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ΣΤΗΝ ΑΝΩΤΑΤΗ ΕΚΠΑΙΔΕΥΣΗ

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HELLENIC QUALITY ASSURANCE AGENCY
FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

ALEXANDER TECHNOLOGICAL INSTITUTE OF THESSALONIKI (ATEIth)

DEPARTMENT OF FOOD TECHNOLOGY

November 2008

External Evaluation Committee

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

1. John N. Sofos (President)

Professor

Colorado State University, USA

2. Dr. Markus Strobl

University of Heidelberg

Helmholtz Zentrum Berlin für Materialien und Energie, Germany

3. Dr. Christos Apostolopoulos

Quality, Food Safety & Dairy Affairs Manager

Friesland Foods Hellas S.A., Greece

4. Georgios Triantafyllides

Quality Assurance Manager

MEVGAL S.A., Greece

5. Dr. Lisbeth Munksgaard

Senior Manager, Corporate Innovation

Danisco A/S, Denmark

It was the wish of this Department to be evaluated by a committee including foreign, non-Greek speaking experts; consequently, following instructions by HQAA, the Department submitted its Internal Evaluation Report in English.

Introduction

The Department was visited by the Committee on 25 and 26 of November 2008. The personnel of the Department were very welcoming, friendly, hospitable, and ready to cooperate by answering questions and providing information and materials when available. Questions were answered, for the most part, by the Chair of the Department (Professor Stylianos Rafaelidis) as some of the members of the Internal Evaluation Committee (IEC) were not fluent in English.

The members of the Committee met and talked with the IEC (Professors Klio Antoniou, Dimitrios Petridis, and Apostolos Thomareis), the secretarial staff, and groups of the academic staff (faculty) and students. The President of the Institute and faculty member of the Department (Professor Pavlos Karakoltsidis) also met with the Committee briefly upon arrival, and during one of the lunches and a dinner. The Director of the School of Food Technology and Nutrition and faculty member of the Department (Professor Apostolos Kyritsakis) was present at the meeting with the faculty (Klio Antoniou, Apostolos Thomareis, Apostolos Kyritsakis, Alexandros Koulouris, Christos Ritzoulis, Nikos Georgiadis, Emmanouil Derilikis, Grigoris Kourtis, Dimitrios Papantoniou, Ilias Samaras, Nikolaos Efremidis, Nikolaos Symeonidis, Nikolaos Fitsios, Catherine Antoniou, Eleni Likotrafiti, Dimitris Petridis, Efthymios Papastergiadis, and Stylianos Rafaelidis).

The External Evaluation Committee (EEC) visited various administration offices, some academic staff offices, teaching classrooms and laboratories, and the pilot food processing plant. Reports, documents, and other data examined by the EEC included the Internal Evaluation Report (IER), the Department student Study Guide in Greek, certain statistical data, a list of publications, the webpage, undergraduate students' theses, postgraduate theses, documents associated with student practical training, laboratory handouts, General Assembly decision records, internal evaluation forms, etc. Unfortunately, the curriculum and the Departmental Website were available only in the Greek language, which hindered their use by the non-Greek speaking evaluators.

Overall, the length of time of the visit appeared somewhat limited as more questions could have been asked if time allowed. This became even more of an issue as limited personnel and students were available on the first day of the visit due to a strike. These developments did not allow the EEC to obtain a better sense of the total time spent by the students at the Institute on a given day. However, we were pleased that students of certain laboratories remained there until we visited them in the afternoon. It was refreshing to see eager to learn young students in the laboratories.

The time of the visit was also somewhat shortened by demonstrating young individuals claiming to be students, but as indicated by the staff, not of the Department under evaluation. In the morning of the first day, the Committee had to meet with the IEC in the

conference room of the Nutrition building as there were indications that demonstrators would interrupt the process if the meeting was held in the Food Technology building. Nevertheless, the process was interrupted by telephone calls that the Chair of the Department was receiving from his Department relative to the activities of the demonstrators.

On the second day, when the EEC met with the students in the auditorium of the Food Technology building, the process was interrupted briefly by a group of approximately 10 young protesters who were urging the students, who had overfilled the auditorium, to leave and to not participate in the evaluation process. The students objected to that and asked the protesters to leave and allow the meeting to proceed. After negotiations, the protesters presented their issues for 2-3 minutes and left, some immediately, while some others observed the ECC-student dialogue for a few minutes and then departed quietly.

