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Doc. 300.1.2

# Higher Education Institution's

### Response

- Higher Education Institution: The Cyprus Institute
- Town: Nicosia
- Programme of study Name (Duration, ECTS, Cycle)

In Greek:

Υπολογιστικές Επιστήμες (3 χρόνια, 180 ECTS,

Διδακτορικό)

In English:

Computational sciences (3 years, 180 ECTS, Doctoral Degree)

edar /// 6U09.

- Language(s) of instruction: English
- Programme's status: New programme: Yes Currently operating: Yes

KYΠPIAKH ΔHMOKPATIA REPUBLIC OF CYPRUS

Date: Date.



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 2019" [N. 136 (I)/2015 to N. 35(I)/2019].



#### 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) must justify whether actions have been taken in improving the quality of the programme of study in each assessment area.
- In particular, under each assessment area, the HEI must respond on, <u>without changing</u> <u>the format of the report</u>:
  - the findings, strengths, areas of improvement and recommendations of the EEC
  - the deficiencies noted under the quality indicators (criteria)
  - the conclusions and final remarks noted by the EEC
- The HEI's response must follow below the EEC's comments, which must be copied from the external evaluation report (Doc. 300.1.1).
- In case of annexes, those should be attached and sent on a separate document.



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

#### <u>Findings</u>

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 Graduate School has established the Educational Quality Management Systems (EQMS) that is based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). All new or reformed educational programs go through a series of internal and external evaluation and approval processes. The Internal Quality Committee is responsible for monitoring and ensuring the quality of education at the Institute. The Committee has a student member.

The learning goals of a program and its courses are clearly presented. The students have a Program Handbook at their disposal that includes course descriptions and assessment/grading details for the program and the courses. Course Handbooks are prepared and disseminated to the students the beginning of each semester. Program and course information is publicly available.

The Office of the Graduate Studies has an important role in overseeing the operations of a program. Any changes to the syllabus and proposed new courses go through review and approval processes. The Graduate School and the PhD program follow the key KPIs, such as the pass rates of courses and degrees.

Course evaluation is conducted with an anonymous questionnaire for the students (course and instructor evaluation/feedback) and the course instructor uses the student feedback to fill a course evaluation form. The process is overseen by the program coordinator who together with the instructors can review the learning process and improve it. The committee heard from the teachers and students that course feedback is actively gathered and it has had positive effects in developing the courses. Meeting with the administrative staff indicated that the Quality Assurance is an integral part of the processes starting from the application phase and ending with graduates leaving the university.

The program is following the career paths of the student. The program is producing graduates that are valued by the labor market. The program has excellent connections to both national and international research activities including student and researcher mobility. The students valued the course selection that provided knowhow and practical knowledge on the computational tools and methods having wide applicability.

The program has experienced significant growth, but despite the growth it is still relatively small. The student-teacher ratio is excellent and the students meet their instructors and mentors often. The students also have access to a state-of-the-art infrastructure including local supercomputer resources.



#### <u>Strengths</u>

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

The Institute has established the necessary internal and external quality assurance processes and they are working well. The Graduate School and the PhD Program in Computational Sciences have clear and accessible learning goals, evaluation criteria and course details that are disseminated to students. Student and teacher feedback are taken into account in developing the program and the courses.

#### 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.

- 1. The program can consider establishing a more formal industrial advisory board or industry group for receiving feedback and advice from the companies regarding degree relevance and industry requirements for PhD level professionals.
- 2. The program can consider a more systematic approach in offering teaching assistant possibilities to the PhD students. It was not clear how the PhD students can gain important teaching experience through helping instructors with the courses. The new MSc program could be used in providing opportunities for PhD students to take part in teaching activities.
- 3. The stipend and financial support instruments available for students should be reviewed periodically in terms of the evolving costs of living.
- 4. The program has grown, but it is still relatively small in terms of the number of students. The program has the aspiration of having more students while keeping the favorable student-teacher ratio and the current high level of administrative support. Given that in the current situation it is difficult to recruit students, the recruitment challenge will be greater with the aspiration of scaling the program. We recommend increasing the visibility and marketing efforts, developing dual-degree instruments, and developing the visiting professor and teacher instruments.

