



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

HELLENIC REPUBLIC

**Α.ΔΙ.Π.**

**H.Q.A.A.**

ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ

HELLENIC QUALITY ASSURANCE AGENCY

ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

FOR HIGHER EDUCATION

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT OF INFORMATION TECHNOLOGY

ALEXANDER TECHNOLOGICAL INSTITUTE OF THESSALONIKI

Version 3.0

December 2010

### External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Information technology of the ATEI of Thessaloniki consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. Professor Christos N. Schizas (President)  
Department of Computer Science, University of Cyprus
  
2. Professor Costas Iliopoulos (Member)  
Department of Computer Science, Kings College
  
3. Professor Pericles Loucopoulos (Member)  
Business School, Loughborough University
  
4. Dr Miltiadis Petridis (Member)  
Reader and Head of the Department of Computer Science,  
University of Greenwich
  
5. Dr George Agapiou (Member)  
Head of Wireless & Satellite Communications Labs, OTE

*The structure of the “Format” proposed for the External Evaluation Report is dictated by the requirements of Law 3374/2005 and corresponds generally to the structure of the Internal Evaluation Report submitted by the Department.*

*The length of text in each box is free. Moreover, the various questions may not be answered separately; they only provide a general idea about specific matters that should be addressed by the Committee when formulating its comments.*

## **Introduction**

The external evaluation committee (EEC) met from the 26<sup>th</sup> of April 2010 to the 1<sup>st</sup> of May 2010 to complete the external assessment of the Department of Information Technology, ATEI Thessalonikis. More specifically, after being briefed in Athens by HQAA in the morning of the 26<sup>th</sup>, the EEC members traveled to Thessaloniki and in the morning of the 27<sup>th</sup> they met at the Campus of ATEI. The EEC had a short meeting with the Vice President of Academic Affairs of the institution who is the chairman of the institutional evaluation committee (MO.ΔΙ.Π), in the presence of the head of the Department of Information Technology and the chairperson of the internal committee (OM.E.A) that prepared the assessment report.

It should be mentioned that even though in the programme of the visit a meeting with the Presidency of the institution was planned, The EEC had the opportunity to meet only with the Vice President who was the chair of the Institutional Evaluation Committee (MO.ΔΙ.Π.). The EEC was concerned that this might be due to a lack of interest and commitment by the top management of ATEI about the quality assessment process and/ or lack of support to the Department of Information Technology.

Subsequently, the EEC had an extensive meeting with the Head of the Department and the members of the internal committee (OM.E.A). A lengthy discussion followed with key departmental staff and committees. On the 28<sup>th</sup> the EEC had an extensive tour of the library, the departmental facilities, the teleconferencing lab, and other facilities of the institution. During the tour the EEC had the chance to talk with students, academic staff, technical and administrative staff. Two separate lengthy meetings were organized also on the 28<sup>th</sup>, one with the members of the academic staff and one with the students. The EEC had thus the opportunity to collect very useful information that was valuable in preparing this report and both staff and students were given the opportunity to express their views about the evaluation procedure and their view about their Institution. The EEC was impressed with the maturity of both staff and students and their sense of purpose and desire for improvement. In the afternoon of the 28<sup>th</sup> the EEC had an exit meeting with the participation of the Vice President for Academic Affairs of the institution, the head of the Department, and the internal committee (OM.E.A). The EEC departed for Athens in the evening of the 28<sup>th</sup> and met on the 29<sup>th</sup> of April and compiled the first draft of the report (where additional needed documents were identified, collected and evaluated). The final version of the report was written on the 30<sup>th</sup> of April and the 1<sup>st</sup> of May 2010.

The EEC wish to express their gratitude for the assistance and commitment of the visited department to the process and work of the EEC.

The EEC met with:

- The Vice President for Academic Affairs of ATEI Thessalonikis (Prof. Panayiotis Tzionas)
- The Head of the Department of Information Technology (Associate Professor

Panayiotis A. Adamidis)

- The Director of the School of Technological Applications (Professor Demetris N. Kleftouris)
- The persons responsible for the internal assessment report, OM.E.A (Professor Antonios Vafeiadis and Assoc. prof. Vassilios Kostoglou.
- The students' representative during in the first meeting
- Members of academic staff
- Lab assistants
- Technical support personnel
- Students (from different years of study)
- Administration personnel (Departmental secretaries)

The EEC was also given access to:

- The internal evaluation report prepared as dictated by H.Q.A.A.
- The internal evaluation and quality assessment report prepared in 2006 and funded by E.Π.E.A.E.K.
- The program of Undergraduate studies and the revised version
- Examples of exam papers
- Detail breakdown of course grades
- Examples of log books from students' practical training
- Examples of textbooks used
- Examples of student final year project theses (Diplomatikes)
- Examples of student feedback forms
- Course syllabus, reviews and specifications
- CVs of academics and publications list
- Examples of publications / Conference Proceedings
- Research proposals
- Minutes of Departmental meetings
- Internal correspondence
- Budget report of the whole Institution

The EEC visited the following facilities:

- The Departmental Facilities
- The library
- The video conferencing facilities for distance learning/teaching
- Teaching classes
- Labs, where the EEC had the chance to observe lab sessions
- The Computer Centre