The meeting with the students, in the absence of any faculty members, was useful and encouraging as it was very open and productive. The students were present in numbers that overflowed the seats and had to stand or sit on the floor. They were treated by the EEC openly and as equal which convinced them to also be open and forthcoming and to participate in the discussion as much as possible. All that wished were given a chance to talk either in English or in Greek. It was really refreshing to see such an attendance and interest by so many young bright minds.

The meeting with the faculty was also productive, as a number of them became involved in the discussion, while some, although present, did not participate in the discussion. It is noteworthy that the faculty indicated that they had not seen the Internal Evaluation Report; also the students were not aware of the Internal Evaluation or its Report.

Overall, the Department should be congratulated for taking the initiative to conduct an internal self-evaluation in order to be one of the first to undergo external evaluation. This demonstrates pride and desire for improvement. The students and faculty consider their Department as the best in the institute, and they believe that this process will lead to: higher academic quality; better student body; formal approval of research activities and agreements with other partners and industry; approval of doctoral studies; better funding; and, overall, better publicity for the Department.

A. Curriculum and Teaching

A1. Curriculum

APPROACH

The Department offers a single undergraduate program, while a postgraduate program was approved recently; in the past, a postgraduate program was offered in collaboration with the University of Ioannina.

According to both oral and written statements of the teaching staff of the Department, and as stated in the internal evaluation report the goals and objectives are to provide a: *“high level of education to its students in the field of Food Technology which is the field of Technology, where biological, physical, chemical and engineering sciences are used to study the nature of foods, the causes which make them to spoil and the principles of their processing, preservation, storage and distribution. Thus, the food produced to be safe, wholesome, nutritious and organoleptically acceptable by the consumer. The main objective of the Department is to provide the best in teaching to its graduates in order to be able to find career placements at the various sectors of Greek economy which deal with food commodities. Besides, to promote scientific knowledge concerning Food Science and Technology through scientific research carried out by its academic staff.”*

In summary, the goals and objectives of the curriculum are to provide a high level of education to the students through which they become trained to meet the needs of future employers in the private as well as in the public sector in their field.

In addition to training graduates to meet food industry needs, which they do well, it appears that they aspire to provide education comparable to that of universities. However, it needs to be determined if this is required for industry employment or necessary and if it is realistic under present circumstances. If such a need is documented by the stakeholders involved, it should be considered if it is useful to offer two degree orientations, one more practical or technical and the other more basic in nature.

The objectives of the program have been based on what is stated in the foundation act and deviations are determined and applied by the departmental General Assembly. The objectives are in line with those of corresponding domestic and international Food Science/Technology departments, and also reflect the needs of the industry as determined through informal personal contacts with employers of graduates and former students working in the field, as well as supervisors of trainees in the industry and the trainees themselves. However, the EEC found no formal process to track the professional development and career of the graduates. Therefore, there is a need for development and implementation of such a process for better collection of data in order to plan validated

curriculum improvements through data analysis.

Factors taken into account include the fact that Food Technologists have to be professionals and useful in the market (private and public), and have to have adequate scientific background. Since the Department offers only one program, there is no need for additional specific objectives or benchmarks. It should be noted that no data are collected or kept for documentation of needs or related evaluations; this should be addressed in the future in order to improve the transparency and enable objective evaluation of decisions as well as consideration of the needs of employers and society.

As indicated, any changes in the curriculum are decided within the General Assembly. According to the Internal Evaluation Report, *“information about the compliance of the Curriculum of undergraduate studies of the Department derives from the students’ assessment, from training supervisors’ assessment during the student industrial training either in food industry and food service companies or research Institutions abroad, as well as from the monitoring of professional progress of the Department’s graduates. The monitoring of the professional progress of the graduates so far is based on data kept by the Department’s academic in charge for industrial training as well as on data kept at the Career Office of ATEITh. Moreover, the continuous contact of the graduates with the Department’s academics is related to their professional progress. The aforementioned are utilized in the revision and updating process of the undergraduate curriculum. The undergraduate curriculum is being assessed and revised every two years and is on display at the Department’s website. The parameters taken into account for the revision process are: the current trends and requirements existing in the job market of the food related professional sector, the study of the curricula of other Food Technology Departments in Greece and abroad as well as the comments of bodies which employ trainees as well as graduates of the Department. The positive views which derive from the trainees and especially the graduate employment places as far as their scientific background knowledge and skills are concerned, are proofs of the suitability of the curriculum and at the same time are tools for its further improvement and updating. Finally, the good and rapid career placement of the graduates in their field of specialization and not in irrelevant fields is a proof that the curriculum satisfies the goals of the Department.”*