#### **Response of The Cyprus Institute**

1. We would like to point out that apart from our more conventional PhD degrees, we also offer Industrial Doctoral Degrees. The Industrial doctoral degrees cater to candidates spending substantial time at/or under the care of a partner from the industrial sector. In this case, a student is assigned an industrial supervisor, who participates as a formal member in the Dissertation Advisory Committee and assumes therefore, a consulting role. The Industrial Supervisor is also considered as an additional member of the Doctoral Examination Committee. For the Industrial Doctoral Degrees, the role of the Industrial supervisor is quite significant since they are also responsible for guiding the student and providing feedback.

With regards to the conventional PhDs, our faculty is in close contact with professionals from the relevant industries and always up-to-date regarding the industry's requirements for PhD level professionals. For instance, our faculty has close contacts with IBM, NV – MAGWEL, NVIDIA



GmbH, and others, where many of our students havecarried out secondments as part of their PhD studies.

Additionally, CaSToRC has developed a model for industrial usage to allow companies and startups to use computational resources either for research and development (R&D) or for proprietary projects through which it aims to foster the interaction with industry. More information can be found here <u>https://castorc.cyi.ac.cy/industrial-program</u>. In addition, members of CaSToRC are actively involved in SHAPE, the industrial program of PRACE (Partnership of Advanced Computing in Europe), which does have an industrial advisory committee at a European level.

Nevertheless, as our student community and educational portfolio expands along with the research interests, we will certainly take into account the Committee's advice to have a more formal industrial advisory board for receiving feedback and advice.

- 2. According to the national legislation stated by the CYQAA, the teaching staff of each private institution, by percentage not smaller than 70%, must possess a recognizable academic degree of one level higher to the level of the programme of study it teaches. The remaining 30% may possess a degree of an equivalent level or a relevant professional qualification. Furthermore, the teaching staff in a post-graduate programme of study should have publications of scientific content. These rules limit the opportunities for our PhD students to teach in the MSc programs. However, we will explore involvement of PhD students in the exercises for the MSc courses and for mentoring masters' students in their research projects.
- **3.** All the financial support instruments that are available for the students are reviewed every two years, taking into account the current costs of living. The current financial aid amounts have been updated according to the current costs of living in Cyprus just before the commencement of the new academic year.
- 4. Increasing visibility and marketing efforts: The Graduate School reviews the marketing strategy plan once a year before the marketing campaign begins, well ahead of the early application deadline. Every year we aim to increase our visibility and intensify our marketing efforts towards that direction. Activities that are customarily part of our marketing campaign include:
  - **a)** Attendance in educational fairs (virtually, if physical presence is not allowed due to the current situation with Covid-19) in Cyprus and abroad.
  - **b)** Advertising our programmes on educational platforms that reach millions of students around the world, and where interested students can ask questions.
  - c) Advertising our programmes and scholarships on our social media.
  - **d)** Production of promotional videos, advertising both the Institute and our programmes, posted on various platforms.
  - e) Informing our contacts through personal and professional networks about our programmes and scholarships.

**Developing dual-degree instruments:** The computation-based Science and Technology Research Centre (CaSTORC) has been awarded, among others, two Marie Skłodowska-Curie joint PhD programs: the 'High Performance Computing in Life sciences, Physics and Engineering (HPC-LEAP)' and Simulation in Multiscale Physical and Biological Systems (STIMULATE) involving 30 PhD



fellows. HPC-LEAP is now concluded while STIMULATE is still on-going. Through these two programmes CaSToRC attracted many high-caliber studentsfrom abroad. Students in these programmes receive their doctoral degrees from two or three European Universities. Efforts to establish more dual or joint PhD programmes will continue in the future since it is considered as one of CaSToRC's most significant goals and most important strengths. The Graduate School also has vast experience with dual and joint-degree agreements with internationally recognized universities and will pursue this even more in the years to come.

