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HELLENIC REPUBLIC  
**H.Q.A.**  
 HELLENIC QUALITY ASSURANCE AND  
 ACCREDITATION AGENCY

## EXTERNAL EVALUATION REPORT

DEPARTMENT OF GEOLOGY

UNIVERSITY OF PATRAS

June 2012



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### External Evaluation Committee

The Committee responsible for the External Evaluation of the **Department of Geology, University of Patras, Greece**, consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. *Prof. Dr. Theodoros Ntaflos (President)*  
*Dept. of Lithospheric Sciences, University of Vienna, Austria*
  
2. *Ass. Prof. Dr. K. Chalikakis*  
*Dept. of Hydrogeology, University of Avignon, France.*
  
3. *Prof. Dr. Georges Kipouros*  
*Materials Engineering, Dept. of Process Engineering and Applied Science,*  
*Dalhousie*  
*University, Halifax, Nova Scotia, Canada*
  
4. *Prof. Dr. Anastassios Kotsakis*  
*Dept. of Geological Sciences, University of Roma Tre, Italy*

**N.B.** The structure of the “Template” proposed for the External Evaluation Report mirrors the requirements of Law 3374/2005 and corresponds overall to the structure of the Internal Evaluation Report submitted by the Department.

The length of text in each box is free. Questions included in each box are not exclusive nor should they always be answered separately; they are meant to provide a general outline of matters that should be addressed by the Committee when formulating its comments.

## **Introduction**

**DISCLAIMER:** The external committee wish to bring the attention the specific existing framework upon which this report was written: the law 1268 was recanted, a new law (4009) was enacted but not fully implemented and the current economic crisis is not resolved. The university’s budget is still uncertain.

### I. The External Evaluation Procedure

The external committee consisting of

1. Prof. Dr. Th. Ntaflos (University of Vienna, Austria)
2. Ass. Prof. Dr. K. Chalikakis (University of Avignon, France)
3. Prof. Dr. G. Kipouros (Dalhousie University, Halifax, Canada)
4. Prof. Dr. A. Kotsakis (University of Roma Tre, Italy)

visited the Department from Monday May 28th to Wednesday May 30th, 2012. The committee met on Monday 28th with the Rector, the Vice Rectors, the Dean of the Faculty of Sciences, and the members of the internal evaluation committees of both the University (MODIP) and the Department of Geology (OMEA).

The committee attended on Monday 28th at the presentation of the department, the undergraduate, postgraduate curriculum and the presentation of the Educational and Research Activities of the Department.

The Department of Geology consists of 3 Sectors, comprising 13 Laboratories. The sectors presented on May 29<sup>th</sup> their curricula and research activities. Subsequently the committee visited all laboratories, classrooms, university facilities, libraries and discussed with the postgraduate and PhD students who are working in these laboratories. The committee attended the presentation of the administration team and interviewed its members.

On May 30<sup>th</sup> the committee interviewed the technical staff and discussed extensively with undergraduates, postgraduates and PhD students.

During the visit, the Department made available to the committee all the requested information and documents (printed and electronic versions).

We should mention that the Department fulfilled all our requests and were very well organized.

### II. The Internal Evaluation Procedure

The Internal Evaluation Report, circulated to the members of the committee, was focused and appropriate.

## **A. Curriculum**

*To be filled separately for each undergraduate, graduate and doctoral programme.*

### APPROACH

- *What are the goals and objectives of the Curriculum? What is the plan for achieving them?*

The main goals of the curriculum are:

1. Exploration, exploitation and sustainable management of mineral and energy resources of continental and marine environment.
2. Design and safety of technical structures in continental and marine environments
3. Preventing natural hazards.
4. Exploration, exploitation and sustainable management of surface and ground water.
5. Sustainable management of “geosites” and protection of the cultural heritage.
6. Protection of the Environment.

There are 3 major directions:

- a) Sector of Earth Materials**
- b) Sector of General and Marine Geology and Geodynamics**
- c) Sector of Applied Geology and Geophysics**

The undergraduate curriculum consists of 34 compulsory courses and 16 elective courses for each sector, the latter being selected from a list of 49 courses. The total number of required courses taken by each student corresponds to 240 ECTS including the written bachelor thesis.

