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HELLENIC REPUBLIC

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HELLENIC QUALITY ASSURANCE AGENCY

ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT OF MEDICAL LABORATORIES

TECHNOLOGICAL EDUCATION INSTITUTE ATHENS

Version 2.0

January 2012

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External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Medical Laboratories of the Technological Educational Institute of Athens consisted of the following four (4) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005

1. Prof. Dr. Panagiotis Karanis (President)
University of Cologne, Germany
2. Prof. Dr. Nikolaos Venizelos
University of Örebro, Sweden
3. Dr. Thomais Kakouli-Duarte
Institute of Technology Carlow, Ireland
4. Dr. Evangelos Vogiatzakis
“Sotiria” Chest Diseases Hospital, Greece

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 External Evaluation Procedure (EEP) constituted by relevant site visits (Monday 16 January 2012 to Wednesday 18 January 2012) and by drafting of the associated External Evaluation Report (EER; Thursday 19 January 2012 to Saturday 21 January 2012). The External Evaluation Committee (EEC) met on Monday 16 January 2012 at the Offices of HQAA with relevant staff who gave an account of the framework, objectives and the expected outcomes of the EEP. The evaluation process was discussed by the EEC members and the HQAA officers. The EEC subsequently departed for TEI of Athens where it was received by academic staff members of the Department of Medical Laboratories (referred to as the Department thereafter). During these three days the EEC had the opportunity to inspect the departmental and campus facilities, to visit the General State Hospital of Nikaia, and to meet with all the appropriate parties detailed below.

- Whom did the Committee meet?

HQAA:

- Dr. Kleomenis Oikonomou
- Ms. Ioanna Leraki

TEI Athens:

- President of TEI Athens, Prof. Demetrios Ninos
- Vice President of TEI Athens, Dr. Michael Bratakos
- Head of Depart. of Medical Laboratories, Prof. Georgios-Alvertos Karikas
- All full time academic staff, some part time academic staff, technical and support staff, library staff, administrative staff and the Erasmus coordinator.
- Students from various semesters of the course, alumni, a TEI graduates' representative and a postgraduate student
- An alumnus of the Department undertaking postgraduate studies abroad (via SKYPE conference)

General State Hospital of Nikaia

- Various hospital unit managers
- Students on clinical practical training obtaining their work experience at the hospital
- Technical staff of the hospital
- Part time lecturers of the Department supervising students on hospital placements

- List of reports, documents, other data examined by the Committee.
- Guidelines for the Members of the EEC

- The Department Internal Evaluation Report (IER; 2009)
- The TEI Prospectus (2010)
- Old curriculum and course information (1999)
- New curriculum and course information (2008)
- The TEI Student Guide Book (1988)
- The Department Study Guide (2011), including a range of administrative policy and procedures documents and various forms
- Samples of student practical worksheets and the work placement log book
- A wide selection of student final year degree projects (dissertations)
- A range of course text books, including those written and edited by academic staff members
- Course teaching material produced by academic staff

- Groups of teaching and administrative staff and students interviewed

TEI Athens

- Academic staff (all full time staff and available part time staff)
- Administrative and support staff (departmental, office and library staff and technical staff)
- Students from various semesters
- An alumnus of the Department undertaking postgraduate studies abroad (via SKYPE conference)
- Student graduate representative

General State Hospital of Nikaia

- Heads of various hospital units (Cell Laboratory, Pathology and Anatomy Laboratory, Blood Transfusion Laboratory)
- Members of the technical staff of various hospital units (Microbiology Laboratory, Cell Laboratory, Pathology and Anatomy Laboratory, Blood Transfusion Laboratory, the representative of hospital technical staff)
- Part time lecturers of the Department supervising students on work placement
- Students on the clinical practical training placements

- Facilities visited by the External Evaluation Committee.

An overview of the TEI campus was initially provided, while the facilities inspected are detailed below:

Teaching

- Various classrooms
- Various laboratories
- The library
- The computer laboratory
- Staff offices

Research

- A research laboratory

Hospital

- Various hospital laboratories (Microbiology Laboratory, Cell Laboratory,

Pathological Anatomy Laboratory, Blood Transfusion Laboratory)

- Hospital canteen

Other Services

- Student canteen
- Restaurant
- Administrative office

II. The Internal Evaluation Procedure

Please comment on:

- Appropriateness of sources and documentation used

The EEC found that the sources and documentation provided were appropriate. These were the IER and the various teaching texts and materials, student information supplements and administrative documents and forms.