## **A. Curriculum and Teaching**

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

### **A1. Curriculum**

#### APPROACH

The stated **goals and objectives** of the curriculum are to provide students with high quality studies, capabilities and opportunities in the information systems technology. The goal is that the programme of studies is completely compatible with international standards and the needs of industry and information society. The aims of the department show that this is to be achieved through the preparation of students with relevant knowledge and skills and the improvement of the student capabilities for analysis, synthesis, processing of information and data and independent critical thinking and action. Furthermore, the aim is that this should be combined with the integrated technical, human, social and ethical dimension of the education provision. The department states that this is to be achieved through the continuous improvement of the programme of studies, the preparation of students for the “real” conditions of work, the continuous updating of curriculum in line with the rapidly changing technological environment and advances and the familiarisation of students with research methods and processes.

The **objectives were decided** through continuous discussion in informal groups and divisional and departmental meetings. Internationally recognised benchmarks (IEEE, ACM) were used and there was involvement of academic staff and students in attempting to reach these objectives. However, there is little evidence of direct involvement of industrial and society stakeholders.

The curriculum is broadly in line with the stated aims and objectives of the department and the needs of society. Procedures for **the revision of the curriculum** are set out in the statute (Φ.Ε.Κ.), governing the operation of the department based on subject area informal group meetings that feed into division and department meetings. These include an effort for the horizontal and vertical integration of modules within the programme of studies and the highlighting of particular aspects and aims of the curriculum, such as employability and professional development. The revision of the curriculum has been informed by critical studies appraising the current curriculum and comparing it with other institutions. Although there is evidence of monitoring and revision of the curriculum between major revisions, it seems that the inflexible framework surrounding changes of the curriculum does not allow for more agility in the fine tuning of the curriculum.

#### IMPLEMENTATION

The current **curriculum has been defined** at the latest major review, in 2004. The structure is built using the ECTS standard system. The granularity of the structure is set to 6 academic credits each equated to 6 ECTS units. There is no evidence of the manner in which ECTS units were calculated.

The **structure** is compatible with internationally recognised standards and it is coherent and realistic. There is use of prerequisites and option modules to guide students through the programme of study and provide some flexibility. There is evidence of vertical integration between course modules but there is also some overlap. There is less evidence of horizontal

integration between courses and opportunities of setting subjects in the context of each other, exploiting synergies between course modules to make useful integrative learning points (such as between software design and implementation). Evidence, but not adequate of the horizontal integration between courses, is the course "Development and management of Applications". This course is designed to integrate most of the knowledge and expertise acquired over previous semesters. It is the only mandatory course of the 7th semester for all the students. According to the description of the course, "the students have the opportunity to apply in practice knowledge and techniques that they have been taught over the previous semesters in sections like Information Systems Analysis, Databases, Computer networks, User Interfaces etc. Also, the final year dissertation and work placement and employability modules provide a good opportunity for an integration of theoretical knowledge, tools, techniques and methodologies dependent on the subject chosen. This is also the main conduit for preparation and familiarisation of students for research apart from some specialised final year options. There are some limited areas of subject overlap between courses, but these can strengthen the student's appreciation of the subject area. There was evidence of coordination of course material between tutors teaching course modules within the same prerequisites "chain".

Overall, the curriculum provides a wide and quite detailed coverage of subjects in Computer Science, Computer Engineering and Information and Communications systems, with some limited only opportunity of specialisation and/or adaptation to the specific interests and aptitudes of the student. However, the curriculum contains a significant amount of practical work and the students are exposed to many "real" industry-specific problems. Also, the dissertation gives an additional opportunity to a student to specialise.

The specification of course modules has been done in a clear and concise way, with the Learning Outcomes (LO) for each module and indicative content clearly identified. However, LOs are not cross-referenced to items of assessment, nor is there a clear differentiation of LOs between different levels (years) of study.

There is no obvious or stated assessment strategy, especially in terms of which assessment strategy is appropriate to assess specific learning outcomes. There is a universal reliance on written examination for all course modules (except for the final year dissertation) and there are labs for most modules. Passing both exam and lab assessment components at the same time is obligatory to pass a module.

Student recruitment is not controlled by the department. However, there is no clear evidence that the design of the curriculum makes clear assumptions about the student knowledge, skills and ability on entry. Difficulties arise with the different backgrounds and levels of ability on Mathematics. The department stated that it is possible for students to follow remedial studies but, this has not been defined anywhere.

The permanent **staff ability** to implement and deliver the curriculum is evident, but there is a high degree of reliance on casual staff for the coordination of some of the modules which is a cause of concern. Teaching space and staff accommodation space is inadequate for the delivery of the curriculum to the given number of students.

## RESULTS

The **Curriculum implementation** broadly realizes the stated aims and objectives of the department. The aim of familiarizing students for research can only be limited as no postgraduate or doctoral study is possible and it is achieved partially through the final year dissertation and some specialist courses only.

