

EXTERNAL EVALUATION REPORT

AGRICULTURAL UNIVERSITY OF ATHENS

DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

DECEMBER 13-18, 2010

External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Food Science and Technology of the Agricultural University of Athens consisted of the following five (5) expert evaluators drawn from the Registry compiled by HQAA in accordance with Law 3374/2005:

1. Constantin Genigeorgis (Coordinator)

Professor Emeritus University of California, Davis, USA and Professor Emeritus, Aristotle University, Thessaloniki, Greece

2. Christos Apostolopoulos,

Quality, Food safety & Dairy Affairs Manager, Friesland Campina Hellas S.A. Athens, Greece

3. Dimitris Charalampopoulos

Professor, University of Reading, Reading, United Kingdom

4. Vassileios Gekas,

Professor, Cyprus University of Technology, Limassol, Cyprus

5. Jasmina Havranek

Professor, University of Zagreb, Zagreb, Croatia.

The scope

The scope of this evaluation is:

- 1.To define whether the diverse actions of the department under assessment ensure that the results are consistent with its predefined plan
- 2.Evaluate whether this plan is appropriate for the accomplishment of the unit's objectives and
- 3.Check whether the plan is effectively implemented.

It was the wish of the Department of Food Science and Technology of the Agricultural University of Athens to be evaluated by a committee including foreign, non Greek speaking experts. Consequently, following instructions by HQAA, the Department submitted its Internal Evaluation Report (IER) in Greek with and extended abstract in English.

Introduction

The Department was visited by the Committee on December 13 to 18, 2010. The personnel of the Department were friendly, hospitable and ready to cooperate by answering questions and providing requested information and materials when available. They were very anxious to hear our comments on their activities and efforts. Our main contact with the Department and most valuable people in carrying out our assignment were the members of the Internal Evaluation Committee (IEC) of the Department consisting of professors Stavrianos Yianniotis (Chair of the Department), Eleftherios Drosinos, Michael Komaitis, George-John Nychas, and Efi Tsakalidou. They were all fluent in English. Each one of these professors represented one of the following five laboratories of the Department, namely: Food Process Engineering, Quality Control and Hygiene for Food Stuff and Beverages, Food Chemistry, Food Microbiology and Biotechnology and Dairy Research respectively.

Initially the committee had a warm welcome meeting with the Rector of the University Professor Kostas Feggeros, the Vice rectors Prof. Georgios Papadakis and Prof. Epaminondas Paplomatas and the Head of the Food Science & Technology Department Prof. Gianniotis. Indeed the discussion was very friendly and the fact that the top management members of the University expressed their personal concern for this external evaluation of the first of the Departments of the University was indicative of their true belief and dedication to the Quality Assurance of this educational institution.

Following this the Committee went to the Department where Prof. Gianiotis and the members of the IEC of the Department presented in brief the most important points for the Department as these were drawn from the internal evaluation report. The report was produced in two versions, one in English which was an extended abstract and one in Greek which was complete and which was given to the External Evaluation Committee (EEC) members for the first time at that date.

During the presentation, the opportunity was given to all the members of EEC to discuss in more depth specific areas and particular issues related to the scope of this evaluation.

During the period of visit a number of strikes were announced including the public transports, the civil & private sector etc. The IEC recommended a number of visit program changes to make sure that the EEC had a chance to meet and talk with the undergraduate and graduate students, alumni and academic staff.

The EEC interviewed only 6 undergraduate students in the absence of any faculty member. The students though small in number demonstrated maturity, openness, they were highly informative to us about their course work load, class scheduling, reasons for extended times to get their degrees, strengths and weaknesses of academic preparations and concerns for future employments. The meeting was highly refreshing to us.

The EEC further met with only three of the students in the post-graduate program of the Department and all (8) Doctoral degree candidates. The meeting was highly informative to us, with open and candid discussions. The financial burden and the cost of the post-graduate program was of great concern to the post-graduate students. This was not so much of an issue with the doctoral students as they indicated to us the absence of fees. All students indicated awareness on the purpose of our visit and they were highly supportive of the idea of a self and external evaluation of the academic programs they are attending. They were very much interested in quality education and how the current educational programs will affect their future careers.

The EEC had also a very informative meeting with six former graduates of the Department. The Department provided to EEC a study concerning the professional employment of former graduates, their market experiences and challenges and to what extent their overall education as agriculturist-food scientists met their expectations. This study, based on 101 responses was highly informative and beneficial to us in drawing significant conclusions in the trends.

