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

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT OF FOOD TECHNOLOGY

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF THE IONIAN ISLANDS

February 2014

### **External Evaluation Committee**

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

1. **George Vellidis**, Professor, University of Georgia, Tifton, Georgia, U.S.A. (Coordinator)
2. **Sophia Kathariou**, Professor, North Carolina State University, Raleigh, North Carolina, U.S.A.
3. **Vasileios Fotopoulos**, Assistant Professor, Department of Agricultural Sciences, Biotechnology and Food Science, Cyprus University of Technology, Lemesos, Cyprus.
4. **Amalia Tsiami**, Senior Lecturer in Nutritional Medicine, School of Psychology, Social Work and Human Sciences, University of West London, London, UK.
5. **Andronikos Mauromoustakos**, Professor, Dale Bumpers College of Agricultural, Food and Life Sciences, University of Arkansas, Fayetteville, Arkansas, U.S.A.

***N.B.** The structure of the “Template” proposed for the External Evaluation Report mirrors the requirements of Law 3374/2005 and corresponds overall to the structure of the Internal Evaluation Report submitted by the Department.*

*The length of text in each box is free. Questions included in each box are not exclusive nor should they always be answered separately; they are meant to provide a general outline of matters that should be addressed by the Committee when formulating its comments.*

## ***Introduction***

### I. The External Evaluation Procedure

- Dates and brief account of the site visit.
- Whom did the Committee meet?
- List of Reports, documents, other data examined by the Committee.
- Groups of teaching and administrative staff and students interviewed
- Facilities visited by the External Evaluation Committee.

### II. The Internal Evaluation Procedure

Please comment on:

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

The External Evaluation Committee (hereafter the EEC) visited the Department of Food Technology (hereafter the Department) of the Technological Educational Institute of the Ionian Islands from February 3<sup>rd</sup> to February 5<sup>th</sup>, 2014. Because of the unusual circumstances associated with the series of earthquakes which struck the island of Kefalonia on February 2<sup>nd</sup>, only two members of the EEC were able to participate in the site visit to the Department. These two members were Professors Vellidis and Kathariou. The site visit was originally scheduled for February 4<sup>th</sup> and 5<sup>th</sup> but because of the uncertainty associated with the earthquakes, the site visit began on February 3<sup>rd</sup>. On the afternoon of February 3<sup>rd</sup>, the two EEC members met for about six hours with faculty and staff of the Department. The visit began with a presentation summarizing the Department's activities conducted by the members of the departmental self-evaluation committee (OM.E.A) which had undertaken the drafting of the Self-Evaluation Report. The presentation was attended by seven of the eight permanent faculty members, several temporary faculty members (Εκτακτο Εκπαιδευτικό Προσωπικό), some of the Departments four technical support staff (E.T.II.). Following the meeting, there was a general discussion about the Department (30 minutes). Later that day the EEC met separately with seven of the permanent faculty members (1 hour) and five of the 14 temporary faculty members (Εκτακτο Εκπαιδευτικό Προσωπικό) (1 hour). The day ended with tours of the Department's laboratory facilities. On February 4<sup>th</sup>, the day began with more laboratory tours and a two-hour visit to the Robola Cooperative Winery of Kefalonia with which several members of the Department's faculty members work on applied research projects. Later the EEC met with 3 current students (1 hour) and an alumnus of the Department (30 minutes) who works as a viticulturist and food

technologist at the Gentilini winery. Planned meetings with a larger number of students and with additional business enterprises with which the Department cooperates were canceled because of the earthquakes. The day concluded with more laboratory visits and a dinner with several faculty members. On February 5<sup>th</sup> the EEC met with three of the four technical support staff (Ε.Τ.Π.) and the Department's utility worker (εργατοτεχνίτη), toured the final laboratories, visited the Department's farm which is immediately adjacent to the buildings which house the Department. The site visit ended with a final 2-hour meeting with seven of the Department's permanent faculty members. The other three members of the EEC who were in Athens were able to participate actively in this meeting via teleconference (Skype). The two EEC members conducting the site visit had lunch with Professor Maravegias, President of the Governing Board of the Technological Educational Institute of the Ionian Islands and Professor Nikolaos Boukas, Head of the Department of Sound Technology and Musical Instruments of the TEI which is based in Lixouri, Kefalonia.

In Athens, on February 5<sup>th</sup>, the other three members of the EEC met with the Professors Dragonas and Soulis, vice presidents of the Governing Board and were briefed on the TEI and the roles of the Governing Board. On February 6<sup>th</sup>, the entire EEC met with Professor Maravegias, President of the Governing Board, Professor Dragonas, the eighth member of the Department's permanent faculty, and an alumnus of the Department who is pursuing post-graduate studies at the Agricultural University of Athens.

Our meetings were very productive with engaging large-group and one-on-one discussions. Our discussion with the students was extremely positive. The students ranged from second-year students to those who had been in the Department for 9 years. Approximately half of the students had selected the Department as one of their top choices prior to the PanHellenic Exams. However this is not representative of the entire student body where a much smaller percentage had selected the Department as one of their top choices. This assessment is made based on discussions with students and faculty. Relatively few of the students are from the local region. When we asked the students why they had chosen the Department, they provided several reasons. One was that the Department offered a specific course of study which interested them because of a family business. Another compelling reason was that the Department's degree (the original and current) offers graduates certain professional rights and privileges (for example the right to sell agrochemicals, work for certain public sector organizations, etc.) which is a competitive advantage in the job market. The most common answer though was that the economic crisis compelled them to consider a career in agriculture. In general, both the current students and the alumni were very satisfied with the Department. We found this to be a very positive reflection of the Department's teaching faculty and staff. The students were very interested in offering us their opinions and the discussion lasted

approximately an hour and ended only because of time limitations.

