



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
HELLENIC REPUBLIC



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# Accreditation Report for the Undergraduate Study Programme of:

**Geology**

**Institution: Aristotle University of Thessaloniki**

**Date: 29 May 2021**

Report of the Panel appointed by the HAHE to undertake the review of the Undergraduate Study Programme of **Geology** of the **Aristotle University of Thessaloniki** for the purposes of granting accreditation

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

### **I. The External Evaluation & Accreditation Panel**

The Panel responsible for the Accreditation Review of the Undergraduate Study Programme of **Geology** of the **Aristotle University of Thessaloniki** comprised the following three (3) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Prof. Theodoros Ntaflos (Chair)**  
Universität Wien, Austria
  
- 2. Prof. Filippos Tsikalas**  
University of Oslo, Norway
  
- 3. Mr. Dionysios Gkoutis**  
Member of the Geotechnical Chamber of Greece, Greece

## II. Review Procedure and Documentation

The External Evaluation & Accreditation Panel (EEAP) has received on 06/05/2021 by the Hellenic Authority for Higher Education (HAHE) the material on Quality Assurance Standards for Quality Accreditation of Undergraduate Programmes and Accreditation Guidelines. Similarly, the EEAP has received on 19/05/2021 by HAHE the relevant material for the accreditation of the undergraduate study programme of the Department of Geology (DoG), Aristotle University of Thessaloniki (AUTH). Due to the current Covid-19 pandemic situation, the review of the undergraduate study programme was implemented remotely by the use of electronic means via Zoom virtual meetings, and on 20/05/2021 the EEAP received the final timetable for these meetings. The received relevant material for the department included, among other material, the DoG Proposal for Accreditation by the Internal Quality Assurance System, information on the quality indicators for the years 2015-2016, 2016-2017, 2017-2018 and 2018-2019 as well as the DoG External Evaluation Report of 2012. The EEAP notes the immediate response of the DoG in all the requests for additional material and information that were delivered in a technically thorough and comprehensive way.

On Monday 24<sup>th</sup> May 2021 (15:00-17:00), the EEAP met virtually and discussed the strategy and issues to be considered during the scheduled teleconferences. Subsequently, the EEAP initially met with the University Vice Rector and the Department Head. The Vice Rector also serves as the President of the Quality Assurance Unit (MODIP). The EEAP was briefed on the history and academic profile of the AUTH and DoG. Later, the Internal Evaluation Group (OMEA) together with representatives of MODIP joined the meeting, and the Head of the Department presented the department's current status, strengths and areas for improvement. The EEAP had an extensive meeting with the OMEA/MODIP representatives and discussed the compliance of the Geology undergraduate programme to the "Standards for Quality Accreditation for Undergraduate Programmes" that are set by HAHE. At the end of the day, the EEAP had a short internal debriefing meeting to reflect on the impressions of the first day and prepare for the second day of teleconferences.

On Tuesday 25<sup>th</sup> May 2021, the EEAP met teaching staff members and discussed the undergraduate study program, the professional development opportunities, the mobility, faculty workload and the evaluation of teaching staff by the department students. Following that, the EEAP met and discussed with ten (10) undergraduate students. Subsequently, an online tour (links provided and watched by the EEAP at an earlier stage) was held on the DoG classrooms, lecture halls, research and teaching laboratories, library and other facilities. This was followed by a discussion with relevant teaching, technical and administrative staff. Later on the same day, the EEAP met with several DoG graduates covering a wide range of graduation years, and later on with several external stakeholders and social partners from relevant private and public sectors. The day ended with the EEAP having a short internal debriefing meeting to reflect on the impressions of the second day.

On Wednesday 26<sup>th</sup> May 2021, the EEAP had an initial short debriefing meeting with the Head of the Department, OMEA and MODIP. On request by the EEAP, the DoG has organised for the EEAP entry to two live-classroom courses (Mineralogy lab taught on 2<sup>nd</sup> semester and Hydrogeology lab taught on 6<sup>th</sup> semester). The purpose was for EEAP to meet and discuss with a randomly selected group of undergraduate students in order to receive a broader feedback

on the undergraduate programme and potential improvements. Subsequently, the final meeting was held among the EEAP, Vice Rector, Head of the Department, OMEA and MODIP. Later on, the EEAP had a short internal debriefing meeting to discuss the outcomes of the virtual meetings and to initiate the writing of the report.

