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ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ  
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ  
ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC  
HQA  
HELLENIC QUALITY ASSURANCE  
AND ACCREDITATION AGENCY

## Accreditation Report for the Undergraduate Study Programme of:

Physics

Institution: National and Kapodistrian University of Athens

Date: October 19, 2019

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**Επιχειρησιακό Πρόγραμμα  
Ανάπτυξη Ανθρώπινου Δυναμικού,  
Εκπαίδευση και Διά Βίου Μάθηση**  
Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



Report of the Panel appointed by the HQA to undertake the review of the Undergraduate Study Programme of **Physics** of the **National and Kapodistrian University of Athens** for the purposes of granting accreditation

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## **PART A: BACKGROUND AND CONTEXT OF THE REVIEW**

### **I. The Accreditation Panel**

The Panel responsible for the Accreditation Review of the Undergraduate Study Programme of **Physics** of the **National and Kapodistrian University of Athens** comprised the following five (5) members, drawn from the HQA Register, in accordance with the Law 4009/2011:

1. **Professor Emeritus, Christos, Christopoulos** (Chair)  
University of Nottingham
  
2. **Professor Emeritus, Harry Mavromatis**  
American University of Beirut
  
3. **Professor Nikolaos Dimakis**  
University of Texas Rio Grande Valley
  
4. **Professor Anthimos Georgiadis**  
Leuphana Universität Lüneburg
  
5. **Dr. Spyros Manolopoulos**  
University College London

## II. Review Procedure and Documentation

The Panel received documentation from HQA and the Department of Physics of the National Kapodistrian University of Athens (NKUA) on September 26, 2019. In addition to administrative documents from HQA (invitations, etc.) the following materials were received in electronic form:

From HQA: Accreditation Guide, Guidelines, Mapping Grid, Accreditation Template and Standards of Quality Assurance.

From NKUA: Accreditation Proposal, Quality Policy, Study Guide, Regulations, Courses Summaries, Targets, Student Questionnaires, university internal evaluation unit (MODIP) Minutes, Quality Data, and five further Appendices.

The materials provided were comprehensive and in accord with the standards set by HQA. The Chair of the Panel made early contact in advance of the visit with all panel members and distributed specific tasks in preparation for the visit. The Panel members confirmed that they were comfortable with these task allocations and happy to proceed. In advance of the visit, several panel members provided preliminary impressions on specific questions on the mapping grid and requested additional information some of which was provided in advance of the visit.

The panel met at the HQA offices on Monday 14<sup>th</sup> October 2019 for a briefing by the President of the HQA Prof. P. Kyprianos and the General Director of HQA Dr. C. Besta. Additional support material was provided at this stage in preparation for the visit to NKUA. At midday the Panel met with the University Vice-Rector of Administrative Affairs and the Head of the Department of Physics at NKUA central administration building for an introduction to the University and the Department. This was followed by a meeting of the Panel with departmental internal evaluation committee (OMEA) and MODIP to discuss the quality processes adopted by these bodies. The Panel sought and received further information including samples of student final year undergraduate thesis (πτυχιακή). The meeting ended at 5 pm.

On Tuesday 15<sup>th</sup> October 2019, the Panel members were transferred from their hotel to the Zografou Campus for a meeting with teaching staff members (approximately twenty) to discuss issues related to their working experience at the University. This was followed by a meeting with three physics undergraduate students to discuss their study experiences. Afterwards, the Panel visited laboratories and lecture rooms to evaluate the infrastructure and experience the study environment. A meeting was held with graduates working in research related establishments and in industry. The Panel met with twelve employers and social partners to ascertain how they see NKUA graduates and their relations with the Department. After lunch and a debriefing session, the Panel met with OMEA and MODIP representatives to ask additional questions and provide them a preliminary feedback on key findings.

The Panel met on Wednesday, Thursday, and Friday 16-18 Oct 2019 to prepare its report, which was submitted to HQA on Saturday 19<sup>th</sup> Oct 2019.

Throughout the interaction of the Panel with HQA it received all necessary support and was treated with courtesy. The Panel would like to mention that the program was not strictly followed by NKUA. The Panel wishes to thank the Head of Department of Physics Prof. G. Tombras, the NKUA, the OMEA and MODIP teams and all staff, students and external partners of the department who participated in the meetings for their cooperation, courtesy, openness and willingness to engage in the accreditation process and to provide the Panel with all the information and clarifications it sought.

### III. Study Programme Profile

The NKUA was founded in the year 1837 and the Department of Physics was established in 1986 in its present form. The Department of Physics is one of the largest in Greece. Prior to the 2008 financial crisis it numbered 120 faculty. Although, its current faculty is 63 it still maintains a vigorous research and teaching activity. The Department of Physics ranks high in University ranking lists.

