

KN White

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## **EXTERNAL EVALUATION REPORT**

DEPARTMENT

Biology

UNIVERSITY /TEI

Aristotle University of Thessaloniki

+30-2310-998373

12/11/2010

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### External Evaluation Committee

The Committee responsible for the External Evaluation of the Interdisciplinary postgraduate study program "Ecological quality and management at a river basin level" of the Aristotle University of Thessaloniki consisted of the following three (3) expert evaluators :

1. Dr Keith White (President)  
(Title) (Name and Surname)  
  
University of Manchester  
(Institution of origin)
2. Dr Nikitas Mylopoulos  
(Title) (Name and Surname)  
  
University of Thessaly, Greece  
(Institution of origin)
3. Dr. Herbert Weingartner  
  
University of Salzburg  
(Institution of origin)

**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.  
24<sup>th</sup> February until 26<sup>th</sup> February. Visited the main campus of the university of Thessaloniki and the relevant facilities
- Whom did the Committee meet ?  
Masters program steering committee, Masters program General Assembly, students from several cohorts, IT services, library services
- List of Reports, documents, other data examined by the Committee.  
Course information on-line, some examples of student work, summary of aims, objectives, data on student numbers, completion rates etc, course content etc as PowerPoint presentation.
- Groups of teaching and administrative staff and students interviewed  
Program director, representative staff from the three contributing departments.
- Facilities visited by the External Evaluation Committee.  
Central IT support, library IT

II. The Internal Evaluation Procedure

Please comment on:

- Appropriateness of sources and documentation used  
Sources appropriate in that committee provided with information on course content (including on-line information for potential applicants to program), evaluation procedures, course-work, student numbers, student performance, on-line presentations
- Quality and completeness of evidence reviewed and provided.  
Appropriate and complete in sense that representative examples provided.
- To what extent have the objectives of the internal evaluation process been met by the Department?  
There is clear evidence that the departments respond to student evaluation, including evidence of implementation in organisation and curriculum.

**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?
- How were the objectives decided? Which factors were taken into account? Were they set against appropriate standards? Did the unit consult other stakeholders?
- Is the curriculum consistent with the objectives of the Curriculum and the requirements of the society?
- How was the curriculum decided? Were all constituents of the Department, including students and other stakeholders, consulted?
- Has the unit set a procedure for the revision of the curriculum?

The goals and the objectives of the curriculum as stated in the Diploma Supplement are as follows: Assessing the ecological quality and management at a river basin level in accordance with the Water Framework Directive 2000/60 EC. The Program is organized so as to promote an interdisciplinary approach and produce skilled scientific personnel for research, public service and private sector on water protection, and contribute to the water protection and to the social and economic development framework of Greece.

The Program involves theoretical courses, laboratory work and an internship in a systemic approach for monitoring water ecosystems and management of watersheds and concern of the environment, society and sustainable development. It uses a holistic river basin (watershed/catchment) approach which is appropriate to the integrated management of freshwater resources.

At the end of their studies the students organize (including fund raising) a one day meeting where they present their case studies or/and their thesis work to stakeholders (students, professors and the relevant regulatory authorities). In developing the initial curriculum the contributing departments consulted with national and international universities, professional bodies, governmental authorities and other regional stakeholders. This curriculum is approved by the department's general assemblies, the Senate and the Ministry of Education.

**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 curriculum is successful in implementing the three department's goals. The structure of the curriculum is overall rational and adequately articulated. The semester one taught courses are appropriate in relation to the aims of the program but the committee feels that there is a tendency to overload the students. The

courses need to be more **integrated** in order to promote understanding of ecosystem services. In addition, and as articulated by the students, the programme should include a discussion of management and policy in relation to satisfying the requirements of the WFD.

There appears to be a consistency between the actual workload and the ECTS credit points for individual courses. The course material is available in electronic form for downloading from a portal. The course material contains sufficient information for preparation of course work and the oral assessment and external books are not necessary. The course contents are defined in most courses inspected.

Academic staff are well-qualified, committed to the programme and encompass a significant range of expertise. With respect to the practical component there is lack of qualified technicians to prepare and support field and laboratory classes in all core subjects. In addition, the complete lack of government funding and technological support, continuous reduction of support staff in the three departments are of concern. Finally inadequate and dilapidated infrastructure inhibit the application of modern educational and research methods in this Interdepartmental graduate program. These are key prerequisites for fundamental theoretical and practical understanding and hence a successful career in the area of river basin management in relation to implantation of the WFD in Greece.