The key issues and challenges identified in the design and operation of the curriculum can be summarized as:

- The broad coverage of areas in the curriculum covering many areas across Computer Science, Computer and Communications Engineering, Software Engineering and Information and Communications Systems provides a challenge to the department and limited flexibility for students who may want to specialize in particular area within computing.
- The lack of control over student entry is a challenge, especially as students may have different backgrounds on entry, especially in terms of mathematical ability. This may be addressed by additional targeted support.
- It is not totally clear how suitable the curriculum is for the needs of the Greek and local industry. Further involvement in the curriculum development process and feedback from industry and alumni can be beneficial.
- There is no separately expressed assessment strategy. There is reliance on written examination across all modules. However, the connection between Learning Outcomes and assessment is not clear. Establishing the appropriateness of Learning Outcomes for particular levels of study and a clear connection between LOs and Assessment is a key component of a quality control process.
- The teaching space (lecture and lab spaces) and staff accommodation space available to the department is inadequate to support the curriculum. The EEC however, observed that some classes and labs were not fully occupied and this is because there is generally a low attendance of students.
- The long mean completion time for students, low pass rates in courses and associated low attendance rates to Lectures is an issue of concern. It is not clear how the structure of the curriculum may influence this and what the department can do to improve success rates in courses.
- There is a limited degree of overlap between modules. There is limited horizontal integration of course module material between different modules (such as joined case studies, links between the teaching of design and programming etc), except for the final year dissertation and industrial experience modules. The credit accumulation model used makes integration difficult, but nevertheless, students could possibly be given more opportunities to integrate their knowledge and skills from different course modules.

The **department clearly understands** most of the issues mentioned above. However, most of the detailed design of course modules and materials is performed and controlled by individual academic staff. A more group based approach and quality assurance process may be needed to provide an optimized curriculum. The EEC observed a number of examples of impressive good practice in quality in teaching but a more holistic and integrated approach is likely to yield better results.

IMPROVEMENT (use of the self-evaluation conclusions)

The department attempts to improve the quality of curriculum through reviews of its internal academic staff. This effort however is inhibited by the dependence of the department on

other stakeholders' bureaucratic processes. The EEC supports this observation because the current curriculum review was agreed in 2004 and the latest is still pending approval for publication in the statute (Φ.Ε.Κ.). There is a need for strengthening the input to this process by other stakeholders, namely industry and alumni, in addition to the academic staff and students and of the Central Administration.

A key **initiative** for the department is the production of a postgraduate programme of study. It is expected that this would complement the existing provision and enrich the current undergraduate provision.

The department should consider consolidating the curriculum for the next review process investigating the possibility to provide more flexibility and opportunities for specialisation.

It is apparent that some legal/statute changes are called for in order to support the efforts of the department, especially in terms of postgraduate and doctoral studies. Improvements in teaching and staff accommodation and reduction of casual staff are key to further optimising the structure and efficiency of the curriculum.

## A2. Teaching

### APPROACH

The **teaching methods** used attempt to meet the department's goal of educating students with the theoretical knowledge and practical experience necessary for a career in the field of Information Technology (IT). To this end the department has adopted traditional methods such as lectures and laboratory work. Attendance at lectures is not compulsory whereas for laboratory work student attendance is obligatory. There is extensive use of laboratory work. There is a third emerging teaching provision through the use of web-based learning.

The **staff-student ratio** is not a constant ratio. There are no actual full-time equivalent (FTE) numbers given in the internal evaluation document. However, the department presents the following figures: 49 teaching modules with a theoretical 15086 enrolments for all modules. In practice something like 10%-15% are in attendance making the staff-student ratio approximately 1:40.

The department recognises the importance of good **teacher-student collaboration** and it seeks to get student feedback via questionnaires as well as informal meetings. One permanent member of staff has been given the role of academic advisor for all students of the department for any matter that is not curriculum specific. There is no formal staff-student committee. Students are encouraged to seek advice from members of staff and staff seem to make every effort to be available for advice. Whilst in the past students' representatives participated in formal departmental meetings, including the development of curricula, in practice this has fallen by the side in recent months. The department is trying to resolve problems so that student representatives will continue participating in the Departmental bodies. Until then the interested students can attend in the public parts of Departmental bodies. Students perceive that there are too many part-time staff with whom they have little or no contact outside formal teaching sessions.

The department uses standard **teaching resources** such as space for lectures, space for practical work, IT equipment, administrative staff, technical staff, and teaching materials. The department operates one lecture theatre with a capacity for 80 and 3 lecture rooms with capacity for just over 60. The lecture theatre is shared with the co-located department of Automation. There are 2 administrative staff and 4 technical support staff. Whilst IT staff are co-located with the rest of the department, secretarial staff are housed in a different building. The EEC were concerned about the efficiency of this arrangement. The department should have an administrative office to deal with not only with student matters but also with the plethora of administrative tasks relating to internal as well external stakeholders. The department distributes to the students 21 books 12 notes in the form of handouts and a combination of 10 books and notes.

The department uses **information technologies** for teaching, research and administration. Every laboratory and every office is equipped with workstations. Five laboratories house 24 workstations and one 26 workstations. All departmental workstations are supported by 10 file servers.

The **examination** system is the main means of assessing students. All modules are examined by written examination and many by an additional assessment of practical work. A

special case is that of the final project. The EEC did not see any departmental goals for assuring quality of examination.

