Doc. 300.1.2

Date: 11.07.22

Higher Education Institution's Response

- **Higher Education Institution:**
  Neapolis University Pafos (NUP)

- **Town:** Pafos

- **Collaborative Institution(s):**
  Hellenic Mediterranean University (HMU), School of Management and Economic Sciences (Department of Accounting & Finance), Greece

  - **Programme of study**
    Name (Duration, ECTS, Cycle) 1.5 academic year, 90 ECTS, Master (MSc) Conventional

  In English:

  Data Analytics & FinTech

- **Language(s) of instruction:** English/Greek

- **Programme's status:** New

- **Concentrations (if any): n/a**

  In Greek: Concentrations
  In English: Concentrations

ΚΥΠΡΙΑΚΗ ΔΗΜΟΚΡΑΤΙΑ
REPUBLIC OF CYPRUS

A. Guidelines on content and structure of the report

- *The Higher Education Institution (HEI) based on the External Evaluation Committee's (EEC's) evaluation report (Doc.300.1.1 or 300.1.1/1 or 300.1.1/2 or 300.1.1/3 or 300.1.1/4) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area. The answers' documentation should be brief and accurate and supported by the relevant documentation. Referral to annexes should be made only when necessary.*

- *In particular, under each assessment area and by using the 2nd column of each table, the HEI must respond on the following:*

    - *the areas of improvement and recommendations of the EEC*
    - *the conclusions and final remarks noted by the EEC*

- *The institution should respond to the EEC comments, in the designated area next each comment. The comments of the EEC should be copied from the EEC report **without any interference** in the content.*

- *In case of annexes, those should be attached and sent on separate document(s). Each document should be in *.pdf format and named as annex1, annex2, etc.*

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

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
1.1 To revise the title and the content of the program to address the needs of an interdisciplinary student intake: The T&L committee is invited to think outside the box of existing courses in the institution and build up the courses that are needed for this program in order to offer an opportunity to the students to join the financial technology revolution upon graduation. Students in this program need to learn design methodology for financial technology applications and not just passively be presented case studies. They need to learn how to implement, assess and integrate these technologies with current systems. This will only be successful if they develop computational skills, understand the statistical and machine learning principles in order to later on to work on large scale projects with data analysis that are used in the data driven financial sector. To provide the support to students from both backgrounds (ICT and Finance) a recommendation is for the first trimester to have foundational courses in the two subjects and based on their background to choose the most suitable. Also, it was not clear at the review meeting the process of remediation of a course. The foundation courses are normally mandatory. The 60 ECTS taught courses should provide the students within hands on experience in data analytics (planning, running, documenting and presenting) in finance.	The program was not designed with existing courses in mind. Several universities in the EU and US offer programs with a similar title (combining the two research areas). The following are examples of such programs - MSc Data Science and Financial Technology, University of London (https://www.london.ac.uk/msc-data-science-and-financial-technology-structure) - MSc Financial Technology with Data Science, University of Bristol (http://www.bristol.ac.uk/study/postgraduate/2022/eng/msc-financial-technology-with-data-science/) - Master of Science in Financial Technology and Analytics, The University of Texas (https://www.utdallas.edu/fact-sheets/jsom/ms-financial-technology-analytics/) The title and the content of the program is fully compatible with related programs already offered by highly ranked Universities: • University of London, MSc Data Science and Financial Technology: https://london.ac.uk/msc-data-science-and-financial-technology-structure • The University of Hong Kong, MSc in Financial Technology and Data Analytics: https://mscftda.cs.hku.hk/ • Anglia Ruskin University, MSc in FinTech and Data Analytics, https://aru.ac.uk/study/postgraduate/fintech-and-data-analytics • The University of Texas, MSc in financial Technology and Analytics, https://www.utdallas.edu/fact-sheets/jsom/ms-financial-technology-analytics/ A simple search reveals that many well-known universities around the globe design programs combining the Financial Technology and Data analytics scientific fields. More importantly, it is helpful to stress that the curriculum of these programs and the expected learning outcomes are identical to the proposed program. Our program aims to introduce, on the one hand, to students with a scientific background in accounting and finance the tools for intelligent data analysis (programming, data analytics, distributed ledger technologies, and disruptive technologies - e.g., Artificial intelligence, Deep and Machine learning), and on the other hand, to students with relevant IT studies, the potentials of their background on the financial analysis. In addition, regardless of the previous degree, students study new fields of research areas such as high-frequency finance.	Choose an item.