- *How were the objectives decided? Which factors were taken into account? Were they set against appropriate standards? Did the unit consult other stakeholders?*

The objectives of the curriculum were decided taking into account local, national and international requirements promoting basic and applied research. International standards of similar Departments worldwide, including the Bologna process, are being followed.

- *Is the curriculum consistent with the objectives of the Curriculum and the requirements of the society?*

The curriculum is consistent with the set objectives and the requirements of the society at large. Elementary and high school are lacking of education in the field of Geology. The Faculty members undertake activities such as visiting the Schools to bring the Geology closer to the society. Indirectly the society is being informed about Geology through various activities.

- *How was the curriculum decided? Were all constituents of the Department, including students and other stakeholders, consulted?*

Since the establishment of the Department the curriculum has been modified, adapted and tailored to the current state with the participation of the graduate students.

*Has the unit set a procedure for the revision of the curriculum?*

The Department recognizes the necessity of revising part of the curriculum but a procedure for revising the curriculum has not been discussed with the committee.

#### IMPLEMENTATION

- *How effectively is the Department's goal implemented by the curriculum?*

The combination of teaching, tutorials, laboratories and field work approach, covers the current goals. Recent financial difficulties combined with the high number of students enrolled in the program have affected the compulsory field trips and laboratory training.

- *How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?*

The curriculum is comparable to the universally accepted standards.

- *Is the structure of the curriculum rational and clearly articulated?*

The structure of the curriculum is rational and clearly articulated in the Department's Course Guide.

- *Is the curriculum coherent and functional?*

In general, the curriculum is coherent. However, it imposes a rather heavy load on the students. Inadequate preparation in Chemistry in high school makes the Curriculum difficult to implement. Also the possibility for the students to take courses without prerequisites jeopardizes the coherence of the curriculum.

The postgraduate program is offered every two years. A better functionality would be achieved if it will be offered every year.

- *Is the material for each course appropriate and the time offered sufficient?*

The material for each course is appropriate and the time offered sufficient.

- *Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?*

The committee feels that the department has well qualified and trained staff to implement the curriculum. However according to the department's presentation regarding the replacement of retired scientific staff there is a concern of the appropriate timing of replacement. There is also concern of the allocated funds for field trips.

## RESULTS

- *How well is the implementation achieving the Department's predefined goals and objectives?*

In general, the goals could be considered of having been achieved. However, there are some problems.

- *If not, why is it so? How is this problem dealt with?*

The problems might be solved if the curriculum in terms of elective courses will change.

In particular:

- An introductory course should provide an overview of the objectives of the department in order to entice the new students to the subject of geosciences.
  - The course "Geology of Greece" needs to be compulsory and not elective.
  - The course of "Geological Mapping" should be split into two independent compulsory courses. The first course should deal with mapping of sedimentary formations only and the second with metamorphic/magmatic formations.
- *Does the Department understand why and how it achieved or failed to achieve these results?*

The Department understands that changes are necessary and the Faculty members agree with it.

## IMPROVEMENT

- *Does the Department know how the Curriculum should be improved?*

The Department is open to any suggestion that will improve the quality and the effectiveness of the curriculum. The Faculty members agree that the suggestions offering in this report should be implemented at the undergraduate and graduate levels.

- *Which improvements does the Department plan to introduce?*

The department is ready to improve and adapt the curriculum as response to the new challenges and opportunities.



## ***B. Teaching***

### APPROACH:

*Does the Department have a defined pedagogic policy with regard to teaching approach and methodology?*

In the meetings of the committee with students and Faculty members no concerns were expressed.

*Please comment on :*

- *Teaching methods used*

The teaching methods used are up to date. The power point presentation is the common method of teaching. The majority of the presentations and other material related to the teaching are available on line for the students through the e-class system. However, the existing e-class should be drastically improved.

- *Teaching staff/ student ratio*

The ratio of the undergraduate Students/ Faculty members is 14.4.

For the laboratories the ratio is different.

For the latter ratio the auxiliary scientific personnel (persons who are holding MSc and PhD titles) is used and therefore this ratio is lower.

- *Teacher/student collaboration*

Apart of problems mentioned below in the topic "Evaluation by the students...", the faculty members and the auxiliary personnel have excellent relations with the students.

- *Adequacy of means and resources*

The resources, according to the presentations for the teaching and research of the graduate students, appear to be adequate. Due to the excessive number of undergraduate students recently enrolled in the program the human resources assigned to the laboratory sections of teaching need improvement. The palaeontology laboratory is now under reconstruction and needs substantially improvement in terms of resources.