During the preparation of the external evaluation report, the EEC considered the Self-Evaluation Report and the discussions that occurred during our interactions with the various members of the TEI. In addition, the EEC considered several documents provided by the Department upon request of the EEC. We would like to note that the Department promptly provided all supplementary information the EEC requested even though some of the requests were made on short notice the week before the site visit and even during and following the site visit. *The EEC highly commends the Department for its valuable and honest self-assessment.*

The site visit took place in an atmosphere of professionalism and collegiality. *The EEC expresses its gratitude to all the staff, faculty and students of the Department for their honesty, hospitality and assistance in all aspects of the evaluation site visit.*

The Department's teaching facilities are very good. Of special note were the very well-equipped teaching laboratories and the research/teaching farm which are on campus and within easy walking distance of the classroom facilities. All of these facilities are used very intensively to fulfill the Department's teaching mission and provide an excellent environment for hands-on teaching. In general, we find the department's teaching programs to be in a relatively healthy condition having a curriculum with a good balance between theory and practical experience. Courses are mostly taught by highly qualified personnel who also conduct research which is disseminated in peer-reviewed journals and conferences of high repute.

We found a very positive relationship between faculty, staff, and students. Faculty and staff were focused on providing the best possible education to the students. This included providing advising, after class tutoring, an open door policy, and an opportunity to do meaningful work for their Practical Training (Πρακτική). Students with whom we met were generally very positive about their educational experience and their interaction with the faculty and expressed high levels of satisfaction with their courses and laboratory sections. The students were particularly pleased with the hands-on experience provided by most laboratory sections.

Since 2001, the TEI have been assigned research responsibilities. In response to this, the Department has developed research programs most of which address the needs of the agricultural community of Kefalonia. *The EEC considers this as a very positive trend but much more can be done.*

The Self-Evaluation Report provided information for the period 2008-2013. The Report was well written and followed the format provided by HQAA. It contained most of the information needed by the EEC for the evaluation although some of the data tables were missing in the version provided to the EEC prior to the evaluation. As noted earlier, the EEC requested additional information which the Department provided. The Self-Evaluation Report provided an accurate and objective portrayal of the conditions we observed during our site visit. In addition it presented potential solutions to the problems identified during the self-evaluation procedure.

### ***A. Curriculum***

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

#### **APPROACH**

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

The Department offers a single undergraduate program currently titled “Food Technology”. However the curriculum has changed twice since the Department was founded in 1999 to offer an “Organic Farming” curriculum. In 2009 both the Department’s name and curriculum were changed to “Organic Farming and Food Technology”. In 2013 the names were changed again to “Food Technology”. With each change, the course offerings were updated to meet the needs of the new curriculum. It should be noted that the 2009 and 2013 changes were made by the Ministry of Education without the input of the Department. Now the Department is faced with teaching an exclusively Food Technology curriculum while it is primarily staffed by faculty members who have expertise in agricultural production (agronomy, soils, etc.) because they were hired to meet the needs of the original curriculum (Organic Farming). *This provides a daunting and somewhat unfair challenge to these educators.*

The Department’s mission statement is: *“to develop and diffuse scientific and technological knowledge regarding the production, management, and processing of organic food products through teaching and applied research.* The most recent revision to the Food Technology curriculum was conducted during Spring 2013 and implemented for the 2013-2014 academic year. The Department incorporated a unique blend of food technology (79%) and organic farming (21%) courses into the new curriculum which not only draws on the Department’s heritage but also provides a unique curriculum which should draw students to the Department. Global interest in organic food products is growing exponentially and the unique environment of the Ionian Islands provides an exceptional opportunity for the Department’s graduates to apply their expertise locally.

### *Description of the Curriculum*

The curriculum requires 240 ECTS units distributed over 8 semesters. It consists of 42 courses (210 ECTS units) including a Practical Training Project (Πρακτική Εργασία; 10 ECTS units) and a Thesis (Πτυχιακή Εργασία; 20 ECTS units). Of the 42 courses, 37 are required courses and five are compulsory electives. Both the Practical Training and Thesis are required. Many courses consist of both lecture and laboratory sections and students must pass both sections to receive credit for the course. The curriculum and course descriptions are described in the Department's website.

### *Strengths and Weaknesses of the Current Curriculum*

#### Strengths of the curriculum include the following:

- (1) Courses cover a range of subjects relevant to Food Technology
- (2) The core of the curriculum is equivalent (in number and type of courses) to curricula of other Food Technology departments in Greece and elsewhere. According to the Department, 79% of the courses directly correspond to courses in the curricula of other Food Technology departments in Greece.
- (3) Course emphasis on organic (non-conventionally) produced foods may promote development of a specific identity by the Department, i.e. organic food products.
- (4) Many students arrive at the Department without adequate preparation on core subjects such as chemistry, mathematics and physics. Certain faculty have incorporated tutorial elements to such courses (e.g. Chemistry) to allow these students to catch up.
- (5) *Overall the EEC was impressed by the sincere effort by the Department's members to develop an ambitious and comprehensive undergraduate program.*

#### Areas where special attention is needed include the following:

- (1) Several courses have pronounced emphasis on organic farming and less so on food technology, reflecting the previous identify of the Department and the areas of expertise of the faculty (listed in table 2.2.1 in the Internal Report). This was noted, for instance, in several required and elective courses such as Animal Nutrition and Quality of Animal Products (Διατροφή Αγροτικών Ζώων Και Ποιότητα Κτηνοτροφικών Προϊόντων); Plant Nutrition and Quality of Plant-derived Foods (Θρέψη Φυτών Και Ποιότητα Γεωργικών Προϊόντων); Vegetables and Aromatic Plants (Κηπευτικά & Αρωματικά Φυτά); and Soil Management and Food Production (Διαχείριση Εδαφών Και Παράγωγη Τροφίμων). Although we agree with the Department's effort to incorporate its history in organic farming into the new curriculum, these courses should be modified to emphasize the aspects relevant to food

technology and not simply be taught as traditional agronomic or horticultural courses. We strongly encourage the Department to modify both the title and content of these courses. An example of a relevant “blended” course is Biological Mechanisms for Post-harvest Losses (Μετασυλλεκτικά Παθογόνα & Εχθροί Τροφίμων). Course content will require frequent assessment and revisions to adequately address the educational needs of Department’s students.