The Department of Physics student population for the 2017 academic year consists of 1243 active and 2368 inactive students. This distinction is necessary, as in recent years a culture has been established of students registering but not attending and completing their studies.

The nominal duration of studies is four years ( $N = 4$ ). On completion of their studies, students receive “Ptyhion” in Physics, which is equivalent to a BSc degree by EU standards. Several graduates continue with Master and/or Doctorate degrees. Other graduates seek further studies and employment in EU and non-EU universities. A significant proportion of graduates seek employment in Greece’s teaching sector and in the public and private sectors. The Department of Physics informed the Panel that it is high in prospective student preferences. The Department of Physics consists of five sections:

Solid State Physics  
Nuclear and Particle Physics  
Astrophysics, Astronomy and Mechanics  
Environmental Physics and Meteorology  
Electronics, Computers, Telecommunications and Control

The Department of Physics has the following laboratories:

Laboratory of Physics “Caesar D. Alexopoulos”  
Laboratory of Computers and Informatics  
Laboratory of Mechanics and Design  
Laboratory of Solid State Physics  
Laboratory of Nuclear Physics  
Laboratory of Astronomy  
Laboratory of Astrophysics  
Gerostathopoulion University Observatory  
Laboratory of Meteorology  
Laboratory of Physical Electronics

Moreover, the following University Research Institutes are associated with the Department:

Institute of Accelerating Systems and Applications (IASA)  
Solid Earth Physics Institute (SEPI)  
The Department offers undergraduate, postgraduate, and Doctoral Degrees.

## PART B: COMPLIANCE WITH THE PRINCIPLES

### Principle 1: Academic Unit Policy for Quality Assurance

**INSTITUTIONS SHOULD APPLY A QUALITY ASSURANCE POLICY AS PART OF THEIR STRATEGIC MANAGEMENT. THIS POLICY SHOULD EXPAND AND BE AIMED (WITH THE COLLABORATION OF EXTERNAL STAKEHOLDERS) AT ALL INSTITUTION'S AREAS OF ACTIVITY, AND PARTICULARLY AT THE FULFILMENT OF QUALITY REQUIREMENTS OF UNDERGRADUATE PROGRAMMES. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.**

*The quality assurance policy of the academic unit is in line with the Institutional policy on quality, and is included in a published statement that is implemented by all stakeholders. It focuses on the achievement of special objectives related to the quality assurance of study programmes offered by the academic unit.*

*The quality policy statement of the academic unit includes its commitment to implement a quality policy that will promote the academic profile and orientation of the programme, its purpose and field of study; it will realise the programme's strategic goals and it will determine the means and ways for attaining them; it will implement the appropriate quality procedures, aiming at the programme's continuous improvement.*

*In particular, in order to carry out this policy, the academic unit commits itself to put into practice quality procedures that will demonstrate:*

- a) the suitability of the structure and organization of the curriculum;*
- b) the pursuit of learning outcomes and qualifications in accordance with the European and the National Qualifications Framework for Higher Education;*
- c) the promotion of the quality and effectiveness of teaching;*
- d) the appropriateness of the qualifications of the teaching staff;*
- e) the enhancement of the quality and quantity of the research output among faculty members of the academic unit;*
- f) ways for linking teaching and research;*
- g) the level of demand for qualifications acquired by graduates, in the labour market;*
- h) the quality of support services such as the administrative services, the Library, and the student welfare office;*
- i) the conduct of an annual review and an internal audit of the quality assurance system of the undergraduate programme(s) offered, as well as the collaboration of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU);*

### Study Programme compliance

The NKUA has an established quality assurance policy and the corresponding unit (MODIP), which follows the standards of HQA. The Department of Physics quality assurance policy is in line with the University's policy on quality and its assurance. The Department has published its quality policy statements in its home page under the heading "Κανονισμοί-Αξιολογήσεις" (only in Greek language). However, this internet site does not present the Department's immediate goals, the corresponding improvement steps and time for their fulfilment. The Department's:

quality assurance policy focuses on the study programmes offered following the standards of European Association for Quality Assurance in Higher Education (ENQA 2009). The monitoring of their courses is ensured through internal quality procedural steps on an annual basis. However, there is no evidence of implementation of the required modifications identified by their internal quality assurance process. The procedure is organized by OMEA with distributing and collecting students' questionnaires. In turn, this information is communicated to the Department board through the committee for the study programme and then to MODIP and the university general assembly. However, the students and involved faculty are not informed of the student evaluation outcomes. The Department has posted its annual reports (δεδομένα ποιότητας) for the years 2013 – 2017 in its home page but not for the year 2018.