- *Use of information technologies*

The majority of the presentations and other material related to the teaching are available on line for the students. Students and teachers communicate with e-mail. The Department web site is an additional tool serving the teaching facilities. Specific software programs are available as well.

- *Examination system*

The examination system is the written tests. However, some faculty members are using oral examinations. More midterms examinations need to be introduced. A tentative regular raised schedule for the exams should be announced early in the semester.

## IMPLEMENTATION

*Please comment on:*

- *Quality of teaching procedures*

The students have access to the non-well developed e-class system.

- *Quality and adequacy of teaching materials and resources.*

The quality and adequacy of teaching materials and resources is good. However, the number of field work days should be increased.

- *Quality of course material. Is it brought up to date?*

The content of the service courses taken by the department does not correspond to the necessities of the department.

- *Linking of research with teaching*

The results of research are used in order to improve the teaching quality.

- *Mobility of academic staff and students*

The Department participates in the Erasmus and the Erasmus Mundus programs, which can be used by the Department students. However, according to the students they are not well informed about the benefits of the programs. There is still confusion about the equivalency of the offered courses and the validation of the ECTS. An additional problem for the non-participation of the students to these programs is the current economic situation in Greece. The Erasmus responsible Faculty member should be more involved to inform the students about mobility programs. Also the academic staff do not use as much as they should be the mobility programs

- *Evaluation by the students of (a) the teaching and (b) the course content and study material/resources*

The evaluation of the teaching professors by the students is taking place since 2008. The evaluation forms need to be updated. Students should have the possibility in such an evaluation form to provide their own written comments. Laboratories and field trips also need to be also evaluated. Teachers should consider the suggestions of the students in order to improve the quality of their teaching. In addition, according to the internal evaluation report the distribution time of the evaluation form is not precisely specified (the beginning, middle or end of teaching).

Three main issues were revealed during the discussion with a representative number

(40-50) of undergraduate students:

- i. There is the feeling by the female undergraduate students of discrimination in the evaluation of their work.
- ii. The students expressed the question “how can we evaluate the teaching of a professor that we never met?” (the case of Prof. Tselentis).
- iii. The students expressed the question “how the teaching of a professor can be evaluated when the content of teaching is out of the contents of the course?” (the case of Prof. Varnavas).

A general issue is the practice of a limited number of professors who are refusing to discuss the final examination paper with the students.

The MSc and the PhD students expressed the necessity to have safety training courses including CPR.

## RESULTS

*Please comment on:*

- *Efficacy of teaching.*

The committee judges the teaching has high efficacy on the students

- *Discrepancies in the success/failure percentage between courses and how they are justified.*

There is a high percentage of drops out of about 40% in the first year.

The failure rate in the course “Surface processes ” reported by the students and the teaching professor is very high and it is agreed that it is due to being taught in a lower semester.

- *Differences between students in (a) the time to graduation, and (b) final degree grades.*
  - a) The average time of graduation is ca. 6.5, which is 2.5 years above the normal time for graduation.
  - b) According to the provided statistics the students are finishing their study with average grades 6.52.
- *Whether the Department understands the reasons of such positive or negative results?*

The Department believes that the high percentage of drop out is the result of disinteresting the field of study and the fact that the students do not attend the classes.

## IMPROVEMENT

- *Does the Department propose methods and ways for improvement?*

The Department hopes that the state will take seriously their suggestion to reduce the intake number of the students.

- *What initiatives does it take in this direction?*

There is a general problem. The University of Patras, including the Department of Geology, repeatedly suggests a considerably lower number of intake students but never these suggestions have been considered

## **C. Research**

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

### **APPROACH**

- *What is the Department's policy and main objective in research?*

No strategic plan was presented to the committee. However, the Department is very active in acquiring research programs. There is some deviation on success but the majority of the Faculty members are successful.

- *Has the Department set internal standards for assessing research?*

The Department has internal rules about publishing policy and needs to set official internal standards.

### **IMPLEMENTATION**

- *How does the Department promote and support research?*

The Department does not have the possibility to promote and support directly research. This task belongs to the organization "Special account for research funds"(ELKE).

- *Quality and adequacy of research infrastructure and support.*

The quality of research infrastructure in each unit is high at international level. The support is adequate.