The curriculum seems to be consistent with the objectives of the Department and the requirements of society. It is noted that the IEC indicated that some deviations from these objectives are introduced when the department General Assembly is trying to modify the curriculum according to recent market trends, as it is perceived at least from the personal perceptions of the teaching staff. For instance in the near future there are plans of the department to introduce two new subjects that will cover the ERP (Enterprise Resource Planning) applications and also marketing. Additional sources for updating the curriculum are curricula of comparable national and international departments.

IMPLEMENTATION

According to the IEC, Department Chair and faculty, the curriculum is implemented effectively. However, a few deviations occur due to delays in hiring non-permanent staff or part-time employees every academic year.

The curriculum is rather extensive, and it comprehensively covers the various parts of the food technology field. Although the curriculum at first glance appears coherent, it doesn't seem to be functional among a majority of students since it does not tackle inherent deficiencies of almost all students in certain subjects that, for instance, may require in depth knowledge of advanced mathematics. Although these difficulties are well known among the teaching staff of the department for a number of years now, no corrective actions (at least effective) have been implemented on both the curriculum and the teaching practices. Consequently, changes, like those suggested elsewhere, need to be considered and implemented in order to build up the fundamental knowledge from a point and in a way that better meets the needs of the students. That way relatively short extensions devoted to the contents of specific modules could shorten the time of graduation significantly, which in turn might set free considerable resources. In order to compensate for time spent to prepare students for certain difficult modules, other modules (e.g., highly specialized modules in later semesters) could be offered as options, or teaching time of certain modules could be slightly reduced.

The sequence of the modules appears logical. However, it is not evident whether there is overlap and repetition in material presented. The established procedure for coordination of course offerings and outlines or lecture notes is through the General Assembly and various committees which conduct reviews at least every other year. The course material is approved by the Department. Future student questionnaires should be designed to determine if the material is coordinated properly.

Overall, present academic staff resources and those in plans to be hired seem to be well suited to meet present needs. In addition, the staff appears to be confident and engaged in teaching, while some of them are involved in good quality research activities. However, it seems that there is significant room for improvement in the on-time hiring process of the hourly teaching staff. Also, according to some students there can be improvements in the teaching methods of at least certain instructors.

Concerning the teaching equipment and instrumentation resources there is a broad range in terms of age and quality, from very old (e.g., in the pilot plant) to highly modern and advanced installations in the new labs, which are mainly used for research activities. The instruments and installations available in the pilot plant do not meet the standards of state-of-the-art food production/processing, although they are well maintained and still functional for student demonstrations.

RESULTS

According to departmental perception, the implementation is achieving the planned aims to a very high degree, as indicated by the quality of graduates and their on-time employment. However, since there are no documented statistical data and material available to support these statements, it is suggested that a process should be developed to track this information in the future. The department understands how it achieves the positive results but is only partly aware of why they achieve the poor figures concerning student lecture attendance, and number and time that the students take to graduate. It is also unknown how higher graduation rates might affect employment of graduates.

In general, the small number of students that graduate and the time it takes for them to do so are found to be unsatisfactory. Serious assessment of the reasons for this need to be undertaken and appropriate correction measures (the EEC is suggesting some in other parts of this report) have to be considered and implemented. It is noted that the problem is known to the department and measures such as rescheduling of modules in the curriculum and offering of additional tutorials are aimed at addressing this issue. As the department understands this issue, it is recommended that they consider additional ways to increase rates and shorten times of graduation through curriculum revisions such as those presented in other places as well as other actions including modified teaching approaches.

IMPROVEMENT

The Department seems to have gathered information which would be useful in self-evaluation and planning for improvement. It is recommended that this information be properly analyzed and, together with additional data to be gathered, as suggested by the EEC during the site visit, it should be analyzed and used in a systematic way for future planning and improvement. The information gathered and the conclusions reached should be shared among the teaching staff and the students in order not only to better adapt new practices, but also to challenge some of the findings, if necessary. Particular attention also has to be paid to the identification of weaknesses, and in the reliability of the data obtained in terms of sample representation and unbiased scoring. Overall, a more systematic approach has to be applied in order to deal with the already identified weaknesses of the present educational system.