- (2) Certain highly specialized courses (e.g. Aromatic Plants; Soil Management and Food Production; Biological Mechanisms for Post-harvest Losses; Additives and Sweeteners (Πρόσθετες & Γλυκαντικές Ύλες); Value-Added Products from Food Industry (Αξιοποίηση Υποπροϊόντων Βιομηχανικών Τροφίμων) are listed as required. These courses would be better placed among the electives.
- (3) Certain subject areas are covered in numerous courses, suggesting substantial overlaps. For instance, the subject of Food Chemistry is addressed in several courses offered in different semesters (Food Physical Chemistry in semester 2, Food Biochemistry in semester 3, Food Chemistry in semester 4).
- (4) The curriculum lacks a synthesis (“Capstone”) course to promote integration of the diverse areas of the curriculum and prepare the students for the Thesis research.
- (5) The curriculum lacks a course on Human Nutrition.
- (6) The course load is unduly large, contributing to the inability of most students to graduate within 4 years and possibly also contributing to low attendance in most of the lecture classes.

*Overall the EEC recognizes the clear effort by the Department to develop a new undergraduate programme that meets the requirements and expectations associated with its recently acquired identity as a Food Technology Department. However, in its current form, the curriculum needs revisions to reduce redundancy and enhance its Food Technology focus.*

Other issues:

Discussions with students indicated that most teaching materials are current and relevant. PowerPoint files and other electronic media are used frequently by the instructors but are not frequently posted in the e-class system. These materials are available to students in the e-class system for a very limited number of courses (4) only. The students strongly prefer to have access to teaching materials through the e-class system. It should be noted that the e-class only recently became fully functional at the TEI. Faculty are encouraged to use the e-class system.

According to the faculty, relatively few of the students enrolled in the Department selected this program of study as their first choice when taking the PanHellenic

Exams. This reflects the problems facing the Greek higher education system overall. However, the percentage of students who selected the Department as one of their top choices was considerably higher among the small group of students we met in this Department than in groups of students members of the EEC had met in similar departments during other evaluations. *To the EEC, this indicates that the Department and its current and past curricula are better understood and appreciated under the current economic crises when many young people are seeking educational opportunities in the agricultural sector.* Nevertheless, most students who enter the Department, do not have it highly ranked among their choices. Contributing factors to this problem include but are not limited to:

- The plethora of agricultural related programs currently offered by Greek higher education institutions;
- The decline of interest in agriculture in Greece although this is changing under the crises;
- The system which the Greek government uses to assign students to programs of study based on their scores on PanHellenic Examinations. Students are assigned to programs of study according to their score on the Examinations and, in many (if not most) cases NOT by their area of interest. *The EEC recognizes that this method of selecting/assigning a program of study causes significant problems to the individual academic programs and to the overall academic system of the nation and is beyond the control of the individual department or institution.*

Because relatively few of the students enrolled in the Department selected this course of study as their first choice, many are not academically prepared for a science-based program of study. For example they will have inadequate preparation in chemistry, mathematics, and physics. As a result, the Department has included preparatory modules in these courses. Some students agreed that they were not prepared and needed these modules while others found them a repetition of high school material.

1. We were not provided data with which to assess the passing rate of individual courses (data missing from Appendix I, Table 12.2.) These are important missing data as they can clearly identify which courses are problematic either because students are not adequately prepared or because there are not taught adequately. *The EEC strongly recommends that these data be included in any future internal and external evaluation.*
2. A major problem is the extensive delay in graduation time. The graduation rate data provided by the Self-Evaluation Report (Appendix I, Table 7) indicate that none of the students who entered the Department from 2007 onwards have graduated in 4 years and only a very small percentage graduate in 5 years. Of the enrolled students, only between 10 and 15% graduate each year. Under any circumstances, these types of graduation rates are unacceptable. *Again, there are many factors affecting graduation rate **most** of which are beyond the control of*

*the Department.* Nevertheless, the reasons for this phenomenon should be identified and action taken to address this issue. The areas which we believe can be addressed by the Department are:

- a. The large majority of the incoming students arrive at the Department without a clear understanding of the degree in which they enrolled nor the employment opportunities which it provides. Furthermore, many students do not understand the academic expectations and workload required to succeed in the Department. As a result some students flounder without direction for 2 to 3 semesters. A mandatory first semester course introducing the students to the department and academia is strongly suggested. This course would provide an overview of the profession and familiarize the students with its biological, environmental, technical and economical requirements. The class should be team-taught and alumni and area employers invited to deliver lectures. This course should also include trips to relevant local industries and farms. Additional topics for discussion should include ERASMUS, the importance of student evaluations and how they will be used to improve teaching, and other topics that directly affect the students.
- b. We also suggest the spirit of “entrepreneurship” be incorporated into the existing courses on “Economics and Organization of Food Enterprises”. The goal of the suggestion would be to prepare students for the market economy and provide them with the confidence and competence they need to launch a new business or redirect an existing business.
- c. Finally, we propose a capstone course near the end of the curriculum that would push the students to work together in teams and require them to integrate and apply the knowledge they have acquired during their studies. One example would be to develop detailed plans for a food processing business. Plans would include both the production aspects and the business/marketing aspects. This type of activity may also provide students with the confidence to pursue such ideas once they graduate. These courses could be added to the curriculum by merging some of the course sequences described earlier.
- d. The course load is large and greatly contributes to the inability of most students to graduate within 4 years. This heavy course load makes the final examination period nightmarish for most students who must prepare for up to 12 individual final examinations (the total of lecture and laboratory sections if they are enrolled for the recommend courses for each semester) and, in our opinion, negatively affects students’ ability to successfully complete a course. Furthermore, the Curriculum produces highly specialized agriculturalists. Today’s stakeholder needs and employment market more often require generalists who can be trained for