The Department uses the institutional IT system available for its personnel, students and public to communicate the quality assurance policy. However, the procedures and the progress are not well communicated to all parties and access to data concerning the physics department into the MODIPs website is very limited.

### Panel judgement

| <b>Principle 1: Institution Policy for Quality Assurance</b> |          |
|--|----------|
| Fully compliant  |          |
| Substantially compliant                                      | <b>X</b> |
| Partially compliant  |          |
| Non-compliant  |          |

### Panel Recommendations

- 1) The Department should effectively implement required modifications identified by their internal quality assurance process.
- 2) The Department should communicate its quality policy statements, their immediate goals, their corresponding improvement steps and time for their fulfilment to all interested parties including the public.
- 3) The Department should make publicly available the results of its internal annual evaluation in its website.

## Principle 2: Design and Approval of Programmes

**INSTITUTIONS SHOULD DEVELOP THEIR UNDERGRADUATE PROGRAMMES FOLLOWING A DEFINED WRITTEN PROCESS WHICH WILL INVOLVE THE PARTICIPANTS, INFORMATION SOURCES AND THE APPROVAL COMMITTEES FOR THE PROGRAMME. THE OBJECTIVES, THE EXPECTED LEARNING OUTCOMES, THE INTENDED PROFESSIONAL QUALIFICATIONS AND THE WAYS TO ACHIEVE THEM ARE SET OUT IN THE PROGRAMME DESIGN. THE ABOVE DETAILS AS WELL AS INFORMATION ON THE PROGRAMME'S STRUCTURE ARE PUBLISHED IN THE STUDENT GUIDE.**

*Academic units develop their programmes following a well-defined procedure. The academic profile and orientation of the programme, the objectives, the subject areas, the structure and organisation, the expected learning outcomes and the intended professional qualifications according to the National Qualifications Framework for Higher Education are described at this stage. The approval or revision process for programmes includes a check of compliance with the basic requirements described in the Standards, on behalf of the Institution's Quality Assurance Unit (QAU).*

*Furthermore, the programme design should take into consideration the following:*

- *the Institutional strategy*
- *the active participation of students*
- *the experience of external stakeholders from the labour market*
- *the smooth progression of students throughout the stages of the programme*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System*
- *the option to provide work experience to the students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the programme by the Institution.*

### Study Programme compliance

The Department of Physics is research-oriented and aims to provide high-quality education. It received annual external funding of about 7M Euros for 2018.

The Department of Physics offers an undergraduate degree in Physics, which requires 240 European Credit Transfer and Accumulation System (ECTS) credits. Ptyhion is expected to be completed in 8 semesters (4 years) and complies with Greek and EU standards. This degree requires 35 lecture courses, 7 laboratories courses, and an undergraduate thesis. The 35 lecture courses are distributed as follows: 25 mandatory core courses, one core elective course, six physics specialization elective courses, and three free electives courses (in physics or in STEM related areas). The 7 laboratories courses are distributed as follows: 4 basic physics laboratories, 2 core physics laboratories, and 1 physics concentration laboratory. The undergraduate thesis is equivalent to 2 semester courses (15 ECTS). The degree curriculum is well described in the program of study. The committee found that the undergraduate curriculum is excessive. Graduation rates in N-years (N = 4) is 3.82 %, which is considered very low. Moreover, no written guidelines and expectations exist for the undergraduate thesis.

Physics students have the option of participating in curriculum changes via their representatives in the departmental and University committees. However, students, graduates, and other stakeholders' participation in curriculum development is limited. The committee found that

external stakeholders would strongly support enhancement of students' innovations and entrepreneur skills.

The Department of Physics has dedicated faculty advisors that provide student support. Freshmen students are informed about their advisor during an orientation meeting and via email. However, students seem to be unaware of the role of the advisor.

Students have work experience options in the industry, the Greek public sector, and going aboard to EU institutions of higher education via participation in the Erasmus program. The degree curriculum offers experiential learning activities only via the undergraduate thesis. Undergraduate research is limited, and the department does not seem to promote this effort.

Curriculum revisions are initiated by OMEA and must be approved by MODIP and the University general assembly in order become final.