- Quality and completeness of evidence reviewed and provided

The evidence reviewed and provided was most appropriate. The evidence collected, inspected and evaluated for the compilation of the EER was appropriate to the objectives set in the IER (pp. 15).

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

Although the IER does not include clearly delineated objectives in the preface (pp. 3-5), the EEC felt that the objectives of the internal evaluation process have been met at a satisfactory level by the Department. The process followed by the Department is detailed on pages 6 to 11, while the conclusions (pp. 134-137) and the improvement plans (pp. 138-141) clearly address the IER objectives. A repeated reference is made throughout the IER document on the level of understaffing of the Department and this is considered as a limiting factor in achieving the IER objectives.

A. Curriculum

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

APPROACH

- What are the goals and objectives of the Curriculum?

The goals and the objectives of the Department are presented in the IER (pp. 15) and the Prospectus (pp. 34) and appear to be in agreement with Presidential Directive 163(3) (Ministerial Gazette FEK118-1996).

- What is the plan for achieving them?

The academic staff

- Follow the course syllabus, enrich it and update it
- Make best use of all instruments equipment and computers
- Continuously update various exercises

- Use any medium, which can contribute towards the best delivery and understanding of course content (e.g. Overheads, PowerPoint, class notes, e-class, internet, exercises etc.)
- Collaborate closely with the technical staff toward the greatest possible participation and interaction between teacher and student

In addition

- Practical attendance is mandatory and classes constitute two teaching hour sessions each
- Practical exercises coincide and keep up with theory teaching content via collaboration between academic and technical staff
- There are three continuous assessments sessions with equally distributed course material
- There is a six month clinical practical training in a collaborating organisation (e.g. hospitals, health institutions, Universities, etc.)
- There is a final semester degree project based on a practical topic or/and a literature review, with a possibility to extend it for one more semester
- The curriculum has been reviewed
- Academic staff are encouraged to present at conferences and submit papers for publication

- How were the objectives decided?

The academic staff are involved in formulating departmental policy and the consensus is also taken into account for the decision of the final programme objectives, as detailed in IER (pp. 15) and reaffirmed during the meetings with the EEC members.

- Which factors were taken into account?

These objectives were decided according to the Presidential Directive 163(3) (Government Gazette/FEK 118-1996) on the Professional Rights of the Department Graduates, the Ministry of Health, market needs, international standards and trends, and the internal policies and procedures of TEI of Athens.

- Were they set against appropriate standards?

These objectives were set against relevant international standards such as for example:

- BSc of Biomedical Sciences (ex. Polytechnics, Fachhochschule, Universities of Applied Sciences, U.K., Germany, Austria, Belgium, France, Italy, Ireland etc. ; EUROPE)
- Departments of Medical Laboratory scientists or Clinical Laboratory technologists providing BSc in Medical Technology (3+1, 2+2; ASCP; <http://www.ascp.org/>; USA)

- Did the unit consult other stakeholders?

Academic staff and students of the Department were consulted, as affirmed in the EEC meetings, but the IER does not contain clear reference to the participation of social stakeholders in the design of the programme.

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

- Upon completion of their studies the graduates of the Department are equipped with the necessary qualifications to enable them to work in all professions of the subject range of the Department (IER, pp. 15).
- The permanent link with the Health area, especially with the Laboratory sectors (public and private), contributes towards gaining experience from the teaching and

training process and from monitoring current requirements of the health profession in the field, as manifested by the repeated programme reviews (IER, pp. 23).

- The Department is in frequent contact with the Pan Hellenic Association of Medical Laboratories Technologists (PETIE) and other EU/international programmes (e.g. ERASMUS, LEONARDO), and it is updated on professional issues which are of use and taken into account for the ever changing societal needs (IER pp. 23).

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

The curriculum was decided after consultation of academics, students and stakeholders.

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

Yes, there is a clear and detailed programme development approach (IER, pp. 24). This was reflected in the new curriculum material provided during the visit of the EEC.