During late Wednesday 26<sup>th</sup> May to Saturday 29<sup>th</sup> May 2021, the EEAP worked on the Accreditation Report.

### III. Study Programme Profile

The DoG at AUTH is a dynamic organization with almost 50-years history in geological studies covering a broad spectrum of geoscience fields. Currently the department consists of 22 Professors, 12 Associate Professors, 4 Assistant Professors, 28 teaching staff (EDIP), 4 specialized technical staff (ETEP), and 3 administration staff.

The DoG is divided into the following five Divisions (Τομείς):

- (i) Geology
- (ii) Mineralogy-Petrology-Economic Geology
- (iii) Geophysics
- (iv) Meteorology and Climatology
- (v) Physical and Environmental Geography

The DoG also operates the Museum of Geology-Paleontology-Paleoanthropology, the Aristotle University Seismological Station/Network, and the Mount Olympus Meteorological Centre.

The number of the annually new admitted students determined by the State of Greece is 121 and with transfers for special reasons reaches 145 (2020-2021 data). However, the current total undergraduate student population amounts 1524 persons, since a significant number of students fails to complete their studies within the normal 4-year cycle. The student population graduates within approximately 6.1 years (2018-2019 data; turned to 5.7 years 2019-2020 data).

OMEA data (2018-2019) show the enrolled and graduating students distributed as follows: 8.20% graduated in 4 years, 39.34% in 5 years, 27.87% in 6 years, and 24.59% in 6+ years. During the department's life, the total number of graduates is as follows: 2742 BSc graduates, 521 MSc graduates, and 220 PhD.

The DoG offers a BSc with a 4-year cycle (8 semesters) at the undergraduate level. The DoG covers a broad spectrum of scientific fields in geosciences and is the only department in Greece that includes a Meteorology and Climatology Division. According to the 2020-2021 Student Handbook, the completion of the undergraduate programme requires 240 ECTS. These derive from 27 compulsory (mandatory) courses that provide 173 ECTS, a mandatory undergraduate thesis (Διπλωματική Εργασία) with 8/16 ECTS (two choices between literature- or research-based character), and 67 ECTS from a pool of 62 elective (optional) courses. A two-month internship/practical training (Πρακτική Άσκηση) is optional and encouraged and incorporates transparent selection ranking based on student progression and performance/grades. The programme of studies has been adjusted occasionally to the students' needs but a framework of regular reforms was not practised until 2019. Introduction of the substantially reformed/new undergraduate programme was entered in academic year 2020-2021.

## 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 AUTH has established an appropriate Quality Assurance Unit (MODIP) clearly defining review processes, the programme's continuous improvement, and Key Performance Indicators. The MODIP continuously monitors and enforces the Quality Assurance Policy that is applied and guaranteed by a committee of six (6) DoG members (OMEA). The DoG has set specific, measurable and timely goals for its undergraduate study programme. The OMEA is in line with MODIP for the improvement of the study programme. However, an annual review and an internal audit of the quality assurance system of the undergraduate program does not exist. Relevant information is shared with involved parties and posted to the AUTH/MODIP intranet and the DoG website.



The EEAP found an established and well-structured quality assurance policy by the academic unit. The academic unit has issued a statement demonstrating its commitment to the implementation of a quality policy that promotes the academic profile and orientation of the DoG undergraduate programme, its purpose and its field of study. The quality policy statement aims to realise the strategic objectives of the programme strategic goals and defines the ways and means of achieving them.

The DoG maintains a monitoring committee responsible for the undergraduate programme (Επιτροπή Προγράμματος Σπουδών) that in collaboration with the other formal authorities oversee the implementation, progress and potential future needs for flexible adjustment/modification in the undergraduate study programme.

### Panel Judgement

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

### Panel Recommendations

- The EEAP acknowledges the quality assurance procedures by the DoG and recommends that the department should find ways to encourage students for active involvement to the continuous improvement of the undergraduate study programme.
- The EEAP acknowledges maintenance of the monitoring committee responsible for the undergraduate programme (Επιτροπή Προγράμματος Σπουδών) and urges the DoG to continue and reinforce this excellent practice.
- An annual review and an internal audit of the quality assurance system of the undergraduate programme should be established.