An extensive tour was organized for the EEC to see all the Departmental premises (i.e. teaching and research lab facilities, pilot plant, library, teaching classrooms etc.).

During the visit to the five laboratories of the Department the EEC had a chance to meet with academic teaching and research personnel who explained the ongoing research, financial research support, facilities and equipment. Furthermore these staff explained to EEC the critical needs for modern teaching and research facilities, as the current buildings are many decades old and present an environment not comfortable and conducive to effective work. They also indicated emphatically the urgent need for expanding the dairy pilot plant and incorporate facilities and equipment addressing additional and highly significant areas of food processing like meat processing, canning of agricultural products, etc.

On Wednesday, December 15, the university facilities were closed but the IEC was able to organize a meeting of the EEC with 17 out of 22 academic personnel. This meeting lasted for over 4 hours and it was highly constructive and beneficial to all parties concerned. Next, the EEC visited the Central Library, the Office of Research where a very informative presentation was given by a member of the Office staff about their functions, current activities and the critical role the office plays in administering university research. EEC`s schedule for the day was completed with a visit to the Office of Vice-Rector, Professor Epaminondas Paplomatas with whom the EEC spent over an hour touching on issues of university wide current activities and future plans and targets especially in connection with the Department of Food Science and Technology. The meeting was very informative, candid and mutually beneficial.

A. Curriculum and teaching

A1. Curriculum

APPROACH

The Department offers a single undergraduate program, one postgraduate program, a doctoral degree program and participates in two additional postgraduate programs.

Undergraduate program

The main objective of the Department of Food Science and Technology (Food Sci & Tech) is to train food scientists able to cope with the requirements of food industry, food business operators and all other partners involved in the production chain of food including agricultural products.

The EEC feels that the goal is satisfactory, but there is skepticism whether the curriculum is designed in a way to fulfill this goal.

The curriculum offers a total of 98 courses. Of these, 57 are required for graduation with 43 being mandatory, and 14 being electives. The first cycle (first six semesters) absorbs 54% of the total curriculum. Courses taken during the second cycle (last four semesters) representing 46% of the curriculum are devoted to the area of Food Sci & Tech. In the overall curriculum 18 courses are devoted to General background, including English (3), 18 to Agricultural Science and 21 to Food Science (12 mandatory, 5 electives, 4 specialization). The typical academic semester last for 13 weeks.

In the English version of the IER (page 7, lines 1-4) it is stated 'The curriculum of the Department is compatible with corresponding curricula of respective Universities both in quantitative and qualitative criteria. The curriculum provides guidelines which are specific to the interests of the students. The program is announced via the website of the Department'. The EEC has difficulty in comprehending this statement and is confused and wondering whether the IEC took into account colleges of agriculture, which offer exclusive degrees in Food Science or the comparison is being made with colleges of agriculture, like the one at the Aristotle University of Thessaloniki, where the degree in essence is a degree of double major, one representing general agriculture and the other food science. Discussing this issue with students, academic staff and alumni, the EEC got the feeling that this curriculum, with extensive breadth but a rather narrow depth, is justified by the desire of assuring the graduates a speedy employment in the broad economic sector of agriculture, which includes plant, and animal food production and further processing. EEC's opinion is that the current global market trends, need more of experts than generalists. Since changes in the curriculum is a matter of the central University Administration (the Department has decision making freedom only for the last two years) the committee's recommendations to the University's Central authorities is that the agricultural science component of the first six semesters should be limited only to courses of significance to the food science objectives. For example, what is the need for 'Agricultural hydraulics and irrigation', 'Topography and land survey', and 'Meteorology' for a food scientist when there is no independent mandatory course in 'Food toxicology', 'Sensory evaluation of foods', 'Food biochemistry', 'Food enzymology', 'Food packaging' or 'Food product development'?

Obviously, the Department should decide in the future which courses will replace those eliminated in the core curriculum of the first 6 semesters. It was encouraging to see that the above EEC's arguments were supported by students, academic staff and alumni. They all suggested that the time for change has arrived, as there is no practical way that innovative new courses can be incorporated into the existing curriculum structure, concerning the last 4 semesters of the specialization program.

The curriculum of the last two years which is focused on specialization was decided after consultation with all the stakeholders in the Food Science Department, which has flexibility for carrying out re-adjustments. The Department meets at the end of the academic year and goes through any changes that are needed in the curriculum of the Food Science part (last two years). For example, in the last few years, the Department introduced a new branch in the curriculum, i.e., the Nutrition branch, which consisted of four new modules. Minor changes are normally introduced every year to the courses.

