



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
**Α.ΔΙ.Π.**  
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ & ΠΙΣΤΟΠΟΙΗΣΗΣ  
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ ΕΚΠΑΙΔΕΥΣΗ

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

## EXTERNAL EVALUATION REPORT

DEPARTMENT OF INDUSTRIAL MANAGEMENT AND TECHNOLOGY

UNIVERSITY OF PIRAEUS



European Union  
European Social Fund



OPERATIONAL PROGRAMME  
EDUCATION AND LIFELONG LEARNING  
*investing in knowledge society*  
MINISTRY OF EDUCATION, LIFELONG LEARNING AND RELIGIOUS AFFAIRS  
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### **External Evaluation Committee**

The Committee responsible for the External Evaluation of the Department of Industrial Management and Technology of the University of Piraeus consisted of the following five (4) expert evaluators drawn from the Registry constituted by the HQA in accordance with Law 3374/2005 :

1. **Prof. Emeritus Spyros Economides**, Department of Management California State University, East Bay, U.S.A. (Coordinator)
  
2. **Prof. Nicolas Apostolopoulos**, Head of Center for Digital Systems (CeDiS), Freie Universität Berlin, Germany.
  
3. **Prof. Eleni Hadjiconstantinou**, Professor in Management Science, Imperial College Business School, London, U.K.
  
4. **Prof. Emeritus George Yadigaroglu**, Eidgenössische Technische Hochschule Zürich (ETH Zürich), Switzerland.

## ***Introduction***

### **I. The External Evaluation Procedure**

- **Dates and brief account of the site visit.**
- **Whom did the Committee meet?**
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- **Groups of teaching and administrative staff and students interviewed**
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The External Evaluation Committee (EEC, the *Committee*) received the Department's Internal Evaluation report (IER) dated May 2012 before the visit to the Department of Industrial Management and Technology (DIMT, the *Department*) of the University of Piraeus (UniPi, the *University*). After the usual briefing session at the HQA offices, the Committee visited the Department Monday and Tuesday 25-26/6/2012. Upon arrival in Piraeus, later Monday morning, the Committee members were met by the President of DIMT, Prof. L. Kamarinopoulos and its secretary Ms. A.M. Triposkoufi and immediately started discussions with the OMEA (Internal Evaluation Committee, Ομάδα Εσωτερικής Αξιολόγησης) members, Profs. L. Kamarinopoulos (president), D. Daralekas, T. Tambouratzi, and Mr. I. Hroussos, student representative, as well as Faculty members supporting the group, Prof. A. Flamos and Dr. C. Siontorou, Lecturer.

Professor Kamarinopoulos gave first an excellent summary overview presentation of the Department, followed by a presentation by Dr. Siontorou on the Undergraduate Programme (UP) of studies.

Monday afternoon, after lunch, the Committee met first briefly with the UniPi Vice-Rector for Academic Affairs and Personnel, Prof. G. Vassilacopoulos, who focussed mainly on the issues that the Administration faces. Following this meeting, the Committee met again with the OMEA group and heard the remaining presentations on the Postgraduate Program (PG) (Μεταπτυχιακό) and the research activities of the Department. The OMEA presentations were very good, brief and informative and summarized clearly and concisely the findings of the Internal Evaluation. The Committee and the members of the OMEA had long and constructive exchanges well into the evening. The day ended with a brief executive meeting of the Committee and planning for the next day, in cooperation with the Department Chair.

Tuesday morning, the Committee had separate meetings with additional Faculty members (Assistant Professors/Lecturers and Associate/Full professors), the academic support members (ΕΤΕΠ, ΕΕΔΙΠ, ΙΔΑΧ), the representatives of the students and of the administrative staff, a meeting that took place at the Secretariat of the Department and included the Head of the Secretariat. The committee also had a working lunch on site.

A visit to a class having a semester-end examination was organized in which the Committee had the opportunity to speak with a large number of students after the examination. Finally the Committee made a visit to the three laboratories of:

- Advanced Manufacturing Technologies & Testing
- Simulation of Industrial Processes
- Production Management Information Systems

where additional brief presentations and discussions took place with the Faculty and support staff located there, and also heard a presentation about the SAP software system that is extensively used in the PG program. A brief visit to the UniPi library followed. Late in the afternoon, after an informal debriefing meeting, the Committee left the UniPi.

The discussions that took place with all groups were very open, transparent, candid, very useful and conducted in an atmosphere of mutual trust.

On Wednesday, 27/6/2012, the Committee met at the Divani Acropolis hotel and started

drafting its report.

The Committee feels that its evaluation visit took place in a highly professional, as well as very cordial and collegial atmosphere. The Committee members are unanimous in wishing to express in writing their gratitude and appreciation to all the Faculty and Staff of the Department for their excellent hospitality and help with all aspect of the evaluation visit and to HQA for the logistical support.

## **II. The Internal Evaluation Procedure**

- **Appropriateness of sources and documentation used**
- **Quality and completeness of evidence reviewed and provided**
- **To what extent have the objectives of the internal evaluation process been met by the Department?**

The production of the internal evaluation report by the Department followed the required procedure. The IER was of high quality, complete, informative and contained the material necessary for the external evaluation. The oral presentations of the IER made by the members of the OMEA were concise and to the point in reminding the Committee the important aspects that may have needed additional discussion. The presentations also served as the starting point for the exchanges that followed. The Committee in particular appreciated the presentation of key information in useful graphical form.

The Committee concludes that the Department has met the objectives of the internal evaluation process.

**Recommendation:** The Committee strongly agrees with the opinion of the Department expressed in the IER that the Internal Evaluation process should start earlier to allow the formation of a complete image of the unit and that this procedure should be an essential part in the formation of an internal departmental strategy. In this light, it should become a “living process” and conducted on a continuous basis as a tool for monitoring the development of the Department. However, more human and material resources are needed for this purpose, in particular for collecting and organizing the data, updating the information of the departmental web site, as well as technical improvements in the automation of tasks such as student registrations, etc, some of these at the University level.

### **A.1 Curriculum – Undergraduate Program.**

#### **APPROACH**

- **What are the goals and objectives of the Curriculum? What is the plan for achieving them?**
- **How were the objectives decided? Which factors were taken into account? Were they set against appropriate standards? Did the unit consult other stakeholders?**
- **Has the unit set a procedure for the revision of the curriculum?**

The comments below should be considered within the general environment of the Greek educational system that imposes its characteristics on all institutions.

The mission statement that was developed in accordance with the governmental decree (*ΦΕΚ 166/16.6.1989*) founding the department states that **“its purpose is the education, training and development of professionals in the discipline of Production Management with emphasis on the applications of new technologies to the production systems. More specifically, the curriculum is designed to educate and train the students in the effective management of the complex problems that are related to the interdependence of human factors, materials, production systems and supporting technology for planning and managing Production processes”**. As such, the program offered by the department is a combination of management courses and technological courses to develop scientifically oriented professionals capable and knowledgeable to manage typical production and service

enterprises in the Greek business and industrial markets. In that sense the department is unique in the region of Attica and it was the first of its kind nationally. It has a number of common attributes with other similar institutions internationally.