	In all courses, students explore real cases and apply knowledge on a practical level. Students master problem-solving programming skills during the first semester, which they use on several courses' projects in the second semester. At the same time, during the third semester, students are required to combine their knowledge by attempting to solve real-world problems that arise from companies with which the program has secured cooperation. So, the comment indicating that the students are only passively presented with case studies is invalid. The program is designed to be of undiminished interest to all students regardless of their first degree. For example, even the problem-solving programming course is not shaped only to teach programming, as one can easily confirm by observing its study guide. The course's main objective is to present relevant tools and techniques which are appropriate, sound, and attractive even to students with a solid scientific background in computer science. Thus, we consider that the program's title perfectly reflects the program's content and corresponds to the expected learning outcomes. Finally, each study guide describes the course evaluation process and criteria in detail. The eLearning design is clear and does not only involve the provision of material on Moodle platform. Online asynchronous and synchronous sessions are defined with an exact T&L methodology.	
1.2 To more clearly and explicitly incorporate the specifics/uniqueness of the "interdisciplinary collaboration" of both HMU and NUP to offer this joint program: Across Europe, we have observed a number of successful examples of collaboration between different faculties of engineering and management. Hellenic Mediterranean University (HMU) has a relatively mature engineering teaching and research experience, while Neapolis University Pafos, and the School of Economics and Management Science at HMU have a relatively complete faculties for finance and management. The collaboration between the two universities is believed to be beneficial and can complement each other's strengths by providing students with relatively comprehensive resources.	No action required.	Choose an item.

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

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
2.1.The program could be reviewed in terms of T&L eLearning approaches to promote confidence, which is of high importance for the market needs in this new area in Fin Tech. The students need to be exposed to Data Science platforms in different operating systems (i.e. Linux) through the available servers and desktops.	Done During the e-tour of the committee members, the infrastructure of the University was presented, highlighting our high-tech and fully equipped computer labs. Our students have access (either live or remote) to 60 computers running Windows and Linux. At the same time, our students enjoy access to 15 computers with macOS. The teaching of relevant courses is done using the Anaconda distribution. This software is open-source, and its distribution is free for all platforms. Through Anaconda, our students interact with Python and R programming languages. Recent literature shows that these languages are considered the most appropriate for data analytics. Moreover, the programing language Julia and the Keras library are presented to our students during the Disruptive Technologies course, aiming to familiarize our students with machine learning and deep learning latest trends. Also, students are provided with free subscriptions to Microsoft's services to prepare their reports and assignments. At the same time, our students have remote access to Linux and Windows servers with an isolated network to work on security-related theses. It should be noted that Neapolis University is one of the three universities in Cyprus that have integrated the SEED Labs (https://seedsecuritylabs.org/adoptions/world/cyprus.html) of Prof. Wenliang Du from Syracuse University into their educational program.	Choose an item.
2.2 Formal external stakeholders' board for the curriculum review should be in place to provide feedback to update the curriculum to the international standards, and inclusion of industry representatives should be mandatory and appropriate minutes to be taken at each meeting. Online/hybrid/blended teaching methods are not always clearly defined for the conventional program.	As long as the program is accredited, a curriculum review board will be established.	Choose an item.
2.3 The teaching and learning effectiveness is highly linked with the	Pedagogical training is compulsory to all new staff.	Choose an item.

level of expertise of the teaching staff and although seminars on improving didactic and pedagogical practices in online teaching are available to staff, they are not compulsory. This is a good initiative in the right direction, but it is not sufficient. A minimum form of basic accredited pedagogical training should be compulsory to all new staff before they begin teaching online.		
2.4 Overall, assessment methodology should be clear for each course online and how plagiarism will be avoided. This should be standard practice for all courses and all forms of homework or examination online.	The assessment methodology is clearly stated for every course and stated in each syllabus separately. A plagiarism policy is already available in NUP and attached. See Annex 1- Plagiarism Policy.	Choose an item.
2.5 The description and organization of the courses do not reflect an NFQ 9 lever program as the development of students' competencies and general learning experience varies. However, we advise that the college should take the necessary actions to revise the curriculum (and title of the program if it deems necessary and connect the teaching and learning with hands on data science real-life challenges and experiences in Fin Tech sector.	1) NFQ9 does not exist in Cyprus. 2) We are not a college. 3) See our response in point 1.1	Choose an item.
2.6 With respect to the (technical) specifics of the e-learning delivery, the EEC finds that the nature of the programme is compatible with distance learning delivery and the methodology provided is appropriate for the particular programme of study	No action required.	Choose an item.
2.7 The university's learning management system supports (online/hybrid/blended) teaching, learning and administrative processes for the conventional program. This is a Moodle installation with all the basic online services available. The platform specifically provides synchronous (through Office365/MS Teams) and asynchronous tools to support the interaction needs of students with the lecturers, the other students and with the materials. The platform also provides e-assessment procedures through quizzes with automatic feedback	No action required.	Choose an item.