a specific task. Specialization can be obtained in post-graduate programs or with training provided by the employer. Although in terms of knowledge, the Department's graduates may know as much or more than students graduating from a 3 year B.S. and a 1-year Masters from another EU nation, the marketability of the Department's graduates may be lower because they appear to have a single degree that has taken them more than 6 years to complete. This may not be fair but it is the reality of today's market place. Furthermore, many students will run the risk of being removed from the Department's rolls after 6 years without receiving a degree under proposed Ministry of Education regulations.

- e. There are very low student attendance rates in the theoretical courses. The students attribute this to number of reasons which include high workloads. According to discussions with the Department's faculty, the workload is estimated to vary between 52 and 58 hours per week if students are meeting all course commitments. This is indeed quite high and impossible to maintain if a student must work or is involved in any type of regular extracurricular activity. But there are many factors driving low attendance including an ingrained attitude in the students that lecture section attendance is not necessary. The students with whom we met acknowledged that they indeed did not attend at high rates. However, students exhibited impressive engagement in laboratory or field settings that involve close interactions with faculty and teaching staff. This suggested to the EEC that changes can be made in the teaching methods used in the classroom-based classes to enhance and promote student engagement, and reduce absenteeism. Most students we spoke with and some faculty recommended the use of homework assignments, quizzes, and midterm exams (πρόοδος) to encourage attendance but also provide an incentive for students to study the material prior to the final exam. New instructional media and technologies can also be used to engage students in courses. Quizzes and mid-term tests with multiple choice answers which can be graded electronically provide instructors with the opportunity to combine traditionally evaluation techniques with new technology that allows these techniques to be applied to large groups of students. Completely new instructional technologies should also be considered. An example which is widely used in the United States and used on a more limited scale in the EU is an audience response system (commonly referred to as "clickers"). Instructors use clickers to assess students' knowledge of a topic after it has been explained. The students' responses are recorded automatically and can be displayed immediately thus providing immediate feedback to the instructor. The clickers are also used to survey student opinions during the lecture. Under the appropriate circumstances, student responses can be used as the results of a quiz.

This is a relatively low-cost investment which keeps the students engaged during the lecture and encourages attendance.

- f. Another major hurdle to graduation is the students' ability to enroll for more advanced courses without having passed building-block courses. This problem can be overcome by introducing more prerequisites. Another problem is that students attempt repeated examinations of one or many failed courses resulting in a confusing and incoherent sequence of attendance. This problem may be solved with recently passed legislation.
- g. The EEC was surprised to learn that the theory and laboratory sections of the same course have different instructors and that in some cases there is little coordination between the instructors. Another weak point in the process is the fact that laboratory course attendance is mandatory while that of the lecture courses is not. As a result, participation rates are significantly lower at the lecture courses. *The EEC suggests merging of the lecture and laboratory sections of a course into a single course with the equivalent credits and contact hours.*

The TEI has a newly implemented online system for class registration, course grades, and documentation. This has greatly relieved the workload of the Department's clerical support staff and has also improved the ease with which students access information and obtain registration and other documents. We commend the TEI for moving towards this electronic registration system.

The EEC also noted that the Department has highly qualified and exceptionally motivated and committed faculty members who overall do an excellent job under the circumstances, and who are willing and able to respond to the challenges that they face.

The number of available elective courses is limited by Ministry of Education regulations *and is completely counter-productive to any efforts to improve student engagement and develop graduates which are ready for the marketplace.*

The curriculum seems to be consistent with the requirements of the society. Stakeholders and student input was not included in this process. *High involvement of stakeholders is required during future revisions so that the department trains students to meet the needs of the food processing/production industry.*

**Recommendation A1:** The EEC recommends that the Department commits itself to assessing and revising its curriculum on a regular basis. One major issue that should be addressed during these self-assessments is the number of courses required for the degree, with the goal of reducing the total number of current courses (by reducing redundancy) while adding new selected course (as outlined below) to enhance student preparation for academic success and for the profession. Another major issue would be the extent to which the course choices and content address the needs of

students for adequate training in Food Technology.

**Recommendation A2:** Current faculty do not yet have the expertise to teach certain food technology courses. During this transition period, the food focus for lecture courses can be partially addressed by careful incorporation of material (through e-learning and other approaches) from courses offered through established Food Technology departments at other Greek-speaking TEIs and universities. Eventually new faculty must to be recruited for selected courses (e.g. Food Processing and Food Engineering).

**Recommendation A3:** Establish an Introductory course to provide an overview of the profession and familiarize the students with its biological, environmental, technical and socio-economic components. The class should be team-taught, among the Department's eight permanent faculty with alumni and area employers invited as guest lecturers. This course should also include field trips to local industries.

**Recommendation A4:** Establish a Synthesis (Capstone) course in the 6<sup>th</sup> or 7<sup>th</sup> semester. This course would include a project in which students work in small teams (2-3 students) under faculty supervision to address a specific problem of relevance to the food industry (ideally industry input would be solicited for such choices). The Capstone course will promote integration of the diverse areas of the curriculum and prepare the students for their Thesis research. Typically capstone courses involve coordination by one faculty (instructor), with student teams guided by one or more permanent or temporary faculty. Conceivably, the Thesis research could be used as the Capstone course if the framework was modified to allow teamwork.

**Recommendation A5:** Establish a lecture course on Human Nutrition. Such a course would not require a lab and it would be highly desirable for a Food Technology programme. It is among those that could be adopted utilizing e-learning.