We maintain joint/dual PhD agreements with the following institutions around the world:

- 1. University of Illinois
- 2. University of Paris-Saclay
- 3. University of Lund
- 4. RWTH Aachen University
- 5. University of Wuppertal
- 6. University of Rome "Tor Vergata"
- 7. Hebrew University of Jerusalem
- 8. University of Groningen
- 9. Ghent University
- 10. University of Ferrara
- 11. University of Lille
- 12. Humboldt University of Berlin

**Developing the vising professor and teaching instruments:** Currently, visiting professors from abroad or from Cyprus are invited to teach part of the courses according to their field of specialization. We plan to intensify our efforts on this matter and take advantage of the current online delivery of the courses by including visiting professors in the curriculum of the different courses .We also plan to take full advantage of the Erasmus+ programme through the organization of visits of teaching staff from abroad.



### 2. Teaching, learning and student assessment (ESG 1.3)

#### <u>Findings</u>

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.

It is evident that the institute is dedicated to providing its students with education of the highest quality. By being assigned to a research team and a project right at the start of their studies, the student is actively participating in the learning process very early and their analytical thinking and research skills are promoted. The assessment procedure is well defined and up to standards, both for the taught courses and the thesis defence and feedback on their progress is regularly provided to the students. Student complaints and recommendations are taken into consideration and acted upon.

#### <u>Strengths</u>

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

The low ratio of students to teachers is very beneficial since it allows for the teachers to focus on the individual needs of each student and allows for constructive teaching and communication. The constant communication between the students and the faculty as well as the administrative staff is also a positive element. The PhD program has a comprehensive offering of courses that cover both theory and practice in computational sciences. The Institute is well positioned for recruiting more students and teachers given the geographical location, research infrastructure, and a substantial international research project portfolio.

#### 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.

- 1. The student-teacher ratio is excellent; however, the PIs have different expertise areas. It was not fully clear how the PhD supervision workload is balanced across the expertise areas of the PIs.
- 2. The level of internationalization is very good. The EEC recommends the PhD program and the Institute to continue developing the international networks and researcher exchange instruments (also outside EU).

#### **Response of The Cyprus Institute**

1. We currently have twenty-four students registered in our Computational Science PhD program, with eight being part of the STIMULATE project and therefore, undertaking joint PhDs. One additional PhD student is also undertaking a joint PhD. We have fourteen teaching members with eight being faculty members and thus, have supervisory responsibilities. Supervision workload in the case of the joint PhD students is shared among two or three universities and therefore, the Cyprus Institute supervisors are allocated one third or half of the supervisory responsibility for each student. Based on this, the faculty of CaSTORC supervise an average of 2.3 students each. In



relation to this question, please see Section 6 'Additional for Doctoral Programmes' (Cyl response 2). Moreover, each teaching member is allocated one course of 10 ECTS per year on an equal basis. This includes Master's courses. Therefore, not only the supervisory workload is balanced across all faculty members but also the teaching load.

2. It is one of the most significant goals of the program and of CaSToRC to continue developing the international networks and researcher exchange instruments and broaden them in order to include more institutions outside the European Union. We already have a number of Memoranda of Understanding with Institutions not only in Europe but also around the world (e.g. University of Illinois). We are currently also collaborating with Peking University in China, through which our graduate students work on common projects with Chinese PhD students. We are also pursuing EU funding possibilities to expand our network, e.g. in September we submitted a co-fund Marie-Sklodowska-Curie PhD program that involves several major Universities and Research Centers across Europe and SESAME in Jordan. In addition, we are currently expanding in the new field of Quantum Computing through a collaboration with researchers at DESY in Germany. Such opportunities are constantly being explored and utilized. We foresee, as we grow in staff, that our networks will naturally expand, establishing more collaborations with more international institutions.