## IMPLEMENTATION

The quality of **teaching material and resources** is varied. Services provided by the central library are deemed to be good. Teaching space in the department is used throughout the day even not always at full capacity. Space dedicated to lectures is used by the department continuously between 8.00 and 18.00. If the attendance of students were to improve even marginally then the department would be faced with an intolerable situation. The EEC wondered whether the low attendance could be partly attributed to the worry of students that they might not find sitting space should they attend. There are 6 laboratories dedicated to supporting the practical work. Laboratories are used continuously and to full capacity for 10 hours every day from 8.00 to 18.00. Not all students have a choice to enrol on a laboratory due to the limited space and number of machines. The department has a good scheme for laboratory refurbishment. There was no evidence that the department is considering a radical revision of its teaching methods. In fact the large number of students and the limited space available for any additional teaching or practical work are two disabling factors for any further development for teaching by the department. The number of workstations is the absolute minimum for proper laboratory use but they are used innovatively offering a very good support to students and staff. The EEC saw evidence of excellence in the management of IT facilities. The department has installed wireless routers throughout its space. There was evidence of a good use of the blackboard software system primarily though the development efforts and dedication of individual members of staff.

**Course material** was deemed to be of reasonably good quality but not consistent across the modules. Most modules were considered by students to meet their expectations. Students were especially complimentary of the practical element of many modules that gives them a deeper insight particularly of those modules related to hardware. Students perceived that notes, especially for those modules that do not have books associated with them, were inadequate, citing for example bad translation. Every student is given approx. 20€ per module for purchasing textbooks but, since some good books cost a lot more than that, provisions by the Department cover the purchase of more expensive books when needed. The central library has provision for a number of books in stock and gives very good access to electronic journals.

The **linking of research to teaching** does not seem to be formally established. An exception seems to be the use of final year dissertation as a vehicle for research and the EEC saw evidence of a few excellent dissertations. The department also provides a module on research methods. The lack of established framework for research activities within the entire Institution (and this particular education sector) coupled to the high demands on staff time make it extremely difficult for academics to systematically carry out research and transfer it to teaching. The EEC would like to commend the majority of academic staff on the level and volume of research work that they manage to achieve through their own individual interests and aspiration.

There is good **mobility of students and academic staff**. Since 2003 82 students from the department have visited overseas institutions whereas the department received 32 overseas students through the ERASMUS scheme. During the same time 35 academic staff visited other higher education institutions and 14 visited the department. Students on the

ERASMUS scheme expressed the desire for the department to be linked to institutes of higher esteem.

The **evaluation of teaching by students** is done with the use of questionnaires. The use of questionnaires as a formal and systematic process begun only in 2007-08 academic year. Prior to that, individual members of the academic staff distributed and collected questionnaires on an informal basis. There is no Institution-wide standard questionnaire and the department developed its own version using the HQAA template as its starting point. The percentage of returned questionnaires is not high and this raises questions about the reliability of statistical evidence. Questionnaires are used to inform individual academic staff about their particular module. This information is kept by the individual concerned and there is no mechanism for informing a wider community or to inform the programme of study.

## RESULTS

The **efficacy of teaching** is generally good. However, there is a large attendance rate, and long-lag for graduation which, although it is well understood that this is 'normal' practice within the entire sector, it must be of concern to the department and the TEI. The situation is exacerbated by regulations that at least implicitly encourage this phenomenon.

**Discrepancies in success and failure rates** between modules are not formally considered by the department. The department has not established systems or procedures for assessing the quality of examination results. Quality of examination questions, marking scheme, examination of scripts, transcription of marks and final module assessment are all left entirely up to the individual academic teaching that module. Any corrective actions can only be taken by the individual concerned if they choose to do so. The EEC saw evidence of lack of attention in examination papers, discrepancy in failure rates, variability in standards between papers, lack of problem solving and critical thinking.

The **average length of studies** is 6 years, according to the data provided by the department. Only 3.1% finish within 4 years. The **average degree grade** is 6.73. This does not compare well with other departments of the same subject field in other European institutions of higher education.

The department seems to be concerned about the **variability in the length of studies** but they attribute the root causes to exogenous reasons and specifically on existing legislation. The EEC believes that no society could sustain the drain in its under-utilisation of one of its most precious resources namely its young people and sustain the significant financial costs associated with such under-utilisation.

## IMPROVEMENTS

The department has identified a range of problem areas. It has singled out specifically 4 areas for **improvement** namely: (a) need for more space, (b) provision of postgraduate courses and PhDs, (c) more administrative support and (d) reduction of part-time staff. All of these corrective methods require resources. Some, such as the provision of PhDs is outside the control of either the department or the Central Administration of the TEI. Many however, could be considered within a strategic framework and a plan devised by the TEI. The EEC saw written evidence of requests in 2008 (in the form of letters) by the department

to the Central Administration for funding modest improvements in many of these areas. The EEC saw evidence of proposals for improvements including costings. The EEC with regret notes that no action has been taken so far regarding any of the requests involving some resource. A proposal was put forward for a Masters course and has the support of the TEI. The EEC noted the submission of a position paper to the summit of the Hellenic Association of TEI presidents for the transformation of TEI to Universities.