**Recommendation A6.** General Microbiology would be better placed in semester 3, with Food Microbiology in semester 4, so that students take these courses following some exposure to General Chemistry.

**Recommendation A7:** Reduce redundancy in some of the courses (e.g. the Food Chemistry series in semesters 2-4).

**Recommendation A8:** Assign elective status to highly specialized courses.

## ***B. Teaching***

### **APPROACH:**

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

Please comment on :

- Teaching methods used

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

#### *Teaching Methods Used*

The curriculum consists of a series of topics covered by lecture (θεωρία) and laboratory courses. Teaching methods include classroom teaching using PowerPoint presentations, laboratory exercises, activities in the Department's teaching farm, opportunities to engage in laboratory research, and fieldtrips in selected courses. Some of the faculty also place class-related material on electronic platforms (e-classroom). At the time of the site visit, 4 of the courses had some activity on the electronic platform. In general, current students and recent graduates with whom we spoke were pleased with the teaching methods used by the faculty. In sharp contrast to other evaluations in which the EEC members have been involved, the current and former students with whom we spoke provided very positive comments about the lecture courses. Of course, these positive comments were provided by the students who attend their classes regularly. *Nevertheless, our evaluation shows that the Department's faculty generally provide excellent teaching value to their students.*

The biggest problem which the department faces with respect to teaching is that very few students attend the lecture sections. Both the faculty and the students told us that it is very typical for only 2 or 3 students to attend a lecture out of a class of more than 40. To the faculty members' credit, they teach the lecture regardless of the number of students participating. Students who do not attend lectures do not study the course materials during the semester and attempt to pass the course only by studying for a final exam will rarely gain the knowledge the course was designed to provide. Clearly, this is an obstacle that the Department must address and resolve. The obvious solution is to make attendance of lecture courses mandatory. Although this may bring students to the classroom, it may not necessarily engage them. A multi-faceted approach is necessary to combat this problem.

Several of the faculty members with whom we spoke have adopted a variety of tactics to improve attendance. These include scheduling regular tests, mandatory in-class assignments, and similar activities which contribute significantly to the final grade assigned for the class. Alternative lecture formats that may include participatory components (presentations by students, group discussions) would further student engagement and attendance. Another approach which may work well for some courses is to combine the lecture and laboratory sections of a class into a single course. This would enhance engagement of the students, maximize their ability to process the information and also address the problem of non-attendance.

The EEC strongly encourages the Department to consider and adopt strategies with which some faculty have proven effective and to also consider other new approaches. Specific recommendations are provided below.

The EEC commends the fact that the laboratory sections are of relatively small size and are limited to 20 or less by proactive faculty members. Students expressed their overall satisfaction with the quality of the instruction in the labs. However, the EEC was surprised to learn that the theory and laboratory sections of some courses have different instructors and that in some cases there is little coordination between the instructors. This clearly does not promote cohesion in the curriculum and creates problems for the students attempting to absorb new material.

#### *Teacher/Student Collaboration*

The students respected the teaching staff both for their expertise and their dedication to the teaching mission. It was evident from our discussions with the current and recently graduated students that the permanent teaching faculty are largely accessible and responsive to the students' needs. Office hours are announced but the permanent teaching faculty make a concerted effort to have an open-door policy, provide assistance to the students outside the classroom, and generally be accessible. Unfortunately the general student body does not take advantage of this open-door policy. Students with whom we met emphasized to us that their access to faculty who routinely are not at the Department for the entire week is sometimes limited. Every effort must be made to ensure that students always have access to faculty who are teaching their courses even if students do not always take advantage of this.

As mentioned above, the Department employs part-time to full-time temporary teaching faculty. Some of these part-time faculty do not have offices on the campus unless they are involved in research and have office space in one of the labs. In general, they are on campus only to teach thus reducing their accessibility. Those that contribute to the Department's research program typically are on campus for extended periods.

#### *Adequacy of Means And Resources*

With the change in Curriculum to Food Technology, some of the Department's faculty are now teaching courses outside their area of expertise. The majority of the faculty were hired to teach under the Organic Farming curriculum and are trained as agronomists, soil scientists, etc. This is problematic both for the EEC and for the Department (this issue was raised repeatedly by faculty members). For these faculty members to teach Food Technology courses at the tertiary level will require significant retraining. This is a very serious issue that must be addressed by the TEI's Governing Board and by the Ministry. To partially address this issue, 21% of the courses included in the Curriculum reflect the Organic Farming heritage of the department. This solution allows faculty without expertise in Food Technology to

continue meeting their teaching requirements while they obtain additional training.

According to the Self-Evaluation Report the ratio of Permanent Teaching Faculty to students is 1:44 (8 faculty:350 active students). When the 14 Temporary Teaching staff are included, the ratio becomes 1:16 which is very good. The ratio is higher if we consider all registered students 1:61 (8 faculty:486 students) and 1:22, respectively.

The facilities (laboratory equipment, laboratory classrooms and lecture rooms) are adequate. Specialised equipment for the Food Technology curriculum such as food processing equipment is required. Most of the existing resources of the department are related to the previous curriculum.

#### *Use of Information Technologies*

All students were recently issued TEI e-mail addresses although it appears that this is not a reliable means of communication between faculty and students because students do not check email regularly. Some students were not even aware of this development. The Campus does have wireless connections and offices and laboratories have Ethernet connections. Common use computers are available to the students in computer labs.

The faculty should be encouraged to use e-class as means of communication with the students. The course material, learning outcomes and assignments should also be posted on e-class and regular communication can take place via announcements on the course site, as well as via email.

Students have access to electronic subscription databases maintained by the library only from on-campus IP addresses. Although this complicates life for the students, it is typical of most such systems worldwide.