A2. Teaching

APPROACH

The undergraduate studies semester load consists of lectures (47,6 %), practicals (47%) and tutorial (5,4%). In addition to the seven teaching semesters, there is one semester of industrial training outside the institute, and completion of a research project and an undergraduate dissertation. According to the internal evaluation, 71% of the curriculum consists of compulsory modules, 18 % compulsory by option, and 11% free choice modules; 15% are prerequisite modules such as general chemistry or mathematics. The EEC concluded that these figures are in accordance with the program of study.

Based on the internal evaluation report the teacher/student ratio ranges from 1/6 to 1/30. For practicals the ratio ranges from 1/15 to 1/20, and is determined by the size of the facilities. It should be noted that these figures, from the internal evaluation report, are based on the students present in the classes, not on numbers of students enrolled in the Department or the class.

Based on the standards of the labs and the actual teacher/student ratio (i.e., number of students attending, not accepted or enrolled), the resources seem adequate. However, pilot plant facilities and some equipment need modernization, as stated in other parts of the report.

The internal evaluation report states that the teachers inform the students about their tutoring hours and that the teachers are available beyond that timetable and that they are available through e-mail and via the electronic Blackboard system. Presently, three modules are taught exclusively using ICT (Information and Communication Technologies). The students praised the Blackboard system to the EEC. The use of the Blackboard electronic system for interactive communication between students and teachers is planned to be increased and this is applauded. The students requested expansion of the use of electronic means and electronic access to the library also from off campus, considering the distance between their residence and the Institute.

The students confirmed to the EEC the availability of most teachers for consultation or other reasons; however, some students do not feel comfortable in interacting with some of their teachers as they have experienced discouragement as to whether they will be able to complete their studies. The EEC expresses some concern about the impression they obtained that some of the staff express doubts about the qualifications and the ability of some students to focus on their studies, and recommends that the management may introduce regular advisory dialogs between students and teachers based on the evaluations. However, it should also be noted that there are some good examples of collaboration and they should serve as such to expand and enhance collaboration starting with true communication which may lead to better results in mutual respect, education, attendance and graduation.

According to the internal evaluation report, the students' grading assessment for each module is done by the teachers on the basis of reports, intermediate examinations and final examinations. However, for most modules the grade is exclusively or heavily based on the final examination. The examination procedure and assignment of grades is not standardized or evaluated as it may vary with individual lecturers. Re-grading of examinations to settle disputes between students and teachers has now been established, but students claim that it is not applied. These issues should be resolved through dialogue.

IMPLEMENTATION

The teaching process (module and instructor) has been evaluated by the students for two semesters. The mean ranking score for the quality of teaching was between 3,2 and 4,1 out of 5. These average scores show an overall good teacher performance, but the low student attendance and high student examination failure do not confirm the results of the evaluation. The results of the evaluation were not discussed with the students, but only with individual faculty members.

The teaching material provided or available to students received lower scores (mean 3,1) in the student evaluations. The internal evaluation report states that 70-100 % of the lectures are taught on the basis of copied handouts.

Going through the program of study the EEC noted that the material is generally up to date, even though some books suggested for reading for some modules were old (1950-1980), but claimed by staff to be authoritative. Some students claimed that even some copied handouts for certain modules may be more than 20 years old in some cases. Some critical student voices also expressed concern with the quality of the handout material itself in some cases. Thus, it is suggested that the handouts be updated on a regular basis, even when the contents of certain modules do not need major changes. The students should also be aware that the handouts are not the only material to be studied or included in the exams. This can increase the interest of the students in two ways. First they may attend class more regularly since they will not know everything that is covered before hand, and as they will be exposed to additional material they will have an opportunity to deepen and extend their knowledge; this could also lead to higher and faster graduation rates.

In the research activities of the department 15 undergraduate and 5 postgraduate students participate. In addition, the requirement for student research and dissertation preparation provides a good linkage between teaching and research. Another linkage is through the use in teaching of instrumentation obtained for research activities. Also, even though research is not a formal part of the Institute's activities, faculty is encouraged to consider recent research findings in updating their teaching material.

Faculty mobility is limited. Student mobility to other institutions is also limited. They both should be expanded. Student employment is presented as excellent. However, it is recommended that means should be devised for objective, structured, and measurable tracking and documentation.