The department has considered a number of **initiatives** that could be taken in order to address some of the issues identified above. The EEC notes that such initiatives are of limited effect due to exogenous constraints but it commends the department of its efforts in utilising IT centric solutions to ease some of the load on staff. The EEC is convinced that after an analysis of the annual budget for the entire institute there could be the means for addressing some of these debilitating factors provided that there is a strategic vision by the department and the Central Administration. The EEC was informed that the Institute has secured the funds for additional buildings but there are legal and bureaucratic constraints. The EEC believes that every effort should be made to overcome these since otherwise there is very little scope for improvement of quality in teaching.

The EEC would like to suggest that the **department takes the following initiatives**.

First, the EEC wishes to encourage the department to investigate new ways for managing practical work in the labs in order to (a) encourage a greater number of students to take part in this work and (b) ease the pressure on the department for resources. It might be possible to introduce, at least partially, remote work practices for the lab thus releasing space, reduce dependence on departmental IT equipment, increase the capacity for more students doing practical work during an academic session and help those students who find it difficult to regularly travel the long distance to the campus from Thessaloniki.

Second, the EEC was concerned about the absence of any quality assurance procedures related to the examination process and would like to suggest that the department addresses this area as a matter of priority. The quality of every aspect of examination cannot be left simply on the good will of each individual academic staff. It is important that a unified process is established that ensures transparency, correctness, fairness and compatibility across all modules. The department should seriously consider how best it will ensure that errors do not appear in papers, that a paper is related to the learning outcomes, that the standard of questions is consistent across years and across subjects, that there is clear marking scheme and suggested answers, that papers with mathematical formulae are typed using appropriate software and that transcripts are marked anonymously.

## **B. Research**

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

### APPROACH

As noted in the EEC report for the Athens TEI, there is a basic contradiction between the legal and institutional framework for research in TEI on the one hand and the requirements for faculty advancement as well as their need and desire to remain active researchers on the other. The legal and institutional framework for research in TEI does not make research compulsory for teaching staff; it does not set research as a goal for the department; and, therefore, it does not provide the necessary preconditions for research including infrastructure, post-graduate and doctorate programs, financing and appropriate working terms for faculty. On the other hand, the law clearly and very reasonably requires research work from faculty for their advancement; even more importantly, a higher education teacher must remain active in research in any field and especially so in a fast-changing field such as Computer Science. In spite of the above contradiction, most of the academic staff of the department exhibit go to a great effort to conduct research.

The research direction of the Department is mainly defined by the research interests of permanent and casual members of the academic staff. The research is focused on a collection of four research labs that were recently planned. Lack of space and lack of computer system support were serious obstacles in planning and developing a research direction.

The main motivations for research were, firstly the development and promotion of individual members of staff and secondly their scientific recognition by the international research community.

The Department recently requested the approval of a new M.Sc. program on “Web Intelligence”. The M.Sc. is closely related with one of the research groups and as such it will act as a Ph.D. feeder to a future doctoral program, when approved.

There was no formal departmental strategy and support for research. Research infrastructure is practically non-existent. There is no dedicated lab for research, to store data, run experiments etc. The EEC believes that more research infrastructure is required, such as space, equipment (both software and hardware) and formal approval to supervise graduate students.

### IMPLEMENTATION

The Departmental research was initially organized into six research groups (labs) but this now has been reduced into four, that are as follows:

1. Computer Systems, Security and Networks (CSSN). The leader is Professor V. Vitsas. The research of this group focuses in Computer networks, Internet protocols, Quality of service, Mathematical modeling, Simulation of computer networks, Network security.
2. Information Management & Software Engineering (IMSE). The lab leader is Professor D. Dervos. The research of this group focuses on Metrics, Software engineering, Databases, Knowledge discovery from databases, Data mining and data warehouses.
3. Intelligent Systems and Web Applications (ISWA). The lab leader is Professor K. Diamantaras. The research of this group focuses on machine learning, Artificial

intelligence, Intelligent systems, Web accessibly Distance learning and Intelligent user interfaces

4. Information Systems Management (ISM). The lab leader is Assoc. Professor V. Kostoglou. The research of this group focuses on Applications of operation research techniques, Investigations of ISM components, Evaluation and quality control of ISM Mobile Social networking, Computer supported cooperative work, distributive virtual teams among a rather large list of research topics.

## RESULTS

The EEC believes that the research results are adequate, considering the departmental infrastructure, together with administration and teaching loads. The majority of publications are in reputable national and international conferences and journals. The departmental research income is modest.

### Research publications

Almost all (17 out of 19) faculty members are somewhat active in research and have published papers in national and international journals and conferences. The following table gives a summary of the department's publications, the full list can be found in the internal assessment report.

	<b>Books</b>	<b>Scientific Journals</b>	<b>Peer Reviewed Conferences</b>
<b>2003-2008</b>	8	82	229
<b>Average</b>	.5	4.8	13.5

The average number of journal publications is below 1 per person per year, which is rather weak. The average number of conference papers is below 3 per person per year, which is also weak. But given the circumstances under which these results were achieved they are deemed to be satisfactory.