### Panel judgement

| Principle 2: Design and Approval of Programmes |          |
|--|----------|
| Fully compliant                                |          |
| Substantially compliant                        |          |
| Partially compliant                            | <b>X</b> |
| Non-compliant                                  |          |

### Panel Recommendations

- 1) The Department of Physics is strongly recommended to substantially reduce the existing course load and restructure of the current curriculum.
- 2) The Department of Physics must conduct regular meetings with students, graduates and other stakeholders to discuss curriculum changes and improvements.
- 3) The Department of Physics is recommended to enhance innovation and entrepreneurship via seminars or new course development. However, the overall undergraduate degree ECTS must remain at 240.

### Principle 3: Student- centred Learning, Teaching and Assessment

**INSTITUTIONS SHOULD ENSURE THAT THE UNDERGRADUATE PROGRAMMES ARE DELIVERED IN A WAY THAT ENCOURAGES STUDENTS TO TAKE AN ACTIVE ROLE IN CREATING THE LEARNING PROCESS. THE ASSESSMENT METHODS SHOULD REFLECT THIS APPROACH.**

*Student-centred learning and teaching plays an important role in stimulating students' motivation, self-reflection and engagement in the learning process. The above entail continuous consideration of the programme's delivery and the assessment of the related outcomes.*

*The student-centred learning and teaching process*

- *respects and attends to the diversity of students and their needs, enabling flexible learning paths;*
- *considers and uses different modes of delivery, where appropriate;*
- *flexibly uses a variety of pedagogical methods;*
- *regularly evaluates and adjusts the modes of delivery and pedagogical methods aiming at improvement*
- *regularly evaluates the quality and effectiveness of teaching, as documented especially through student surveys;*
- *reinforces the student's sense of autonomy, while ensuring adequate guidance and support from the teaching staff;*
- *promotes mutual respect in the student - teacher relationship;*
- *applies appropriate procedures for dealing with students' complaints.*

*In addition :*

- *the academic staff are familiar with the existing examination system and methods and are supported in developing their own skills in this field;*
- *the assessment criteria and methods are published in advance;*
- *the 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;*
- *student assessment is conducted by more than one examiner, where possible;*
- *the regulations for assessment take into account mitigating circumstances*
- *assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures;*
- *a formal procedure for student appeals is in place.*

#### Study Programme compliance

The Department provides a "Studies Guide" (Οδηγός Σπουδών) and a detailed study program for each academic year. It appoints a Student Advisor (Σύμβουλος Σπουδών) to each student, with emphasis to first-year students. All faculty members serve as Faculty Advisors. The Department informs sufficiently the students about the course content, study assessments, laboratory work and the course evaluations.

Teaching relies on contemporary methods with sufficient practical examples and experiments. However, there is not enough evidence of respecting the diversities between students, while caring for their various needs, by adopting flexible learning methods and encouraging them to participate in additional support lectures and activities. Bibliographic support is also available

and direct contact with the teaching staff is encouraged. However, the Department does not offer enough project-based teaching, although appreciated by the students.

The Department publishes the course assessment methods and criteria in advance, and it has a formal procedure for student appeals in place.

The teaching evaluation is conducted regularly and for each course. However, the current student participation is low.

### Panel judgement

| <b>Principle 3: Student- centred Learning, Teaching an Assessment</b> |          |
|---|----------|
| Fully compliant   |          |
| Substantially compliant   | <b>X</b> |
| Partially compliant   |          |
| Non-compliant   |          |

### Panel Recommendations

- 1) The Department should improve teaching towards student-centered methods (e.g., more student projects).
- 2) The Department and all teaching staff should continue to encourage the students to participate in online evaluations.

## **Principle 4: Student Admission, Progression, Recognition and Certification**

**INSTITUTIONS SHOULD DEVELOP AND APPLY PUBLISHED REGULATIONS COVERING ALL ASPECTS AND PHASES OF STUDIES (ADMISSION, PROGRESSION, RECOGNITION AND CERTIFICATION).**

*Institutions and academic units need to put in place both processes and tools to collect, manage and act on information regarding student progression.*

*Procedures concerning the award and recognition of higher education degrees, the duration of studies, rules ensuring students progression, terms and conditions for student mobility should be based on the institutional study regulations. Appropriate recognition procedures rely on institutional practice for recognition of credits among various European academic departments and Institutions, in line with the principles of the Lisbon Recognition Convention.*

*Graduation represents the culmination of the students' study period. Students need to receive documentation explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed (Diploma Supplement).*

### **Study Programme compliance**

Students are formally admitted on a dedicated registration day that takes place at the Department, where information is presented regarding the programme of study, the department's organisation, the process for acquisition of the student identity cards and the electronic system "my-studies". The latter is a secure and personalised way, which provides access to the Studies Guide, allows the registration of courses, provides information on their assessment results and the means to request certificates and other related material. At the registration day, students are informed about reference books, lectures' timetable, student benefits, the department's web page and links with relevant information. This information is also disseminated via an information booklet available both in hard and electronic format. However, the electronic version of the information booklet was not verified by the Panel. The registration day is followed at a later date by a dedicated information day event supported by the Department's leadership team and members, during which the students are getting informed about the Department's Sections, as well as teaching and research activities within the Department. The Panel found no evidence that the orientation programme was not effective.