- *Scientific publications.*

According to the provided CVs of the Faculty staff the quantity and the quality of the scientific publications is quite satisfactory.

- *Research projects.*

Research projects and funding are very good and comparable to the European standards. However, there are uneven distributed. The utilization of the undergraduate students in conducting research is well demonstrated.

- *Research collaborations.*

The Faculty members have excellent contacts and collaboration with many research institutions worldwide. Judging from the authorship in the publications it is obvious that a certain synergy exists. The major research equipment needs to be centralized in order to provide access for all units and Departments.

## RESULTS

- *How successfully were the Department's research objectives implemented?*

Quite satisfactorily. The approximate average of peer review publications per Faculty member and year is ~1.2

- *Scientific publications.*

The members of the Department exhibit high quality publications in widely recognized international journals and conferences, with a high number of citations. Several of the academic staff consistently publishes at world-wide recognized conferences of their respective fields.

- *Research projects.*

The Department has benefited in the past from infrastructure projects and had a combined research funding from the Greek Ministry of Education, the General Secretariat of Research and Technology, and the European Commission. There are additional small local research programs that bring the Department closer to the local society.

The Faculty members expressed concerns regarding the uncertainty in funding due to the economic crisis after 2009.

- *Research collaborations.*

From the provided publications it is obvious that there is a quite good collaboration among the members of the Department.

- *Efficacy of research work. Applied results. Patents etc.*

All the undertaken research projects have been completed.

In terms of applied results the Department has a significant record of applied results as it is evident from the reports of the three sectors.

Inspecting the web sites of the Department the only reference to patents is the Laboratory of Seismology of the sector Applied Geology and Geophysics. From the web site of this laboratory was not possible to ascertain whether the patents were assigned to the university, to an outside agency or both.

- *Is the Department's research acknowledged and visible outside the Department? Rewards and awards.*

The Department is visible to the local and national society mainly due to the activities of the laboratories of Seismology, Marine Geology and Physical Oceanography, Hydrogeology, Sedimentology, and to the international community due to the scientific activities of almost all the research laboratories.

Many awards and rewards were reported to the committee.

**IMPROVEMENT**

- *Improvements in research proposed by the Department, if necessary.*

For major equipment it is important to form a university wide access unit that will serve the whole Department. Some of the major equipment is already old and need to be replaced (e.g. SEM).

- *Initiatives in this direction undertaken by the Department.*

The committee discussed with the Faculty members the necessity of centralizing the major equipment of the Department.

## **D. All Other Services**

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

### APPROACH

- *How does the Department view the various services provided to the members of the academic community (teaching staff, students).*

The Department considers the structure of the secretarial service problematic for the smooth operation of the administration. Individual members of the secretarial service are in general polite with exception of one particular person. Students are complaining of the operational daily period (10:00-13:00), which they consider it inadequate. Given the expected transition to the electronic way of registration, problems may be surfaced.

The technical service is covered by one single person who is devoted to provide excellent service to the whole Department.

The centralized technical service of the university is responsive to the requests of the Department.

- *Does the Department have a policy to simplify administrative procedures? Are most procedures processed electronically?*

There are difficulties in changing the control over the secretarial services as reported by the Department head.

The technical personal of the three sectors provide adequate services.

- *Does the Department have a policy to increase student presence on Campus?*

No problem has been identified so far

### IMPLEMENTATION

- *Organization and infrastructure of the Department's administration (e.g. secretariat of the Department).*

The control over the secretariat of the Department should be moved to the responsibilities of the head of the Department.

- *Form and function of academic services and infrastructure for students (e.g. library, PCs and free internet access, student counseling, athletic- cultural activity etc.).*

The academic services and infrastructures for students are very well.

### RESULTS

- *Are administrative and other services adequate and functional?*



With exception of the secretarial services where some problems have been identified, all other services are adequate and well functioned.

We should underline that the head of the secretariat provides excellent service to the students and to the Faculty members.

- *How does the Department view the particular results?*

The Department considers the services to the students as very good.

#### IMPROVEMENTS

- *Has the Department identified ways and methods to improve the services provided?*

The Department makes efforts to improve the services.

The majority of the available web sites are informative and up to date.

A limited number of laboratories are not present in the websites of the Department.