The curriculum for the first three years is decided on a University wide agreement, and the Department has insignificant power to define or change it. This program is reviewed every year by the Inter-department Committee of the University and approved by the University Senate. As mentioned earlier many of the courses set for the first six semesters have nothing to do with Food Sci & Tech and the Department has very limited power to intervene.

The whole curriculum should have taken into account also the statistical data from collected alumni questionnaires, such as the one based on 101 graduates of the University's Food Science and Technology program who received their degrees during the period of 1985-2008. According to this particular questionnaire, a percent necessity index between 3 and 33% for the first curriculum cycle was assigned for 18 agricultural-based courses, whereas for the food-based courses the percent indexes were significantly higher. For the question "If in the curriculum of Food Sci & Tech should have fewer classical agricultural science courses and dealing more with food science the response were in favor of Food Sci & Tech by an overwhelming suggestion by 86 (85%) in favor of the Food Sci & Tech courses. In addition to this, the EEC did not have any

documented evidence showing that the food industry was consulted to provide an input in curriculum revision process.

It is the feeling of EEC that the overall curriculum as it stands today obviously aims at graduating students with two majors, one in general agriculture and one in Food Sci. & Tech. rather than providing a pure Food Sci. & Tech. course. It is doubtful whether this is a cost effective route for societal and market needs especially in view of serious delays in student graduation time?

Course attendance occupies over 30 hours per week. Realizing the international norms that for every teaching hour a 3 hours of studying is required, it is very likely that the students will run out of available time to prepare for the examinations. This is probably one of the main reasons that only very few students in the Greek Universities, can complete their studies within a semester after the completion of their classes. For example, it is rare phenomenon that American university students will not graduate at the end of the last semester of their studies.

Postgraduate course

The Department operates for more than a decade a postgraduate degree in Food Science and Technology and Human Nutrition (Food Sci & Tech & HN). The aim of the program is to produce well educated specialists in the area of Food Sci. & Tech to meet societal needs. The graduates are employed in State agencies and the food chain at the primary and further processing level. Of the graduates 10-20% continue their education at the doctoral level. The Department also collaborates in the provision of two additional post graduate programs in viticulture-enology, with the department of Plant Production Science, and a post graduate program of MBA in Agribusiness Management with the Department of Rural Economy and Development. The Food Sci. & Tech & HN program requires two semesters of course attendance, one month of practical training in the food industry and a thesis, both occupying a third semester. In total 19 courses are offered; out of these 8 are compulsory and 11 are electives. The students have the freedom to choose one of six emphasis areas. According to the internal report, the financing is not sufficient particularly for a program which requires a thesis based on research. The fees for attending the program are currently 4,500 Euro, which partly cover the

cost of the program. Over the last six academic years 70 scientists have fulfilled the requirements for the program.

Student evaluation

HQAA special forms were used to evaluate the undergraduate courses and the professors. Unfortunately the IEC provided no tables to reflect the qualitative and quantitative nature of student responses. Only a general statement is provided in the IEC report indicating 'Examining system is deemed as satisfactory'. In the opinion of the EEC, qualitative and quantitative data on student responses are required to identify weaknesses and strengths in the teaching and examination process. For future evaluations, the EEC recommends that it would be more beneficial if the collected data were analyzed with mean, range and standard deviation for each course, and academic personnel. The professors should be aware of statistical data concerning their courses as well as specific comments made by the students in the evaluation forms. Student evaluation should not be considered as a threat to a professorial prestige but rather a positive step in course content and delivery improvement and more effective student education and on time graduation.

Academic staff teaching contact hours

No documented teaching workload for academic staff was provided to the EEC. It is the feeling of this committee that tabulated information of the workload per academic staff, per semester should be collected and included in internal evaluation reports. This should include teaching contact hours, administrative workload and graduate student research supervision, student advising, etc. This information is of significance to an academic when he/she goes through the promotional process as it provides a frame of reference in terms of mean, range and standard deviation of work load and allows more equitable sharing in the teaching duties among personnel.

IMPLEMENTATION

The Department and the University have implemented effectively the curriculum for the undergraduate and postgraduate programs.