The students' progression is monitored by OMEA and the academic studies committee (Συντονιστική Επιτροπή Προγράμματος Σπουδών) based on data provided by the department's administration team, and is reported to ΜΟΔΙΠ, as well as to the department's teaching staff. Each student has the option to see his/her progress and seek advice via his/her Student Advisor.

The Department encourages student mobility by participating in the ERASMUS+ programme. Each academic year 5 – 10 students attend courses at EU universities. Relevant information on ERASMUS+ is also available in English and posted at the department's web page. The student participation at the ERASMUS+ programme appears to be limited by reciprocity, i.e. the number of students from foreign universities that chose to study at the Department. In addition,

students have the opportunity to collaborate with other national or international teams during their final year thesis, as well as the opportunity to conduct thesis related work at different departments, universities and academic institutes. It is also noted that students participate in international Physics competitions taking place abroad, present their work at national and international conferences and attend international summer schools, e.g. CERN and ESA. Student mobility activities are only supported by external sponsorships.

The Department's study programme is compatible with the Bologna accord and utilises 240 ECTS. However, the Diploma Supplement is only issued following a request by a graduate and not mandatory.

There are no documented quality requirements for the implementation of the undergraduate thesis and no Thesis Handbook is available. Information regarding the thesis work standards and expectations are conveyed orally to the students by their thesis supervisors.

The Department offers a practical training programme (ΠΠΑ) with relevant information regarding the process on the department's web page. However, only 25% of the number of the newly registered students participate to the ΠΠΑ per year on a voluntary basis. Participating students found the programme to increase their future employment opportunities.

The ΠΠΑ programme appears to be supported by a network of external shareholders. Although no reference material (URL link) was available, the Panel was able to meet a selection of representatives from the ΠΠΑ support network who confirmed their engagement, enthusiastic support and willingness to continue supporting the programme.

### Panel judgement

| <b>Principle 4: Student Admission, Progression, Recognition and Certification</b> |          |
|---|----------|
| Fully compliant   |          |
| Substantially compliant   | <b>X</b> |
| Partially compliant   |          |
| Non-compliant   |          |

### Panel Recommendations

- 1) The Department should expand the orientation activities.
- 2) The Department should consider mid-term examinations or other forms of continuous assessments as an alternative to the final exam.
- 3) The Department should take steps for the Student Advisor to become more effective.
- 4) The Department should issue the Diploma Supplement for all graduates.
- 5) The Department should provide a Thesis Handbook.

## Principle 5: Teaching Staff

**INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE QUALIFICATIONS AND COMPETENCE OF THE TEACHING STAFF. THEY SHOULD APPLY FAIR AND TRANSPARENT PROCESSES FOR THE RECRUITMENT AND DEVELOPMENT OF THE TEACHING STAFF.**

*The Institutions and their academic units have a major responsibility as to the standard of their teaching staff providing them with a supportive environment that promotes the advancement of their scientific work. In particular, the academic unit should:*

- *set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff and offer them conditions of employment that recognize the importance of teaching and research;*
- *offer opportunities and promote the professional development of the teaching staff;*
- *encourage scholarly activity to strengthen the link between education and research;*
- *encourage innovation in teaching methods and the use of new technologies;*
- *promote the increase of the volume and quality of the research output within the academic unit*
- *follow quality assurance processes for all staff members (with respect to attendance requirements, performance, self-assessment, training etc.);*
- *develop policies to attract highly qualified academic staff;*

### Study Programme compliance

The Department supports staff mobility and grants absence of leave from teaching duties. However, the departmental set target (2%) for faculty teaching abroad is not met. Funding to attend conferences is available from the accounting site of research funding (EAKE). Furthermore, the Department has cultivated a research active culture with teaching and research staff encouraged to participate actively in research projects and form national and international collaborations.

The teaching workload is deemed appropriate, allowing for faculty engagement in research. Faculty mainly teach in their area of research.

Teaching staff are regularly evaluated by students' via electronic surveys. The results of these surveys do not appear to be circulated and made widely known publicly.