IMPLEMENTATION

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

Very effectively; the curriculum corresponds to the departmental goals as detailed in IER (pp. 15).

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

The curriculum is comparable with curricula of respective international programmes of study with which the EEC is familiar. This is also reaffirmed by the fact that Department graduates have been accepted for postgraduate studies (PhD in Switzerland) and professional positions (in Karolinska Hospital, Sweden) in highly reputable international institutions.

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

Yes, the curriculum is rational and clearly articulated. This is particularly reflected in the succession between the prerequisites and dependent courses (IER, pp. 28).

- Is the curriculum coherent and functional?

Based on the above observations, the EEC finds the curriculum coherent and functional.

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

Yes. The EEC recommends that modules/material on Instrumentation, Laboratory Management and Nuclear Physics should be included/covered in the curriculum. In the case of Nuclear Physics, unless the practical training offered increases, the curriculum should be changed and this area of expertise should be transferred to another qualification. Finally, the EEC believes that the number of lecture hours is more than enough and these can be reduced in benefit of practical hours.

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

By international standards it seems to be that the permanent and the part time academic staff are excellently qualified in various disciplines with a broad range of qualifications, which include medical doctors, biologists, and physicists; the EEC finds this to be a good basis for the development of further postgraduate education. However, due to current budget cuts at national level, the departmental resources have been limited in terms of consumables, laboratory teaching facilities and equipment.

RESULTS

- How well is the implementation achieving the Department's predefined goals and objectives?
 - The EEC is satisfied that the programme achieves the Department goals and objectives detailed in IER (pp. 15).
 - Graduates are qualified to work as professional practitioners in Greece and in other European countries, as the programme is at EQF Level 6 (http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm). In addition, graduates are equipped to undertake postgraduate studies in related areas in Europe.
- Does the Department understand why and how it achieved or failed to achieve these results?

Yes. Through an analysis of the data collected and evaluated, the IER details both positive and negative aspects of the Department (pp. 134-137). In response to this, clear set of plans are proposed (IER, pp. 138-141) in order to enhance the positive and limit the negative elements identified. In addition, this was also confirmed during interviews of staff and students by the EEC.

IMPROVEMENT

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

Yes; please see above.

- Which improvements does the Department plan to introduce?

The proposed improvements are clearly detailed in in the IER (pp. 138-141). The EEC agrees with and recommends these proposals.

B. Teaching

APPROACH:

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

The Department uses conventional and classical teaching practices. The introduction of an additional defined pedagogical model may improve teaching quality according to the Bologna requirements.

Please comment on :

- Teaching methods used
 - Classical cathedral teaching method is mostly used
 - Seminars
 - Presentations
 - Practical sessions

- Teaching staff/ student ratio

1/6 (115/691) – the figures used include all teaching staff (permanent, non-permanent and technical), while the student number is the one representing students of all semesters in April 2011; the EEC find this to be a good ratio.

- Teacher/student collaboration

Based on staff and student interviews by the EEC, it became evident that the teacher-student collaboration is in good standard.

- Adequacy of means and resources
 - Students are taught by committed and well qualified teachers.
 - The facilities are of high international standard and the laboratories have been recently refurbished with state of the art equipment.
 - The library is well equipped with a plethora of text books and online access of electronic databases (e.g. Pub Med, Science Direct, Heal Link etc.). However, the EEC members express their concern in relation to the limited library opening hours.
 - The Departmental facilities create an environment for positive staff and student interactions, which enhances the effectiveness of teaching and learning.
- Use of information technologies
 - There is an electronic on-line platform via which students can obtain relevant course material
 - Students have readily available internet access
 - Please see library resources as above
- Examination system
 - Written exams at the end of each semester for theory and laboratory subjects; dyslexic students are availing of oral examinations
 - Obligatory written examinations and continuous assessment in laboratory subjects
 - Submission and assessment of laboratory work books
 - The ECC feels that the students are over assessed under these practices.
 - In relation to the assessment of the clinical practical training in hospitals, some complaints were noted concerning the coordination and the procedures used. It is possible for students to cooperate with local and regional hospitals, in order to

cover the need for the six-month clinical practical training. During this exercise in the evaluated laboratories of the hospitals, the TEI teachers supervising the clinical practice of students should monitor closely their progress, and provide accurately and timely the objects of their training. It is recommended to review the Education Book, so that the evaluation of students is intended and personalized, based on objective and concrete criteria, that follows the key fields of the program of studies.