The early semesters include exclusively fundamental modules which are partly difficult to pass by the students and which are not specific for food technology. Therefore, besides measures such as those suggested above, it should also be considered to include early modules specific to food technology which do not require fundamental pre-knowledge but are appropriate to stimulate the interest and motivation of the students and their devotion to the subject.

In general, adjustments and modifications are needed to address various issues that were identified during the external evaluation. They include, as suggested above, the offering of introductory seminars to familiarize incoming students with the field of Food Technology during the first two semesters of their study; introductory tutorials to prepare students for certain hard subjects that follow in the curriculum and for which they may not be prepared to attend; and inclusion of social science, economics and communication subjects. Specifically, the introductory seminar modules should inform the newly enrolled students about the scope, the aims and contents of food technology, the envisaged professions and potential fields of activity, and their future perspectives on the job market, as well as their chances in research, the requirements and their opportunities during studying in the department.

A recent revision of the curriculum involved a redistribution of the existing modules by shifting demanding modules to higher semesters; however, this alone will not be adequate to improve the status-quo. The structure of the curriculum is partly inadequate with respect to the students' earlier educational achievements. Therefore, students are to a considerable proportion unable to follow the curriculum within the given time-structure and sequence.

Nevertheless, it should be noted that strong negative as well as positive positions exist and should be considered as such when making modifications or adjustments. Differences may often be due to lack of interaction, dialogue, understanding of issues and motivation. An open and honest communication could solve many of the perceived problems.

RESULTS

According to the internal evaluation report, 90% of the candidates are employed within one year after the end of their education. The figures from the report indicate that only 60% of the students accepted in the programme at some point graduate, while 40% never graduate. Of the portion graduating, 80 % do so only after 8 years, while the time required is 4 years.

Please, note: In the internal evaluation report the average amount of time the students devote in studying is not expressed properly. The four hours mentioned as average total time of studying per week, should be per module and per week and not as the total.

The EEC concludes that the knowledge level of the students that graduate is excellent. However, as designed and applied the program of study may not be suitable for all students accepted. The students and the academic staff both acknowledged this by indicating that a few subjects sometimes delay graduation significantly. Therefore, tutorials and seminars in the early semesters may help avoid this problem and eliminate the need for some students to take private tutorials.

The management and the staff are very much aware of the situation. They aim at educating graduates that are comparable in knowledge to those from universities or even better. However, it appears that as they are proud of the students passing, they pay little attention to the 40% not graduating.

IMPROVEMENTS

The low attendance in certain lecture modules by students is a concern that may also contribute to slow and low graduation rates. The faculty, individually and as a group, and through discussions with students, is encouraged to determine reasons for this in order to resolve the issue. Approaches that may be useful in addressing this problem include additional tutorials that will provide students with a level of knowledge that will allow them to better participate in more advanced or difficult subjects, which will also allow maintenance of high quality standards in the more difficult subjects; and, introductory seminars during the first and second semesters, presented by various faculty members that will introduce them to their field of study, its content, its breadth, its opportunities, and its value in society. This will help students determine where they will belong when they graduate, instill purpose in their efforts, and potentially increase their interest in taking their studies more seriously. Additionally, teaching materials and methods should be re-evaluated when necessary.

The staff felt that the governmental demands for the acceptance of students opens the study for not qualified students and proposed that restricted acceptance may improve the situation.

The EEC finds that the quality of the students that graduate seems to be high. The Department should consider how they can improve the opportunities for the students that are accepted and have a weaker background in order to improve the number of students graduating.

In summary, approaches to be considered include:

- devoting more time to certain modules;
- offering introductory modules, tutorials and seminars;
- making additional courses optional;
- improving the methods of teaching in order to attract students rather than increasing the difficulty of teaching;
- harmonizing the examination system among modules and structures;
- basing the final grade on assignments and tests, in addition to the final exam;
- other means should also be considered.

It should be considered to translate the Website and curriculum into English, and to start offering certain subjects in the English language, as this may attract students from neighboring and other countries; a target could be set to make the Department a center of food technology studies for Greeks as well as non-Greeks.

B. Research

Since the Department is not a research institute or university department, the EEC concentrated the evaluation on education and did not conduct an in-depth investigation of the research part. Nevertheless, since some faculty members are involved in research and the department seems to desire to be recognized for doing research, the EEC has made a few remarks on research.