The Department's research effort is compartmentalized in relation to the five sectors that comprise the Physics Department. There does not appear to exist a central research strategy.

### Panel judgement

| Principle 5: Teaching Staff |          |
|-----------------------------|----------|
| Fully compliant             |          |
| Substantially compliant     | <b>X</b> |
| Partially compliant         |          |
| Non-compliant               |          |

### **Panel Recommendations**

- 1) The Department should make efforts to increase staff mobility.
- 2) The Department should develop a focused research strategy for each of the five departmental sectors.
- 3) The Department should link sector's research strategy with faculty performance.

## Principle 6: Learning Resources and Student Support

**INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER TEACHING AND LEARNING NEEDS. THEY SHOULD –ON THE ONE HAND- PROVIDE SATISFACTORY INFRASTRUCTURE AND SERVICES FOR LEARNING AND STUDENT SUPPORT AND–ON THE OTHER HAND- FACILITATE DIRECT ACCESS TO THEM BY ESTABLISHING INTERNAL RULES TO THIS END (E.G. LECTURE ROOMS, LABORATORIES, LIBRARIES, NETWORKS, BOARDING, CAREER AND SOCIAL POLICY SERVICES ETC.).**

*Institutions and their academic units must have sufficient funding and means to support learning and academic activity in general, so that they can offer to students the best possible level of studies. The above means could include facilities such as libraries, study rooms, educational and scientific equipment, information and communications services, support or counselling services.*

*When allocating the available resources, the needs of all students must be taken into consideration (e.g. whether they are full-time or part-time students, employed or international students, students with disabilities) and the shift towards student-centred learning and the adoption of flexible modes of learning and teaching. Support activities and facilities may be organised in various ways, depending on the institutional context. However, the internal quality assurance ensures that all resources are appropriate, adequate, and accessible, and that students are informed about the services available to them.*

*In delivering support services the role of support and administrative staff is crucial and therefore they need to be qualified and have opportunities to develop their competences.*

### Study Programme compliance

The Department of Physics has maintained sufficient funding for its research activities. However, the undergraduate students' benefits from this funding is very limited, since they are involved in research only during their thesis. The Department has sufficient teaching laboratories for its undergraduate students. These laboratories are well equipped, and some have been recently upgraded with new equipment, thus enhancing student learning.

The classrooms are moderately maintained. However, the building common areas (e.g., hallways and toilets) are in a bad condition, with graffiti evidenced in many walls. Furthermore, the response time from Technical Services in case of repairs is long. The department offers a study area and students can connect to the internet via Wi-Fi access. Students have access to the University library and some outdoors sports facilities hosted close to the department buildings. Although the Department does not offer its own student counselling services, these services are available at the University.

The University has student dormitory facilities.

All physics classes offered are face-to-face, with class-related material being posted at the internet. Students have access to the internet-posted material and found these very useful. However, employed students found hard to attend classes (lectures and laboratories) offered during working hours. No hybrid classes, which limit face-to-face lectures with online instruction, are currently available.

## Panel judgement

| <b>Principle 6: Learning Resources and Student Support</b> |          |
|--|----------|
| Fully compliant  |          |
| Substantially compliant                                    | <b>X</b> |
| Partially compliant  |          |
| Non-compliant  |          |

## Panel Recommendations

- 1) The Department should develop and offer hybrid lecture classes.
- 2) The Department in conjunction with the University must take appropriate measures for the improvement of the common areas of their buildings.
- 3) The Department should develop a mechanism for improving Technical Services response time.
- 4) An effort should be made to enhance the style and presentation of student support material online to make it more legible and attractive.
- 5) Organize a Career Day with the active support and participation of the employment sector.
- 6) The Department of Physics must encourage undergraduate research, by incorporating undergraduate students (first to fourth year) in research projects, thus enhancing experiential learning.

## Principle 7: Information Management

**INSTITUTIONS BEAR FULL RESPONSIBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF UNDERGRADUATE PROGRAMMES OF STUDY AND RELATED ACTIVITIES, IN AN INTEGRATED, EFFECTIVE AND EASILY ACCESSIBLE WAY.**

*Institutions are expected to establish and operate an information system for the management and monitoring of data concerning students, teaching staff, course structure and organisation, teaching and provision of services to students as well as to the academic community. Reliable data is essential for accurate information and for decision making, as well as for identifying areas of smooth operation and areas for improvement. Effective procedures for collecting and analysing information on study programmes and other activities feed data into the internal system of quality assurance.*

*The information gathered depends, to some extent, on the type and mission of the Institution. The following are of interest:*

- *key performance indicators*
- *student population profile*
- *student progression, success and drop-out rates*
- *student satisfaction with their programme(s)*
- *availability of learning resources and student support*
- *career paths of graduates*

*A number of methods may be used for collecting information. It is important that students and staff are involved in providing and analyzing information and planning follow-up activities.*

### Study Programme compliance

Several data collection systems have been established including those provided by HQA. However, there is lack of information on employability and career paths for graduates. Students are invited to complete online questionnaires on each course they take. Statistical data according to HQA are available on progression completion rates.

