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<b>Α . Δ Ι . Π .</b>	<b>Η . Q . A . A .</b>
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ	HELLENIC QUALITY ASSURANCE AGENCY
ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ	FOR HIGHER EDUCATION

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT OF BIOLOGICAL APPLICATIONS AND TECHNOLOGY

UNIVERSITY OF IOANNINA

Version 2.0

June 2011

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### External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Biological Applications and Technology of the University of Ioannina consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005:

1. Dr. **Constantinos Deltas**, Professor of Genetics, Department of Biological Sciences, University of Cyprus, Nicosia, Cyprus (President).
2. Dr. **Spyridon Agathos**, Professor of Biotechnology, University of Louvain, Louvain, Belgium.
3. Dr. **Nikolaos (Nicholas) Dimakis**, Associate Professor, Department of Physics and Geology, University of Texas-Pan American, Edinburg, Texas, U.S.A.
4. Dr. **Anastasios Papageorgiou**, Professor of Biotechnology, Biocity Turku, University of Turku, Turku, Finland.
5. Dr. **Athanasios Theologis**, Professor Emeritus, Department of Plant and Microbial Biology, University of Berkeley, San Francisco, U.S.A.

**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**

### I. The External Evaluation Procedure

- Dates and brief account of the site visit.

The site visit was conducted between the 13th and the 15th of June 2011. It involved briefings by the Rector Prof. T. Albanis, vice-Rector of Academic Affairs) Prof. G. Kapsalis, and formal presentations by the Department Chair and members of the Internal Evaluation Committee (IEC). The members of the IEC were:

Associate Prof. G. Thyphronitis (Chair),

Associate Prof. T. Michaelidis,

Prof. G. Pilidis,

Associate Prof. A. Kyparissis.

The Committee met with the following:

- all members of the faculty (DEP),
- non-tenure track instructors (407/80),
- scientific technical staff,
- undergraduate and postgraduate students,
- administrative staff.

The committee visited most of the University facilities, teaching and research laboratories, administrative offices, lecture halls and classrooms, the library, the student and faculty restaurants, and had a tour of the campus. The committee visited Saint George’s Monastery, where some space has been converted and reserved for special occasion’s conferences. Finally, the committee visited the ceremony hall.

- Whom did the Committee meet?

### **Monday June 13, 2011**

9:30. The EEC was briefed at ADIP headquarters by Prof. A. Gravanis on the goals and the procedure of the external evaluation process.

19:00. Meeting at the University of Ioannina Rector's office, Prof. T. Albanis.

The EEC was briefed unofficially by the University of Ioannina Rector Prof. Albanis, the vice-Rector Prof. Kapsalis, and the Chairman of the Department of Biological Applications and Technology Assoc. Prof. G. Thyphronitis. They provided information on the Department's general profile, teaching, educational, and research activities, and answered questions from the committee members.

### **Tuesday June 14, 2011**

The EEC attended presentations by the Rector, the Chairman, and the other members of the IEC. They aimed to give us a general idea of the directions and goals of the University and the Department. Specifically, the following items were presented in greater detail:

- Undergraduate program of study,
- Postgraduate program of study,
- Research activities.

- List of Reports, documents, other data examined by the Committee.

The EEC was provided with the IEC detailed report, the power point presentations by the Rector and the Chair, and additional documents by individual faculty, which selectively described the teaching and research activities of their groups. All relevant information and individual faculty CV were provided to the Committee on a USB stick, or otherwise.

### II. The Internal Evaluation Procedure

Please comment on:

The EEC had all necessary documents and information needed in order to proceed to its evaluation. The documentation provided to the EEC was thorough, well presented, and of professional quality. For the faculty, a finer distinction between the overall works produced before and after their appointment at the UoI would have been desirable. However, the EEC extracted this information during the site visit by asking individual faculty members.

Similarly, the same applies to information regarding their research activities, research funding history, and duration.

- To what extent have the objectives of the internal evaluation process been met by the Department?

The objectives of the internal evaluation process were met to a great extent and the document produced was very helpful to the EEC.

**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?

Overall, it aims to prepare graduates with special skills in applied biological processes and technology, without neglecting the fundamentals. The faculty members are trying to achieve this through a well planned curriculum.