#### 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?

#### IMPROVEMENT

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

The programme provides a good level of postgraduate training orientated towards a professional position and provides appropriately trained personnel in relation to environmental protection and water quality management. All three contributing departments are however aware of the need to continuously review and update the curriculum. In the light of this, committee therefore recommends reducing and consolidating the elective courses to more integrate the curriculum and incorporate elements of policy and management plus water chemistry. This could be achieved without further overloading the students by a reduction in the amount of biology, including biological monitoring and assessment.

The committee is concerned that the students' knowledge and understanding is not adequately tested by the current system of assessment and we recommend formal examinations in core courses such as Physical Function of a River Basin and Monitoring of Ecological Quality.

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## B. Teaching

### APPROACH:

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

Please comment on :

- Teaching methods used
- Teaching staff/ student ratio
- Teacher/student collaboration
- Adequacy of means and resources
- Need to ascertain
- Use of information technologies
- Examination system

The program involves good use of on-line resources, including training in their use - e.g. bibliographical databases, Blackboard and now Moodle learning systems, statistical packages and GIS software.

In regard to teaching methodology, the departments follows traditional teaching concepts in that the program includes formal lectures by the academic personnel, lecture notes in printed or electronic form, problem solving sessions and a project. In addition the committee comments the inclusion of a group case study and an assessed (by the provider) month-long internship Presently, there are 11 registered students and since the inception of the program, numbers vary from 7-13 students served by 13 faculty members involved in teaching.

Students reported that they are overall satisfied with teacher cooperation and availability but requested more support in relation to the group case study.

The classrooms and the audio-visual infrastructure appear to be adequate. Computer clusters are available in each of the contributing departments and library and IT support to staff and students appear to be very good.

The examination system follows the traditional format with projects and written/oral presentations for each course but formal examinations are lacking. The assessments are set and assessed by the responsible teaching staff.

### IMPLEMENTATION

Please comment on:

- Quality of teaching procedures
- Quality and adequacy of teaching materials and resources.
- Quality of course material. Is it brought up to date?
- Linking of research with teaching  
Presume projects link to staff research interests. Publications?
- Mobility of academic staff and students  
Internship (presumably) results in students working away. Any projects similarly with industry/regulatory section? Staff mobility?
- Evaluation by the students of (a) the teaching and (b) the course content and study material/resources

### RESULTS

Please comment on:



- Efficacy of teaching.  
Need to discuss
- Discrepancies in the success/failure percentage between courses and how they are justified.
- Differences between students in (a) the time to graduation, and (b) final degree grades.
- Whether the Department understands the reasons of such positive or negative results?

The teaching procedures are good. The teaching material and resources are good and of sufficient quality. Material inspected appears to be up-to-date. There is a strong link between research and teaching which is commended. It is noted that the departments run a popular placement program which results in a number of internships in local government and industry.

A student course evaluation system was initiated from commencement of the program. Both electronic and paper forms are used. Around two-thirds of students felt the taught courses well-organised, engage with students and encourage students to question and critique. Nearly three-quarters felt the courses met the objectives as outlined in the study guide and that papers and electronic resources were readily available. The students appear to be satisfied with the method and delivery of teaching. Staff state that improvements made in response to student comments and this is corroborated by the students. This includes the request for additional tutoring in relation to 'difficult' modules such as GIS.

The overall response by the students to the evaluation is rather disappointing in that has declined recently but this fall in the number of respondents may be a due to improved student satisfaction. To enhance response, we recommend dedicating class time in filling out course evaluation forms.

Time to graduation varies from 36 months (i.e. end of the program) to 48 months which is acceptable. There is no difference in grading in relation to time of submission.

#### IMPROVEMENT

- Does the Department propose methods and ways for improvement?
- What initiatives does it take in this direction?

The Departments could consider additional methods to improve the rate of response to the student evaluation of individual courses and the program as a whole.

**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?
- Has the Department set internal standards for assessing research?  
The research relevant to the program is both fundamental and applied with a wide range of projects with the emphasis on river basin ecology in relation to the WFD. Research topics presented are influenced by societal needs as defined by government agencies and to a lesser extent industry.

**IMPLEMENTATION**

- How does the Department promote and support research?  
Seems to be an active policy of engaging students at all levels in research, including publication in scientific journals. Links to pdf of papers also available in most cases.
- Quality and adequacy of research infrastructure and support.  
Quality and adequacy of equipment is not always up to date and this reflects the general lack of funding to universities from the central government.
- Scientific publications.  
Where data available (available for most staff in the school) indicates that staff are research-active with publication in international peer-reviewed journals as well as conference proceedings
- Research projects.  
In many cases indication of past and current research projects and initiatives
- Research collaborations.  
Staff to collaborate in that joint publications from the three contributing departments, plus in relation to student projects.