Most data collection is done online. A student questionnaire for each course taken is available online for students three weeks before the course ends. Formal staff surveys do not appear to be conducted.

There is no “exit” questionnaire completed by students on graduation although there are plans to introduce such a questionnaire, which will include contact details to facilitate alumni contact and collection of data on the careers of graduates. Data is collected on the research and teaching activities of staff but an assessment of teaching effectiveness of individual staff is not attempted.

The analysis of collected data is rudimentary as there is an insufficient number of staff with appropriate skills for this task. Some analysis is evident. However, further analysis would have provided additional information to improve student progress.

Data gathered from student satisfaction surveys was presented to the panel on graphical form so as to be easily accessible, but it does not appear that this information is available to students and other stakeholders. More analysis and data interpretation is needed in order to extract useful information, which can inform curriculum development.

### Panel judgement

| <b>Principle 7: Information Management</b> |          |
|--|----------|
| Fully compliant                            |          |
| Substantially compliant                    | <b>X</b> |
| Partially compliant                        |          |
| Non-compliant                              |          |

### Panel Recommendations

- 1) School or Department should designate a dedicated person(s) with the appropriate skills to perform a regular in-depth analysis of data collected and disseminate the results.
- 2) The Department should collect and communicate data on career paths of its graduates.
- 3) The Department should create a dedicated web page for the practical training programme to include links of the supporting network partners, opportunities, events and other related activities.

## Principle 8: Public Information

**INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES WHICH IS CLEAR, ACCURATE, OBJECTIVE, UP-TO-DATE AND READILY ACCESSIBLE.**

*Information on Institution's activities is useful for prospective and current students, graduates, other stakeholders and the public.*

*Therefore, institutions and their academic units provide information about their activities, including the programmes they offer, the intended learning outcomes, the qualifications awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students, as well as graduate employment information.*

### Study Programme compliance

There is a large volume of information available online on programme structure, degrees awarded, staff CVs, assessment criteria, etc. Online announcements on timetable changes and related issues are also used effectively.

All course outlines with assessment methods and learning outcomes are available online. The e-class system appears to be comprehensive covering all courses. The course outline, basic structure and learning outcomes is in the public domain. A password is required to gain access to specific support materials. Access was provided to the Panel to view some of the online material. There is a range of support material some in Powerpoint format and others in handwritten.

It is difficult to locate online quality related information as it appears to be located in particular areas, which are not intuitively obvious to the average user.

The Department's web page navigation is difficult, and its content is not uniform.

### Panel judgement

| Principle 8: Public Information |   |
|---------------------------------|---|
| Fully compliant                 | X |
| Substantially compliant         |   |
| Partially compliant             |   |
| Non-compliant                   |   |

### Panel Recommendations

- 1) The Department should improve its webpage navigation and include a dedicated option designated as "quality matters" in its home page.
- 2) The Department should facilitate contact with alumni and publicize outreach activities.

## Principle 9: On-going Monitoring and Periodic Internal Review of Programmes

**INSTITUTIONS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM FOR THE AUDIT AND ANNUAL INTERNAL REVIEW OF THEIR PROGRAMMES, SO AS TO ACHIEVE THE OBJECTIVES SET FOR THEM, THROUGH MONITORING AND AMENDMENTS, WITH A VIEW TO CONTINUOUS IMPROVEMENT. ANY ACTIONS TAKEN IN THE ABOVE CONTEXT SHOULD BE COMMUNICATED TO ALL PARTIES CONCERNED.**

*Regular monitoring, review and revision of study programmes aim to maintain the level of educational provision and to create a supportive and effective learning environment for students.*

*The above comprise the evaluation of:*

- the content of the programme in the light of the latest research in the given discipline, thus ensuring that the programme is up to date;*
- the changing needs of society*
- the students' workload, progression and completion;*
- the effectiveness of the procedures for the assessment of students*
- the students' expectations, needs and satisfaction in relation to the programme;*
- the learning environment, support services and their fitness for purpose for the programme*

*Programmes are reviewed and revised regularly involving students and other stakeholders. The information collected is analysed and the programme is adapted to ensure that it is up-to-date. Revised programme specifications are published.*

### Study Programme compliance

Since 2015, two years after the last HQA External Evaluation, the Department initiated systematic annual internal monitoring of its programs. The Department collects data from various stakeholders including students. However, updates in the undergraduate curriculum have not yet been implemented. The Department is aware of changes needed and have planned to update the curriculum. However, there is no evidence that the Department has a common view for the changes that need to be implemented.