in order to assess students' knowledge. The provision of more complex forms of e-assessment to assess competences and skills, such as critical thinking, is also provided though was not shown the specific assessment procedures during the meetings. Each course has a minimum of 6 hours of teleconferences, which is considered an adequate number of hours of synchronous communication between teacher and students.		
2.8 Collaboration among teachers and students (and among students) is conducted through the online forums of the subject and other forums that can be created ad-hoc for facing special needs. In addition, collaboration among students is promoted by collaborative activities based on project-based learning, though it was not shown the design, procedure, and technical support for these activities.	No action required.	Choose an item.
2.9 Formative assessment of the courses is based on submitted mid-term assignments and reports with provision of personalised feedback during the course counting to 20% of the final grade while summative assessment is based on a mandatory final exam counting to 60% of the final grade. Assessment procedure during the course is completed with a number of online quiz-based and other interactive activities counting to 20%. Optional formative (self-assessment) activities are included in the weekly study guides in order to self-assess student knowledge and skills of the course.	No action required.	Choose an item.
2.10 From the documentation provided and the information gathered from the meetings, it was not clear if gamification strategies are used to increase the student levels of motivation and engagement with the eassessment process. In addition, more sophisticated forms of feedback based on intelligent tutoring systems and conversational pedagogical agents are also encouraged to support immediate and automatic feedback to students and self-evaluate their advances.	For the gamification aspect of the courses we have: - Enabled budges on Moodle. - We promote the use of Kahoot. - We use existing tools provided by moodle enhanced with gamification parameters Actual Example: Jigsaw role-playing game - Best wins budge: Suppose we work in a large travel agency that maintains access to noisy data from Google, Booking, and Trip Advisor. We have to use these data to predict next year's arrivals. The owner of the company is highly wary of AI technologies for forecasting. The company's accountant is	Choose an item.

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	convinced that arrivals will remain down due to the pandemic but is anxiously awaiting the forecast results. The IT department is divided into teams, and each team is asked to apply different techniques to predict arrivals. Students take on roles: - The professor is the cautious manager who must be convinced - Two other professors take on the roles of accountant and marketing manager - The students participate in the IT teams. Within the team, they take on roles. One leads the team; some are assigned to identify the appropriate mathematical model, others to program the proposed architecture, etc. There is more than one IT team. Each team undertakes to present a comprehensive strategic plan regarding the programming to be followed, listing any difficulties encountered. Depending on their role, members of each team communicate with their peers from the other teams and work through arguments and counter-arguments to any assumptions made by the other teams. After the process is completed, each team presents its predictions. The manager, the marketing department, and the accountant evaluate the data following specific rubrics. The team with the highest score wins a budge. The teams are ranked in a table according to their performance. See annex 2- Documentation from study guides and syllabi (1).	
2.11 Finally, the EEC wants to point out that onsite final exams may not be in line with the learning style of online students, and formative continuous assessment through the writing assignments and project-based collaborative learning during the course could be reinforced instead.	Taken into consideration. NUP has already applied online proctoring for final exams.	Choose an item.