IMPLEMENTATION

Please comment on:

- Quality of teaching procedures
There are a large number of cathedral lectures, which might not be helpful to enhance the lifelong learning skills and abilities of the students. On the other hand the implementation of seminars, presentations and laboratory exercises constitutes a good quality approach to develop the learners' strengths.
- Quality and adequacy of teaching materials and resources.
The above have been found to be of good quality.
- Quality of course material. Is it brought up to date?
The EEC found the course material of good quality. The curriculum has been updated in 2008 and the relevant text books and laboratory instruments are up-to-date.
- Linking of research with teaching
There is not substantial linkage between research and teaching. On the other hand, the Department has commenced the process of developing this link.
- Mobility of academic staff and students
Staff and students participate in international exchange and mobility programmes (e.g. ERASMUS) with other European education institutions. The EEC found this of acceptable level.
- Evaluation by the students of (a) the teaching and (b) the course content and study material/resources
 - According to the IER (Table 11-4) students evaluated only approximately half of the courses.
 - There were isolated cases of students commenting negatively on their work placement in hospitals, in relation to coordination and procedures used.

RESULTS

Please comment on:

- Efficacy of teaching.
 - From materials provided and interviews with staff and students it was evident that the teaching is efficient.
 - The graduates upon their exit are well prepared to commence professional practice in their field of learning.
 - The EEC found that a limiting factor to teaching efficacy is the large student numbers in relation to the availability of practical facilities.
- Discrepancies in the success/failure percentage between courses and how they are

justified.

According to Table 11-3 of the IER, there were discrepancies in the success rates between subjects. After consultation with the academic staff, the EEC felt that the single most determinant factor for such discrepancies was the student attendance.

- Differences between students in (a) the time to graduation, and (b) final degree grades.
 - The information provided in the IER is limited in relation to determining (a); the EEC recommends that this indicator should be provided in a clear manner in the next IER.
 - The majority of final degree grades were distributed in the range of 7.0-8.4, followed by the ranges of 6.0-6.9, 8.5-10.0 and 5.0-5.9 according to IER, Table 11-5. This was observed for the years 2005 to 2011. However, the average degree grades for the years 2001 to 2011 remained consistent around the mark of 7.5.
 - The EEC felt that were not able to adequately address this question from the information provided by the Department.
- Whether the Department understands the reasons of such positive or negative results?

Yes. The Department understands the reasons of variable results and encourages the students to graduate in the minimum required time. At the same time, the current legislation allows students to remain registered at TEI Athens beyond the minimum required time of study.

IMPROVEMENT

- Does the Department propose methods and ways for improvement?

Yes. These are clearly articulated in the plans for improvement as detailed in the IER (pp. 138) and as discussed during interviews with academic staff.
- What initiatives does it take in this direction?
 - Internal Evaluation Report
 - Institutional Review
 - Student evaluation questionnaires of staff and subjects

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?
There is a substantial research activity in TEI in collaboration with other higher education institutions (e.g. AEI) funded under the KPS, Archimedes I, II, III programmes. This is confirmed by a number of scientific articles in international journals and by a considerable number of citations. Indicatively, between 2006 and 2010 the Department has published 165 papers.
- Has the Department set internal standards for assessing research?
Although there is research activity in the Department there is no evidence for the existence of internal standards for assessing research performance.

IMPLEMENTATION

- How does the Department promote and support research?
 - Via the securing of recent research funding (Archimedes, 2012-2014)
 - Currently the Archimedes programme funds projects in the areas of
 - ✓ wastewater contamination
 - ✓ cellular studies in relation to haemodialysis
 - ✓ isolation of pathogenic bacteria from food
 - ✓ removal of toxicants from wastewater
 - Via establishing collaborations with national and international research groups
 - Via the establishment of a purpose built research laboratory
 - Via the completion of final semester dissertations by research
 - In the form of the postgraduate diploma in "Food and water quality-assurance and public health"
- Quality and adequacy of research infrastructure and support.
Although the Department has recently established a well-equipped research laboratory, the EEC felt that the research infrastructure needs considerable improvement. This is mainly due to the fact that the Department focus is on teaching obligations.
- Scientific publications.
Between 2006 and 2010 the Department has published 165 papers.
- Research projects.
From 2004 and 2006 there were four research projects under Archimedes I:
 - 1) Epidemiological studies on *Legionella*
 - 2) Toxicity of residues from antifungal treatments
 - 3) The level homocystein in humans
 - 4) Antibiotic resistance of *Enterobacteria*
 Under Archimedes II 2007-2009
 - Development of HDL as an atheromatic marker
- Research collaborations.
There is a large number of research collaborations established by the Department at national and international levels.