#### *Examination System*

Grades for *most* lecture sections were assigned from a single final written examination. However, in very limited number of courses, faculty members have incorporated tests, quizzes, in-class assignments, and other activities as described earlier. These things all contribute to the final grade which provides serious incentive for students to attend lectures and also provides for a better learning experience.

The laboratory section of each course is mostly assessed through laboratory exercises (not in all lab sections) and written and/or oral final exams. The Department uses a 10-point grading scale and the student has to earn at least a grade of 5 to pass the course. When the course has both laboratory and theoretical sections, both grades are used to determine the final course grade. Students do not pass the course until they have passed both sections. Data provided in the Self-Evaluation Report (Appendix I, Table 6) indicate that most students graduate with an overall grade of about 6.5 during the evaluation period. The EEC notes that during 2013, the average grade at

graduation was 7.49.

#### *Quality of Teaching Procedures*

Most faculty members are dedicated and enthusiastic about their teaching, but attendance of lecture courses is frequently low with a few bright exceptions. In these exceptions, individual faculty members make great efforts to attract the students to the classroom by encouraging them to participate in related laboratory research, etc. *This is an excellent example of faculty members doing much more than expected to attract and retain students.* Current legislation does allow for the institution to introduce compulsory attendance but to this point the TEI of the Ionian Islands has chosen not to do so. However, instructors can implement measures that can encourage and reward attendance, as indicated above (*mid-term exams, bonus points for participation in group discussions and presentations, etc.*) Students interviewed agreed that the introduction of homework assignments, quizzes and mid-term exams will increase participation. Students were quite pleased with the laboratory courses/sections because of the hands-on nature of these classes. They were particularly pleased with laboratories that provided them with the opportunity for extended hands-on activities and did complain that they did not have adequate opportunities for hands-on experiences in the greenhouses and on the teaching farm. They were less pleased with laboratories where techniques were demonstrated only. *Experiential learning clearly engages the students and every effort must be made to expand these teaching opportunities.*

#### *Quality and Adequacy of Teaching Materials and Resources*

During interviews with students, comments were made that teaching materials used are appropriate. The EEC examined available books for selected classes and found them to be excellent resources, frequently in effective formats (e.g. plant pathology books with numerous photographs of high quality). Books are available to the students at no cost. *One student complaint was that books selected by faculty members for classes do not become available in local bookstores until late in the semester.* The TEI and the Ministry of Education which has responsibility for book distribution through the EUDOXOS system must address this issue as it contributes to the problems discussed earlier.

Most teaching laboratories were well maintained and well equipped. In most cases teaching laboratory consumables were adequate. At least one research/teaching laboratory was completely new with equipment still in packing cases. So in general, the resources are good but additional investment is needed to reequip some laboratories for food technology teaching labs.

#### *Mobility of Academic Staff and Students*

Overall, there was an impressive mobility from some faculty who participated in upwards of 3 National or International Conferences per year. In contrast, students do

not yet appear to take full advantage of opportunities such as Erasmus. The EEC suggests that faculty should strongly encourage student mobility. It is also expected that students would be able to visit industrial partners during their Practical Training (Πρακτική). Eight students from France (Lille) visited the department during the past two summers for their Final Project. The seminar proposed under Recommendation A2 will make students more aware of study-abroad opportunities. It is worth noting that the Department respects the Bologna process and transfers the credit for the courses that its students earn while studying abroad.

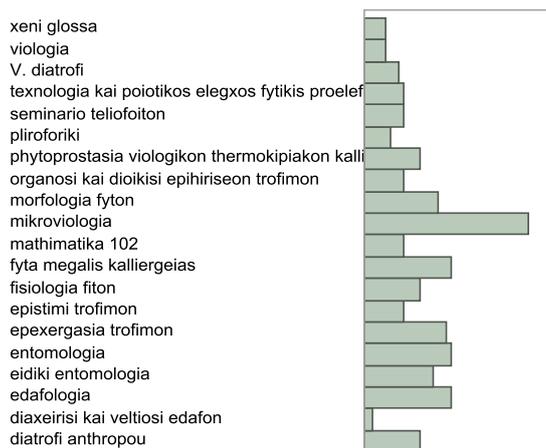
*Evaluation by the Students of (a) the Teaching and (b) the Course Content and Study Material/Resources*

The Department has been conducting student evaluations since the 2007-2008 academic year although the regularity at which they were conducted is not completely clear. Nevertheless, the results of these evaluations were not included in the Self-Evaluation Report. When we asked the Department for the results of the evaluations, they told us that all student evaluations are sent directly to the Governing Board of the TEI in Athens and that they were not available to the Department. The data described below were provided to us by the Governing Board upon our request. *These evaluations were distributed in 20 courses only during 2012 using the questionnaire provided by the HQAA.* Consequently, about half of the total courses offered were evaluated and we have only a total of 260 student evaluations with which to assess teaching and course performance. Overall, *the availability and use of student evaluation data can only be described as inadequate.*

Figure 1 and Table 1 indicate the courses for which we had evaluation data. Figure 2 shows results for individual courses separated by Lecture courses, Instructor, and Lab courses. The evaluation scale is 1 to 5 with 5 being the best score. In general, the Lecture courses and Lab courses all received good to very good scores while the Instructor scores were in the very good to excellent range. Figure 3 shows the mean and median results for all evaluated Lecture courses (mean=3.84, median=3.79), Instructor (mean=4.51, median=4.61), and Lab courses (mean=4.06, median=4.14).

These results are very good and show a high level of satisfaction from the relatively small number of students (n=260) who participated in the evaluations. Although these are good results, the EEC strongly encourages the Department to evaluate all courses on a regular basis to ensure that the quality of teaching stays consistently high. It should be noted again that EEC only received data for half of the courses taught during 2012.

Any instructor consistently receiving evaluations results below 3 on a scale of 1 to 5 (5 is best) should re-evaluate his/her teaching methods and if appropriate take a short course in modern teaching methods. Funds should be made available by the Department for this type of continuing education activities.