#### **Collaboration with social, cultural and production organizations**

*Please, comment on quality, originality and significance of the Department's initiatives.*

The Department's activities could be considered as satisfactory. Open house activities and visits to elementary and high schools have resulted in to raising the visibility of the subject of Geology to the public. The expectation of these visits is to attract students whose first choice is geology.

#### ***E. Strategic Planning, Perspectives for Improvement and Dealing with Potential Inhibiting Factors***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

*Please, comment on the Department's:*

- *Potential inhibiting factors at State, Institutional and Departmental level, and proposals on ways to overcome them.*

The Department has to overcome a large number of inhibiting factors that are common in many other Departments of the country. At the state level, this includes bureaucracy, insufficient funding, unclear chartered-status of the alumni, funding of the Ph.D. students and lack of sufficient and specific actions to help young research Faculty members, delays in appointing elected Faculty. In addition the state run qualifies examination system obliges the university to accept more students than the capacity of the laboratories permits. The non-continuity of financial support of the graduate students from the available research programs makes their economic situation difficult and affects their research activities. From the provided documents at the university level and from the presentations it is evident that the Department has a limited yearly budget.

The Department is waiting for the implementation of the new law to adapt/modify the short term goals while in a medium and long term goals the perspectives of discovering and prospecting solid and non-solid energy sources has high priority. At the mean time the Department is obliged to improvise in order to achieve daily operations.

The Department requests from the Government to reduce drastically the number of the yearly inscribed students in the Department.

Despite all this inhibiting factors the Department has the potential to stand its ground at the European level.

## ***F. Final Conclusions and recommendations of the EEC***

*For each particular matter, please distinguish between under- and post-graduate level, if necessary.*

*Conclusions and recommendations of the EEC on:*

- *the development of the Department to this date and its present situation, including explicit comments on good practices and weaknesses identified through the External Evaluation process and recommendations for improvement*
- *the Department's readiness and capability to change/improve*
- *the Department's quality assurance.*

In general, the overall performance of the Department of Geology is very good.

A strong collaboration between researchers in the Department is a distinct point. This could lead in to a higher level in the quality and quantity of the research.

The relation between Faculty members and undergraduate, graduate and post graduate students is very good and the moral is very high.

The visibility of the Department in the society is very high due to the applied research of all the sectors and particularly the activities of the Laboratory of Seismology.

Despite the existing problems in teaching, the education provided to the students is very good.

The infrastructure of the university and the space available to the Department are sufficient.

Some weaknesses have been identified mainly in teaching.

### Recommendations of the EEC

#### **Recommendations for Curriculum**

*To the Department (undergraduate level)*

1. An introductory course should provide an overview of the objectives of the Department in order to entice the new students to the subject of geosciences.
2. The course "Geology of Greece" needs to be compulsory and not elective.
3. The course of "Geological Mapping" should be split into two independent compulsory courses. The first course should deal with mapping of sedimentary formations only and the second with metamorphic/magmatic formations.
4. The postgraduate program should be offered every year.

*To the University*

The curriculum for common and service courses among different Departments

should be adapted and coordinated according to the necessities of each Department.

*To the Government*

The University should become autonomous. Department should be able to change and adapt the contents of a course accordingly without approval by the government.

**Recommendations for teaching**

*To the Department*

1. The evaluation of the teaching professor by the students for each course should be implemented in order to increase the quality of teaching.
2. Courses need to have clearly defined prerequisites to be fulfilled by the students in order to have legitimation to attend them.
3. All professors are requested to discuss with students about the final examination papers.
4. The course of “Surface processes” should be taught in a higher semester.

*To the University*

The university should have clear and transparent rules in order to face incidences concerning conflicts and discriminations among Faculty members and especially female students.

*To the Government*

The university and the Departments should define the number of students they will accept on the basis of the teaching capacity.

*To the Department (Graduate level)*

The graduate student should be given a commitment by the supervisor of a financial support for a specific duration of the graduate studies.

**Recommendation for research**

The committee recommends the centralization of the major equipment of the Department.

The Committee recommends the introduction of a Department`s “Research Day” during which research students will present their work in the form of presentations and posters. Sponsors of the research and potential sponsors should also be invited

to attend the “Research Day” activities.

**Recommendation for others**

The control over the secretariat of the Department should be moved to the Department’s head responsibility.

## The Members of the Committee

Name and Surname	Signature
1.	_____
2.	_____
3.	_____
4.	_____
5.	_____