### Research projects

The Department participated in several national programs. It includes several ARCHIMIDES projects that are exclusive for TEI but competitive. There was some modest activity with industrial partners.

There was a large component in Government funded projects which were of consulting nature rather than research. Furthermore, several members of the academic staff participated as scientific investigators in international projects (e.g. Da Vinci, EU e-learning). This is an area in which the Department underperformed and it needs to be addressed. Of course, as it has been mentioned elsewhere that poor research infrastructure is part of the reason.

### Research collaborations

There was substantial inter-disciplinary research within ATEI Thessaloniki mainly with the department of Automation and the department of Agricultural Management.

On the national level, there is evidence of research collaboration with TEI Serres, TEI

Athinas, Aristoteleio University of Thessaloniki, University of Macedonia as well as University of Athens.

There was some partial participation in international collaborations. The international component of the research is very weak and it needs to be strengthened substantially.

The EEC noted some evidence of participation in programme committess of international conferences.

#### IMPROVEMENT

The department needs supportive institutional framework and research funding. A well equipped lab devoted to research is urgently needed. All current labs are used for teaching and they are fully occupied by students daily, until late afternoon, and thus they cannot be used for research. Furthermore, research data cannot be held on these computers as students have access to the hard drives during the day. Additionally long experiments can not run as they will be interrupted by the student activity.

Academic staff administration load is too high and hinders research activities. The EEC would like to encourage the Department to find ways to reduce this load. Participation on the board of International Journals should be sought. Furthermore, the Department needs to increase participation in national and international research projects. The department should also try to increase its research funding income.

The introduction of a doctoral programme will strengthen research at ATEI. The research groups/labs will reach the critical mass that will enable them to organize conferences, workshops, compose research proposals etc. The current practice adopted by the department academic staff is that a graduate student being supervised by an ATEI academic is formally assigned to a University. This artificial dependency on external University staff should be removed. Thus giving full and deserving credit to ATEI academic staff.

Space is needed for these research associates who collaborate with academic staff. This will allow them to work and collaborate with the supervisors and other staff. Similarly, space is needed for visiting academic staff, as this will increase the research collaborations between visitors, permanent staff and graduate students.

The EEC would like to suggest a sharper strategic research plan on the basis of track record but also of potential so that each research lab achieves significant impact. The department should consider focusing its research on applied research addressing pressing industry problems thus exploiting their unique positioning and differentiation form other type higher education institutions.

The EEC noted that there are 58 casual staff of whom about 30 are used full-time. The EEC believes that this important resource is not utilized innovatively because these staff cost exactly the same as full-time staff to the institution but the institution receives only teaching benefits from this investment. If the institution prepares a strategic policy that will involve these casual staff in research and administration then the return in investment will be that much greater in both monetary and academic terms. This will have a significant impact on research and will contribute to the achievement of meeting the aspiration of the department and of the institute to become more research-centric.

### **C. All Other Services**

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

#### **APPROACH**

The office space of the department is over occupied and in many cases there are three teachers sharing a space of 15-20 m<sup>2</sup>. Requests for additional space have been turned down based on financial or legal arguments.

The departmental secretariat consisting of two persons provide services to students such as grade recording, public certifications provision, recording requests etc. Service to the teachers, other than some basic help such as recording the meetings, exam keeping, etc. is not readily available. The location of the secretariat is in a totally different place to the rest of the department and this causes a big gap in providing any substantial help to the teachers.

The service provided by the technical personnel is concerned with the proper functioning and the upgrading of the lab equipment and the installation of new software in the PCs. This provided service seems to be offered very well.

Career path and job placement is provided by a job placement office that is usually served by two persons and its operation is based on funds from the Information Society (ΚΤΠ). This service is showing signs of diminishing. There is no satisfactory connection to the companies and not enough information is provided to the students although this should be an important service for the students.

There does not appear to be any pastoral service either by the department or by the institute.

#### **IMPLEMENTATION**

In terms of satisfying reasonable faculty and student requests, administrative services are facing, in most cases, restraining legislation procedures and budget limitations. An organizational procedure with clear targets on how administration supports staff and students does not exist.. Things are rather moving slow and changes are not encouraged.

There are no written rules for the responsibilities of the secretarial staff. Therefore the secretaries are only providing basic services to students. The space of their office is small for offering this kind of service and keeping records and documents. It is understaffed and therefore cannot provide a real service for the whole Department.

Technical service is managed by the department itself. Labs are well equipped with PCs. However, there is no procedure or formal rules of how the service is offered and how requests from different Departments, if they exist, are satisfied. Wireless connection exists everywhere within the department's building. In general, the ICT services to the students and to the staff are well organized-provided and maintained.

Facilities for handicapped students are slowly been introduced and the department should be commented on this.

A mediator is responsible for practical training and stands between the Department and the students. The Department has a job placement committee (three faculty members) that is responsible for the organization of the eighth semester's practical training. Under its supervision runs the job placement office everyday from 9:00 to 16:00. It runs daily events

every semester in order for the companies to present themselves and the available positions for practical training in Information Technology. The students can directly communicate with the representatives from the companies. Even more the department runs a website with all the necessary information and an information system with all the currently available places for practical training.