- 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 were decided among the faculty during regular Departmental meetings. Factors that were taken into account were their will to implement a stronger biological curriculum and their desire to enhance the graduates' laboratory skills, in view of the applied nature of their future employment. This is evidenced by the five-year program duration and the high number of laboratory courses.

It was not clear to what extent other stakeholders took part in the decision-making process as regards the curriculum preparation. It is true though that this Department attempted to acquire a distinct identity among the other biology departments of the country.

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

There doesn't seem to be a formal procedure for curriculum revision. However, the Departmental assembly discusses academic issues relating to the curriculum every couple of years and they adjust to changing needs. Recently, they had made a major reform by adopting the ECTS system of study, and they improved the distribution of the subject matter and the teaching load. It is commendable that they provide the option to their students to carry out a practical exercise as well as a 5<sup>th</sup>-year research thesis, which includes the preparation of a final official document and an oral presentation. It is also positive that they provide three options to their students, which include a research project of a one-year, or one-semester duration, or no research-type project but rather a bibliography-based report, depending on the students' career goal.

**IMPLEMENTATION**

- How effectively is the Department's goal implemented by the curriculum?
- How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?
- Is the structure of the curriculum rational and clearly articulated?

- Is the curriculum coherent and functional?
- Is the material for each course appropriate and the time offered sufficient?
- Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?

The existing curriculum serves the goals of the Department and it seems to be of higher standards compared to similar biology-oriented programs within the Greek state. The curriculum is coherent and focused on preparing graduates with experimental skills in laboratory and applied biological processes for the industry and not only.

We found that the majority of faculty members are highly trained and committed to teaching and conducting research, while they enthusiastically engage in their duties. This shows very well by the quantity and quality of laboratory exercises the students perform in the various courses throughout their studies, year after year.

The hiring of special non-permanent qualified personnel on contracts is one effective way of teaching the various subjects, both theoretical and laboratory courses. The EEC realized that because these people, most with PhD degrees, are really dedicated and inspired by the academic environment, they do an excellent job in implementing the teaching curriculum of the BET. Considering that they need to break the huge classes in two or even three groups for laboratory exercises, they spend substantial amount of hours with the students. Some are also engaged in research projects, keeping their CV at a competitive level. However, some of them feel they are in a dead end career track.

#### RESULTS

- How well is the implementation achieving the Department's predefined goals and objectives?
- If not, why is it so? How is this problem dealt with?
- Does the Department understand why and how it achieved or failed to achieve these results?

The EEC would like to recommend that every faculty member should prepare a tentative schedule of the course material/syllabus before the beginning of every semester, and roster of lectures, including the exact dates for midterm and final exams. This provides up front a feeling of good organization and comfort to the students. Such a syllabus will help the students on elective courses selection.

#### IMPROVEMENT

- Does the Department know how the Curriculum should be improved?
- Which improvements does the Department plan to introduce?

The Committee feels that despite the experimental/laboratory orientation of the Department, the curriculum provides a wealth of laboratory exercises in nearly every



course, which, however, becomes exaggerated and too heavy to both parties involved, the faculty and the students. It was commented upon by the IEC and the EEC agrees that there should be some re-organization of the laboratory courses and merging of exercises to include related fields of study. This, among others, would free up time for the faculty to engage in their research, and also save resources.

### **B. Teaching**

#### APPROACH:

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

Please comment on :

- Teaching methods used  
Power point, blackboard and demonstrations, field trips, access to electronic material on-line
- Teaching staff/ student ratio

The teaching staff is basically adequate and it includes the faculty plus other scientific personnel, permanent and non-permanent, plus some PhD students. However, a major problem arises from the much higher number of admitted students each year, compared to the number the Department can realistically host and train. Thus, the personnel need to offer the same laboratory exercises three or four times during the week.

The Department has repeatedly affirmed that the number of admitted students per year should not exceed 50. In contrast, the number of students admitted upon allocation by the Ministry of Education is in the order of 110-120, which by far exceeds the capacity of the Department, in terms of facilities and personnel. Moreover, the Department has repeatedly explained that this cannot continue because of adverse consequences on the quality of studies offered, while it imposes a burden on the faculty. The most severe adverse consequence is that it takes valuable time away from research and productivity. According to the information provided in the internal report, the ratio of students to faculty is close to 30:1, which is unacceptable by any international standard, which is closer to 13:1.