#### 3. Teaching Staff (ESG 1.5)

#### <u>Findings</u>

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 relies on a strong group of faculty members, including 4 full time and 4 part time or adjunct professors. The faculty are active in an interdisciplinary range of research fields within the CaSToRP center, including several aspects of computational physics, climate research, machine learning and computational biology. Postdoctoral fellows participate in research, with six postdoctoral instructors. Students take courses during the first two semesters of the PhD (20 ECTS total). A mandatory course (10 ECTS) has the form of a seminar series. The other 10 ECTS are drawn from a collection of 17 elective courses that cover aspects of HPC, computational physics, and data science. Each course is evaluated by the students, providing feedback. Some courses are shared with a new MSc program and with the University of Cyprus.

#### <u>Strengths</u>

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

The course topics map closely onto faculty research activity and expertise, and the synergy between teaching and research is strong. Student/faculty ratio is low, teaching loads are reasonably low, classes are small, and almost all the faculty teach to all the students. This allows both highly personalized teaching and ample time for faculty research.

The faculty have a strong research network within Cyprus, Europe and beyond. This includes strong involvement with European HPC such as PRACE and several joint positions with high profile partner HEIs.

The core funding for the current teaching and PhD salaries is sustainable, and external fundraising has been quite strong of late. Several strategic areas for development have been identified, contingent on increased core funding: artificial intelligence, computational biology, quantum computing.

#### 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.

- 1. Given the strong fundraising, we would hope core funding from the government could increase, allowing some of the development areas indicated above.
- 2. Incoming visiting professors and possibly an outgoing sabbatical program could help bring in new expertise and research groups in strategic areas. For example, computational biology currently relies on two adjunct professors. To mitigate risks associated with visiting or part time teachers and supervisors, areas such as this could be strengthened with permanent faculty.
- 3. The EEC recommends the PhD program to develop courses on soft skills, such as communications and entrepreneurship, in supporting graduating students.



#### **Response of The Cyprus Institute**

- 1. We would certainly welcome core funding from the government in order to consolidate our long-term vision. New promising directions are important in attracting high quality students and the support of government would be instrumental in expanding our portfolio. Quantum Computing is one of the directions that did not exist in our previous PhD program and one we would like to promote. Strengthening computational biology is another direction that we would like to pursuit. Both these directions will indeed benefit from permanent faculty members and we would more than welcome core funding to support these.
- 2. We fully agree that permanent faculty should be recruited in the new directions and it is part of our strategic plans for the near future, pending on the increase of core funding.

It should be noted, however, that the new President of the Cyprus Institute, Prof. George Christophides, specializes in the field of molecular biology and he will be teaching or co-teaching two of the PhD courses; Advanced Topics in Computational and Mathematical Biology and Frontiers & Methodologies in Computational Sciences.

3. The new PhD programme includes a transferable skills course designed to address the academic needs of the specific cohort of students each year and it is flexible both in terms of content and structure. The syllabus of the course is tailored according to the specific requests of both students and faculty. The development of written and oral communication skills as well as entrepreneurship skills is considered of utmost importance and these will certainly be covered in the transferrable skills course. Professionals (including people working in relevant fields outside research and academia) and faculty from The Cyprus Institute and abroad will be teaching the course.



### 4. Students

(ESG 1.4, 1.6, 1.7)

#### <u>Findings</u>

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 ethos of the doctoral programme is to provide high quality supervision and instruction as befitting their aspiration as a regional Centre of Excellence. The programme has access to excellent high-performance computing facilities, with emphasis on computational physics although there are cross-disciplinary topics covered as well. The entry criteria is competitive to ensure high quality students enter the programme and this is evidenced by the very low attrition rate and the destinations post-PhD are institutions of international repute. The doctoral programme structure is in transition in terms of the balance between courses and research: from 50/130 ECTS (courses/research) to 20/160 ECTS over a 3 year period.

#### <u>Strengths</u>

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

This is a highly selective programme with good student-teacher ratio for supervision (3:1), with access to excellent high-performance computing facilities, and a strong demand for their students once they graduate. It is commendable that most students spend a proportion of their time abroad in joint projects in partner European institutions or internships in companies and international laboratories. The Graduate School office provides centralised student support from admissions to graduation which is much appreciated by the students. The stages in the journey of the students from admission, on-campus orientation, thesis topic selection, thesis proposal submission and review, annual appraisal and final thesis defence are well catalogued and in line with good practices.