The Institute runs a “career office” for providing information about the companies to the students, however due to the teachers overload from other responsibilities this service seems to be underperforming. Activities that promote this counseling service to the students are not apparently provided. The office is understaffed and its existence and continuation is dependent on funds from KTII. The office is expected to fully operate with the new National ESPA program, however currently its financial coverage depends on the budget of the Institute.

Services are offered also to the students by the library. Library facilities appear to be provided in a professional manner with high standards through a newly refurbished and well maintained area. The library has a good collection of books and subscribes to main National and International magazines and journals.

A new teleconference room of high standards exists that helps the teachers to hold audio-conferences and use blackboard teaching techniques.

There is a newly built gym for use by Institute staff and students, but any other cultural events do not appear to exist.

#### RESULTS

Central administrative services are not efficient in the manner they are provided. They do not consider any means of rewarding a Department that offers better academic services to the students. It seems to work in a rather equal fairness approach towards all the Departments therefore there is no motivation for improvements.

Improvement to the secretarial office, the limited space of the teachers and the establishment of the construction of new research labs is not certain that it can be achieved. Due to the limited budget, which seems to be fixed and assigned rigidly to given tasks, any improvement to the operation of the Department cannot be easily achieved.

Students, although they report their complaints about the quality of the services they obtain, they feel to be quite inferior to the University students in terms of job prospects.

#### IMPROVEMENTS

The department staff knows well the financial situation, the usually declined requests and have no plans or do not know how to improve the quality of education, although they are striving for it. They need to have specific targets and vision for the improvement of their department. They need to be focused on what differentiates the ATEI (more technically focused) from a University (more theoretically focused) and cultivate this also to the students.

The teaching staff is overloaded by both the teaching and administrative work, something that needs to be considered by the Ministry of Education and increase the number of the faculty especially if graduate studies are going to be offered.

The number of the secretarial staff needs to be increased especially if graduate studies are offered.

### ***D. Strategic planning, perspectives for improvement and potential inhibiting factors***

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

The EEC notes that the department has developed a strategy for academic development and quality improvement which is a result of a study which was funded by ΕΠΕΑΕΚ in 2006.

This study refers to four problem areas:

- The lack of space
- Inability to offer postgraduate/doctoral studies
- Unsatisfactory secretarial support
- Large number of casual academic staff

In addition to that the current self evaluation report gives emphasis to the improvement of the following:

- Search for new methods to improve learning
- Continuous improvement of the programme studies
- The existence of a strategy for establishing research

The plan of action is detailed in pages 68-72 of the internal evaluation report and it appears realistic and reasonable. It is divided into short-, medium- and long- term actions. In addition to this, certain actions have been identified by the department to be auctioned by the institute's central administration. At the state level, the department has identified actions to be taken for achieving their strategic plan.

The EEC observed however that since the internal evaluation and quality assessment report prepared in 2006 and funded by Ε.Π.Ε.Α.Ε.Κ. very limited actions have been taken in response to recommendations in these 4 years.

The legislation for TEI regarding research is definitely an inhibiting factor so far as this specific Department is concerned. Space, technological infrastructure, funding and graduate students are necessary and not provided for in the TEI legislation

The EEC noted that there is lack of cohesion between the department and central administration regarding strategic matters. For instance, there is little dialogue between the department and central administration regarding the allocation of financial resources. The result of this is that corrective actions or academic development cannot be realised.

The EEC feels that (a) some competitive (as opposed to equal) funding from the central administration should be made available for bidding by all departments and (b) some earmarked national funding from the state should be made available to departments of high standing. The present planning is unsatisfactory because of the lack of a well defined and shared vision.

## ***E. Conclusions:***

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

The EEC has an overall good impression of the state of the department. A good spirit among Faculty members has been identified: they work well together and they care for the development of their department. New faculty recruitments continue to enrich an already good level. The EEC feels that the Internal Evaluation Report has thoroughly touched most of the aspects that reflect the true situation of the Department and is the result of long cooperation among academic staff. The EEC also feels that the faculty members subscribe to their stated goals; although the implementation can be relatively slow mainly due to exogenous reasons.

Student satisfaction appears to be good (based on the opinions of presented students to the EEC and on the received questionnaires). There is evidence of good relationship of the students with their teachers. There is a large number of dropouts and students take an enormous amount of time for graduation.

The teaching methods used are predominantly traditional but there are elements of innovative electronically supported teaching. The use of internet has been used to enhance the student learning experience. The use of labs is significant for the enhancement of practical skills and has been appreciated by the students.

The research practice and interest at the department go beyond what could be expected at a TEI department. The EEC was happy to observe pockets of excellence.

Services in the department, particularly, are of high standard. Centrally provided technical services and administrative services are inadequate. Central services lack formal procedures and modern electronic service infrastructures.

Strategy of the department has limited implementation and the department's strategy is not shared and formally adopted by the central administration.

## **RECOMMENDATIONS**

### ***Space***

There is lack of adequate teaching and faculty member accommodation which are vital for the development of the department. Each faculty member should have a modest but private office (12-15 m<sup>2</sup>); a 50-75 m<sup>2</sup> research lab per active research group for work done by undergraduate students (thesis), graduate students (including PhD students), research associates working in projects and casual (external) faculty. The department should draw a new facilities plan with 10-15 year projection.