### Panel judgement

| <b>Principle 9: On-going Monitoring and Periodic Internal Review of Programmes</b> |          |
|--|----------|
| Fully compliant  |          |
| Substantially compliant  |          |
| Partially compliant  | <b>X</b> |
| Non-compliant  |          |

### Panel Recommendations

The Department should implement major restructure of the undergraduate curriculum without delay.

## Principle 10: Regular External Evaluation of Undergraduate Programmes

**PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY COMMITTEES OF EXTERNAL EXPERTS SET BY HQA, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HQA.**

*HQA is responsible for administering the programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HQA grants accreditation of programmes, with a specific term of validity, following to which revision is required. The accreditation of the quality of the programmes acts as a means of verification of the compliance of the programme with the template's requirements, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees.*

*Both academic units and institutions participate in the regular external quality assurance process, while respecting the requirements of the legislative framework in which they operate.*

*The quality assurance, in this case the accreditation, is an on-going process that does not end with the external feedback, or report or its follow-up process within the Institution. Therefore, Institutions and their academic units ensure that the progress made since the last external quality assurance activity is taken into consideration when preparing for the next one.*

### Study Programme compliance

The Department underwent an external evaluation of its total program in October 2013 by a five-member team, operating under the auspices of the HQA.

The 2013 HQA evaluation made a number of recommendations, including the observation that Student Advisors should be assigned to each entering undergraduate. Our Panel realized that the Department had put efforts to review and address the concerns of the 2013 Panel.

The Panel senses that the Department is open to suggestions for improvements and program modifications. However, some of the 2013 Panel recommendations are still pending. The members of the Department appeared to be aware of the importance of the present external accreditation review, the significance of its findings, and have indicated that the Panel's input will help them fine tune their upcoming new program initiative.

### Panel judgement

| Principle 10: Regular External Evaluation of Undergraduate Programmes |          |
|---|----------|
| Fully compliant   |          |
| Substantially compliant   | <b>X</b> |
| Partially compliant   |          |
| Non-compliant   |          |

### Panel Recommendations

The Department should continue implementing the recommendations of the 2013 external evaluation, especially the needed changes in the undergraduate curriculum.

## **PART C: CONCLUSIONS**

### **I. Features of Good Practice**

- 1) The Department has very good experimental facilities for the study program.
- 2) The Astronomical Observatories are used by undergraduate students as part of the coursework and also serves as outreach facilities.
- 3) The Department's graduates have a good reputation in the employment sector.

### **II. Areas of Weakness**

The undergraduate curriculum is not up to date, taking into account the current societal, educational, and employment needs.

- 1) The link between undergraduate study program and ongoing research is weak.
- 2) The Department does not provide course evaluations feedback to students and public (i.e., closing the quality loop).
- 3) There appears to be a weak consensus on the strategic directions of the Department.

### **III. Recommendations for Follow-up Actions**

- 1) The undergraduate curriculum needs restructuring taking into account the current societal, educational, and employment needs, as well as a common strategy of the Department.
- 2) The Department should enhance involvement of undergraduate students in research.
- 3) The Department should ensure that feedback is provided to students completing course evaluations (close the quality loop).

### **IV. Summary & Overall Assessment**

The Principles where full compliance has been achieved are: 8

The Principles where substantial compliance has been achieved are: 1, 3, 4, 5, 6, 7, 10

The Principles where partial compliance has been achieved are: 2, 9

The Principles where failure of compliance was identified are: none

| <b>Overall Judgement</b> |          |
|--------------------------|----------|
| Fully compliant          |          |
| Substantially compliant  | <b>X</b> |
| Partially compliant      |          |
| Non-compliant            |          |

## The members of the Accreditation Panel

Name and Surname

Signature

1. **Professor Emeritus, Christos, Christopoulos** (Chair)  
University of Nottingham
2. **Professor Emeritus, Harry Mavromatis**  
American University of Beirut
3. **Professor Nikolaos Dimakis**  
University of Texas Rio Grande Valley
4. **Professor Anthimos Georgiadis**  
Leuphana Universität Lüneburg
5. **Dr. Spyros Manolopoulos**  
University College London