## 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 strengths of the DoG undergraduate programme lie on the broad spectrum of geoscience fields covered in teaching and research, as well as on the integration of fieldwork within the frame of the offered courses. The DoG undergraduate programme promotes and emphasises on interdisciplinary and holistic knowledge and education. Established links between research and teaching in the undergraduate programme are obvious. The DoG undergraduate study programme curriculum is well-articulated and comprehensive. The ECTS system is applied across the curriculum (one ECTS corresponds now to 25 hours and not 30 as it was in the earlier curriculum). However, the EEAP located disproportions at least in some courses between the same hours of theory teaching and workload (e.g. NGGG 104Y and NGGN 738E).

The description of the learning outcomes within the course frameworks (syllabi) appears to be highly heterogeneous.

The EEAP found that a targeted comparison of the design and curriculum of the DoG undergraduate study programme with high-quality/renown European and international

programmes and universities is lacking in the provided documentation, and that such comparison would have been beneficial and would strengthen even more the gravity of the DoG undergraduate study programme.

Following the recommendation of the External Evaluation Committee in 2012, the DoG has formulated and established a well-defined 5-year Departmental Strategic Plan where the undergraduate programme is a major component. Following international practice and towards achieving excellence, the EEAP finds that the strategic plan should be kept updated and reviewed on an annual rolling basis.

The high number of newly admitted students and their consequent very diverse background (in mathematics, physics, chemistry) affects the student progress and therefore, indirectly, the quality of the study programme. In addition, the high number of both the admitted and the remaining enrolled (4+ years) students exerts pressure on existing teaching and laboratory facilities and infrastructure. The existing laboratory infrastructure does not offer optimal conditions for hands-on training to all undergraduate students. In order to overcome this obstacle, the DoG is organizing multiple laboratory training having the same topic with reduced number of students allowing their active participation to the course.

The programme of studies has been refined occasionally to the students' needs and a framework of regular reforms on 3-5 years basis was not earlier practiced. However, following intensive efforts by the DoG during the last years the procedure for the study programme revision is now in place. The procedure also foresees consultation with stakeholders, external experts, students and graduates; however, this is not yet fully optimised. A form of informal advisory/consultation panel comprised of alumni and external stakeholders may be considered.

Both alumni and stakeholders expressed their positive views of the programmes' graduates knowledge and abilities. In addition, the DoG meets the expectations set by the Geotechnical Chamber of Greece.

The DoG undergraduate programme provides the opportunity to attain certified pedagogics sufficiency (Πιστοποιητικό Παιδαγωγικής και Διδακτικής Επάρκειας) that leads to adequate professional rights for DoG graduates in teaching in the secondary education system in Greece. In this context, the DoG should lobby and enhance all efforts for its graduates to retain all current teaching professional rights.

### Panel Judgement

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

## **Panel Recommendations**

- The DoG should re-check the proportionality between teaching hours and workload in order to avoid discrepancies that affect the ECTS as mentioned above.
- The DoG should make efforts towards better-homogenised descriptions of the learning outcomes within the course frameworks (syllabi).
- Since excellence is aimed, the gravity of the DoG undergraduate study programme will be further increased in the next future revision by targeted comparisons of the design and curriculum with high-quality/renown European and international programmes and universities. Periodic regular reforms of the study programme on 3-5 years basis must be envisaged.
- The established and well-defined 5-year Departmental Strategic Plan where the undergraduate programme is a major component needs to be reviewed on an annual rolling basis.
- The number of students should be reduced in order to further increase the quality of the study programme.
- The stakeholders and external experts of public and private sectors should be formally consulted for revisions and future planning of the study programme.
- The DoG should lobby and keep up all efforts for its graduates to retain all current teaching professional rights in the secondary education system in Greece.