### ***Technical infrastructure***

Research: The proposed research labs need to be formally constructed and endowed with appropriate equipment for their operation. Requirements should be specified by the research groups and agreed and prioritized by the department

Teaching: The department should continue to support and enhance the electronic delivery of teaching materials. The necessary infrastructure in terms of servers, software and support staff needs to be fit for this purpose.

### ***Administrative infrastructure***

There is a need for additional administrative staff. The current size and location of the administration office is poor. It does not meet the current expectations and this will certainly be inadequate should the department implement its proposed strategy. E-services should be further promoted and enhanced (e.g. online registration

of students, grading and timetabling).

### ***Funding***

The EEC studied the institutional budget. They feel that the budget should be revised to better reflect and support the strategic priorities in the department and the institution. Substantial research funding is needed (both in terms of infrastructure and direct funding for research projects that could enhance the current research activities of the department).

Funding support for conference participation is a good initiative but should be strengthened. Travel funds should also be provided for international cooperation meetings.

### ***Teaching load***

The EEC believes that one of the key obstacles to further development of the department (in all terms: Research, administration and teaching quality) is primarily due to teaching overload. They should also offer teaching reduction as a reward for competitive research project gain.

### ***Learning and teaching quality control***

The EEC recommends that the department examines its procedures for ensuring the quality and consistency of exam papers, course specifications and course materials. Processes should involve peer moderation and support within subject groups. Course specifications should provide a contract showing (a) Learning Outcomes and objectives, (b) course content and structure (c) teaching and assessment methods and clearly show how these are related.

We summarize our key findings in the table below:

<b><i>Curriculum</i></b>	<b><i>Teaching</i></b>	<b><i>Research</i></b>	<b><i>Services</i></b>	<b><i>Strategy</i></b>
<p><i>Approach</i></p> <p><b>Very Good</b></p> <p>It has a good technical approach.</p>	<p><i>Approach</i></p> <p><b>Very Good</b></p> <p>Better facilities (conference and larger teaching rooms needed).</p>	<p><i>Approach</i></p> <p><b>Good</b> (when compared to institutions with similar missions)</p> <p>Evidence of good practice. In some cases excellent work is produced.</p>	<p><i>Approach</i></p> <p><b>Poor</b></p> <p>Needs better organization and more resources.</p>	<p><i>Approach</i></p> <p><b>Limited</b></p> <p>Some strategy under implementation.</p>
<p><i>Implementation</i></p> <p><b>Good</b></p> <p>There is a need for more space for faculty members.</p>	<p><i>Implementation</i></p> <p><b>Very Good</b></p> <p>It includes theory and laboratory work and in limited cases good use of e-learning</p>	<p><i>Implementation</i></p> <p><b>Very Good (in some cases)</b></p> <p>in spite of legislation and institutional difficulties</p>	<p><i>Implementation</i></p> <p><b>Poor</b></p> <p>Inadequate number of administration staff; There are limitations in e-infrastructure</p>	<p><i>Implementation</i></p> <p><b>Limited</b></p> <p>There is strategy on paper but limited evidence of action.</p>

<p><i>Results</i></p> <p>Not changed since 2004; <b>Good</b> laboratory practical work; <b>Limited</b> opportunities for industrial specialization</p>	<p><i>Results</i></p> <p>Student satisfaction <b>very good</b>, especially in laboratory work where it can be considered as <b>very good</b>; useful use of questionnaires, Attendances are low, pass rates are low.</p>	<p><i>Results</i></p> <p><b>Very good</b> (when compared to institutions with similar missions) – New research laboratories are proposed, good publications and some projects.</p>	<p><i>Results</i></p> <p><b>Poor</b> in general, except technical support in the department which can be rated as <b>very good</b>; <b>Excellent</b> Library support</p>	<p><i>Results</i></p> <p><b>Inadequate</b> implementation of the planned strategy and requests and <b>inadequate</b> support from central administration.</p>
<p><i>Improvement</i></p> <p><b>Need</b> to improve dropout rate; take measures to reduce allowed length of study</p>	<p><i>Improvement</i></p> <p><b>Reduce</b> teaching load; There is a need to <b>revise</b> quality control of exam and in many cases to <b>improve</b> consistency of quality of books and notes.</p>	<p><i>Improvement</i></p> <p>More focus needed. More resources needed. The research labs <b>need</b> to be constructed. There is need for space for research associates</p>	<p><i>Improvement</i></p> <p>Service improvement is <b>needed</b> through professional assistance. Collocation of administrative support and <b>improvement</b> of Central support for the academic information system.</p>	<p><i>Improvement</i></p> <p><b>Better</b> coordination of institutional and departmental strategy. <b>Need</b> institutional and legislative changes.</p>

The Members of the Committee

Name and Surname	Signature
1. Professor Christos N. Schizas	
2. Professor Costas Iliopoulos	
3. Professor Pericles Loucopoulos	
4. Dr Miltiadis Petridis	
5. Dr George Agapiou	