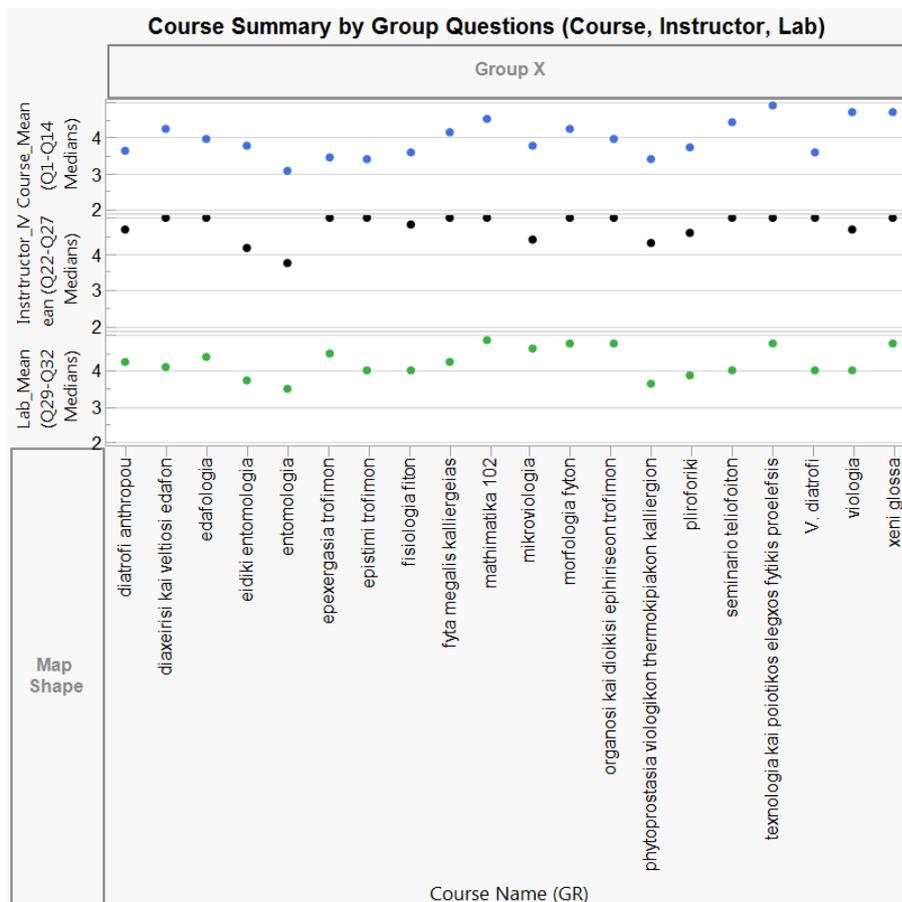
**Figure 1.** Graphical representation of the number of respondents per course for which evaluations were available.

It should be noted, however, that our discussions with the students also indicated that *in general the students were quite satisfied with the quality of teaching* even though individual students had complaints about some instructors. The majority of the students with whom we spoke were complimentary about the effort put forth by their instructors. The students also told us that their instructors were mostly accessible (with some exceptions) and always willing to answer questions and provide academic support.

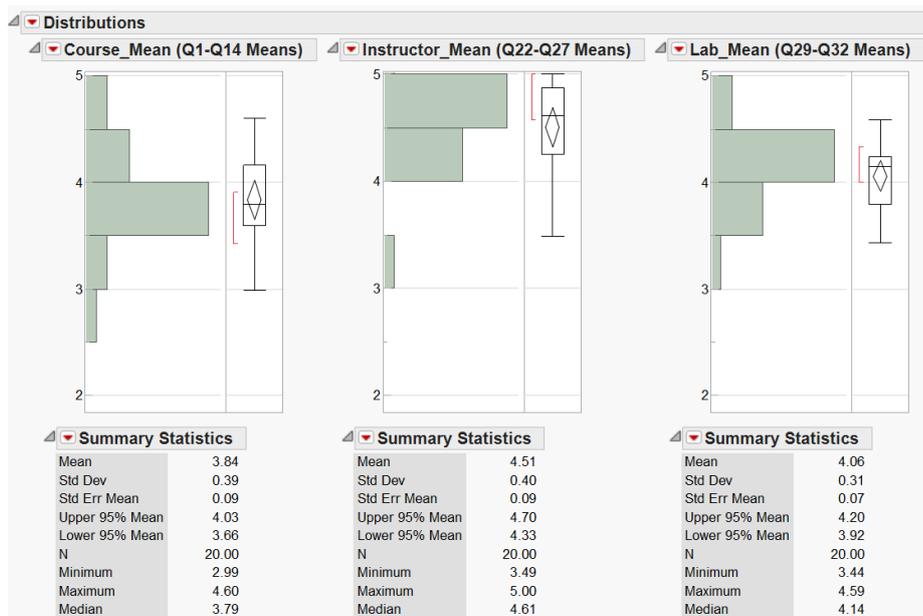
*Student evaluation of instruction should be done in every semester and course and results shared with the instructor at the beginning of the next semester.* This type of feedback will allow even the best instructors to improve their teaching. The EEC acknowledges the fact that the course evaluation process is in its infancy in Greece. Improvements can include an electronic evaluation system which would greatly

**Table 1.** Tabular representation of the number of respondents per course for which evaluations were available.

Course Name	Number of Respondents	% of Total Respondents
Diatrofi anthropou	13	5.0%
Diaxeirisi kai veltiosi edafon	2	0.8%
Edafologia	20	7.7%
Eidiki entomologia	16	6.2%
Entomologia	20	7.7%
Epexergasia trofimon	19	7.3%
Epistimi trofimon	9	3.5%
Fisiologia fiton	13	5.0%
Fyta megalis kalliergeias	20	7.7%
Mathimatika 102	9	3.5%
Mikroviologia	38	14.6%
Morfologia fyton	17	6.5%
Organosi kai dioikisi epihiriseon trofimon	9	3.5%
Phytoprostatia viologikon thermokipiakon kalliergion	13	5.0%
Pliroforiki	6	2.3%
Seminario teliofoiton	9	3.5%
Texnologia kai poiotikos elegxos fytikis proelefsis	9	3.5%
V. diatrofi	8	3.1%
viologia	5	1.9%
xeni glossa	5	1.9%
<b>Total</b>	<b>260</b>	<b>100.0%</b>



**Figure 2.** Results for individual courses separated by Lecture courses, Instructor, and Lab courses. Scale of 1 to 5 with 5 being best.