#### 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.

1. The balance of credits between courses and research was weighted too highly in favour of the former (50:130::Courses:Research) which has now being reduced to a more manageable (20:160) division for students to concentrate on research and submit their thesis within the 3-year time frame. The EEC commends this change and expects that it will shorten the time to graduation. We would like to see this reduced more in the future by integrating the doctoral programme more closely with the Masters programme in Computational and Data Sciences, i.e. create a pipeline from Masters to the Doctoral programme, so that students gain course credits during the Masters programme (with an exit point, if required), and concentrate on their research during the 3 years of doctoral study. At present a large number of students take more than 3 years to submit their dissertation.



- 2. We would recommend dedicated on-campus facilities for counselling of students with mental health problems which is an issue of increasing concern amongst the student population worldwide.
- 3. The Cyl should consider investing resources in collaboration with the government to scale up the current cohort size of 24 doctoral students without diluting the quality of supervision. This would mean investing in tenure-track faculty staff, and formal collaborative links with international research groups to encourage visiting Faculty positions.

#### **Response of the Cyprus Institute**

- 1. Changes have been made to bring the PhD program better in line with the Bologna Process, by giving more emphasis to credits gained through research rather than from taught elements. As the EEC supports, we also envision that the reduction of the taught component will shorten the graduation time of our students. We are in favour of the recommendation of the EEC to create a pipeline from Masters to the Doctoral programme, so that students will gain course credits during the Masters programme. A 4-year path consisting of taught courses of 60 ECTS in the first year (with an exit strategy for a MSc) and a research element of 180 ECTS will provide outstanding students with an undergraduate degree with an excellent route into doctoral research. As this constitutes a strategic change on the structure of our program, it will be assessed thoroughly during the next internal reviews of the program.
- 2. Although we do not have personnel specializing in mental problems, the Graduate School personnel has attended various mental health seminars and workshops and they are always on the lookout for more training opportunities in this area. The personnel at the Graduate School have created a close relationship with the students and many times they trust them with their problems and seek encouragement from them. If a more serious case is identified, they will guide the student to seek professional help. However, in the future and as the student numbers increase, we will seriously consider the committee's advice to hire a person with professional education in this area.
- **3.** As already mentioned, we are in full agreement with EEC for the need of expanding the program by hiring additional permanent faculty. We will welcome core funding in order to accomplish this without decreasing standards. Regarding visitors we will explore various schemes: i) within the EU project *Modelling and Simulation for Engineering Applications* (SimEA) we included a visitors program which will be activated starting this academic year, ii) we will enhance cross-registration opportunities with the University of Cyprus where students from both can select courses taught at both institutions, iii) explore joint appointments of faculty on a part-time basis between the Cyprus Institute and the two public universities and iv) explore the establishment of agreements among our collaborating institutions for staff exchanges.



### 5. Resources (ESG 1.6)

#### <u>Findings</u>

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 resources available to students are able to support the study programme. Having access to selected elibraries of universities from all over the world ensures that the students will always have at their disposal the study material they need and the facilities along with the equipment are well suited for a study programme at this level. As the committee has been informed, the Institute classroom space and facilities are able to support significant growth. Student mobility is encouraged by the Institute, mainly through joint degrees and collaborative projects with international universities. The evaluation took place over an online meeting and the tour of the Institute was based on three videos and a collection of photographs. The committee was not able to physically inspect the buildings and teaching and research facilities.

#### <u>Strengths</u>

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

The institute displays the ability to facilitate the computational needs of its PhD students, faculty and researchers to an impressive capacity thanks to its local infrastructure, as well as the access it has acquired to many powerful data centres across Europe. Students and alumni also pointed out that networking with high-calibre professionals in their field during conference events they attended was very beneficial to them for advancing research and post-doctoral appointments.