**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.  
The relevance of the projects carried out by students on the program is indicated by their participation in national and international conferences and in the publication of their results in international peer-reviewed journals. The relevance of the projects is also reflected in the fact that a significant number of students (10) progressed to a PhD programme within the contributing departments since the commencement of the program in 2007.

**IMPROVEMENT**

- Improvements in research proposed by the Department, if necessary.
- Initiatives in this direction undertaken by the Department.  
To further strengthen links with the local communities in relation to research questions relating the their river basin, both to address local needs but also to facilitate provision of information and support for community and regional development.

**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).
- 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? Does this imply attendance can be poor(?)

**IMPLEMENTATION**

- Organization and infrastructure of the Department's administration (e.g. secretariat of the Department).  
Need to discuss
- Form and function of academic services and infrastructure for students (e.g. library, PCs and free internet access, student counseling, athletic- cultural activity etc.).  
Need to discuss

**RESULTS**

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

**IMPROVEMENTS**

- Has the Department identified ways and methods to improve the services provided?
  - Initiatives undertaken in this direction.
- The support staff at the university and departmental level is highly appreciated by the students and the academic staff, as confirmed during the interviews. Currently the program is administered through the Department of Biology student support office. However there are concerns on the part of the academic staff as to continued availability of human resources, specifically administrative and technical support which could jeopardize the quality of the program.

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

- Please, comment on quality, originality and significance of the Department's initiatives.
- The program is active in addressing local, regional and national societal needs. For example the student's give presentation on their projects to the local community which have been very well received. Such engagement also enhances student engagement and confidence and, hence, career prospects.

**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.
- Short-, medium- and long-term goals.
- Plan and actions for improvement by the Department/Academic Unit
- Long-term actions proposed by the Department.

Currently academic staff contributions to the program are not recognised by the departments and it is recommended that contributions are taken into account in relation to staff teaching load allocation.

- ✓ IT and library support is very good with well-qualified and committed staff and the committee trust that this level of support to the program will continue.

**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.

The contributing departments provide a good platform for the program with well qualified staff and clear research structure to underpin the projects, including involvement of undergraduate and postgraduate students. The program is multidisciplinary as multi-departmental. There appears to be a high level of collaboration among the academic staff from the three departments who appreciate each other's work and contributions. The academic staff very approachable and sensitive to student issues.

The program of studies is very good and has the potential to produce high quality independently thinking graduates for both PhD programmes and for a career in the regulatory and consultancy sectors. It also contributes to the public good and to the economy in assisting in compliance with the requirements of the WFD and hence environmental improvements.

The curriculum is well and thoughtfully designed with a range of specialized topics within the Masters programme. However consideration needs to be given to the inclusion of policy and management issues and ecosystem services. The case study and the internship units are very good and innovative components of the program. The case study ensures that the students integrate their knowledge and understanding of

the taught component while the internship is to be commended in relation to work experience and dealing with real life problems.

It is recommended that practitioners are more engaged with the program, specifically in relation to provision of seminars and the case study to provide students with an understanding of real environmental problems, barriers and solutions. In addition a practitioner's advisor group is recommended to advise on program content as this will assist in ensuring that the program is tailored to the needs of potential employers of the students following graduation.

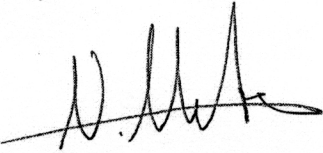
✓ Poor laboratory facilities in some areas and lack of availability of technical support staff limit the quality of provision in relation to the practical component of the taught units and, potentially, the projects. It is important that the current good level of administrative and IT support is maintained.

In order to understand the principles, methods and approaches in relation to chemistry and engineering approaches, more courses in those areas are needed. In addition we recommend that policy and ecosystem management are included in the program. This could be achieved by reducing the number of biology-based units.

The economic viability of the program is of concern. It is an expensive graduate program with high operating costs (laboratories, field work, etc.) and the lack of money may prove a hindrance to development. The program leaders should therefore examine additional ways of financing, for example as a multinational programme funded through the Erasmus Mundus scheme. In addition we recommend that the departments consider offering some components such as the taught units as short courses, on-line correspondence course to attract further funding. These could include contribution from academic and professionals from elsewhere in the EU.

In conclusion the committee is of the opinion that the program is of high quality, underpinned by committed academic staff and fulfils the need for trained professionals to facilitate Greece's move towards compliance with the WFD.

## The Members of the Committee

Name and Surname	Signature
Dr Keith White	26th Feb 2015 <u>KNWhite</u>
Dr Nikitas Mylopoulos	
Dr. Herbert Weingartner	