As stated above, the total education offered to the students covers two degree areas, namely agriculture and food science. There is a unanimous departmental opinion shared by students, alumni, and academic staff, that the segment of the curriculum represented by the agricultural science area should be shortened in favor of the food science component, in order for the latter to be more compatible to the food science programs offered by relevant departments of other universities. In this way, the curriculum would be more coherent and functional and more cost and time effective. As far as the courses offered in the broad area of food science, the content of each course, is appropriate and of high quality, and of sufficient time. With respect to the scientific caliber of the staff, we consider them highly qualified at the national and international level.

With respect to the resources, these are in general adequate, although certain issues have been identified. The teaching rooms are sufficient, but require improving of their quality, to make them more appropriate for the today`s modern teaching methods. Some of these are in the basement of the buildings. The adequacy, suitability and quality of supportive equipment are unsatisfactory for the use of modern educational technology. The rooms have neither modern aesthetic nor functionality, nor is there any possibility of using new technologies (interactive white board, Internet). The adequacy, suitability and quality of the laboratory sites are modest. Quite often, teaching also takes place in research laboratories. The adequacy, suitability and quality of the laboratory equipment is considered moderate to satisfactory. The department has only an old pilot plant devoted to dairy technology, as part of the dairy laboratory but even this has a rather minimum capacity. Unfortunately, other food processing areas are not available to the students (i.e. meat processing, drying, canning etc). In addition to the above, the adequacy, suitability and quality of storage areas is poor. The Department does not have a study room, other than the state of the art University Library. The offices of the academic staff are dispersed in 4 buildings, and lag behind in aesthetic and functionality. The administrative and technical support is provided centrally by the University through the administrative services.

In international academia we rarely see formal training to develop academic teaching skills. Such training however has been introduced recently in some countries designed specifically for entrance level academic staff.

RESULTS

Though the students acquire the intended knowledge and practical skills the course time scheduling may generate time segments of inactivity. Furthermore, the fact of a highly loaded curriculum, and extensive class attendance time, may be generating a lack of motivation resulting in the significant extension of the duration of the studies and on acquiring the degree on time. In so many foreign universities and especially in the USA, all students in professional and non professional schools graduate at the end of the last semester of their studies. In contrast, it takes a significant greater time for the Greek university student to graduate, a fact contributing to significant economic expenses for the State, hardships for student families, delaying of student employment, outdated of his acquiring knowledge and probably decreasing trust in his/her professional potential.

The Department personnel is fully aware of the reasons behind this Greek phenomenon, which mainly lies beyond the scope of their responsibility. Within the frame of the two years exclusive duties on professional curriculum development, there is not enough time to carry out significant changes. On the contrary significant changes, for the better, can be implemented at the University wide level concerning the first three years of studies.

IMPROVEMENT

The Department knows how the curriculum should be improved but as far as the course workload, the ability of the Department is limited due to the above mentioned reasons. One of the Department`s plans is to enhance the Nutrition component of the curriculum, and extend the period spent by the students in the industry in order to enhance the acquisition of hands-on skills at the industrial level. Moreover, in order to address the inefficiencies of facilities and of certain equipment, which are vital for teaching, the department has recently submitted a proposal to the University Senate for a new building.

A2. Teaching

APPROACH

A variety of teaching methods are used, including lectures, laboratory practices, visits to industry, and e-courses.

In compulsory courses the staff/student ratio is approximately 1/50, whereas in the elective courses this ratio is between 1/10 to 1/30, depending on the choices of the students. In the laboratories of compulsory courses the ratio is approximately 1/25. In the laboratories of elective courses this ratio varies between 1/10 to 1/15, and sometimes less, depending on the choices of students. As far as the academic personnel, the ratio is 1:10 and as far as the rest of the teaching staff the ratio is 1:13. EEC considers the department's staff/student ratio to be satisfactory.

The academic staff are available both in the campus and off campus (through electronic communication) to address academic (help with coursework, preparation for examinations, study advice), and personal issues. The EEC strongly supports the creation of advisors/tutors in a formal way, who are assigned to the students from the beginning of their studies and have regular meetings with them throughout their studies.

After discussing the issue of adequacy of means and resources with the students (undergraduate, postgraduate) and staff, the EEC came to the conclusion that there is a wide spectrum of adequate means and resources being used, which includes state of the art electronic communication systems (e-class platform, GUNet).

As far as the examination system the EEC was informed that it included mid-terms in some of the courses. In a system that is overloaded and it takes so much time to take a degree, the final grade should be built up gradually throughout the duration of the course and not to be based only on the final examination. Therefore, the EEC proposes that the practice of multiple examinations is extended to all courses. Additional assignments of review papers (term papers) on interesting subjects should also be incorporated in the grading system.