The EEC strongly recommends that the admission of an excessive number of students must not continue, as a courtesy to the next generation of students and researchers of this Department. The reasonably expected reduction of the number of students admitted each year close to 50, is also going to save money for the state and remedy to a good extent the exacerbated problem of unemployment encountered in recent years. Especially the problem of unemployment faced by the current generation of graduates may have negative

implications for future generations as well, as it may backfire and discourage future talented high-school graduates from pursuing science education.

- Teacher/student collaboration

There seems to be excellent relationship between faculty and students. The instructors are easily accessible even though there is no official policy for office hours. The EEC recommends that in addition to the existing liberty of the system, official office hours should be implemented in order for the students to have secured access to their instructors.

- Adequacy of means and resources
- Use of information technologies

There doesn't seem to be any particular problem in the adequacy of resources and information technologies used for achieving their teaching goals. All faculty and other supporting personnel appear enthusiastic and up-to-date in pursuing their educational aims.

- Examination system

Apparently, there is flexibility in the manner each faculty member examines their students. Some faculty emphasize on midterm exams, while others on final exams. The EEC accepts this variability; however, we recommend that as a rule, each student should be examined on at least two different occasions, for example one midterm exam and one final exam. The student course-grades should be based preferably on written exams in order to secure reliability and credibility of the examination process. In cases of oral exams in the form of work presentations, the presence of another faculty and/or other students is highly advisable.

Also, it was clear to the EEC that the final grade for courses that were comprised of theory and lab exercises was calculated based on separate exams. Each instructor selects the type of examination and the relative weight between theory and lab. The EEC accepts the flexibility enjoyed by each instructor; however, it recommends that a general guideline for streamlining the examination should be implemented.

The weight of the lab course and the theory should be specified and known to the students from the beginning of each semester. In a way, the Committee recommends that a contract is agreed between the faculty and the students at the beginning of each semester that should be honored by all parties.

#### IMPLEMENTATION

Please comment on:

- Quality of teaching procedures

- Quality and adequacy of teaching materials and resources.

The Committee approves of the teaching procedures, material and resources.

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

It was obvious that the faculty made commendable efforts to use high quality textbooks that enjoy wide acceptability by the scientific community, and which have been translated into Greek. In general, the EEC saw an effort to use textbooks that are up-to-date. However, in certain occasions, such as in structural biology, an effort should be made to introduce more contemporary material.

- Linking of research with teaching

The best evidence for linking teaching with research is the fact that the program provides the 5<sup>th</sup>-year diploma research thesis; thereby each student has the opportunity to put into practice in the lab most or part of their theoretical training. Even though it is optional, every faculty member supervises about two undergraduate students per year, pursuing research projects that in many occasions result in original peer-review publications. Nevertheless, lack of adequate research funding imposes severe problems and limitations in this activity, which will be discussed further in another section.

- Mobility of academic staff and students

Although the opportunities exist and are announced properly within the Department, not many students take advantage of these exchange programs. An effort should be made to encourage them more. The faculty is engaged in multiple collaborations out of the Department and encouraged to be more extroverted.

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

There is an official mechanism for the students to evaluate both the faculty and the course content. This is clearly an excellent way for receiving feedback by the students. The EEC could not discern a formal mechanism for acting upon the feedback of these surveys. We presume they are taken into account in a comprehensive way for course revisions.

## RESULTS

Please comment on:

- Efficacy of teaching.

The EEC thinks that the faculty is quite efficient in meeting their teaching goals. It is important that they have ample assistance from the non-tenure scientific personnel, which

is hired basically for assisting in the teaching duties, and for running the practical classes/laboratories in the various courses. Therefore, the goals here are achieved effectively. We would like to comment again that the high number of students in conjunction with the large number of classes and laboratory courses puts a very heavy load on all faculty, thus reducing time allocated for research.

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

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We were not provided with relevant data that would allow us to judge or comment on this issue. Upon our request we were provided with data regarding the success/failure rate of students at the different examination periods of the year 2008. The only observation one can make on this limited data is that the overall success rates increase in all three examination periods of February, June, and September as the students progress to senior years (4<sup>th</sup> and 5<sup>th</sup>) compared to the 1<sup>st</sup>-3<sup>rd</sup> year of study. There might be several explanations for this discrepancy although one might attribute it mostly to the maturation of the students and the pressure they feel for finishing their studies.