## 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 DoG undergraduate programme is organised in a positive student-centred learning environment that allows for certain different modes of delivery and offers flexible learning paths and mutual respect. Continuous attempts are needed to integrate and evolve different ways that can improve the attendance levels. The EEAP observed that, in general, besides the written exams and laboratory assignment other student assessment methods (e.g. πρόοδος partial performance/mid-term examinations, homework assignments, group projects) are not fully and explicitly utilised in the curriculum and weighted towards the final course grade. The course

frameworks (syllabi) describe in detail the contents as well as the currently utilised assessment criteria methods.

Following the recommendation of the External Evaluation Committee in 2012, the DoG had introduced in the former undergraduate programme (run within 2013-2020) five (5) prerequisite courses (“chain system” of instruction) which have been abandoned as inefficient from the newly introduced undergraduate programme (2020-2021). The EEAP acknowledges the compliance efforts of the DoG and the resulted adjustments, however, the implementation of required prerequisite courses (“chain system” of instruction) is essential for the curriculum effectiveness and quality. The EEAP considers that re-introduction of the policy of required prerequisite courses in the next regular revision of the undergraduate programme will be beneficial given that the DoG exploits, in this context, flexible and reasonable criteria that are adapted to the curriculum. The EEAP notes that the majority of interviewed undergraduate students and alumni graduates were positive towards this perspective.

The EEAP noted the moderate to low participation of students in the course evaluations despite the efforts of the department; that is 29.3% (2019-2020 MODIP data) of all registered students. The EEAP acknowledges that the low percentage is biased as participation in actively enrolled students is considerably higher. In the fieldwork courses, however, the participation percentage increases substantially. Students claim that course evaluation questionnaires are time-consuming. Few have complained for lack of adequate space in the questionnaires for lengthy/extensive notes and comments.

Students are not fully aware of the actual role and the services an Academic Advisor can provide towards their success. They do not use this service as they consider it redundant.

The EEAP notes the efforts implemented by the DoG to tackle the imposed teaching and research challenges during the current Covid-19 pandemic. The DoG managed positively the situation, and through digitalisation efforts, a resulting dowry evolved with additional e-learning material both for the theoretical and laboratory (e.g. virtual microscopy) parts of courses.

### Panel Judgement

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

## **Panel Recommendations**

- Increase the number of courses where the use of enriched student assessment methods using multiple examination measurements are established and clearly communicate the assessment criteria in the curriculum.
- The DoG should make further efforts to increase the participation of students and their confidence in the course evaluations.
- The DoG should find ways to strengthen student participation and involvement in the internal evaluation and continuous improvement of the study programme.
- In the next regular revision of the undergraduate programme, the DoG should re-introduce the policy of required prerequisite courses, exploiting/implementing flexible and reasonable criteria that are adapted to the curriculum.
- The role and duties of the Academic Advisor should be further promoted to the students and adapted to the specific needs of the department. The students, at least in the first two years, should be encouraged to contact frequently the Academic Advisor. A formal assessment of Academic Advisors by students should be considered.

## 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

Incoming students are mostly admitted via state examinations and the DoG has no control over the number of the admitted undergraduate students. The incoming students are welcomed and guided to the DoG premises, activities, and study programme. The students' progression is properly monitored.

The student mobility at the DoG is low. Only a small number of students take advance of the ERASMUS+ programme although there is a well-documented and transparent ECTS equivalence between DoG and foreign institutions.

One of the strengths of the DoG is that the integration of fieldwork takes place within the frame of the offered courses and corresponding ECTS workload; several other multi-day field courses are part of the curriculum. Fieldwork training is widely accepted from the students and their attendance is very high.

A proper Thesis Handbook has been prepared by DoG and is available, clearly defining the quality requirements for the implementation of the mandatory undergraduate thesis (Διπλωματική Εργασία). Quality control for the thesis is achieved by the final examination committee.

A two-month internship/practical training (Πρακτική Άσκηση) is optional and incorporates transparent selection ranking based on student progression and performance/grades. Students value the practical training as a first step towards the undergraduate thesis and/or the job market. The EEAP notes that there is a strong demand among the students for participation in the practical training. The DoG should sustain efforts to increase the number of such opportunities (current number of offered places cover almost half



the number of annual incoming students), and the Greek State should increase both the funds and the amount of compensation for the practical training.