It is a semester program that consists of classroom instruction, laboratory sessions and exercises, mini research projects and field trips to industrial sites. In terms of course content and instructional methodology, the department curriculum conforms to a large degree to similar programs offered in higher institutions of learning abroad. An important instructional component that the EEC considers as a good practice is the offering of tutorial sessions, in particular catch up sessions for entering students.

The course content of the program is thoroughly described in various departmental publications. The total curriculum that was last revised in 2010 consists of 94 courses, all of equal weight and value, 52 of which are core requirements, 26 electives and 16 for foreign languages.

In structuring the program, although input was solicited from prospective employers and alumni and student opinions were heard, faculty members provided most of the consultation, a majority of who was educated in relevant fields at universities abroad. As such, the objectives of the curriculum are consistent with both of the pedagogical academic standards and the practical knowledge essential for managing various aspects of production environments.

The curriculum was revised significantly three times while small revisions take place continuously, not as much in terms of its structure but in terms of course content, a good practice in order to serve the needs of the market place. As is the practice in Greek public universities, the General Assembly of the Department, the membership of which includes students, approves the modifications to the curriculum.

#### IMPLEMENTATION

- **How effectively is the Department's goal implemented by the curriculum?**
- **How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?**
- **Is the structure of the curriculum rational and clearly articulated?**
- **Is the curriculum coherent and functional?**
- **Is the material for each course appropriate and the time offered sufficient?**
- **Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?**

Based on evidence provided by the IER and also obtained at the meetings with the Faculty and the student body, the general opinion was that the curriculum serves well the goals of the mission statement. Even though the EEC members thought that the course load on a semester basis is relatively heavy, a large number of students commented that they feel comfortable with the amount of time they devote to study for the courses outside the classroom. Seen as a sum of topics and of acquired skills, the undergraduate curriculum can be considered as satisfactory in training engineers, with good adherence to the mission statement and the corresponding societal skills.

Compared with other similar university curricula in Greece, the department appears to have a better balance between technical / engineering oriented courses and economic-financial / management courses (30 core courses in each category). For example, the University of the Aegean at Chios is oriented more toward the economic-financial track, while the Technical University of Crete seems to be oriented more toward technical / engineering type courses.

It was noted by the EEC that the Greek educational legislation does not set a limit on the

timeframe in which a student must finish his/her study program or on the number of times the student is allowed to take a final examination to pass a course. It was also noted that the passing of a course, the body of knowledge of which is a prerequisite of a follow up course, is not enforced and as such, there are no designated prerequisite courses.

In a previous section it was noted that periodic reviews of the curriculum are conducted, as required or as initiated for a specific reason and subsequently approved by the department Assembly. There is no permanent, formally constituted departmental committee to manage the curriculum changes from their initiation to their approval or rejection.

Faculty has indicated that their working load is quite heavy and the EEC has concurred. However, both faculty and students feel that this is not necessarily inhibiting the achievement of the departmental goals relative to the mission, thereby rendering the human resources adequate to serve the curriculum. More over it is the EEC's opinion that the professional backgrounds of the faculty personnel are quite adequate to serve the pedagogical demands imposed by the curriculum courses.

#### RESULTS

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

The program is well established, has a good reputation and is ranked at a relatively high position in comparison with competing institutions in Greece as reflected in the choices made by the students during the Panhellenic entrance examinations.

#### IMPROVEMENT

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

The department feels that there is a process of continuous curriculum improvement in place. The EEC feels that the process has room for improvement through the establishment of a more rigorous and formal administrative framework.

EEC recognizes the existence of the very strict legislative guidelines that the department has to adhere to regarding the number of courses and/or hours that the undergraduate curriculum must consist of. Nevertheless, the EEC makes the following recommendations in its belief that they are good improvements and enhancements to the curriculum, regardless of the legislative mandate restrictions, in the hope that innovative ways may be found to incorporate them in the curriculum:

##### Recommendation A.1.1

The establishment of a three-faculty member and one student standing Undergraduate Curriculum Committee, the members of which are nominated by the body of the faculty, accompanied by a document of Committee rules and regulations. This will formalize and facilitate the curriculum revision process and provide an incentive for faculty members to submit changes to upgrade the coverage of courses and propose, introduce or substitute courses.

##### Recommendation A.1.2

The EEC believes that the number of courses in the curriculum, 7 courses per semester, is large compared with other institutions of higher learning abroad and should be reduced. Encourage the students to chose the project work or the external training. This requires further improvement of the links between faculty and the industrial community.

##### Recommendation A.1.3

The department is encouraged to pursue a more aggressive public relations campaign with the local businesses and industry to establish training internships. The students should then



be encouraged to choose the project work as an alternative to coursework and combine the internship duties with the project subject matter, with benefits for both parties including potential job market opportunities for the students.

Recommendation A.1.4

Given the current economic and social environment in Greece, the EEC recommends the incorporation in the curriculum of a course in corporate social responsibility.

Recommendation A.1.5

The EEC recommends that, subject to the degree of flexibility that is possible within the legislative mandate, the department articulates and designates a number of appropriate prerequisite courses and strictly enforces this requirement before a student is allowed to register for the relevant subsequent course.

Recommendation A.1.6

Require from all students to take a language qualification test and waive the requirement for the student to enroll in a corresponding language class, if the student passes the test.

The EEC considers the following recommendation to be of strategic nature as it refers to suggestions regarding program structure overhaul rather than content changes besides the ones driven by new knowledge in the relevant field and discipline sectors. Keeping in mind (a) the departmental mission statement which aims to develop Production Managers knowledgeable in the analysis, design, implementation and management of production systems involving human resources, materials and technologies, (b) the suggestions by some students for a need of more specialization, that some members of the EEC share and (c) the flexibility provided within the elective course body of knowledge, without sacrificing the balance between the scientific management courses and technology courses that are included in the curriculum.

Recommendation A.1.7

(a) The elective courses be taken starting in the third instead of the fourth year.

(b) The elective courses are reorganized into specialization categories (Options of Concentration) in which some of the core courses are included as “mandatory electives” in a given Option. A “mandatory elective” may be included in more than one Option but may be excluded from another. Example: If one assumes that one of the designed Options is Logistics (a postgraduate concentration of which exists), then in the 5<sup>th</sup> semester, the student may substitute Economics of Transportation, (a “mandatory elective”) in lieu of Ergonomics (a core course) and never take Ergonomics. Similarly, the student may be required to take one of the core courses as a “mandatory elective” relevant to the option in lieu of being allowed to choose freely from the pool of elective courses. The intent here would be to require from everyone in the first two years to take core courses considered fundamental for the Production Manager and design an Option Package for special professional interests for the next two years that is a combination of relevant existing core courses and elective courses, some of which would be “mandatory” for each option. Additionally, students could be encouraged to propose a degree project relevant to their option only in lieu of a free elective.