APPROACH

Certain faculty members should be commended for securing funding and developing collaborations to conduct research in a non-research institute. This worthwhile activity should be continued and efforts should be made for its expansion and with collaborations with sister departments in other TEIs/ universities or the industry.

According to the internal evaluation report, all regular academic staff of the Department may develop research initiatives focused on their fields. External resources are obtained through national and European programs. The Department invites PhD and MSc students from the Universities to do their experiments at the facilities of the Institute, even though the Institute is not mentioned in the resulting theses, which the EEC agrees is unfair. The criteria for hiring the permanent staff include the record of candidates in research and scientific experience. The ability to do research in the Department makes it possible to attract people from recognized national and international universities.

The EEC found that the scientific labs are well equipped with state of the art equipment through European funding. Labs having permanent scientific staff were newly renovated and well equipped.

IMPLEMENTATION

According to the internal evaluation report, the research component included 12 projects over 5 years. The EEC determined that this number is impressive considering that research is not included in the official activities.

According to the internal evaluation report and what was replied during the meetings, the research is done in cooperation with the Department of Human Nutrition of ATEITH, the Department of Chemistry of the University of Ioannina, and the Department of Chemistry of the University of Thessaloniki.

The publication list provided included a number of scientific papers published in recognized, international, peer reviewed journals. The number of published works indicated in the internal evaluation report could not be verified since duplication was noticed as the list was completed by a compilation of individual faculty reports. Considering that research is not part of the official curriculum, the EEC found the list impressive. Some very comprehensive PhD theses were also shown as examples.

RESULTS

According to the internal evaluation report, 15 undergraduate students, 5 postgraduate students and 3 PhD students are involved in research activities. The EEC talked with two PhD students and a postgraduate student involved in research. The EEC regards this as a relevant implementation of research for educating students for scientific careers.

The internal evaluation report presents an increasing number of scientific citations but does not include specifics about scientific citations. Also, the internal evaluation report indicated an increasing participation in scientific conferences and lecture invitations. The EEC did not confirm these figures or the international level of such activities.

Application results were not recorded in the internal evaluation report. A few examples of research applications were mentioned during the visit to the laboratories and the pilot plant. A patent obtained for instrumentation developed was shown to the EEC.

IMPROVEMENT

The representatives from the staff and the management were proud of the scientific level and the research infrastructure in the Department. It was acknowledged that research activities are tools that lead to better and scientifically based education and lead to visibility for the Department and the Institute. During the discussions with the management, the EEC proposed closer cooperation with the industrial partners and universities at the national and European level; however, the EEC also noticed a reluctance to apply for EU funding due to low success rate.

The EEC recommends that the pilot facilities be modernized in order to be attractive external cooperation, collaborative projects and student training.

C. All Other Services

APPROACH

Overall, indications are that the various services, including clerical, mechanical, computer, cafeteria, etc., are adequate. For example, as indicated to the EEC, the aged pilot plant equipment is maintained and kept functional by the mechanical staff; however, according to student accounts, although the equipment is used and useful, because of its age it often fails to operate and needs frequent repairs.

IMPLEMENTATION

The professional relationship between the secretarial staff and the department administration appears good. However, an effort should be made for improved collaboration between the students and the secretarial staff.

Use of electronic means of communication and use of the internet should be encouraged and be expanded to cover all aspects of education and allow student use even when away from campus.

The students find the library adequate in material and services but limited in space, especially in study areas, since most of them live in town, a long distance from the Institute.

Student counseling is in its initial steps of implementation and it should become a priority of the Department.

It is suggested that the good relations with certain industrial organizations be expanded beyond the student practical training activities, and further cultivated for collaboration in research and product testing.

Efforts should be expanded in making the goals, objectives and activities of the Department known to the public and especially secondary education students who are the future candidates for the Department.

Although not investigated extensively by the EEC, it is suggested that cultural and sports activities and programs should be maintained and expanded for the benefit of the students and staff.

RESULTS

According to the Department the results are satisfactory. However, they should determine how to better communicate with and serve the students.

IMPROVEMENTS

Problems are recognized by the Department and efforts are made to improve various deficiencies. For example, an expansion of the library/study area is planned; student counseling is initiated; and, doing business electronically is making progress.