- Differences between students in (a) the time to graduation, and (b) final degree grades.

The average time to graduation is 5.75 years, which is reasonable for a 5-year program. According to the data provided to the EEC, 44% of students graduate with a 7-8 grade, 47% with 6-7 grade, while only 8% of students graduate with a 8-9 grade. The average graduation grade is 7.13. The EEC judges that these metrics are within reason, knowing the Greek system of higher education; however, it is desirable to improve them. A possible solution to the problem is to encourage more students to attend regularly and conscientiously the offered lectures. The fact that sometimes classroom attendance is only 40% or less is very disappointing. Although the students are not obligated to attend the lectures (laboratory attendance is mandatory), the EEC encourages the faculty to take appropriate measures towards increasing lecture attendance.

- Whether the Department understands the reasons of such positive or negative results?

As mentioned above, a major explanation for the less satisfactory results in student grades and performance is attributed to the poor class attendance, which according to the law is not obligatory. The EEC makes a clear recommendation to the faculty to find ways for remedying this weakness.

#### IMPROVEMENT

- Does the Department propose methods and ways for improvement?

- What initiatives does it take in this direction?

The EEC did not discuss any such methods with the faculty. Apparently, it was not something that the faculty was aware of. As a matter of fact, though, in case the Department achieved 100% attendance in all classes they would be faced with a classroom space problem, as many classrooms cannot accommodate so many students. The issue of the number of students admitted each year into the program was discussed before in this document.

Another issue is related to the consumables used for teaching laboratories. There is money shortage for materials/reagents used for laboratory exercises, which compromises the quality of teaching. This problem is further enhanced by the much higher number of students admitted each year into the program, compared to the corresponding number the Department is prepared to accept. Therefore, a drastic reduction in the number of admitted students would relieve this problem to a great extent. On the same note, the EEC was told that for several reasons beyond the capacity of the faculty members, there are great delays in receiving consumables, for teaching and research purposes. Consequently, based on this report, the EEC expects measures will be taken by the appropriate University authorities to expedite existing purchasing procedures. The possibility of purchasing consumables with income from charging a reasonable tuition for the postgraduate program was apparently not an option as, for ideological reasons, such a measure is generally opposed within the Department and the University.

### **C. Research**

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

#### **APPROACH**

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

The faculty is clearly determined to excel in research and all its members aspire to publish high quality peer-review papers, in the area of their expertise. A research output is a determining factor for faculty promotion. Undergraduate, postgraduate, and PhD students are supervised by the faculty in the area of the faculty expertise. It is very positive that the 5<sup>th</sup> year students have the option to carry out a research project in one of the laboratories in the Department. This is particularly advantageous, in view of research fund shortages, as it serves a dual purpose: student training in a research environment and concomitantly providing technical skills and assistance to the faculty members.

- Has the Department set internal standards for assessing research?

Internal Departmental standards (such as number of publications per year, average IF of publications, number/percentage of publications with IF>4 or 5) are not clearly set. However, faculty promotion is based on research output. The EEC did not have the time and the opportunity to discuss adequately faculty promotion. Based on CVs however, it was obvious that some faculty are clearly more productive than others in research output and publications. This, to some extent, could be attributed to the assignment of administrative or teaching duties in addition to lack of adequate and appropriate laboratory space. A special effort has been in progress in remedying the problem of inadequate space for teaching laboratories and it is anticipated that laboratory space will be freed to use for research. This, in conjunction with other measures, is expected to boost research and at the same time enable the faculty to set more distinct internal standards for high quality research.

#### IMPLEMENTATION

- How does the Department promote and support research?

The Department supports and promotes undergraduate and post-graduate students to engage in research. However, at the highest level there was inability to absorb funding from central sources, for reasons not totally understood by the EEC. Considering that funding is a fundamental driving force for competitive research, the EEC was struck by the fact that a few years ago more than 2m euro were given by the University authorities to another technology-oriented Department while at the same time this Department received only 78.500 euro (1.5% of total available budget). Applications in biological sciences and technology are a contemporary driving force for development and one expects that this rather new Department, which is still in its developing phase, should have had better treatment. The EEC strongly feels this should be remedied because it is a Department with promising potentials, both because of its very nature as well as because of its geographic location.