## **A.2 Curriculum – Postgraduate Programs**

### **APPROACH**

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

The department is currently offering a Postgraduate Program with the following two distinct

areas of specialization (Options); (1) Logistics and (2) Energy Management and Environmental Protection. A third Postgraduate Option in Project Management is in the final planning stages. All programs are designed to reflect the professional training and expertise of the existing faculty.

#### 1. LOGISTICS

The program has been in existence since 1998. It has been receiving 200 to 300 applications per year out of which about 30-40 are accepted. The program is self-supported through student tuition fees. It is in the process of an upgrade modification regarding both course offerings and content. The EEC, based on biographical sketches of the faculty involved, feels that the instructional personnel that is supplemented by adjunct professors who are respected practitioners in the Greek industry and research centers, has the credentials, the knowledge and experience to make the program a credible one. The department has also instituted selection criteria that ensure a quality student population coming from the industry and other institutions of higher learning, including foreign institutions. The EEC also feels that the knowledge basis delivered to the students is close to the market and addresses the skills sought by prospective employers.

#### 2. ENERGY MANAGEMENT AND ENVIRONMENTAL PROTECTION

In the current economic environment in Greece, alternative, renewable sources of energy, especially solar energy, have drawn the attention not only of the Greek state but also of many other countries of the European Community as promising sources of energy sufficiency and revenue. With tourism being another important pillar of the Greek economy, environmental protection is also a discipline that is of great importance.

The department of Industrial Management and Technology of the University of Piraeus and the department of Chemical Engineering of the National Technical University of Greece offer the program jointly. It is administered by the University of Piraeus and the two institutions share resources and facilities. Other than their own faculty personnel, faculty with related expertise from other Greek institutions of higher learning and research organizations also are involved in the program that is also supported by student tuition fees. EEC observed that teaching faculty credentials and expertise are very appropriate and highly regarded to provide quality and credibility to the program, the goals of which are compatible with other similar programs in Greece and abroad. The department is committed to reinforce the energy area in response to recent needs. Unfortunately, practical difficulties, such as very long delays in the selection and appointment of new faculty due to budgetary considerations have hampered this initiative.

For engineering graduates who already have a quantitative background, the program offers an ideal complementary body of knowledge to their professional background to enable them to undertake managerial positions in the industry, since the postgraduate curriculum of the department of Industrial Management and Technology of the University of Piraeus is designed to offer the required knowledge and managerial skills.

#### IMPLEMENTATION

- **How effectively is the Department's goal implemented by the curriculum?**
- **How does the curriculum compare with appropriate, universally accepted standards for the specific area of study?**
- **Is the structure of the curriculum rational and clearly articulated?**
- **Is the curriculum coherent and functional?**
- **Is the material for each course appropriate and the time offered sufficient?**
- **Does the Department have the necessary resources and appropriately qualified and trained staff to implement the curriculum?**

#### 1. LOGISTICS

The program is recently averaging 30-40 active students. It has 15 courses out of which 7-10 are required and the remaining are electives, all of which consist of 3-hour sessions that are a combination of lecturing and problem solving. In addition, the students are required to do laboratory work and write a thesis as a graduation requirement. The EEC has looked at samples of student thesis work and has found them to be of high quality and practical applicability.

In addition to the support received by the laboratory of Computer Based Production Systems Applications, the program has its own Enterprise Resource Planning (ERP) system laboratory, a system that has been donated and partially subsidized by SAP. This laboratory is doing an exceptional job in educating and training the students on all aspects of implementing and utilizing SAP, the most popular ERP system of corporate environments worldwide. Numerous projects, real applications and even theses have been developed using the facility and capabilities of the SAP system. Most importantly, this endeavor has established this department as the leading provider of SAP certified personnel not only to the Greek enterprises but also to numerous ones in Europe. This is an important recognition and accomplishment for this program and the faculty in charge.

## 2. ENERGY MANAGEMENT AND ENVIRONMENTAL PROTECTION

The program is recently averaging 30-40 active students. It has 23 courses out of which 11 are required and the remaining are electives, all of which consist of 3-hour sessions that are a combination of lecturing and problem solving. In addition, the students are required to do laboratory work and write a thesis as a graduation requirement. The EEC has looked at samples of student thesis work and has found them to be of high quality and practical applicability.

In addition to the support received by the laboratory of Computer Based Production Systems Applications, the program is supported by the following two laboratory facilities:

- a. Contemporary Production Technologies Laboratory
- b. Simulation of Industrial Processes Laboratory

## RESULTS

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

### 1. LOGISTICS

There is no formal statistical procedure to gather response data from the various beneficiary groups of the program. Implicitly, however, the relatively high number of applications and the competitive selection process for a small group of candidates combined with the willingness of the students to pay tuition fees while other similar institutions offer a free program indicates that the program is highly successful. Partners such as the Armed Forces have high regard for the program and send students regularly subsidizing their fees.

### 2. ENERGY MANAGEMENT AND ENVIRONMENTAL PROTECTION

There is no formal statistical procedure to gather response data from the various beneficiary groups of the program. It is the program of choice, however, for qualified engineering graduates from relevant departments the National Technical University, such as Chemical, Electrical and Mechanical engineering, who wish to be further educated and perhaps

professionally employed in managerial positions. They are also paying tuition fees to attend the program and add a unique dimension to the department's employment market visibility.

For both programs, the limited feedback that the department receives from the market is highly positive, thereby attesting to the quality and adequacy of student preparation. It is especially worth noting that the department is considered to be a unique provider of highly trained professionals in the implementation and use of the SAP system, given that the training and certification of such specialists in the open market is extremely costly.

#### IMPROVEMENT

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

##### Recommendation A.2.1

For both programs, just as is the case for the undergraduate program, the EEC recommends the establishment of a formal procedure for continuously reviewing and improving the curriculum to meet changing industrial needs. Perhaps a three-faculty member and one student standing Graduate Curriculum Committee, the members of which are nominated by the body of the faculty, accompanied by a document of Committee rules and regulations. This will formalize and facilitate the curriculum revision process and provide an incentive for faculty members to submit changes to upgrade the coverage of courses and propose, introduce or substitute courses.

##### Recommendation A.2.2

The EEC recommends that the department retain a database with information of graduates of the program, accompanied by a procedure for regular updates for the purpose of gathering statistics that can be used for market assessment on the performance and career progress of the graduates. It is recommended that that is done in consultation with the alumni Association in existence which must be strengthened and enhance its channels of communication with the department administration.

##### Recommendation A.2.3

The EEC recommends that the department expands its outreach to the industrial and business community and institutes annual meetings, seminars and other types of professional and social events in order to expand its visibility and expose the postgraduate student population and alumni to the employment market as well as gathering information on the progress of alumni that are employed.

##### Recommendation A.2.4

The EEC recommends that, to the extent that resources are available, the current practice of subsidizing postgraduate student research work for participation and presentation to international professional conferences should be expanded and encouraged.