### Panel Judgement

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

### Panel Recommendations

- Student mobility needs to be actively encouraged, even if the ERASMUS+ programme is providing limited funding. The responsible person for student mobility together with the teaching staff should find additional and alternative ways (e.g. dedicated lectures, active web-site promotion etc) to inform students about the benefits of participating in the ERASMUS+ network programme.
- The DoG should lobby and sustain efforts to increase the number of the two-month internship/practical training opportunities.
- The Greek State should increase both the funds and the amount of compensation for the practical training.

## 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 DoG teaching staff makes use of the existing professional development opportunities. Specialised pedagogic training is required to establish innovative teaching methods, widen their implementation and thus increase attendance of students. In this framework, dedicated pedagogic training to the teaching staff should be promoted.

Students are largely satisfied with the academic staff teaching competence, open-mindedness, mentorship capabilities, cooperation and social interactions. Consideration should be given to introduce annual teaching awards for excellence based on transparent and objective criteria.

Established links between research and teaching in the undergraduate programme are evident and apparent from the up-to-date subjects of the offered elective courses as well as the undergraduate thesis topics that are linked to research projects.

The DoG has established structures for academic staff collaboration with other universities, research laboratories and the public and private sectors. This very good practice should be promoted further.

The DoG practices invitation of external/guest lecturers to address topics in specialised scientific subjects, and this practice should be maintained and re-enforced towards co-teaching.

## Panel Judgement

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

## Panel Recommendations

- The EEAP recommends that the AUTH should provide (or speed up the establishment of) specialised seminars or courses on academic pedagogics, meeting also the needs for disabled students.
- The hiring of temporary teaching personnel who will cover special topics of a course/discipline in a co-teaching mode with existing staff should be established by law; increased available funds for such positions should be also considered.
- Consideration should be given to introduce annual teaching awards for excellence based on transparent and objective criteria.

## 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 DoG provides to the students facilities that include recently renovated classrooms, laboratories, educational and scientific equipment, computational facilities with personal computers (Νησίδα Η/Υ), dedicated library and library-study, and information and communications services.

The teaching laboratories are well organized and meet the international safety standards; however, limited training on first aid is provided to the laboratory staff.

Although the DoG tries to upgrade laboratory equipment as much as possible, the EEAP noticed aged teaching and research equipment (e.g. Atomic Absorption Spectrometer). More specifically, despite their regular maintenance, the existing single ocular microscopes used for teaching purposes may introduce health problems according to current EU safety norms (<https://osha.europa.eu/en/publications/e-fact-16-hazards-and-risks-leading-work-related-neck-and-upper-limb-disorders-wrulds/view>).

The EEAP observed lack of emergency response procedures/training and emergency drill for the Faculty of Sciences building, a responsibility that concerns the entire university.

## Panel Judgement

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

## Panel Recommendations

- The EEAP recommends that bi-ocular microscopes should replace the single ocular microscopes. A concrete timeframe for the gradual replacement of these microscopes should be defined/constructed and appropriate budgeting should be considered.
- First aid training should be provided to the DoG staff.
- The DoG/AUTH should implement an emergency response procedure and frequent emergency drills.

## 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

The AUTH has established and the DoG operates the information system for the collection and management of data concerning the student body and its progression, teaching staff information and research projects.

The EEAP witnessed the use of collected information and their proper use and presentation to allow relevant interpretations and comparisons. The DoG is highly acknowledged for the continuous efforts in this aspect.

Students have expressed satisfaction with the undergraduate study programme. Nevertheless, the EEAP found that student participation in course evaluations is still moderate to low.

The DoG monitors the career paths of the graduates in collaboration with the Geotechnical Chamber of Greece and the Association of Greek Geologists. Increased collaboration and enhanced efforts and actions must be considered to increase the quantity, quality and representativeness of the graduate/alumni career path records.

## Panel Judgement

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

## Panel Recommendations

- The DoG should investigate and test alternative ways to increase participation of students in the course evaluations.
- The DoG should increase the quantity, quality and statistical representativeness of the graduate career path records via tighter collaboration with the Geotechnical Chamber of Greece and other relevant professional associations. The statistical outcomes must be easily accessible in the DoG website.