#### 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.

1. The graduate school is located at the outskirts of Nicosia, at a significant distance from the city centre and with limited public transportation options. Future expansion planning could consider on-campus housing for students.

#### **Response of The Cyprus Institute**

1. Due to our small number of students and their frequent mobility (due to our joint doctoral programmes, Erasmus+, trainings, secondments, collaborations etc.), we have not established an on-campus housing so far. However, the Office of Graduate Studies is always happy to provide help and support to students that are in need of an accommodation and explain and guide them through their options. Although the Institute is located at the outskirts of Nicosia, it is very close to residential areas with a lot of housing opportunities available. Students can opt to stay in private apartments that are abundant in the area or in student residences provided by another institution close by. It should be noted that the residential areas include all amenities, within walking distance. It should also be noted that rent in Cyprus is generally cheaper as compared to other EU countries.



### 6. Additional for doctoral programmes (ALL ESG)

#### <u>Findings</u>

## 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 PhD program has well-defined criteria and processes for student selection and admission into the program as well as monitoring and supporting studies across the different stages of the PhD program. The admission procedure includes joint degrees. The expected time for completing the PhD degree is three years. The PhD program details including course information are available online. The students have guidelines regarding the preparation of the dissertation and the administration has processes for assisting students and providing support in various matters. The program has a plagiarism checking procedure and procedures for submitting the dissertation to the university library system. The PhD supervision and evaluation committees are defined and overall the processes are well-defined. The study and research progress of students is regularly monitoring and the supervisors have regular meetings with the PhD students. The students have an extensive evaluation at the end of the first year of studies.

#### **Strengths**

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

Overall the PhD program has a sound approach to the monitoring and mentoring of the research progress of each student.

#### 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.

- 1. The PhD program gives grades for the students based on their research work every semester. It was not fully clear to the EEC how the grades are given.
- 2. It was not clear how the students are distributed among the different areas of the PhD program.
- 3. The Institute and its four research centres provide a rich basis for interdisciplinary PhD topics. The EEC recommends the program to explore new synergy possibilities for interdisciplinary PhD projects with the research institutes, for example pertaining to atmospheric sciences and environmental monitoring at the crossroads of three continents.

#### **Response of The Cyprus Institute**

1. We would like to clarify to the committee that students do not receive grades for their research work every semester but the Dissertation Advisory Committee provides a research progress report through which the research progress is deemed as satisfactory or not satisfactory. In the case of the latter, the student progress is further discussed at the Academic Committee.



- 2. PhD students typically apply for a given area of computational science that matches their interest. During the admission process, the research interests of the applicants are compared and matched against the research interests and scientific expertise of our faculty and consequently they are brought in contact with specific faculty members to investigate potential supervisory capacity. From our experience, the areas covered by faculty have on average about the same number of students and each faculty member supervises typically 2-3 students at a time.
- **3.** The vision of the Graduate School is to promote interdisciplinarity based on the Science and Technology focus, on which the School was established. We have already offered PhD projects that link our centers, our faculty, the various fields and numerous innovative ideas. One of our students is currently working on a project bringing together methods and approaches from The Computation-based Science and Technology Research Center (CaSTORC) with The Science and Technology in Archaeology and Culture Research Center. The student's research is focused on digital design, architecture, simulation and fabrication and is exploring the latter through the use of game engines and deep learning techniques. Another student is working on a project linking CaSTORC with the Climate and Atmosphere Research Centre. The student's research is focused on improving hydrologic-process representation in a distributed hydrologic model towards fully coupled atmospheric-hydrologic simulations. We envision that the opening of all courses from all six programmes (PhD and Master's) as electives to our doctoral students, will further reinforce the collaboration between our centers. At the same time, we hope to create opportunities to generate common ideas, funding, proposals and PhD positions.



### **B.** Higher Education Institution academic representatives

Name	Position	Signature
Prof. Sturt Manning	Associate Provost	Sturt main
Dr Chrysanthia Leontiou	Head of the Office of Graduate Studies	Cluy forther
Prof. Constantia Alexandrou	Program Coordinator	kappan
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