#### **A.3 Curriculum-Doctorate Program**

Based on information provided in the IER of the department, a small number of doctoral candidates are active in the doctoral program. The department has a prospective doctorate student selection process in place with typical requirements to ensure the admission of quality candidates. Potential candidate sources include primarily its own postgraduate students. A small number of candidates come from external sources and other institutions. These individuals identify matching research interests with those faculty members of the department who publicly announce open doctoral positions on specific topics of their professional research interests.

Faculty members who are seeking interested doctoral students make it clear that the expected research output should be of high quality and should make an original contribution to the relevant field of knowledge. Unlike some other doctoral programs domestically and abroad, this one does not require any coursework, a point that the EEC does not consider crucial, provided that the quality of the research work that has an open ended horizon with an average 3 year completion, meets internationally accepted standards.

**Recommendation A.3.1**

The EEC recommends that it is made clear to the prospective candidates in advance that the quality expected for a doctoral dissertation should be such that it results in at least one joint publication by the student and the supervising professor in a respected, refereed journal of international calibre.

The EEC recommends that a formalized procedure and a schedule is developed whereby the doctoral candidate, at predetermined intervals, gives a seminar on the research progress which all other doctoral candidates must attend. This will give an incentive to the speaking candidate to make progress on his research and be given feedback, suggestions and ideas from other colleagues and faculty.

**Recommendation A.3.2**

The EEC recommends that a number of examiners external to the department are systematically included in the doctoral thesis committees.

**B.1 Teaching – Undergraduate Program**

APPROACH:

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

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

The comments below should be considered within the general characteristics of the Greek educational system that imposes its characteristics on all institutions. It is important to note that general regulations such as the practically unlimited duration of studies are an important factor that influences the actual learning habits of the students as well as their determination to finish the studies.

The teaching methods that are being used by the Department follow in general the classical teaching approach of Greek Universities. The overall pedagogical model of the Department is based mainly on the instructional model with traditional lectures to be the main source of the education. In addition to the typical lectures that build the core of the curriculum and deal mainly with applied theory some practical work is carried out within the labs that focus mainly on the application of the theory to exercises as well as to the solution of simplified real problems. A variety of teaching and learning methods is used, including non-compulsory-attendance lectures, a few compulsory-attendance laboratory sessions, coursework, exercise sessions and an alternative short project that counts as two elective courses. The Committee recommends further promotion of this project approach as well as the consideration of new models of teaching and learning based on the learner centric model and the strong participation of the student groups. This will affect significantly the revision of the Curriculum.

The main problem of the department is the ratio of the teaching personnel to the student body. The introductory courses in the first year begin with an amount of students that is around 100 (which decreases significantly during the term for various reasons that will be addressed below). This number poses many restrictions on the way courses can be organized as there are more or less none teaching assistants so that the typical face to face instruction dominates the scene. Consequently the option of interrogation with students and the use of interaction within the face-to-face instruction are limited. Also due to capacity reasons the personal assistance of the Teaching staff to individual students is limited. However strong evidence has been given to the Committee by teachers AND by students that most of the teaching staff is really accessible during the weak for consultancy purposes. This is much

appreciated by the students and the impression has been given to the Committee that the collaboration between teachers and students is excellent.

The Department has an elected Student Advisor (Σύμβουλος Σπουδών) for all undergraduate students, a good practice that should be reinforced. The committee did not interview directly the Student Advisor.

It is important to note that the Department has around 870 matriculated students but only 55% of them are considered to be active. Therefore for Greek standards and given the regular length of study the ratio of teaching staff to students is considered reasonable. The employment of tutors for supporting the main courses of the first two years of study in order to improve the exercise part of the courses and the collaboration between students and teaching staff could be helpful and should be considered.

Most of the Faculty post their teaching materials (e.g., lecture notes, lecture slides, problem sheets, assignments, etc.) on the internet site of the Department of the UniPi. However it should be noted that not all the material is stored on one central server facility of the University. Moreover different Web server systems are currently in use within the Department. In general the use of educational technology in teaching and learning does not seem to be sufficiently coordinated and some basic infrastructure facilities for digital teaching and learning services (Learning Management System, Collaborative tools, Audio/Video Services for recording and distributing Courses Online) should be initiated or extended. The usage of e-portfolio methods could prove valuable for students as they have indicated the need for additional support in the field of carrier services.

The Department is making extensive use of the W-LAN infrastructure of the University. Unfortunately the WiFi installed and maintained by the central IT services of the University does not offer Internet access in all rooms of the Department thus causing some restrictions for teachers and students. The system is continuously expanded and it is expected that a full coverage will be available soon.

The examination system is commonplace, based either on a single final exam, or a combination of a final exam and coursework. There is no provision of technology based examinations using multiple choice methods; also there are no self assessment offerings during the term that could help students to perform some type of self-evaluation.

#### IMPLEMENTATION

- **Quality of teaching procedures**
- **Quality and adequacy of teaching materials and resources.**
- **Quality of course material. Is it brought up to date?**
- **Linking of research with teaching**
- **Mobility of academic staff and students**
- **Evaluation by the students of (a) the teaching and (b) the course content and study material/resources**

The Committee has studied carefully the efforts of the teaching staff and the methodology used by the teachers to achieve high quality of teaching. During the evaluation process and the discussions of the Committee with the teaching personnel and (random) samples from students evidence was given that the procedures used to keep the quality of teaching high meet the expected high standards. Above that special attention has been given to the problem of reaching a homogenous level between the students that are entering the Department as some students are coming from diverse backgrounds and may not have the adequate background for specific lectures. In such cases introductory tutorial classes are offered by the Department, something that the Committee considers as a very good practice. The efforts of the Chairman of the Department to monitor and enhance the quality of education deserve special mention. The students have expressed their positive opinion about the overall teaching quality with a grade of over 80%.

The quality of the teaching personnel is reflected by the overall teaching achievements. It can

be asserted that the teaching efforts of the staff absorb more time than planned and scheduled. This means that the teaching staff is investing a significant amount of time in order to fulfil the teaching obligations. The Committee has observed that there are too many topics for each teacher to offer and this might be the reason for some shortage in teaching personnel. However efforts are made to keep the quality of the teaching materials high.

In terms of teaching resources it should be noted that the Department maintains 4 Laboratories (Laboratory of Advanced Manufacturing Technologies & Testing, Laboratory of Simulation of Industrial Processes, Laboratory of Production Management Information Systems, SAP-Laboratory) that are used to carry out the experimental work and the exercises that are part of the curriculum. The 4 laboratories work independently from each other. The Laboratory of Advanced Manufacturing Technologies & Testing and the Laboratory of Simulation of Industrial Processes need to be modernized in order to be up to date, but the current budget is not sufficient for this update thus making their use not really adequate. The Laboratory of Production Management Information Systems is offering an adequate portfolio of software systems for the purpose designed. The SAP Lab is well equipped and fulfills the expectations but is mainly used by the graduate students.

