-evaluation of their grade. Similarly, several D&I actions exist (typically organized in the form of seminars), but the EEC observed that not all staff are fully aware of them. These actions should be known to all and part of their daily practice. The EEC recommends that all teaching staff (both permanent and adjunct) are uptodate with basic day to day procedures and D&I initiatives, and that these are implemented by all.

#### Please select what is appropriate for each of the following sub-areas:

Sub-a	area	Non-compliant/ Partially Compliant/Compliant
3.1	Teaching staff recruitment and development	Compliant
3.2	Teaching staff number and status	Compliant
3.3	Synergies of teaching and research	Partially compliant

4. Student admission, progression, recognition and certification (ESG 1.4)

# **Sub-areas**

- 4.1 Student admission, processes and criteria
- 4.2 Student progression
- 4.3 Student recognition
- 4.4 Student certification

#### 4.1 Student admission, processes and criteria

#### Standards

- Pre-defined and published regulations regarding student admission are in place.
- Access policies, admission processes and criteria are implemented consistently and in a transparent manner.

# 4.2 Student progression

#### Standards

- Pre-defined and published regulations regarding student progression are in place.
- Processes and tools to collect, monitor and act on information on student progression, are in place.

# 4.3 Student recognition

# **Standards**

- Pre-defined and published regulations regarding student recognition are in place.
- Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components for ensuring the students' progress in their studies, while promoting mobility.
- Appropriate recognition procedures are in place that rely on:
  - institutional practice for recognition being in line with the principles of the Lisbon Recognition Convention
  - cooperation with other institutions, quality assurance agencies and the national ENIC/NARIC centre with a view to ensuring coherent recognition across the country

#### 4.4 Student certification

# **Standards**

- Pre-defined and published regulations regarding student certification are in place.
- Students receive certification explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed.

# You may also consider the following questions:

- Are the admission requirements for the study programme appropriate? How is the students' prior preparation/education assessed (including the level of international students, for example)?
- How is the procedure of recognition for prior learning and work experience ensured, including recognition of study results acquired at foreign higher education institutions?
- Is the certification of the HEI accompanied by a diploma supplement, which is in line with European and international standards?

#### **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

Various units offer essential support to students. These units include the Distance Learning unit, the Student Success Centre, the Academic Counselling, and the Student Affairs Department. Their support covers a wide range of student needs, including psychological, academic, and professional assistance, as well as help with the interactions related to enrollment, daily activities, and special requirements. Student mobility is encouraged and supported by the university through the ERASMUS office. The department of Student Affairs supports students by promoting their personal growth, as well as development of leadership and communication skills by different kinds of activities, such as advice and guidance, mock interviews, employment and internships programs, workshops and career exhibition days. However, the ECC has not identified a well-defined policy regarding the support provided to new employees and adjunct professors in cases involving psychological assistance or special needs.

The student admission process reveals a well-structured and transparent system. The process is clearly defined, with explicit regulations in place. The criteria are a minimum high school grade prerequisite and the mandatory English language proficiency certificate. The university allows the consideration of special cases not satisfying these requirements through the Special Academic Admission process, potentially fostering inclusivity. Consistency is evident throughout the process, supported by both documented evidence and observations during interviews with administrative staff.

The university has clear and public regulations about the recognition of credits earned in programmes of other institutions (transfer credits), from national testing and professional examining bodies, from exchange programs (such as Erasmus+) and from work experience.

The student progression system within the programme is carefully designed to support continuous assessment and feedback. Assignments serve as the primary means of assessment, and faculty members are required to offer written feedback for each assessment task. Although the consistency of this written feedback may vary (we elaborate on this point earlier in this report), students have responded positively to the overall responsiveness of the faculty. Faculty members are readily available to address student inquiries and provide guidance beyond regular class hours. Additionally, internal regulations are well-documented and accessible to faculty members. There is however some room for improvement with respect to grading guidelines and rubrics, as discussed earlier in the report.

Overall, the university has well-defined and transparent regulations governing student advancement, recognition, and certification. Additionally, there are feedback channels that allow students to contribute their insights on program quality. Furthermore, students are actively encouraged to engage in university processes, including committee participation (as commented in Section 1).