RESULTS

- How successfully were the Department's research objectives implemented?
Very successfully, given the limited capacity of the Department in capital infrastructure and funding.
- Scientific publications.
Given this limited capacity the Department has published an impressive 165 papers between 2006 and 2010.
- Research projects.
At a satisfactory level and as detailed above and in the IER (see Archimedes, pp. 105-115)
- Research collaborations.
There are no official research collaborations and bilateral research agreements with other institutions recognised at departmental level. The current collaborations are informal and mainly at colleague or group level. Some of these were formed during the Archimedes projects. In addition, there are no collaborations with other departments of TEI Athens, or with the respective departments of TEI Thessaloniki and TEI Larisa.
- Efficacy of research work. Applied results. Patents etc.
The research results have practical significance for comparisons of certain research parameters, as measures for subsequent research projects and as starting points for future studies. There is no evidence of any industrial applications, while there is evidence of one patent (IER, Table 11.10).
- Is the Department's research acknowledged and visible outside the Department?
Rewards and awards.
In the years from 2003 to 2010, the departmental research work has been cited 430 times, the Department has carried out 10 book reviews; its academic staff has participated 10 times in the organization of scientific conferences, 20 times in editorial boards of scientific journals and has received 10 invitations as guest speakers. In addition, the Department has achieved, in the same time period, 15 awards and 7 honors (IER, Table 11.10).

IMPROVEMENT

- Improvements in research proposed by the Department, if necessary.
The EEC did not perceive any specific proposals in this direction apart from affirmation by the academic staff that the Department infrastructure needs to increase and therefore capital funding must be sought.
- Initiatives in this direction undertaken by the Department.
No such initiatives were perceived by the EEC.

D. All Other Services

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

According to the IER as “other services” were considered the following:

1. The administrative and technical services (pp. 123)
2. Student welfare services (pp. 125)
3. All other infrastructure used by the Department (pp. 128)
4. Exploitation of new technologies by the Department (pp. 130)
5. Transparency and efficiency in infrastructure and equipment use (pp. 130)
6. Transparency and efficiency of financial resources (pp. 131)

APPROACH

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

The views of the Department in relation to these services are detailed in the IER (pp. 123-131). The main points are:

- The number of administrative staff is inadequate to support the students and academic staff. The Department feels that this has an adverse effect on student support. At the same time the existing departmental administrative staff has developed efficient on line tools to replace to the best possible extend this deficiency.
- The Department administration is collaborating well with the central TEI administration.
- There are a limited number of laboratories facilitating the various subjects. This entails good organization for the multipurpose function of the laboratories. There are no technical staff assigned to specific laboratories. However, laboratory use is satisfactory.
- The information technology services and infrastructures are well supported by the central server of TEI Athens.
- The Department provides a two hour weekly slot for one to one student and Student Advisor meetings. However, indicatively, the student number of the spring semester of 2008-2009 was 728 while the permanent academic staff was only 9.
- In each semester and before commencement of student work placement, there is an information day to update students on their obligations, the best possible organization of their activities, their way of attendance etc.
- There is satisfactory support of the staff in terms of information technology and communication platforms.
- There is no support service for working students. However, the teaching staff provide options of flexible laboratory hours and is always willing to support in the best possible way.
- There are no official support mechanisms for weaker students. However, the teaching staff support individual cases when requested by the students.
- The Department does not offer scholarships apart from the IKY state