The material that has been found on the Internet platform of the Department is adequately updated and reflects the current status of the curriculum. However there is more theoretical material that is being used during the lectures, it should be enhanced by additional practical material. Here the Labs could play an active role.

Efforts are made to involve students in faculty research projects, however this does generally not hold for undergraduate students.

It is known to the Department Chair and to the Staff of the Department that there is only a limited participation of students in ERASMUS and other exchange programs. Also the visiting of industrial units in Greece is highly dependent on the personal efforts of particular members of the staff. The SAP Lab can be mentioned as a good example of bringing together theory and praxis. Students and personnel have expressed their interest to improve this. The Committee would recommend to integrate such mobility programs into the curriculum and to set targets in form of percentages of students per academic year.

There is a centrally administered systematic evaluation system based on the HQA questionnaire. The Department chair and the individual Faculty members get the results of such evaluations. The ECC recommends that these results be also systematically discussed in class with the students and if possible, even posted on the Departmental web site in an appropriate form. Some students have expressed to the Committee their wish to incorporate into the traditional lectures more links to practical work.

#### RESULTS

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

The average failure-rate of the students per course appears rather low. The distribution of grades can be considered as an indicator for successful teaching. There are, however, students who show up in examinations mostly unprepared trying their chances. The Committee recommends to limit the number of times an examination can be repeated in order to enforce more consequent study behaviour.

There were no discrepancies noted in the success/failure percentage between courses and how they are justified.

The Department and the Chair are well aware about the efficiency and the quality of teaching and learning they offer. There exist an open communication channel between students and teachers that helps monitoring and understanding the teaching process.

#### IMPROVEMENT

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

As in all Greek institutions of higher education there is non-attendance from classes where presence is according to regulations not compulsory. The Committee recommends that the Department addresses this issue and explores ways of improving it, such as intermediate testing, mid-term examinations, etc. Also extensive group work should be considered. Such an improvement needs however the implementation of new methods in teaching and learning, that have to consider the examination process as well. Problem based teaching and learning could help.

At this point there are no strategic decisions from the Department to review completely the teaching process. The Department pays great attention to integrate technology into teaching. The potential of using more advanced features of e-learning are considered.

#### ***B.2 Teaching – Postgraduate Program***

##### APPROACH:

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

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

The Curriculum for the postgraduate Program is designed as a three-semester program for part-time, working students. The lectures are offered between 18:00-21:00 hrs four days a week to allow working students to participate. The courses are given by the Department staff as well as by Industry experts that cover different aspects of practical experience. This is much appreciated by the students. In general it can be said that the didactic approach of the postgraduate program is much more interactive and requires significant participation from the students. This suits well to the pedagogical intentions and the overall goals of the program.

For the postgraduate program the ratio of teacher to students is considered adequate. Classes contain a low number of students so that interaction between teachers and students is possible and can be effectively implemented.

The postgraduate program is making extensive use of the Lab facilities of the Department thus enabling the students to get in regular contact with the teachers, especially when case studies are treated. Other additional options for collaboration are generated during visits to industrial or governmental installations. The Committee encourages such activities and would suggest include additional international partners.

The program quality is considered adequate. The staff involved is trying to create unique opportunities for students to learn not only the theory but also to work with industry standard systems. For instance the SAP package is part of the ERP and CRM education. This offers students some excellent carrier opportunities after completing the postgraduate education. The Committee recommends that the Department should enhance this type of practical education and try to offer internships for the graduate students.



All courses are supported by additional material that is on the web where only the graduate students have access to. The Committee strongly recommends the extension of blended learning scenarios and group collaboration in order to allow part time students to work more intensively (in virtual groups) outside the University. Also lecture capturing and delivering is an additional point to consider (just in time learning). The usage of Open Educational Resources should be examined.

The examination system is considered fair and can be enhanced by additional methods of self-assessment during course time.

#### IMPLEMENTATION

##### **Quality of teaching procedures**

- **Quality and adequacy of teaching materials and resources.**
- **Quality of course material. Is it brought up to date?**
- **Linking of research with teaching**
- **Mobility of academic staff and students**
- **Evaluation by the students of (a) the teaching and (b) the course content and study material/resources**

There is evidence that the strategic collaboration with the Department of Chemistry of the National Technical University of Athens (NTUA) has significantly strengthened the position of the graduate program of the Department. The program is well established and is considered to be very competitive within the student community. The collaboration with experts from inside and outside (industry, government) the academic world are the strong points of the project that attract students (admission rates vary from 1:3 to 1:6). In addition many students prefer the location of the University to other locations far from the capital of Greece so that the demand for the program is expected to remain strong.

The student body consists of 10% from the Department's own graduates while 90% come from other Universities. As a consequence, the lecturers are facing a competent student body that is motivated to study the subject. Nevertheless some students would prefer more emphasis on economic management issues instead of engineering and technology processes. The Committee believes that the Department should keep the key issues of the program unchanged and offer some additional courses that focus on managing activities.

The course material that is distributed to the students is of good value and up to date. Most of it is distributed electronically through a course repository system.

The Department used to offer every year to all graduates a set of teaching textbooks. This practice has been changed recently; every year books are made available to the students through the Library but they remain the property of the Department. By adding new books every year this collection is thus continuously improved and enriched, while remaining available to the students during their tenure. It is recommended to return to the previous practice of book offering.

The research aspect enters into the Curriculum at the moment of the project thesis. This could be extended in future offerings by linking the research activities of the Laboratories with the teaching material that is based on the curriculum.

Students enter the program of the Department from several well-established Greek universities. By design, some of the teaching staff comes from other institutions (obviously in the first place from the partner institution, the NTUA) and/or from Industry. There is no strategic plan to implement large student exchange programs. It should be noted that the degree is designed for part time students and therefore not much time is available for additional activities, especially in different locations.

#### RESULTS

- **Efficacy of teaching**
- **Discrepancies in the success/failure percentage between courses and**