IMPLEMENTATION

In the IER it was indicated that a questionnaire is being distributed at the end of each course for the evaluation of the course and the staff. This is modeled after the one proposed by HQAA. This system was introduced for all courses during the academic year 2008-2009 and is reviewed by the central academic administration. Unfortunately none of the findings were incorporated in the IER. In the EEC's opinion this is an important tool in order to get a realistic picture of the teaching methods, their delivery and their impact upon student learning. The committee encourages the Department and the central administration during the process of reviewing the

data that appropriate tables are created, which reflect the performance of the teaching team as well as that of the individual members for each question addressed. This approach will allow the identification of teaching deficiencies in terms of lecture delivery and educational means and methods used. Such deficiencies should be identified at the administrative level and corrective actions should be implemented. In case of significant teaching deficiencies the EEC recommends that the central administration organizes appropriate seminars, which will assist the faculty in improving their teaching skills.

With respect to the quality and adequacy of teaching materials and resources, according to the academic personnel and undergraduate and graduate student opinions, the course material in terms of books, hand-outs, including power-point presentations and up-to date relevant content are all supplied to the students. No complaints during the student meetings with the EEC were raised.

Based on their impressive record of securing research funding, the faculty acquires additional knowledge and skills, which they pass on to the students during their research projects. There is no doubt that a department so successful in attracting competitive grants, contracts with industry and other sectors of the economy, will eventually allow the overflowing of the acquired knowledge into the teaching practices and teaching content.

There is no strategic planning on the mobility of the members of the academic staff. However, currently, the Department has several schemes (Erasmus, Socrates) in place with many universities throughout Europe, and a significant number of academic staff and students have utilized these programs. Also, a considerable number of scientists from other countries regularly come in this department every year. The committee identified a weakness, which was also strongly expressed by the totality of the teaching staff, concerning mobility opportunities. More specifically, although all of them had permanent jobs no formal provision was made for them to qualify for sabbatical leaves.

RESULTS

With respect to the efficacy of teaching, we cannot be very specific due to the absence of documentation of the students' opinion supplied to the EEC. However, from our discussion with

a limited number of students and alumni, we have the feeling that there is sufficient efficacy of teaching.

With respect to the discrepancies in the success/failure percentage between courses the committee is unable to provide any reliable comments in the absence of any statistical data provided to us. Nevertheless, the limited number of students interviewed indicated that a repetitive failure in the final exams was not common. The committee's feeling is that statistical data should be generated, and incorporated in the internal evaluation report, concerning the percentage of passing and failing grades for every semester over a period of time.

With respect to the differences between students in the time to graduation and final degree grades, the committee thinks that the tables in the IER are explicit enough to draw conclusions. The committee feels that the data concerning the degree grades are satisfactory to impressive, as during the period 2003 – 2009, 51 to 74% of the students graduated with a grade of more than 7. Such a score definitely reflects the efficiency of the Department's teaching system in delivering knowledge and the acquisition of knowledge in the area of Food Sci. & Tech.

With respect to the time required for graduation the data provided by the Department reflect a serious social, economic and educational problem for the institution and the Greek society. More specifically, the EEC calculated that for the period 2002 to 2009, 63% (from 48 to 79%) of the entering students completed their academic studies in 7 or more years! Another way to evaluate the importance of these data is also the fact that after such a delay in graduation, at the time of their employment their knowledge is almost obsolete. From the discussion EEC members had with the faculty, everybody is aware of this major educational, social and economic problem.

IMPROVEMENTS

The feeling of the Department's academic personnel and of the EEC is that the major problem identified above is multifactorial and the big question is to what extent an academic unit can correct it. Potential solutions, which were discussed with the faculty, may incorporate:

- 1) Modifications towards lowering the teaching load of the program, especially in the first six semesters.

2) Facilitation of the student preparation for assessing their knowledge through a system of a multiple examinations (coursework, tests, essays, etc) throughout each course leading to a final grade, rather than a grade acquired by a final examination. Such a system, among other things, will significantly enhance the student attendance in the theoretical part of the courses.

3) In cases of identification of trends in student failures, corrective actions should be taken, such as training, improving in teaching aids, etc.

4) It is unacceptable for a student to arrive in the 7th or 8th semester and not having passed courses of the earlier semesters, which are essential for the more specialized courses taught in the later semesters. Corrective actions in this area may not have a significant effect on cutting the time required for graduation but for sure will have a beneficial effect in helping students understand and perform well in more specialized and advanced courses.