Efforts should be made to speed up the above improvements as well as the following:

- The cooling and heating systems should be improved.
- The pilot plant needs renovation and equipment updating.
- The distance between campus and the city where students live should be taken into account in scheduling academic and other activities.

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

The long term goal of the department was, according to the internal evaluation team and the department management, to educate the best graduates for the industry and the society, and to be the best institute compared to other technological schools and university departments in Greece and eventually in Europe. The department aims at being so well known that the best Greek students want to study in it rather than in the university or in other countries. The EEC applauds and encourages such goals.

Specifically, the current goal is to educate the students to work effectively in food processing and quality control. The current goals were confirmed by the staff. According to the internal evaluation report the strategy of academic development is approached as follows: *“Since 1987, the Department is in a continuous process of academic development, by applying successive 5 year plans. Within the framework of these development plans the Department takes seriously into account the trends in job market for the Department’s graduates career placements as these trends are transforming within the next five years. The Department sets the goals of the educational process such as introduction of new modules, creation of new laboratories, updating of the curriculum etc, which must be achieved so that the Department’s graduates acquire new scientific knowledge and skills which will help them to find more easily job placements in their profession. At the same time, the Department takes care to continuously update its list of scientific equipment in order to satisfy as much as possible the occasional needs arising from the research activities of the academic staff.”*

The Management and staff members indicated the development of 5 year plans which are approved unanimously by the Department General Assembly. The EEC noted that the minutes of the General Assembly recorded only decisions, items for action and members present and voting, with no indication of discussion or modifications during the Assembly.

The dialogue with the industry was also considered, and it was determined by the EEC that it is only informal and through personal contacts. It was indicated to the EEC that newly hired staff members are usually recruited from external positions and with industry experience bringing in their personal networks. Dialogue with industry was not systematized or on a regular basis. Therefore, updating of the curriculum seems to be based on informal and non-systematic input from outside sources and is finalized in the General Assembly. Better structured, formalized and documented approaches are encouraged.

The external practical studies, not only train, but also contribute to recruitment opportunities for the students.

As a consequence of research activities, the Department has chosen to prioritize updating of scientific equipment which for the most part seems to be state of the art. In addition, as indicated, for the pilot plant facilities, although maintained to be functional, plans should be developed for their modernization.

The Department has fulfilled the requirement for evaluating teaching and the data are available. In the future, they should take advantage of the data by bringing the information obtained into consideration when preparing their strategic plans and curriculum revisions.

There is a lack of objective data on the needs from the industry and other stakeholders. There also seems to be a lack of dialogue between the Management and the providers of data and between the teachers and students on the results of the questionnaires. The Department should indicate long term, medium term and short term goals, analyse which parties internally and externally can provide data, and initiate data collection and analysis if not present and initiate dialogue with these groups in order to improve the strategic process, the commitment of the parties and the cooperation with the stakeholders.

The department has to consider how to assist some of the students to be able to complete subjects for which they may not be initially prepared. The state should also consider accepting students based on job market needs and provide corresponding personnel and infrastructure needs.

The high number of temporary hourly-paid teaching staff is a concern. However, it should be noted that additional regular faculty teaching positions have been approved and will be filled when qualified individuals are identified.

The generally low lecture attendance also helps maintain acceptable staff-student ratios. However, in laboratory and practicals where attendance is high, staff-student ratio is limited by laboratory space and dealt with by teaching multiple sections.

E. Conclusions

- The EEC agreed that the Department should be congratulated for being open and willing to be evaluated as one of the first in the country; this demonstrates pride, confidence, and willingness for improvement.
- The Department should also be congratulated for having such a comprehensive program of studies, and for providing the students with the opportunity for a very good educational experience in the field.
- The IEC should be commended for preparing a good report summarizing the Department and its activities. It is suggested that the Department should develop ways and means for pertinent data collection and analysis which can be used for better planning, curriculum changes, student training, and in order to objectively document the findings included in future reports; in addition, it is suggested that input from all faculty should be sought in finalizing future internal evaluation reports. Data supporting findings and decisions should be included as appendices in future evaluation reports.
- The very high job placement of graduating students of the Department, as indicated by the faculty, is a very important accomplishment which is also acknowledged by the students. However, it should be helpful, if in future reports such conclusions are based on objective data collected and analyzed through established processes and from sources that include representative numbers of graduates at different stages of their careers and employers. Such information will also be very valuable in planning at all levels and for all activities of the Department.
- In addition to training graduates to meet food industry needs, which they do well, it appears that they aspire to provide education comparable to that of universities. However, it needs to be determined whether this is required for industry employment or necessary and realistic under present circumstances. If such a need is documented by the stakeholders involved, it should be considered if it is useful to offer two degree orientations, one more practical or technical and the other more basic in nature.
- Most of the laboratory facilities are renovated or well maintained and adequately equipped for student training. In addition, the pilot plant is extensively equipped for proper student practical training in various food technology unit operations and processes. It is suggested, however, that efforts should be made to secure funds for the modernization of the facility and its equipment in terms of ease of cleaning, sanitation, and state of operation. With such upgrades the Department may then be able to attract industry interest for product development and testing, and student projects or other collaborations. Related to this, it should be emphasized that the existing industry interactions should be further expanded to build long term ties and collaborations for the benefit of the Department, its students, and graduates.