3. Teaching staff
(ESG 1.5)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
3.1 To adopt a transparent workload model process for all staff members with clear admin/teaching/research activities allocation and to be shared at the beginning of each academic year to all academic staff: The School has not informed the EEC of any professional development activities for teaching staff focused on the online Teaching and Learning skills which could prove impactful in the years to follow on the quality of the teaching and learning in the programme and the reputation of the programme. The panel would advise as well in the future rounds of recruitment to review the curriculum needs of the programme and the research strategy of the School in order to identify candidates with potential to progress within your institution.	The EEC did not request such information, which of course, is available. The professional development policy as well as the academic advancement policy is attached. <u>Annex 3 – Nup Continuous Staff Development and Annex 4- Academic staff development Policy.</u> See also a latest example of professional advancement as part of Erasmus Staff training program. (Example 1- Digital week - Université Côte d'Azur (univ-cotedazur.eu))	Choose an item.
3.2 The college tries to improve the teaching skills of the teaching staff through activities such as optional seminars, for instance: These efforts are appreciated. As pointed out in the previous section, such efforts should be structured in a more formal way and be made compulsory to teachers, in order to ensure that no staff begins teaching online without a minimum of pedagogical training.	See our response in point 2.3 Note: We are not a College.	Choose an item.

3.3 Given the interdisciplinarity of the programme it would be beneficial to consider synergies between the academics of ICT and Finance from both institutions. Furthermore, from the information provided so far on scientific publications of faculty members, it is not clear how many are related to big data, data science or financial technology. The connection between teaching and research shall be clarified, for example, the faculty members are expected to list all the related research with respect to the underlying lecture be provided in the curriculum.	Please see the EEC comment on the quality of the academic staff in page 4 of the EEC report: "1. The academic staff teaching the courses have the appropriate qualification, consistently with the program. Their teaching load is consistent with the sector. 2. The programme has invested on staff with potential of career development and enthusiasm to teach in the programme, while they are also active in research." See the table in Annex 5- Correlation between teaching staff and research.	Choose an item.
3.4 For some courses, the qualifications of the teachers concerned should be fully reviewed: For example, in high-frequency finance and trading, if teachers do not have either relevant teaching and research background or industrial working experience, they may not be able to either explain theoretically the microstructure of financial markets or deduce reasonable explanations from the practical trading processes.	The example is unfortunate. Professor C. Floros who is the coordinator of the said course, has international recognized published work and expertise in high frequency finance and trading, *Please see also our response in 3.3* *See below the academics' relevant teaching and research background:* 1) Research experience with publications in top academic journals (European Journal of Finance, International Review of Financial Analysis, Annals of Operations Research, Journal of Risk, Research in International Business and Finance, Global Finance Journal, Operational Research etc). 2) Publication of a text book with title "Modelling and Forecasting High Frequency Financial Data" (https://link.springer.com/book/10.1057/9781137396495). 3) Teaching experience at both UG and PG levels (UG: Computational Finance (Level 4); PG: Contemporary topics in Financial Analysis). Relevant Publications: https://www.tandfonline.com/doi/full/10.1080/1351847X.2020.1809487 https://www.sciencedirect.com/science/article/pii/S1057521921000491 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3850088 https://link.springer.com/article/10.1007/s12351-020-00607-0 https://link.springer.com/article/10.1007/s10479-019-03199-x https://www.sciencedirect.com/science/article/pii/S0275531912000463 https://www.sciencedirect.com/science/article/pii/S1044028315000307	Choose an item.

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

Areas of improvement and recommendations by EEC	Actions Taken by the Institution	For official use Only
4.1 According to students' feedback during this evaluation process, the panel could not have a clear picture in terms of the program but only generally on the satisfaction of students from other programs that are face to face: It was noted that some students had difficulty to communicate in English although the programs are delivered in English and Greek. As a result, the panel recommends for the program review committee to revise the minimum English language requirements.	No action required. Note: the program has not started yet, so the remark "It was noted that some students had difficulty to communicate in English although the programs are delivered in English and Greek" is not applicable. Nonetheless, to say that students interviewed were from Greek speaking courses.	Choose an item.
4.2 The teaching staff could be supported from the Institution with career development skills in Teaching and Learning.	See our response at point 2.3.	Choose an item.
4.3 The panel also recommends the development of a 5-10 year plan for the programme and the capacity of intake year on year, in order to plan for recruitment activities in EU and abroad and increase the number of applicants and of enrolled students over the next years (including the recommendation to consider a market research and identify other institutions that provide online programs similar to this MSc online).	Recommendation is noted. A feasibility and sustainability plan has already been developed. Annex 6- Feasibility Study and Annex 7 – Sustainability plan.	Choose an item.
4.4 To attract larger numbers of students, it may be helpful to review the modules taught with content highly relevant with current market needs, and to actively promote and advertise the positive values and high potential of this program to prospective students and relevant stakeholders.	No Action required.	Choose an item.
4.5 The plans of the college are coherent (so students' admission, progression and recognition is (or is going to be) well conducted, the limited number of students and potential difficulties in recruiting new students needs to be tackled. To attract larger numbers of students, it may be helpful to review the courses taught (as advised in Section 1) with content highly relevant with the current Fin Tech industry.	1. We are not a college. 2. No action required.	Choose an item.