There is a sustained effort by the academic staff to assist the students in by-passing the above mentioned difficulties as much as possible, within the legal frame of regulations.

B. Research

APPROACH

The department exhibits a special desire to focus the research component in the specialty areas of each of the five laboratories. This covers a broad area of Food Sci & Tech, and includes novel research.

The committee has not identified any specific standards in assessing the research performance of the academic staff other than the fact that the acquired funding will be assessed during promotional procedures, and obviously by the funding agencies. It must also be noted that every academic staff is free to seek funding from various sources, such as national or international agencies and the private sector.

IMPLEMENTATION

The Department encourages the academic staff to seek funding from national and international agencies and the private sector.

The EEC was provided with a document recording the research activities for the academic years of 2007 and 2008. The success record in securing grants is highly impressive, as the members of the Department obtained 82 and 72 projects for the respective years. The funding sources were broad, including national, EU and international agencies, and the food industry. Moreover, the quality and quantity of the published work, in high impact factor journals, is outstanding. More specifically, according to the web of science the number of publications of the last five years (2005-2009) in Journals of Science Citation Index is 195. Until 28/09/2009 the citations for publications were 898 broken down as follows: 2005 (8), 2006 (66), 2007 (178), 2008 (326) and 2009 (320).

In terms of research collaborations there are synergies with other departments within the University, as well as other Greek universities. Most impressive is the high number of joint projects with other universities and scientific centers from countries not only of the EU (27 members), but also from New Zealand, United States of America, Brazil and Canada.

As it is difficult to evaluate the research infrastructure, the Department has conducted an internal study (using a questionnaire) to get the feelings of the staff members. The weaknesses that were also identified by the committee during our discussions and tour of the Department are the following: 1) inequality of supplied laboratory space (ranges from 1.60 m² /person to 20 m² /person). 2) Frequently research facilities are used as teaching facilities, thus hindering the smooth conducting of research. 3) The suitability of the research laboratories is considered not to be satisfactory. 4) With respect to equipment, state of the art instrumentation is available to the research investigators (most of it acquired through research funds) for specific areas; some other areas though need replacement of old equipment, which are unable to serve sophisticated and complex research objectives. 5) Many of the equipment are scattered around the various buildings, which creates inconvenience for the researchers. 6) The maintenance of the equipment is a serious problem as State funding is limited and therefore the servicing of the equipment is covered by existing or new research funds.

RESULTS

Based on the publication and funding record of the Department's personnel it can be deduced that the Department's research objectives are very successfully implemented. Through these

accomplishments the members of the Department are well known worldwide and as a result they are regularly invited in numerous conferences, as leaders of projects consortia, scientific forums, decision making committees, electoral bodies, editorial boards, reviewers in journals (640 times during the evaluation period), etc. In addition to this, a number of faculty members have been the recipients of national and international awards.

The EEC notes the accomplishments of the Dairy Laboratory as an international laboratory of excellence in dairy science. Furthermore, members of the laboratories of Food Microbiology and Biotechnology and the Laboratory of Food Quality Control and Hygiene have not only attracted invitations as main speakers in international congresses but have also placed their research teams among the best in the world in predictive modeling and risk assessment.

With respect to the applicability of the research the committee (based on the publication record and the type of research funds) characterizes the departmental research as applied in nature, fundamental in its approach, and of high caliber.

IMPROVEMENT

During the discussions with the faculty the EEC identified improvement needs in the infrastructure of the department and certain administrative areas at the government/central university level, which are not conducive to the efforts of preparing, securing and executing research projects. These areas have been explicitly identified in the IER and will not be repeated here. We highlight the following: The flow of information concerning calls for submission of proposals funded by the government frequently is not systematic and often leaves short time for preparation and submission. However, the existence of a well organized office of research (ELKE) facilitates the investigators' efforts in terms of the payments, financial and legal implications.

The committee identified the lack of an effective University plan with respect to health and safety. In research there are often issues with the handling of toxic chemicals, toxic fumes and dangerous procedures for the investigators. In view of the fact that several research laboratories are also used for teaching purposes, the potential risks are amplified. This problem cannot be tackled by ad hoc measures, but by the implementation of a coherent health and safety system.

The system should include a health and safety officer, standard operating procedures, safety records, and it should be submitted to regular reviews. In the absence of such a system the legal implications might be extremely serious for the University.

C. All other services

APPROACH

The Department is of the opinion that the services are generally of satisfactory level, however they have identified a number of areas that need extra attention.