# **Strengths**

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

According to the students interviewed by the EEC, teaching staff is highly accessible and readily available for support and guidance whenever needed. The student to teacher ratio was also praised by students. This accessibility fosters a conducive learning environment and facilitates effective communication between students and instructors, ultimately enhancing the overall educational experience. This is a strength of the programme.

The EEC acknowledges that the university offers robust support and services to students. The Distance Learning Unit proactively suggests compensation measures to tailor program materials, learning experiences, and assessment structures for students with special needs. Additionally, KESY provides assistance through welfare mechanisms and psychological support to students facing special needs or personal difficulties. All these initiatives are examples of very good practice.

# Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

Although faculty members assured that they consistently offer grades and written feedback for all assignments and exams, student interviews revealed that this was not always the case. The EEC recommends universal adherence to the practice of providing formative written feedback consistently at all times.

The EEC was informed that a marking rubric exists, but its availability to students remains unclear. Despite requests by the EEC, no rubric was provided for this programme to the EEC. The EEC recommends making the marking rubric publicly accessible to students. In addition, the EEC suggests that the expected author of the marking rubric and the process of revisions should be explicitly stated in the Quality Assurance policy.

For industry-based projects, the EEC recommends that information about relevant intellectual property issues are provided to students before the commencement of their project work, not upon request or after the industrial placement has commenced.

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Please select what is appropriate for each of the following sub-areas:

		Non-compliant/
Sub-	area	Partially Compliant/Compliant
4.1	Student admission, processes and criteria	Compliant
4.2	Student progression	Compliant
4.3	Student recognition	Compliant
4.4	Student certification	Compliant

#### 5. Learning resources and student support (ESG 1.6)

#### **Sub-areas**

- 5.1 Teaching and Learning resources
- 5.2 Physical resources
- 5.3 Human support resources
- 5.4 Student support

# 5.1 Teaching and Learning resources

#### Standards

- Adequate and readily accessible teaching and learning resources (teaching and learning environments, materials, aids and equipment) are provided to students and support the achievement of objectives in the study programme.
- Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- All resources are fit for purpose.
- Student-centred learning and flexible modes of learning and teaching, are taken into account when allocating, planning and providing the learning resources.

#### 5.2 Physical resources

#### <u>Standards</u>

- Physical resources, i.e. premises, libraries, study facilities, IT infrastructure, are adequate to support the study programme.
- Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).
- All resources are fit for purpose and students are informed about the services available to them.

#### 5.3 Human support resources

# Standards

- Human support resources, i.e. tutors/mentors, counsellors, other advisers, qualified administrative staff, are adequate to support the study programme.
- Adequacy of resources is ensured for changing circumstances (change in student numbers, etc.).

• All resources are fit for purpose and students are informed about the services available to them.

# 5.4 Student support

#### Standards

- Student support is provided covering the needs of a diverse student population, such as mature, part-time, employed and international students and students with special needs.
- Students are informed about the services available to them.
- Student-centred learning and flexible modes of learning and teaching, are taken into account when allocating, planning and providing student support.
- Students' mobility within and across higher education systems is encouraged and supported.

# You may also consider the following questions:

- Evaluate the supply of teaching materials and equipment (including teaching labs, expendable materials, etc.), the condition of classrooms, adequacy of financial resources to conduct the study programme and achieve its objectives. What needs to be supplemented/improved?
- What is the feedback from the teaching staff on the availability of teaching materials, classrooms, etc.?
- Are the resources in accordance with actual (changing) needs and contemporary requirements? How is the effectiveness of using resources ensured?
- What are the resource-related trends and future risks (risks arising from changing numbers of students, obsolescence of teaching equipment, etc.)? How are these trends taken into account and how are the risks mitigated?
- Evaluate student feedback on support services. Based on student feedback, which support services (including information flow, counselling) need further development?
- How is student learning within the standard period of study supported (student counselling, flexibility of the study programme, etc.)?
- How students' special needs are considered (different capabilities, different levels of academic preparation, special needs due to physical disabilities, etc.)?
- How is student mobility being supported?