## 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

The DoG website provides the necessary information regarding the academic unit and the study programme. The published information is up-to-date, although the website design is slightly outdated. The DoG website contains limited relevant information with environmental social and economic impact addressing local stakeholders and the general public. Furthermore, the EEAP was unable to locate at the DG website information regarding statistics on student pass rates and detailed graduate employment information.

Following relevant discussions and provided information, the EEAP acknowledges that the DoG is in the process of upgrading and restructuring its website.

### Panel Judgement

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

### Panel Recommendations

- All available data should be publicly available at the DoG website in a form that is easily interpretable.
- The DoG should keep updated and detailed employment records and statistics for its graduates via collaboration with the Geotechnical Chamber of Greece based on the «Geotechnical Employment Register», taking in consideration GDPR rules and restrictions.



- Via its website the DoG should increase outreach, for example:
  - ✓ Develop a site for alumni and publish information that targets this group specifically.
  - ✓ Relevant information can be on the DoG strategic initiatives, faculty research distinctions and awards, and upcoming seminars.
  - ✓ Publish opportunities for visits and engagement with the undergraduate program.
  - ✓ The website should include job opportunities in the DoG as well faculty and other support staff recruitment efforts.

## 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

The DoG in collaboration with OMEA/MODIP has established the annual self-assessment procedure of the study programme in accordance with the Quality Assurance Requirements. The findings are shared within the academic unit leading to the implementation of agreed actions. The latest Internal Evaluation is for academic year 2018-2019 and ADIP (EAAE) Inventory Bulletins for the DoG are available online, however the EEAP noted that the DoG website should also contain all Internal Evaluation Reports covering previous years as this will assist the easy access of information. The EEAP acknowledges the steps undertaken by the DoG to comply with the above.

The EEAP noted that students' participation and involvement of external stakeholders in the undergraduate study programme revisions should be enhanced further.

### Panel Judgement

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

### **Panel Recommendations**

- Annual Internal Evaluation Reports should be promptly published on the DoG and MODIP websites. The EEAP acknowledges the steps undertaken by the DoG to comply with the above. MODIP should supply a user-friendly export solution of the Internal Evaluation Reports.
- The students' participation and the involvement of external stakeholders in the undergraduate study programme revisions should be enhanced further.
- Reinforce the established outreach plan towards the student body and the scientific community with educational projects on climate change impacts, adaptation and mitigation, at the European and global levels for higher department visibility and student attraction.

## Principle 10: Regular External Evaluation of Undergraduate Programmes

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

*HAHE is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HAHE 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

In 2012, an External Evaluation Committee was appointed by HQA and evaluated the DoG. The External Evaluation Report is available on both the DoG and MODIP websites. The DoG has seriously considered the proposed recommendations and followed up with a specific roadmap and implementation of actions. The EEAP found that the DoG complied with all substantial recommendations, however continuous effort should be made to implement further several details of the relevant recommendations.

### Panel Judgement

Principle 10: Regular External Evaluation of Undergraduate Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

### Panel Recommendations

A detailed action plan/roadmap and implementation grade to any recommendations should be provided for any future accreditation/evaluation.

## **PART C: CONCLUSIONS**

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

- The strengths of the DoG undergraduate programme lie on the broad spectrum of geoscience fields covered in teaching and research, as well as on the integration of fieldwork within the frame of the offered courses.
- The DoG is the only department in Greece that includes a Meteorology and Climatology Division.
- An excellent and supportive relationship among students, academic and administrative staff is evident.
- The DoG premises provide a good working environment with space kept in satisfactory conditions.
- The DoG maintains a monitoring committee responsible for the undergraduate programme (Επιτροπή Προγράμματος Σπουδών) that can quickly overhaul potential issues in the undergraduate study programme.
- The DoG attracts a significant amount of external research funds.
- The DoG maintains an extensive network of public and private sector stakeholders.
- The two-month optional (incorporating transparent student selection ranking) internship/practical training (Πρακτική Άσκηση) is an important part of the curriculum.
- The DoG website is well structured, user-friendly and provides the necessary information regarding the academic unit and the study programme with up-to-date information. However, the web design is slightly outdated.
- The DoG has seriously considered the proposed recommendations in the 2012 External Evaluation Committee and followed up with a specific roadmap and implementation of actions.
- The Museum of Geology-Paleontology-Paleoanthropology, the Aristotle University Seismological Station/Network, and the Mount Olympus Meteorological Centre & Network are very important assets of the DoG providing extremely valuable research, educational and outreach services.