<p><b>how they are justified.</b></p> <ul style="list-style-type: none"> <li>• <b>Differences between students in (a) the time to graduation, and (b) final degree grades.</b></li> <li>• <b>Whether the Department understands the reasons of such positive or negative results?</b></li> </ul> <p>The combination of using faculty members and external teachers from the Academia (NTUA) as well as experts from the industry and the government to teach the postgraduate program is very good practice. The use of Labs should be further improved.</p> <p>Participants have a very high degree of commitment and rate success. Most students in the Logistics are motivated and achieve respectable results. The Environmental part of the program is less attractive to the students, mainly due to the fact that many students not prefer the engineering part of the curriculum.</p> <p>No observation has been made between students in the time to graduation, and/or final degree grades.</p> <p>The Department is aware of the reasons concerning the strong and the weak points of the program and has indicated most of them in the internal evaluation report.</p>
<p><b>C. Research</b></p> <p>APPROACH</p> <ul style="list-style-type: none"> <li>• <b>What is the Department's policy and main objective in research?</b></li> <li>• <b>Has the Department set internal standards for assessing research?</b></li> </ul> <p>The Department does not have a clearly formulated research policy or a set framework for carrying out research, although the main research objectives may be implicit in the activities, publications and research projects undertaken by the Department. Faculty members conduct research in their own area of scientific training and specialisation, as evidenced by their publications and other research accomplishments such as journal reviewers, participating in the editorial boards of journals, etc.</p> <p>Based on the Internal Evaluation Report (IER), the excellent presentations to the EEC by the President and other academic staff of the Department and discussions with them, the Committee noted that the current research strategy of DIMT is to conduct both fundamental and applied research in a wide range of subject areas, such as, computer science, engineering, mathematics, economics, decision sciences, energy systems, biotechnology and social sciences. The Department's research orientation is evident through its activities in the above areas and, as such, the EEC strongly recommends that this ethos is maintained and further promoted. The multi-disciplinary nature of research work performed within the Department is in line with its mission statement and aims to enhance and disseminate scientific and practical knowledge at the interface of management and technology with the view to effectively managing production and service enterprises in Greece and improving their efficiency. As such, the research objectives are consistent with those of other similar Departments in Europe and worldwide.</p> <p>It can be argued that the Departmental policy in terms of research evaluation can be directly inferred from the internal practice and publication of papers in international learned journals and other peer-reviewed conferences and symposia. Indeed, evidence in the IER suggests that some research laboratories in the DIMT are internationally recognized due to their research activities and publications and some faculty members are very well-respected by their peers. The EEC notes that, within the last five years, the volume and quality of research output of the DIMT have improved with significant research activities being carried out in the areas of computer science, engineering and mathematics and a clear emphasis being placed on publications in SCOPUS and ISI listed Journals.</p>

The DIMT has not set internal criteria and systematic standards or processes for assessing research, but as it is the case with Greek educational institutions, these are built into the process of tenure and promotion of individual faculty.

Based on the discussions of the EEC with faculty members, it is noted that the Department does not have a formal committee to undertake the role of setting evaluation standards for research. Moreover, it has become evident that the more junior academics spend a significant amount of time for the delivery of courses due to the high teaching load dictated by the formal university procedures. This allows relatively limited time for them to carry out research. On the other hand, it is known that the current Greek educational legislation imposes that research output is essential for academic promotions. Hence, junior faculty will have to put more emphasis on research for promotion purposes and this may have a negative impact on the quality of teaching. The Committee formed the view that junior academics tend to spend a significant amount of personal time on research in order to achieve research output of respectable quality and improve their academic potential.

The above situation imposes a big burden on the academic staff and may severely affect their research performance and career development within the Department. Hence, as already recognized by the President of the Department, determining trade-offs between the teaching, administrative and research commitments allocated to junior faculty is of crucial importance to the successful running of the Department.

During the discussions of the Committee with junior academics of the Department, it has become clear that collaborative research with senior faculty works well and this is already evident by the joint publications produced as well as the participation in a limited number of joint research projects. The Committee considers that to be good practice and recommends that the senior Faculty takes a more active and leadership role in setting research targets and forming teams of researchers working in specialized fields of knowledge.

#### IMPLEMENTATION

- **How does the Department promote and support research?**
- **Quality and adequacy of research infrastructure and support.**
- **Scientific publications.**
- **Research projects.**
- **Research collaborations.**

It is the EEC's opinion that the academic and professional qualifications and practical experience of the existing faculty and their continuous exposure to the international research community are sufficiently adequate to respond to the multi-disciplinary research needs of the DIMT and the University of Piraeus. Acquiring additional faculty personnel of high caliber from international well-known institutions can further enhance the departmental research activities.

Based on information provided in the IER and the meeting held with PhD candidates of the DIMT, the Committee feels that a small number of doctoral candidates are active on the doctoral program and contribute to the departmental research output. Faculty members of the department who share similar research interests supervise these individuals. It is noted that the DIMT or any other Department of the University offers no PhD Scholarships. The PhD students are sponsored to attend one academic conference per year. The Doctoral program offers the choice for the PhD theses to be written either in the English or Greek language. Building a significant student body of high quality doctoral students can potentially make a substantial contribution to the Departmental research output in the relevant field of knowledge. Upon graduation, these individuals (alumni) may further contribute to the Department or University in different ways through their connections to the Greek or overseas industry and other academic.

A very positive practice is that postgraduate and (to a lesser extent) undergraduate students are included in research projects and publications. This generates a positive research attitude within the Department and the Committee would like to see this good practice continued and enhanced.

In terms of research infrastructure, it is noted that three research laboratories have been set up at DIMT in accordance with the Governmental Decree (ΦΕΚ 213/13.09.2002), namely, the Laboratory of Advanced Manufacturing Technologies & Testing (Εργαστήριο Σύγχρονων Τεχνολογιών και Ελέγχου, ΕΣΤΠ&Ε), the Laboratory of Simulation of Industrial Processes (Εργαστήριο Προσομοίωσης Βιομηχανικών Διεργασιών, ΕΠΒΔ) and the Laboratory of Production Management Information Systems (Εργαστήριο Πληροφορικών Συστημάτων Παραγωγής, ΕΠΣΠ). Each laboratory has a faculty member in charge supported by PhD candidates, post-doctoral assistants, postgraduate and undergraduate students. The primary use of these labs, which work independently from each other, is to carry out experimental and applied work (as part of the Curriculum) for teaching purposes (i.e. student dissertations, tutorial classes on CAD-CAM). However, wherever appropriate, the labs are also used for research activities carried out by staff or doctoral students. Postgraduate students, and sometimes, undergraduate students are involved in laboratory research work, mainly through their project theses/ dissertations. The Committee considers that as good practice.

The research laboratories have been initially designed and adequately equipped to serve specific teaching and research needs of the DIMT. For example, the ΕΠΒΔ is used for experimental and computational analysis, simulation and optimization of industrial processes from both the theoretical as well as applied perspectives. In particular, it is worth mentioning that, historically, this Laboratory appeared to be one of the best organized laboratories of its type in comparison with other similar university environments in Greece, both in terms of experienced academic staff as well as different kinds of equipment to perform wide-ranging research activities. However, it must be noted, that the cost of equipment maintenance is high and this poses a financial challenge for the Department.

Since 2002, research work in the laboratories has been mainly funded through a small number of national research programs (such as, THALIS), European programs (such as, LIFE-EU) or international collaborations initiated by certain academics. It must be noted that, although funded research has been very limited, there is notable research output associated with the laboratory activities. In particular, since 2001 the results of the research work have been reported in a significant number of ISI publications and papers in international refereed journals. In addition, a small number of PhD theses have been completed.

As indicated in the IER, the Department is aware of the limitations of research infrastructure. The availability of laboratory capacity and space is barely satisfactory and could drastically improve to accommodate both an increasing number of PhD students and research active staff.