- Quality and adequacy of research infrastructure and support.

The quality of research infrastructure varies among laboratories. In some sections there is adequate equipment that supports reasonable research, which enables faculty to set goals leading to solid publications. However, some other laboratories are less equipped. With some notable exceptions, the lack of research funding prevents them from obtaining enough consumables for their everyday research needs. This has a bearing on recruiting good PhD students as they rarely secure money for elementary stipends of these students. It is very difficult to accept that there are PhD students who carry out research for 3-4 or more years without any financial support.

- Scientific publications.
- Research projects.
- Research collaborations.

Overall, under the circumstances, the publication output is considered commendable, with ample room for improvement, provided that certain things will change (see below). There are several research projects in progress by all faculty members while the spectrum of collaborations and networking within and outside Greece is strong and promising. There are publications of the various groups with co-authors from several other centers and Universities, which shows that all or most faculty members are pursuing high quality and excellence, in their capacity.

The EEC considers that changes such as the reduction of the teaching load will free up time to invest in research and grant writing, although it is already obvious that several faculty have engaged in intense grant writing in the recent years. The EEC also recommends that a major effort is made by the Department in collaboration with the Rector's office to obtain more money from central University sources in order to support, even at a low level, junior faculty. According to data provided to the EEC, there is money coming to the University from various sources such as regional investment funds but the Department has not been receiving a fair share. A change in this policy will maintain a fundamental level of research activity until better chances arise for attracting large research grants from elsewhere. Otherwise, some very promising faculty members may reach out for better positions in other centers.

## RESULTS

- How successfully were the Department's research objectives implemented?
- Scientific publications.
- Research projects.
- Research collaborations.
- Efficacy of research work. Applied results. Patents etc.
- Is the Department's research acknowledged and visible outside the Department?  
Rewards and awards.

In the absence of adequate research funds, few faculty members have been able to excel in their research goals. The Department aspires to engage in high quality research but due to research fund shortages it is difficult to achieve its set goals. Especially, the young and recently appointed faculty members, unless they are supported by internal funds for a while, they will be reduced to good teachers with poor publication output in a few years, due to difficulties in securing independent external research funding. Therefore, as mentioned before, the Departmental council should seek more support from central funds in order to maintain their potentials until better opportunities arise.

All things considered, several faculty members are internationally known and visible, as

judged by invitations to deliver lectures, review manuscripts for peer-review journals, membership in journal editorial boards, and organization of conferences.

The faculty has five patents (four USA - and one Greek patent) awarded to the Laboratory of Molecular Biology.

#### IMPROVEMENT

- Improvements in research proposed by the Department, if necessary.
- Initiatives in this direction undertaken by the Department.

A central move to improve research conditions at the Department is to introduce the scheme of start-up funding for newly elected and appointed faculty members for all ranks. Currently, some faculty members do not even have a private office space for themselves, their students, and their postdocs. This is totally unacceptable.

A special mention is made for Dr Halley, who after five years at UoI he does not have his own lab space.

Similarly, another unacceptable situation is when PhD students pursue their research with no stipend. Every effort should be made, including reaching out to the society and industry, for obtaining scholarships for supporting them (philanthropy).

A positive development is the built approval of a new 3.750 sq.m. building by the Greek state, for hosting teaching labs and offices. When completed it will free up space to be used for research. Additionally, we fully support the Department's vision to obtain more laboratory space close to the current FORTH facilities for hosting an integrated mini biologically oriented Center. Finally, it would be ideal if the currently abandoned Lambridios School was renovated and used as a field station and summer school.

#### ***D. All Other Services***

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

#### APPROACH

- How does the Department view the various services provided to the members of the academic community (teaching staff, students).
- Does the Department have a policy to simplify administrative procedures? Are most procedures processed electronically?
- Does the Department have a policy to increase student presence on Campus?

There was a general feeling among the members of the EEC that delays in the purchasing of consumables and other materials are compromising research in the Department.

All faculty members were content with the excellent secretariat assistance enjoyed at all levels. Moreover, the library services are also excellent, including remote access to online



journals. The EEC was surprised that all students indiscriminately enjoy three free meals per day. This could easily change by setting a low price for the food services provided, which would make a substantial income for the University, since nearly 3000 students use the restaurant services every day.

Finally, it was more than obvious that the Departmental buildings need basic maintenance for repairs and damage prevention from excess humidity.