In regards to the simplification of the administrative procedures, a policy exists that encourages the use of electronic communication and handling of information, however the simplification of procedures is restricted by the limited administrative personnel employed (two secretaries for the whole Department).

The Department does not have a policy to increase student presence in the campus, and unfortunately there are no facilities in the campus or in the Department to help doing this, such as common rooms, coffee shops, etc. The only available facilities where the student can socialize and entertain themselves are the library and certain athletic facilities (including a gym).

IMPLEMENTATION

In the presence of 22 faculty members, a large undergraduate program, numerous postgraduate students and postdoctoral staff, as well as extensive research activities, the two administrative staff can only partially cover the needs of the Department.

There is a state of the art library equipped with a number of PCs, free wireless service and study rooms. The library can also be accessed off-line by all registered students. There is a well equipped gym as well as athletic courts. Moreover, there is a counseling office, which provides advice to the students with specific needs (learning difficulties or disabilities).

RESULTS

The committee was impressed with the library facilities and conference room; the environment was extremely pleasant and inspiring for the students and staff using it. However, the working

hours are very limited (closed in the evening and during the weekends). Also the gym has limited working hours, whereas the athletic courts are neglected and need regular maintenance.

The insufficient number of administrative staff of the department has been addressed above.

IMPROVEMENT

The problems have been identified but corrective actions are beyond the jurisdiction of the Department. Therefore, there are no initiatives under way to improve the situation.

Collaboration with social, cultural and production organizations

According to the internal evaluation report, the Department demonstrates an intensive activity and services at a local, regional and national level. With respect to the industry, its contribution is through collaboration in research projects, advising and a limited amount of continuous education. With respect to government agencies, several academic staff are members of advisory committees in national and international forums, contribute to continuous education training, and also act as reviewers for research grants in national organizations. It should be mentioned that the current chairman of the National Hellenic Food Safety Authority is a distinguished member of the Department.

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

The Department`s IER identifies the following positive issues:

- The incoming students have high academic scores.
- There is a smaller percentage of ‘still’ students in comparison with other departments of the university.
- The overall graduation time as compared to the other departments of the university is shorter.

The EEC cannot verify these statements as no statistical data have been provided.

Also the statement in the IER that the graduates of the university with specialization in Food Sci. & Tech are securing good employment cannot be verified in the absence of data supplied to us.

The department`s IER identified the following negative issues:

- insufficient room for laboratories except of Laboratory of Dairy Research.

- lack of funding (small regular budget) and public investment.
- non-autonomy of the Department to determine the program of study.

The IER attributes these negatives as due more or less to institutional and external to the Department interventions. In many ways the EEC agrees with expressed negatives.

It is true that the Dairy Laboratory has more space and equipment flexibility as compared to the other laboratories. Furthermore, the former has a satisfactory pilot plant while the activities of the other laboratories cannot be accommodated for student hands-on training in the absence of a pilot plant where practical training, e.g in meat technology and canning can take place.

Other than a certain degree of flexibility in updating the curriculum of the 7th to 10th semester the Department has no power to adjust the curriculum of the first six semesters as this issue is addressed by university wide philosophies and policies.

Improvement plans

The department in its IER proposes the following:

1. Short term action plan

- integration of more Department courses into the curriculum of the first six semesters.
- improvement of existing infrastructure through the regular budget and of the program of public investment.
- strengthening cooperation with the food industry
- updating the objectives of Department

2. Medium-term action plan

- a new building for the accommodation of the Department
- cooperation with similar universities from other countries for common postgraduate programs.

To the University administration the IER proposes

- autonomous curriculum

- spatial improvement and restructuring of the Department. Since 2007 a request has been advanced to the office of the Rector to include in the next 4- year planning of the University the construction of a new building for the accommodation of the Department.

To the State the IER proposes

Increase funding for the operation and research in higher education institutions with a parallel increase of the funds of the program of public investment for the improvement of basic infrastructure of the Department and in particular in the area of buildings facilities.

E. Final Conclusions and recommendations of the EEC

The EEC recognizes the department`s impressive record concerning the award of competitive research grants from local and international sources and the realization of research contracts from the food industry. The practical result of these accomplishments has been the impressive publication record of the Department`s staff, the boosting of their professional competence and the invitational record as speakers, think tank members, and other distinguished assignments and recognitions, and partnerships with public services and the food industry.