#### **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

The university has established support structures and processes to enhance the faculty's pedagogical, digital, and technical competencies related to teaching and learning activities. Mainly, this task is performed by the PSU and the Distance Learning Units. Additionally, the university provides relevant information within its internal regulations (specifically in Chapters 2, 6, and 7) to guide faculty during their teaching/learning experiences. Adjunct staff are encouraged but not obliged to follow any of these training courses. This is a disadvantage, as discussed already earlier in this report.

The materials and activities are interactive and useful according to student comments. The materials have multimodal elements. When necessary, materials are adapted to accommodate students with special needs. While there are some automatically graded activities, they are not widely used. Additionally, gamification activities are not extensively incorporated into the program's courses.

After evaluating the university's physical and technological resources, the ECC concludes that the environment is suitable to support the study program. The classrooms and laboratories are appropriately sized, and the technological infrastructure meets the necessary requirements. Additionally, the library offers resources in formats suitable for both physical and virtual access by students, on a 24/7 basis. The university employs various tools, such as Moodle, Webex, Office 365, a ticketing system, Turnitin, Proctorio, and Planet E-stream, to facilitate teaching and learning. Furthermore, learning resources are uploaded to Moodle, ensuring accessibility for students anywhere and everywhere.

According to faculty members, the university provides pedagogical support for designing, implementing, and evaluating courses by the PSU units. In addition, there are other stakeholders that may support faculty in the preparation of their activities, materials or other pedagogical/technological issues, such as Technology Enhanced Learning Center, the Mediazone Center and the e-Learning Expert Faculty.

# Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

The DL and PSU units are good practices due to their efficient structure, competences, digitalization, and integration with other relevant stakeholders for dealing with different issues. The EEC finds that these are a powerful asset to promote, assess and improve the student learning experience, and to improve the teachers competencies in delivering high quality and adaptive teaching.

The Teaching Certificate Program for Faculty is also a good practice. It states the general strategy, goals, and policies to be followed in the teaching and learning activities and provides real examples to help lecturers when preparing materials or conducting teaching.

Students have constant (24/7) access to learning resources through the Moodle platform, as they are readily available in digital form. This is an example of good practice.

The processes to detect and provide the necessary assistance to students with special needs is also considered a good practice and is highly commendable.

#### Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

As an improvement that would greatly benefit students, <u>the EEC recommends that course instructors always provide</u> <u>written feedback to students</u>, as this facilitates their understanding of the material and aids in their academic growth. There should be no divergence from this practice.

Even though courses provided by the PSU are considered good practices, it seems that they have not reached all the faculty. In particular, the ECC has observed that these courses have not been completed by some of the new adjunct faculty, who were also unaware of some basic teaching regulations. As per the EEC's recommendations in previous sections, it is important that all the faculty who teach in the programme have completed these courses and are aware of the aforementioned documents.

There is no information in the documentation provided to the EEC about what is considered as good formative feedback and how to provide it. Since giving useful formative feedback may be a challenging and subjective process, especially to less experienced staff, the ECC believes it would be beneficial to add this information in the faculty handbook.

The ECC observed that certain video materials lack subtitles. <u>The EEC recommends that subtitles be added to all video content,</u> to improve the student-teacher experience and reduce misunderstandings, ambiguity and other similar factors that may lower student engagement.

The pedagogical model for e-Learning and the Distance Learning Faculty Handbook are very useful documents that promote uniform and high quality teaching in an e-Learning setup. However, the ECC has not found similar resources in the context of face-to-face learning, which would apply to this programme. The EEC recommends developing these documents in the context of face-to-face learning and providing them to the faculty. This would benefit the quality and homogeneity of the learning, teaching and grading activities of the program, and would also provide useful guidance to teachers in their activities.

The documentation provided to the ECC for each relevant course included solely the course outline (there was no information on student workload broken down into hours, grading guidelines, activities). The assessment and study guides, which are mandatory in the context of e-Learning programs as it is stated in the pedagogical model for e-Learning, were not provided to the EEC. The ECC could therefore not establish whether these guides are provided also in face-to-face programmes. If not, the EEC recommends developing these guides and sharing them with the courses' students would improve transparency, accountability, homogeneity and also self-determination learning.