During the evaluation process and the discussions of the Committee with the faculty personnel, evidence was presented that there are serious limitations in terms of outdated equipment that cannot be replaced or maintained due to lack of financial resources (e.g. FMS system). For example, the Laboratory of Advanced Manufacturing Technologies & Testing and the Laboratory of Simulation of Industrial Processes need to undergo significant modernization in order to be up to date and, hence, used efficiently for teaching and research purposes. The current financial situation in Greece imposes serious constraints to achieve this. Furthermore, during the meeting with Associate and Full Professors, it has become evident that lack of coordination between the University management and its academic leadership concerning financial decisions poses additional burden on the efficient allocation of limited University funds.

To increase the quality and quantity of research output, the DIMT must have the critical mass required in specific areas of research. To achieve that, new hires of high caliber are planned, however, the recruitment procedure for new faculty has proved very time consuming and this situation has worsened over the last couple of years. Currently, there are four Faculty personnel leaving the department due to retirement but only two new hires are in the pipeline. As a result, the existing faculty will be overloaded and this may negatively impact research output. Furthermore, lack of well qualified research laboratory personnel is noted.

A careful examination of the Departmental research output shows that, since 2000, there is a notable improvement, both in terms of quality and quantity, relative to the size of the faculty currently on board. This is indicated mainly by the increasing number of conference papers (listed in the IER) presented by the academic faculty at various national and international conferences as well as publications in respectable journals (more than one publication per faculty member per year). The Committee considers that to be good practice and comments that the reputation of an academic department greatly depends on the quality of its scientific publications, a strategic goal that should actively be pursued by the DIMT.

In addition to the laboratory-related research output, certain faculty members of the Department acted as principal investigators for a small number of research projects undertaken jointly with other Universities (such as, the Universidad Politecnica de Valencia, INSEAD) or sponsored by national programs, such as, THALIS-ΕΣΠΙΑ, ΕΠΙΕΑΕΚ, ARISTIA). However, with one recent exception, it is noted that there is a limited number of European projects involving collaborations with European partners; this may be due to the lack of orientation in the European programs that are compatible with the directions of the Department. The EEC highly recommends that Faculty have to be proactive in their participation in sponsored research projects seeking funds by EU, the Greek Ministry of Education or from private sector organizations.

Based on evidence provided by the IER and also obtained at the meetings with both senior and junior Faculty, the general opinion was that various forms of research collaboration is evident both at the teaching and research levels:

- (i) Research collaborations are already in place between the faculty from the DIMT with staff from other University departments, such as, the Departments of Economics, Maritime and Computer Science.
- (ii) Joint research ventures with other Greek institutions, such as, the Chemical Engineering Department of the National Technical University of Athens (NTUA) and the DIMOKRITOS research center. In addition, some DIMT academics spent time (on sabbatical leave) at Universities abroad, where they developed research links within their own research areas.
- (iii) partnerships with major Universities worldwide, such as, the University of Minnesota (USA), University de Sherbrookw and University of Toronto (Canada), Cranfield University (UK), University of Coimbra (Portugal).

The EEC encourages this good practice as a platform of promoting research and developing links with reputable institutions in Europe and worldwide.

#### RESULTS

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

Faculty has indicated that their working load is quite heavy and the EEC has agreed with this comment. During the meeting with Assistant Professors and Lecturers, some academics expressed the view that they may engage up to 30 hours per week in research activities in addition to their teaching load. Junior faculty would be happy if there was a Committee of senior professors to provide guidance and research direction. This illustrates that research culture is becoming part of the Department's identity so that the latter can compete against international standards. To this end, the Committee would urge the Department to allocate reasonable teaching load to the junior staff in order to facilitate their career development and enable them to realize their research potential.

It is worth noting that, a national research study providing metrics of Greek Scientific Publications in international academic journals during the period 1996-2010, has revealed that, in the domain of "Engineering & Technology", the University of Piraeus is one among six Greek universities having a higher impact factor than the international average. In the "Social Sciences" domain, the publications list of the University of Piraeus receives the highest impact factor among the above list of six Greek universities included in the study.

The EEC considers the above reported results very promising and encourages the staff of the DIMT to continue engaging in research with high impact for Greek production and service enterprises and industrial markets. It must be noted that a number of faculty personnel have been given honorary awards for their research achievements.

#### IMPROVEMENT

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

The EEC recognizes that very strict legislative guidelines imposed by the Greek State severely limit the flexibility and autonomy of the Department in the development of its strategic plans, such as, the design of long-term research strategy, recruitment policy, financial planning and sourcing. Hence, the academic development of the Department is limited and can only be viewed within the legislative mandate restrictions imposed in the Greek education system, Nevertheless, the EEC makes the following recommendations for the Department:

##### Recommendation C.1

The IER does not have a section of strategic planning on research. Research is, however, an important issue regarding the image of the Department and the advancement of its Faculty at the personal level, in particular the younger members. The Committee recommends that the Department should make serious efforts to formally define its strategic research direction and major research themes in line with the Departmental mission statement so as to provide clarity and direction to its members in terms of priorities and research standards. Plans should be put forward for implementation. The EEC believes that a major improvement would be possible if the Department were to have and manage its own research budget.

##### Recommendation C.2

The EEC Committee recommends that the Department maintain the positive research attitude within the Department and would like to see the good practice continued and enhanced. For example, faculty is strongly encouraged to increase the number of their publications in internationally respectable journals. New faculty hires from top international institutions should be pursued to strengthen the existing academic community of the Department. Research excellence should be recognized and promoted by the Department.

##### Recommendation C.3

The Committee recommends that the DIMT make every effort towards establishing internal research evaluation benchmarks as well as identifying and disseminating best practice. This would ideally include the peer review of research publications with the view to developing a shared understanding of research quality and impact. The EEC recommends that there should be a well-defined process linking research quality to promotions. For example, as a first step in terms of setting research standards, the Department may create its own list of

academic journals ranked by quality. However, because of the diverse nature of subject areas within the DIMT, attention must be paid to the type of high quality journals included in such list. There are many internationally used journal rankings that can be deployed by the Department to assess the quality of various publication outlets.

#### Recommendation C.4

The Department is encouraged to pursue a more aggressive public relations campaign in attracting sponsored research from European research programmes, such as FP7, or national sources, such as, the Greek Ministry of Education. The Committee also recommends closer research collaboration with the industrial markets. Additional financial resources will allow the modernization of the research labs to have up-to-date equipment and software systems with the view to improving the research infrastructure and support.

#### Recommendation C.5

Building a significant student body of high quality doctoral students can make a substantial contribution to the Departmental research output in the relevant field of knowledge. To make this possible, the Committee suggests that the DIMT should make a firm commitment to the PhD program and make every effort so that additional financial resources are allocated to attract high quality researchers, for example, offer a number of PhD scholarships to the most competent candidates.

#### IMPROVEMENT

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

There is some discussion about the two basic fields of the program (logistics and environment) with respect to other competing programs of Greek Universities but at the moment there is no decision about strategic changes. The Department will implement continuous improvements.

Further strengthening of contacts with industry by initiating Industrial seminars, visits and joint research activities.

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

#### APPROACH

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

The Committee got the impression that the Department is in general satisfied with the results of the services achieved so far. The teaching staff is working closely with the Chair to meet the goals that have been set. The Department is not satisfied with the support that is receiving from the top management of the University.