<p>scholarships.</p> <ul style="list-style-type: none"> ➤ There is an appropriate induction day in each semester to welcome and support the integration of new students. ➤ International students are well supported by the Department. This practice also includes ERASMUS and Era- Place students who are always integrating successfully in the Department. The Department ERASMUS coordinator is supportive over and above the central TEI ERASMUS Office. ➤ The library resources are considered to be adequate, with a good collection of relevant text books and electronic access to specialized journals. However, the library opening hours are inadequate. ➤ The Department has well equipped laboratories for student practice in the various subjects of study. The Department appeals to the central management of TEI Athens for the inadequate provision of laboratories. With current student numbers and the up-to-date curriculum it is imperative that laboratories be reinstated to the Department by the TEI management. ➤ The academic staff offices are considered inadequate without basic hand washing facilities, but with elementary furnishing and computers and air conditioning. ➤ The Department Administration has a single office and is relatively limited. ➤ There are no dedicated teaching spaces according to subject areas. ➤ There are no facilities to support meetings. ➤ Amphitheatre use is very difficult for academic staff. ➤ The tele-conferring room in the Library is a state of the art facility. <ul style="list-style-type: none"> • Does the Department have a policy to simplify administrative procedures? Are most procedures processed electronically? Yes. This has been explained during EEC and administrative staff interviews and is also detailed in the IER (pp. 130). • Does the Department have a policy to increase student presence on Campus? There are excellent campus facilities for student recreational activities and clubs and societies.
<p>IMPLEMENTATION</p> <ul style="list-style-type: none"> • Organization and infrastructure of the Department's administration (e.g. secretariat of the Department). The Department considers the acquisition of additional administrative staff vital for the efficient operation of the secretariat. • Form and function of academic services and infrastructure for students (e.g. library, PCs and free internet access, student counseling, athletic- cultural activity etc.). <ul style="list-style-type: none"> ➤ The overall student support services are good. ➤ The facilities for extracurricular activities are satisfactory.
<p>RESULTS</p> <ul style="list-style-type: none"> • Are administrative and other services adequate and functional? <ul style="list-style-type: none"> ➤ Secretariat support for both staff and students is inadequate in terms of administrative staff numbers. The current administrative staff strives to eliminate any deficiencies by use of electronic and on line services. ➤ Other services function at a satisfactory level within the Departmental constraints.

- How does the Department view the particular results?
The Department realizes these limitations and provides a clear plan for improvement as detailed in IER (pp. 138-141).

IMPROVEMENTS

- Has the Department identified ways and methods to improve the services provided?
Yes. As stated above the Department elaborates on this in the IER (pp. 138-141) and this was articulated during meetings with the EEC.
- Initiatives undertaken in this direction.
 - The Department proposes discussions with the TEI management and the commencement of immediate action towards the recruitment of additional permanent academic staff (IER, pp. 140).
 - Under the framework of the long term action plan for the adaption of current teaching practice emphasis will be given to translational education (IER, pp. 141).

Collaboration with social, cultural and production (SCP) organizations

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

The Department clearly recognises the importance of links with SCP organisations (IER, pp. 116). By its nature it is directly involved with Society via disease prevention and public health.

There is a great deal of work required to create the framework of collaboration between the Department and relevant SCP organisations (in this case of the Health sector), so that maximum integrity, responsibility, mutual response of the interacting bodies and effectiveness of actions can be achieved. The Department has a minimal number of permanent academic staff in relation to its output. Although student numbers have currently declined compared to past years, the Department engages in research activities, has updated its curriculum twice towards the direction of eight year study programmes, is keeping up with current scientific developments and is keeping pace with the progress of teaching practice in biomedical sciences.

Despite these efforts, collaboration of the Department with SCP organisations of the Health sector is complicated due to the following reasons:

- a) Low number of permanent academic staff members in the Department
- b) Complexity and complex distribution of the levels of governance per Ministry (Ministries of Education and Health)
- c) Great distribution and considerable division of health providing services
- d) The great degree of effectiveness required from such collaborations in order to be of high standard
- e) Lack of laboratory facilities and modern infrastructure. The services provided by the

Department do not have consultative nature, do not occur by questionnaire collection, are not carried out by the dissemination of electronic material and are not reinforced by lectures and presentations.

- f) The provision of services by the Department needs considerable funding in order to be accredited for analytical examinations and specialised analytical definitions in patients of various organisations that require diagnosis, treatment and further monitoring for a defined time period.