- Student evaluation scores of courses and faculty are overall above average. However, means should be devised to ensure unbiased evaluations, and to determine reasons for and ways to improve lower score for certain items.
- Certain faculty members should be commended for finding funding and collaborations to conduct research in a non-research institute. This worthwhile activity should be continued and efforts should be made for its expansion and with collaborations with sister departments in TEI or universities.
- The Department has contacts and collaborations with certain international institutes. Efforts are needed to further develop and cultivate such ties through collaborative activities and short term exchange of students and faculty in order to increase mobility.
- As initial efforts have started for the establishment of electronic means in student instruction and communication, it is necessary to enhance and expand the use of such means to the whole curriculum and all student activities, including student access when at home, since students generally live a long distance away from campus.
- A comprehensive lending library is available and this is appreciated by both faculty and students. It is suggested that efforts should continue to procure updated books and other material and make it part of the student educational process. Related issues include the potential of having multiple copies of key library material for students who live away from campus, as well as regular, substantial when needed, and documented updating of notes and handouts of materials that students receive from instructors.
- Another related suggestion is the documented regular revision and updating of the curriculum, which it was indicated as occurring. However, it should be based on documented needs and data collected for this purpose.
- Temporary faculty allows flexibility in curriculum offerings but it may not be as efficient in activities such as long term planning and student counseling. Therefore, it is suggested to consider these issues in determining the balance between permanent and temporary personnel.
- One issue that needs major attention and comprehensive action by the Department but also by government and society is the low graduation rate including students that appear to never graduate, and the length of time required for graduation, which for the majority of students may be as long as eight years. This is a major societal, economic and moral issue, which should be taken seriously. The Department, and other stakeholders, should open an honest and real dialogue with the students to determine reasons and based on that to seek ways for improvement. One approach to better analyze the reasons for this problem may be to collect data relative to which subjects delay graduation, any trends, and reasons for that; such data may be collected through evaluation and analysis of records as well as anonymous student surveys. The data can then be used for improvement.

- The low attendance of certain lectures by students is a concern that may also contribute to slow and low graduation rates. The faculty, individually and as a group, and through discussions with students, is encouraged to determine reasons for this in order to resolve the issue. Approaches that may help address this problem include additional tutorials that will provide students with a level of knowledge that will allow them to better participate in more advanced or difficult subjects, which will also allow maintenance of high quality standards in the more difficult subjects; introductory seminars during the first and second semesters, presented by various faculty members that will introduce them to their field of study, its content, its breadth, its opportunities, and its value in society. This will help students determine where they will belong when they graduate, instill purpose in their efforts, and potentially increase their interest in taking their studies more seriously. Additionally, teaching materials and methods should be re-evaluated when necessary.
- An approach that may contribute greatly to the improvement of student-teacher relations, class attendance and graduation rates and timeliness is an improvement in teacher-student communication and interaction. Students may react differently when they feel confident that there will be no grade repercussions if they express their true feelings, concerns, problems, suggestions, and ideas for improvement of the educational process. It may be a difficult and slow process to establish such a relationship and trust, and there may be obstacles from both sides; with time, patience and planning, however, things will improve, and confidence and respect will build from both sides toward each other.

The Members of the Committee

Name and Surname	Signature
1. John N. Sofos (President)	
2. Dr. Markus Strobl	
3. Dr. Christos Apostolopoulos	
4. Georgios Triantafillides	
5. Lisbeth Munksgaard	