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

- A part of the laboratory equipment is aged.
- Diverse background in natural sciences and low admission threshold of the newly admitted students.
- Relatively low student attendance in theoretical courses. The participation in departmental and course evaluations/surveys is low as well.
- Lack of staff first aid training and emergency response procedures/training/drill.

### III. Recommendations for Follow-up Actions

#### Addressed to DoG

- The next study programme revision should consider:
  - Targeted comparisons of the design and curriculum with high-quality/renown European and international programmes and universities.
  - Re-introduction of the policy of required prerequisite courses, exploiting/ implementing flexible and reasonable criteria that are adapted to the curriculum.
  - Re-check the proportionality between teaching hours and workload in order to avoid discrepancies that affect the ECTS
  - Homogenise the descriptions of the learning outcomes within the course frameworks (syllabi).
  - Enrich the methods of student assessment in the courses and clearly communicate those in the curriculum.
  - Re-enforcing the involvement of external/guest lecturers on specialized scientific topics towards co-teaching.
  - Strengthening the consultation with stakeholders and external experts of public and private sectors.
  - Intensify the efforts to regulate the DMS graduate profession in secondary education system, and public and private sectors.
  - Increase students' participation and confidence in course and internal evaluations.
- Envisage periodic regular reforms of the undergraduate study programme on 3-5 years basis.
- Review the established and well-defined 5-year Departmental Strategic Plan, where the undergraduate programme is a major component, on an annual rolling basis.
- Establish an annual review and an internal audit of the quality assurance system of the undergraduate programme.
- Construct a concrete timeframe for the gradual replacement of single ocular microscopes by bi-ocular microscopes and consider appropriate budgeting.
- Increase students' participation and confidence in course and internal evaluations.
- Promote further the role and duties of the Academic Advisor and introduce their formal assessment.
- Further improve the methods of course delivery.
- Consider annual teaching awards for excellence.
- Increase the students' international mobility (ERASMUS+).
- Further lobby and sustain efforts to increase the number of the two-month internship/practical training opportunities.
- Lobby and keep up all efforts for geology graduates to retain all current teaching professional rights in the secondary education system.
- Increase the quantity, quality and statistical representativeness of the graduate career path records via tighter collaboration with the Geotechnical Chamber of Greece and other

relevant professional associations; make these statistical outcomes easily accessible in the DoG website.

- Further increase outreach activities.
- Further reinforce participation and initiate education projects on climate change impacts, adaptation and mitigation.

#### Addressed to AUTH

- Provide (or speed up the establishment of) specialised seminars or courses on academic pedagogics, meeting also the needs for disabled students.
- Provide first aid training and emergency response procedures and drills.
- Forecast additional DoG budget for the gradual replacement of single ocular microscopes by bi-ocular microscopes.

#### Addressed to the State Authorities

- Urgently:
  - ✓ Increase funding for maintenance and replacement of aged laboratory equipment.
  - ✓ Increase both the funds and the amount of compensation for the optional practical training.
  - ✓ The hiring of temporary teaching personnel who will cover special topics of a course/discipline in a co-teaching mode with existing staff should be established by law.
  - ✓ Increase funding to attract and support external/guest lecturers.

#### IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: **1, 3, 4, 5, 7, 8, 9, and 10.**

The Principles where substantial compliance has been achieved are: **2 and 6.**

The Principles where partial compliance has been achieved are: **None.**

The Principles where failure of compliance was identified are: **None.**

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



## The members of the External Evaluation & Accreditation Panel

**Name and Surname**

**Signature**

**1. Prof. Theodoros Ntaflos (Chair)**

Universität Wien, Austria

**2. Prof. Filippos Tsikalas**

University of Oslo, Norway

**3. Mr. Dionysios Gkoutis**

Member of the Geotechnical Chamber of Greece, Greece