# Please select what is appropriate for each of the following sub-areas:

	•• •	•
		Non-compliant/
Sub-a	area	Partially Compliant/Compliant
5.1	Teaching and Learning resources	Partially compliant
5.2	Physical resources	Compliant
5.3	Human support resources	Compliant
5.4	Student support	Compliant

# 6. Additional for doctoral programmes (ALL ESG)

#### **Sub-areas**

- 6.1 Selection criteria and requirements
- 6.2 Proposal and dissertation
- 6.3 Supervision and committees

# 6.1 Selection criteria and requirements

#### Standards

- Specific criteria that the potential students need to meet for admission in the programme, as well as how the selection procedures are made, are defined.
- The following requirements of the doctoral degree programme are analysed and published:
  - the stages of completion
  - o the minimum and maximum time of completing the programme
  - o the examinations
  - o the procedures for supporting and accepting the student's proposal
  - o the criteria for obtaining the Ph.D. degree

#### 6.2 Proposal and dissertation

#### Standards

- Specific and clear guidelines for the writing of the proposal and the dissertation are set regarding:
  - the chapters that are contained
  - o the system used for the presentation of each chapter, sub-chapters and bibliography
  - o the minimum word limit
  - the binding, the cover page and the prologue pages, including the pages supporting the authenticity, originality and importance of the dissertation, as well as the reference to the committee for the final evaluation
- There is a plagiarism check system. Information is provided on the detection of plagiarism and the consequences in case of such misconduct.
- The process of submitting the dissertation to the university library is set.

# 6.3 Supervision and committees

# Standards

- The composition, the procedure and the criteria for the formation of the advisory committee (to whom the doctoral student submits the research proposal) are determined.
- The composition, the procedure and the criteria for the formation of the examining committee (to whom the doctoral student defends his/her dissertation), are determined.
- The duties of the supervisor-chairperson and the other members of the advisory committee towards the student are determined and include:
  - regular meetings

- reports per semester and feedback from supervisors
- support for writing research papers
- participation in conferences
- The number of doctoral students that each chairperson supervises at the same time are determined.

# You may also consider the following questions:

- How is the scientific quality of the PhD thesis ensured?
- Is there a link between the doctoral programmes of study and the society? What is the value of the obtained degree outside academia and in the labour market?
- Can you please provide us with some dissertation samples?

# **Findings**

A short description of the situation in the Higher Education Institution (HEI), based on elements from the application for external evaluation and on findings from the onsite visit.

Click or tap here to enter text.

#### Strengths

A list of strengths, e.g. examples of good practices, achievements, innovative solutions etc.

Click or tap here to enter text.

#### Areas of improvement and recommendations

A list of problem areas to be dealt with, followed by or linked to the recommendations of how to improve the situation.

Click or tap here to enter text.

# Please select what is appropriate for each of the following sub-areas:

		Non-compliant/
Sub-	area	Partially Compliant/Compliant
6.1	Selection criteria and requirements	Choose answer
6.2	Proposal and dissertation	Choose answer
6.3	Supervision and committees	Choose answer

#### D. Conclusions and final remarks

Please provide constructive conclusions and final remarks which may form the basis upon which improvements of the quality of the programme of study under review may be achieved, with emphasis on the correspondence with the EQF.

The EEC reviewed and examined the materials provided by the University of Nicosia pertaining to its Bachelor's Degree Programme in Data Science. The one-day site visit was held on 3 April 2024.

The EEC was presented with detailed information about the degree programme. During the site visit, the EEC met university, school and department leadership peers and met professors, teachers and administrators. It also met students of the program.

Based on the examination and evaluation of the accreditation materials and the physical site visit, the EEC concludes that some of the required standards are met fully, and some of the required standards are met partially. The EEC has made a list of recommendations targeted to improving the required standards and raising the level of the programme internationally. These recommendations are marked in bold and highlighted throughout this document.

# E. Signatures of the EEC

Name	Signature
Christina Lioma	
Konstantinos Stefanidis	
Jordi Conesa i Caralt	
Maria Antoniadou	
Click to enter Name	
Click to enter Name	

**Date:** 5 April 2024