There is no machine shop for equipment maintenance on campus. An onsite skilful technician should be easily reached for solving problems.

#### IMPLEMENTATION

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

In addition to what is written in the previous section, the EEC realized there is no formal mechanism for continuous student academic counseling. This is a significant drawback and must be remedied as soon as possible. The EEC recommends that every student must have an academic advisor, who advises on career goals and directions, enrollment in classes, etc.

#### RESULTS

- Are administrative and other services adequate and functional?
- How does the Department view the particular results?

They are adequate. Specific recommendations have been made throughout.

#### IMPROVEMENTS

- Has the Department identified ways and methods to improve the services provided?
- Initiatives undertaken in this direction.

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

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

Some faculty members are involved in the solid waste recycling processes, and further collaboration is envisioned regarding water quality and biodiversity of lake Pamvotis. Also, the ecologists are interested in identifying endangered plant species in the area.

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

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

Please, comment on the Department's:

- Potential inhibiting factors at State, Institutional and Departmental level, and proposals on ways to overcome them.
- Short-, medium- and long-term goals.
- Plan and actions for improvement by the Department/Academic Unit
- Long-term actions proposed by the Department.

The inhibiting factors and the parameters that pose obstacles in the development of the Department have been discussed throughout and they are mainly related to inadequate funding and lack of space. There are measures in progress for short term remedying the space problem but it is unpredictable how the research funding will be addressed in the following years. Some recommendations by the EEC are shown below.

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

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

The EEC recommends the following:

1. Tuition fees for postgraduate students (MSc students), which may be used in supporting PhD students in the form of scholarship funds and/or funding research activities.
2. Voluntary student work on campus (academic and non-academic), thus releasing University money, which could be used elsewhere.
3. Graffiti on the walls should be removed and University property must be respected.

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 should continue the hiring of excellent candidates, which add value to itself and the University as a whole.

- the Department's readiness and capability to change/improve
- the Department's quality assurance.

It is very important that the Department has obtained diploma certification and secured the

professional rights of their graduates, recognizing their qualifications to work in various sectors as follows (indicative and based on the Presidential decision published in the Governmental Bulletin, 3 December 2008) (Προεδρικό Διάταγμα, Φύλλο 3<sup>ης</sup> Δεκεμβρίου 2008 της Εφημερίδος της Κυβερνήσεως της Ελληνικής Δημοκρατίας):

Primary and Secondary Education

Research Institutes

Diagnostic laboratories (hematology, microbiology, cytology, histopathology, biochemistry, molecular biology, immunobiology, genetics)

Engage in or carry out environmental studies

Carry out biological controls of water, soil, and food

Engage in sectors related to the protection and management of the environment and fisheries

Engage in sectors of Biotechnology and Bioinformatics

Their professional rights enable them to seek positions in the public and private sector.

The EEC was convinced that the Department has some well established and some promising faculty members at all ranks who are willing to continue investing their share in the curriculum and in the research activities of the Department. There is readiness and there are capabilities. One point to emphasize is that based on the very nature of the BET and its goals, the Department should try and guide more graduates towards the business sector in agricultural and other bioeconomy activities, instead of them waiting for appointments in the public sector or the teaching arena.

Based on data we were provided by the Department, all faculty members have engaged in grant writing, although the average preparation of two proposals per year per faculty member is not particularly impressive. This low number, however, may be partly explained by the lack of adequate opportunities in the country.

Despite the genuine efforts of all faculty members to excel under these difficult circumstances of the economy and the real shortage of funds, it did not escape our attention that some faculty members were more productive than others, having earned a name of their own in the international arena, mainly through high rate publications and participation at important conferences. On a few occasions, faculty members managed to attract important funding from various sources. It is worth commenting on the outputs of the laboratories of enzyme biotechnology, theoretical ecology, ichthyology and environmental chemistry in contrast to others.

Finally, it is very desirable that the Department is assisted in reaching its strategic goal of a critical mass in the number of at least 25 members of faculty. At the same time, further extroversion and engagement into collaborations for grant applications (EU FP7, Interreg, Mediterranean grants etc) should be encouraged. To this effect, the UoI's Research Committee and Liaison Office should take a more active role in assisting the faculty

members to identify funding opportunities and prepare effective grant proposals.

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