These issues have been repeatedly discussed at Departmental and at SEYP level, in the context of health provision to the citizens of the wider area of TEI Athens. However, these targets can not materialise due to the reasons described above.

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 EEC considers the following inhibiting factors and makes the following recommendations:

- Increased student numbers; the Department must reduce its student intake.
- Lack of funding either at state or Institutional levels; the Department should seek external funding from benefactors, sponsors, should liaise with the health/pharmaceutical industry and integrate in collaborative European projects.

- Short-, medium- and long-term goals.

Short term:

- The Department wishes to recruit a number of new permanent academic staff members.
- There will be immediate discussions with TEI central management in relation to reallocation to the Department of certain laboratory facility.

Medium term goals:

- The academic staff wish to expand their postgraduate programmes.
- As the Department is currently providing a postgraduate qualification in collaboration with the University of Thessaly, a medium target goal is to become the sole provider of this postgraduate programme.

- Plan and actions for improvement by the Department/Academic Unit

In the last ten years the Academic staff have revised the Curriculum twice in line with current international advancements and developments in the field; the latest revision is most up-to-date with valid applied programs. The EEC consider that the most important element in these updates is that great attention has been paid to new contemporary methods for

diagnosis which are also applied in the Department.

The Department has its own home page to publish the education program: http://www.teiath.gr/seyp/iatrika_ergastiria. More over, the education program is also accessible via the home page of the Society of the Greek Med Technologist: (<http://www.petie.gr>).

The Department observes strict guidelines for the preparation of the examination work by graduate students. The final year BSc Theses preparation follows these guidelines which differentiate the theses to theoretical, solely based on a literature review, or practical, that also contains an experimental part. This is a very important part of the programme which will be are very useful to the students who are going to graduate. Although there are no reasons to doubt the good work and standards of the Department, the EEC wishes to advise the staff to give particular future emphasis in teaching students about the importance of avoiding internet copy transfer and plagiarism.

- Long-term actions proposed by the Department.

The Department is always focused on maintaining the forefront of knowledge in its areas of expertise. Although there are short to medium term development plans, these plans can not be fulfilled via action committees, due to the small number of permanent academic staff. In addition, although there is a consistent philosophy regarding the education policy of the Department, it is difficult to implement long term planning mainly due to current obstacles in Higher Education reform, coupled with the economic situation of the State and subsequent lack of funding. Despite the fact that the Departmental long term planning to acquire more permanent staff members is proven a necessity in every academic year, this acquisition does not materialise.

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 has come a long way in developing and implementing the delivery of its curriculum. The academic staff of the Department are of very high standard as demonstrated by their academic qualifications, professional experience and publication pressure and output, especially in light of the fact that they are severely low in numbers (permanent staff) and with shortages in infrastructure. They are proactive, with clear and specific targets and embracing current developments. This is complemented by the competency of part time teaching staff as well as the technical staff, and is reflected by knowledgeable, self-confident and well-articulated students as manifested by their interviews with the EEC.

The EEC feels that further improvements are needed in the following areas and they recommend:

- Due to the nature and to the extent of contributions to the current education and practical work provided and carried out in the Department, the EEC recommend that departmental name could be re-placed with the name 'Department of Biomedical Laboratories'.
- The Department fulfils all the requirements for its goals and for maintaining the BSc requirements (Level 6 status). It also has the necessary structure, research capability and academic level to provide postgraduate, Master level, education programmes. The EEC believe that further critical mass, capital infrastructure and more research funding are necessary to reach the level of PhD programme provision. Nevertheless, it was clear from the site visit and the IER that the academic staff are working towards achieving this goal.
- The contributions of first and non-first authors varied greatly within and among the published papers. It is not clear if an appreciable number of authors made substantial, little, which, or no substantial contributions to the research. There is therefore a need for an analysis of published data in this context. The process of identifying and evaluating research outputs should involve professionals with the appropriate expertise required to recognize and evaluate the information reported. The results offered should be scientifically valid, confirmed, and should have significant implications to the aims of the Department. The Department is well equipped for its mission; further improvements will enhance the good work of the Department.
- The department strives to expand its research capacity, and acquire Level 8 status. It is therefore imperative that bilateral formal research agreements are made with relevant internationally reputable research organisations in Greece and abroad. This will foster the necessary collaborations to bring the Department closer to the Level 8 target. Capital funding should also be sought as the limited current research infrastructure does not support the accumulation of a critical research mass for the provision of Level 8 programmes.
- Prior to the establishment of PhD courses, at departmental level, the staff should be asked to provide consent for future use that includes as much detail as possible, including information associated with commercialization activities, and the nature of likely future research initiatives.
- The educational programme of the Department could raise its quality level by reducing the student intake in each semester. This would allow for better use of resources, including laboratory facilities, which are currently overused and students are lacking the best practical training they can receive due to overcrowding of classes.
- The EEC found that a limiting factor to teaching efficacy is the large student numbers in relation to the availability of practical facilities. A reduction of lecture hours in benefit of practical hours would be a solution and will be a gain for the students enabling them to access additional practical training.
- A biosafety/biosecurity and chemical usage protocol was not evident in the Department practices. Clear policy and procedures in this context must be adopted and implemented in the relevant work areas.
- There is a need for the establishment of biosecurity laboratories, with level of containment in accordance to the pathogens used for teaching and research.
- Basic laboratory safety and disinfection facilities must be installed in all laboratories, such as eye wash facilities and hand washing facilities, and one shower facility at departmental level.

- A Standard Operation Procedures Manual Book should be compiled for all procedures involving departmental equipment and facilities. This book must be kept in a commonly accessible place (e.g. the Secretariat) to be consulted by all technical and research staff and be updated when required.
 - A cryo-bank storage facility could be established for the maintenance of useful strains of cell lines, pathogens and clinical material for teaching and research purposes.
 - The Department administration has demonstrated a diligent effort to modernise procedures and offer remote access to students. However, the hours of receiving students in the Department office should increase and the way that graduates receive their BSc certificates should also get modernised and offer the possibility of awards in *absentia*, in line with current international practices.
 - There is a need to further systematically evaluate the existing and the emerging structure of the Department. This evaluation must consider ways in which new information technologies can be utilized.
 - The EEC further recommends the increase of student mobility in relation to their work placement in Greece and abroad. The current practice involves hospitals in the Athens greater area but students should also be encouraged to work in hospitals in other Greek cities as well. In addition to this, it is recommended that students should start applying for work placement in hospitals of other European countries. This will enhance the students' maturity and cultural appreciation, and will provide them with the prospect that any hospital and any European country will be potential places for employment.
- the Department's readiness and capability to change/improve

The Department has demonstrated the capacity and willingness to change/improve and this can be seen in the following areas:

 - The lab facilities have been renovated and improved
 - Electronic services have been improved
 - They actively seeking research funding and already have secured recent projects
 - The overall environment of the Department has improved including efficient signposting to facilitate usage by staff, students and visitors.
 - The Department's quality assurance.
 - The most obvious mechanisms of quality assurance observed by the EEC were the IER and EER systems. In addition, the final semester dissertations are corrected by more than one internal examiner. The EEC recommends that external evaluators can be used to assess the good quality of examination practices at undergraduate and postgraduate levels. In addition undergraduate exam scripts should be corrected by student code numbers and not names.
 - The Department needs to approve and adopt a more clear and systematic overall quality assurance protocol.

Concluding Remarks

The EEC recommends the IER carried out by the Department and acknowledges the good work carried out for its compilation. Taken into consideration all the departmental endeavours, efforts, and activities, the overall infrastructure and the education programme, the excellent conditions for work and study, the variety of learner support systems, and the wide choice of social and sport activities, the Department of Medical Laboratories in TEI Athens is clearly a unit for the provision of higher education programmes to Level 6 according to the Bologna Process. The Department has potential for further improvements, while at the same time it has an obligation to provide the best education to its students. The main disadvantage of the Department is its deficiency in the number of the permanent academic staff which is managed by the presence of a large number of non-permanent personnel; the advantage of the Department is the high level of infrastructure and the high level education opportunities it provides. Although the Department academic staff have proactively formed affiliations with relevant collaborative organizations in order to cover potential deficiencies and limitations, the EEC expresses concerns that the support by the Ministry of Education via the annual budget may ultimately jeopardize the efficiency of the Department's decision making, planning process and curriculum delivery.

The Members of the Committee

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