There is no indication that there exists a strategic plan within the Department to simplify and to make more efficient the administrative procedures. The Committee could not detect any such plan that is set up or initiated by the Office of the President of the University.

There has been no discussion about a policy to increase student presence on Campus.

#### IMPLEMENTATION

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

The organization of the department is well established and the office of the Chair (Dean) is working in close cooperation with the other administrative staff. Much of the administrative work is still carried out using isolated IT-based solutions. There is no system integration underway; the Central Administration of the University should establish this.

There is effort within the Department that is recognized by the Committee to offer to the students good infrastructure services. However this is a task that should be planned and realized by the Central Services of the University. The digital resources of the Library are not yet available for undergraduate students, the PC pools are under the supervision of dedicated groups and do not form a global service, the wireless LAN is not accessible in any room of the main building, there is no standard A/V equipment for all teaching rooms of the Department etc. The Central University Services should address all those deficiencies. Within the IT Sector there is no offer of a digital id for each student with access to different digital services (single sign on), there is no central content management system that can be used by used from all administrative and academic staff in order to keep their website updated.

#### RESULTS

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

There is a basic infrastructure for IT-based services but this is not adequate for the needs of the Department.

There is no much criticism about the lack of functionality of main administrative support except the decentralization of budget in terms of a budget plan that when established and approved by the Management of the University should be carried out by the Department in order to improve efficiency.

#### IMPROVEMENTS

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

Yes, there is need for a coordinated action plan for all Departments but there are no known initiatives to the Committee in this direction.

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

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

In general, the planning uncertainties, the interventional control mechanisms imposed by the State on the University and the Department and the extensive bureaucracy in the Greek educational system result in some paralysis and/or long delays that hamper implementation of strategic plans and hinder routine operations in the Department. For example, the Department cannot control the number of entering students, the number of Faculty positions and the allocation of funds. These issues transcend this Evaluation and have to be addressed at the national level.

Despite these generic issues, there is freedom in the definition of the curriculum and in the definition of the profiles of new faculty to be hired that has certainly a strategic impact on the Department and can be exploited to create new opportunities.

The IER section on strategic planning is brief, reflecting the difficulties associated in Greece with long-term strategic planning.



The strategic academic improvement plan of the Department is aiming at the improvement of teaching and research activities and of the existing infrastructure.

The Committee was pleased to learn that there was a recent (2010) revision of the Undergraduate studies program regarding the elective courses, as well as of the Doctoral program, while a revision of the Graduate studies program is underway.

The Committee was also pleased to learn that the Department is monitoring its educational activities via the course evaluations, grades obtained in courses, distribution of students in elective courses, examination results, etc.

Although the Department states that it is making all that is possible to attract the best Faculty, this process is seriously delayed and hampered in particular the last years. It will likely become even more difficult within the present economic situation in Greece. As a number of Faculty members will be retiring in the coming years, this will create a serious human resources problem for the Department. There is equally a continuing problem of insufficient staffing of laboratory personnel.

Despite the peculiarities of the Greek educational system regarding admissions, (number legislated externally, quality of the entering students depending on their grades and their declared choices in the Panhellenic Admission Process), the Department is making public relations efforts to attract good students, something that the Committee considers as *good practice*.

The Department does not have a formal process of strategic planning. The strategy can only be discussed and defined in the Departmental General Assembly, but as noted above the Greek educational system does not permit many strategic initiatives.

The Committee, in agreement with the Department makes the following recommendations:

Recommendation E.1: The EEC recommends the introduction of a formal strategic planning process (and a commonly shared vision, a few clear goals, areas of importance, priorities, etc.), for example, by the creation of a Strategic Planning Committee. Such a process should lead to the definition of the future image of the Department and its position in Greece and the world. Retiring positions should be reassigned to the strategic, possibly new areas, as dictated by a clear strategic vision and the corresponding planning.

Recommendation E.2: The EEC generally recommends increasing the Department's interactions with the outside actors and stakeholders: industry, other academic institutions, alumni, etc.

In addition, the EEC recommends:

Recommendation E.3: The Department, in its future strategic planning should take full advantage and maximize the benefits from its niche educational position (strong links between engineering aspects and management) and strategic location in the Athens metropolitan area, in particular for its Graduate Studies programme.

Recommendation E.4: In spite of current limitations, to implement its strategic goals and improve the quality of teaching and research, the Department should implement a strategy and possibly criteria and an algorithm for the internal distribution of financial resources.

The IER does not have a section of strategic planning on research. Research is, however, an important issue regarding the image of the Department and the advancement of its Faculty at the personal level, in particular the younger members of the Faculty.

Recommendation E5: In research, strategic research directions and major research themes should be defined in harmony with the Departments strategic planning, along with implementation plans.

The recently voted Law for Higher Education that has not been implemented yet provides new degrees of freedom that can be exploited to accomplish strategic goals and objectives that the previous legal framework did not allow. The Department should be ready to

implement the new framework Law, if and when it is implemented. Regarding infrastructure, the Department benefits from its central geographic location but suffers from lack of space at that location. Options for implementing solutions (such as a move to the space available in Nikaia) should be discussed and acted upon if agreeable.

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

##### **Conclusions and recommendations of the EEC on:**

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

This evaluation took place at a difficult of great economic uncertainty and for the country as a whole. Funding to all Greek Universities and Departments and resources needed for implementing improvements have been drastically reduced or eliminated; decisions regarding, e.g., staff appointments, have been frozen or rejected and there is little room for implementing any large-scale future plans, at least in the short term. In spite of these very serious limitations, and looking into a better future, the Committee is making its final conclusions and recommendations.

The Committee found that, overall; the Department is doing a very good job in terms of its core tasks. Human resources are good and generally very motivated and the Department occupies a nationally important niche area.

Compared to other national institutions of higher learning, the DIMT has a student body of interested, motivated and relatively disciplined students that allows smooth operations at all levels and in particular the academic one. The impact of the endemic student unrest in the educational institutions in Greece (student strikes and "occupations") is luckily lesser at UniPi.

The students, both undergraduate and graduate participated with interest in the Evaluation process. The quality and interest of the undergraduate student body is also reflected in the relatively short average time to graduation, reasonably good grades, and relatively limited absenteeism from classes. The graduate student body has a professional conduct and attitude and seems to be very well motivated. The academic performance in the graduate program is very high.

The EEC report contains recommendations in the particular sections above. All are not repeated here, except for the ones that the EEC felt were the most important ones (keeping their original numbering):

The Department has the general tendency that prevails in Greece of egalitarian and even distribution of resources regardless of their potential usefulness, impact and compliance with the Department's strategy. There are also no internal quality evaluation processes for teaching and research.

##### **Recommendation F.1:**

The Committee recommends that in the future internal self- and peer-assessment procedures be implemented and resources allocated according to a well-established quality and cost/benefit criteria and in compliance with the Department's strategic planning.