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5. Learning resources and student support
(ESG 1.6)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
5.1 To invest in teaching staff professional development, in order to enable growth for progress: In terms of student support, a potential solution could be a "buddy coder" mentor system in order for students to reach out to students that are doing research in the area or alumni that have secured jobs in the area.	Well noted. A "buddy coder" mentor system, is well received.	Choose an item.
5.2 Especially with online program delivery, attention is needed as studying in isolation it can impact the students' sense of belonging which could bring high rates of dropout.	No action required.	Choose an item.
5.3 The panel also recommends the T&L Committee to include student representation of the program and to monitor the T&L processes, curriculum review and resources for each semester needs taking into account the student and staff feedback year on year with inclusion of an official industry advisory Board and External examiner.	Students are institutionally represented. See Annex 8 – Prose tool and Annex 9 – Evaluation of Courses and Instructors by the Students Procedure	Choose an item.
5.4 It is recommended to have in place procedures, appropriate training, guidance and support, for teaching personnel, to enable personnel to efficiently support the online educational process. The EEC did not receive any information on the planning for online moderators and communication pedagogical strategy to have an interactive online program.	See our response in 2.3 See Annex 10 - Documentation form study guides and syllabi (2)	Choose an item.
5.5 The students are provided with a departmental email account, and the department need to ensure that communications are enforced through this email, which should be imposed as the official channel of email communication with the students.	Already applied in NUP.	Choose an item.
5.6 The School should consider a rigorous process of data collection in terms of reviewing the pipeline and year on year alumni of the students through the administrative office.	Already applied in NUP.	
5.7 The EEC further recommends the School to deploy external visiting staff and guest speakers to enrich teaching and connect it with the industry.	Already applied in NUP. Well noted.	

6. Additional for doctoral programmes
(ALL ESG)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
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7. Eligibility (Joint programme)
(ALL ESG)

Areas of improvement and recommendations **by EEC**	Actions Taken by the Institution	For official use Only
7.1 The EEC was not provided with any cooperation agreement.	Already in place. Never requested. See Annex 11- MOU	Choose an item.
7.2 The partner universities have not applied for joint internal quality assurance processes. The joint programme is offered jointly, but the EEC has the impression from the online visit that the cooperating universities are not equally involved in the design, delivery, and further development of the programme.	Wrong impression. As stated in both the Official Gazette and the MOU between the two Universities, the program is implemented in accordance with the Cypriot legal framework. "Επισπεύδων ίδρυμα είναι το Πανεπιστήμιο Νεάπολις Πάφος και το πρόγραμμα υλοποιείται σύμφωνα με τις πρόνοιες της Κυπριακής νομοθεσίας." Article 1 of the MOU. During the online visit, the two Heads of the collaborating departments from HMU who are also in charge of internal quality procedures in the respective departments were also actively participating.	Choose an item.
7.3 There does not exist a joint syllabus and there was no risk assessment for the collaboration. Study counselling and mobility plans are not in place for the third trimester at the Hellenic University to consider the needs of different kinds of students.	The syllabus is one, jointly developed and included in the application. See also the EEC report page 3: "The EEC **further commends the institutions for the best-practice study guides** with respect to the programme and for the enthusiasm of both faculty/staff and students (although no students are as yet enrolled into the programme) for this Programme."	Choose an item.

B. Conclusions and final remarks

Conclusions and final remarks **by EEC**	Actions Taken by the Institution	For official use Only
As detailed in the report, the EEC finds that, notwithstanding several commendations and strengths, the programme has to further mature and be finetuned for full compliance to all CYQAA standards	Click or tap here to enter text.	Choose an item.
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C. Higher Education Institution academic representatives

Name	*Position*	*Signature*
Prof. Pantelis Sklias	Rector	
Click to enter Name	Click to enter Position	
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Date: 11.07.2022