A major issue with the Greek university system recognized by many members of the academic community and by two of the EEC members who served in the past in this system is the serious and unacceptable delay in graduation time. In many schools and departments, grade point averages and diploma grades are terrible thus creating problems of employment, securing scholarships and acceptance to graduate schools inside and outside of the country. So far no national or institutional actions have addressed this social and economic problem. The problem is multifactorial and its solution requires actions at the Department, University and State regulations level. No organized statistical data as those requested to be reported in IER`s and verified by the EEC have ever been collected in the past. Some degree of accreditation processes involving international bodies have been applied to certain professional schools of the country.

As annual quality assurance data are collected and analyzed by departments, schools and universities, problematic areas in curriculum content, scheduling classes to minimize waste of

time, and teaching efficiency (lectures, laboratories, practical training and grading) will be identified and corrective actions can become possible. Currently there is no mechanism in training the failing teacher. There is no mechanism to assess the productivity (teaching, research, university and public service and professional competence) of a faculty member once he/she has been promoted to full professor!¹ Therefore there is a need to create additional promotional steps (with monetary rewards) to maintain motivation and continued academic excellence.

Data concerning student questionnaires (at the department and school level) should be analyzed, summarized and placed in the web to show trends, and individual (without names) scores (to identify individual weakness and bottlenecks). Data concerning a particular faculty member should be known only to department chairs and school deans and electors during the promotional processes.

The EEC feels that the non-autonomy of the Department and in particular its inability to define and decide about the curriculum concerning the undergraduate courses, has indeed reached not only a scandalous but at the same time has exceeded the alarming level. This obstacle is the reason of many problems of the undergraduate courses, starting from the quality of the students entering the university and ending to the time, money and effort wasted for subjects completely irrelevant to the Food Sci. & Tech area. Under such overloaded curriculum it is psychologically unsound to force the students to come to classes or to pay more attention in a laboratory class.

¹ If a person is promoted to this rank at age 50 nobody will ever assess him/her again until retirement time at age 67!

Regarding the insufficient laboratory space it is something that the EEC has also confirmed. However a solution to this difficult issue, because it requires a significant investment, is the sharing of the instruments of the Department so as to take advantage of all the analytical capacity of the Department which is indeed rather significant. This will enable not only a better use of the existing instrumentation but also reduce the cost maintenance and drastically minimize the damaging effect of a probable break-down of the expensive instruments.

As far as the lack of funding and public investment that it is claimed by the Department, indeed this is becoming worse and worse every year. The regular funding has reached its historical

lowest levels. Unfortunately this seems to be more or less the case for the coming years, and therefore the Department has to consider more seriously other means of funding beyond research. Some of them might be:

Offering continuing education courses for the industry and charging an appropriate fee.

Expand consulting possibilities with a fee for service as there are so many experts in the Department to help the Greek food industry. This practice is in place in Greek professional schools in the form of clinics. Ways to utilize the collected funds and means of giving credit to those who bring them can be worked out in the Department, University Administration and Office of Research. As a motivating factor, faculty contributions to continuing education and consulting should be serious components of every promotional package. Such accomplishments reflect also on one`s professional competence which should become one of the major promotional attributes.

Enhance the attraction of donations from society (individuals, alumni, organizations and the industry). A major source of funding even in State universities in US, (as government funding is drying out), is coming from donations². Donations to the Greek society and State in the form of institutions, building facilities, hospitals, athletic facilities etc by the “very rich and famous Greeks” has been a tradition documented in the history of modern Greece.

The reason why the educational institutions are so afraid to tap these resources is a question needing further exploration.

²For example the new Chancellor of University of California, Davis, the Greek Linda Katehi has set the donation target to one billion dollars for the next two years. Over 650 million have been committed already in the first year of this effort!

The fear and the notion by certain faculty and students that the universities and the departments “will be bought” by the donors for “personal services” is too obsolete, naive and verifies only the existence of ignorance on global trends. At the end this attitude deprives valuable resources from the University that would only further improve its teaching and research level for the benefit of all the academic community. Rules of ethics can be established, as they exist in the most

prestigious institutions of the world to assure that the existing suspicion does not become a reality.

The EEC realizes also that although long term goals are clearly defined by the Department, no respective long term plan actions have been proposed to achieve those goals.

As a final note the EEC recognizes the enthusiasm with which the Department and the University Administration supported our task and salutes the role of H.Q.A.A for HIGHER EDUCATION in contributing to the release of renovating forces from within the Greek University System for the benefit of the Greek youth and society.

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