**Figure 3.** Mean and median for Lecture courses, Instructor, and Lab courses from all 20 courses for which evaluations were available.

enhance the effectiveness and accuracy of data analysis. Electronic evaluations would also permit the verbal comments of the students to be included. Specific suggestions for improving the course evaluation process:

- Discuss the importance of the evaluation process with the students and assure them that it will be used to improve the teaching program (see suggestions about informational seminar).
- Review the evaluation form with someone who specializes in creating surveys to ensure that the evaluation instrument provides the necessary data.

**Recommendation B1:** Critical teaching faculty vacancies identified by the Department in the Self-Evaluation Report positions should be filled promptly by the Ministry of Education.

**Recommendation B2:** Temporary teaching faculty are currently given 6-month contracts. This is completely counterproductive as it develops an air of uncertainty and decreases morale and productivity. *Temporary teaching faculty should at minimum be offered 1-year contracts.*

**Recommendation B3:** Introduce weighted grading where a student's grade will depend on midterm exams, quizzes (announced and unannounced), assignments, group discussions or presentations, laboratory exercises and a final exam. This will provide an incentive for students to attend classes. Higher attendance and multiple grading options may reduce the currently unacceptably high fraction of students who fail each course. Simply making lecture courses mandatory may increase student attendance but does not assure student retention of knowledge.

**Recommendation B4:** New instructional media and technologies should be used to engage students in courses. These technologies may include audience response systems (commonly referred to as "clickers"), quizzes and mid-term tests with multiple choice answers which can be graded electronically, etc.

**Recommendation B5:** Pre-requisites should be increased and enforced.

**Recommendation B6:** Student evaluation of instruction should be done in every semester and course and results shared with the instructor at the beginning of the next semester

**Recommendation B7:** Student evaluations of teaching should be utilized to support excellence in teaching. The Department Head should annually discuss the faculty member's student evaluation scores with the faculty member and provide financial support for improving teaching methods if needed.

**Recommendation B8:** An outcomes assessment process with metrics should be gradually introduced for all courses taught. The assessment should examine if the student has achieved the learning outcomes as outlined in the syllabus.

**Recommendation B9:** Teaching Excellence Awards (or equivalent tools for

recognition of excellence) should be established at the institute level (TEI) to recognize individuals who excel in teaching. These awards should be presented at gatherings of the entire faculty of the TEI to increase their prestige. When possible, the awards should be accompanied by a one-time allocation of TEI resources to improve the teaching laboratory/methods of the awardee.

**Recommendation B10:** The Department should encourage faculty to take sabbaticals at other institutions with the provision that resources are available to cover that faculty member's teaching responsibilities during the sabbatical period.

**Recommendation B11:** The Department must ensure that senior faculty are involved with teaching introductory courses. This impresses incoming students and has been proven to increase retention and graduation rates.

**Recommendation B12:** E-class resources should be used extensively by the faculty, and teaching material should be uploaded in advance. Email communication and reminders about deadlines for assignments may also increase student submissions and participation in mid-term evaluations.

**Recommendation B13:** The expansion of the department to include laboratories for food science should be carefully planned, with the inclusion of advisory input by industry. It is important to have a Departmental strategy and relate it to the needs of industry and the local economy.

**Recommendation B14:** All students should have an appointed *academic advisor* to help with course planning and other academic issues. The academic advisor could also assist students to find placement in the industry for the Practical Exercise at an earlier stage of their study, i.e. end of the first year.

## **C. Research**

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

### **APPROACH**

- What is the Department's policy and main objective in research?
- Has the Department set internal standards for assessing research?

The department's research mission is to conduct applied Food Technology research that is important to regional and national stakeholders. Department faculty have participated in several research programs as leaders or partners, including large-scale EU-funded projects. Research facilities and equipment include well-equipped modern research labs, with multiple chromatographs, AAS and PCR equipment for molecular analyses. In addition, the Department has access to greenhouses and field facilities (orchards, experimental vineyard), part of which are rented from the neighbouring and long-standing collaborator, the Valianios School of Agriculture.

*Available equipment, lab spaces and plant growing facilities were well maintained. The research infrastructure is very good.*

The Self-Evaluation Report documented a certain level of research productivity, mainly manifested through the publication of research articles and conference proceedings. *The EEC recognizes the existing efforts* and strongly encourages development of projects that would adapt research to the specific mission and unique attributes of the Department. The research programs listed in the internal report included a diversity of topics several of which did not appear to be closely related to Food Technology. *It was difficult for the EEC to identify major research themes or distinct areas of research excellence.* This may be partly due to the gradual shift of the Department's offered degree from Organic Farming to Food Technology during the last years. In addition, *the Department has not established research priorities on which most of the faculty members collaborate.* Research goals are established by individual faculty members or through small research team collaboration. However several on-going research programs offer opportunities for across-the-board collaboration. These include but are not limited to adding value to traditional food products, the identification and characterization of indigenous yeast strains for the production of Ionian Islands, native fig cultivars, organic olive oil production and others. Clearly the Department cannot focus on all of these programs with limited staffing. One or two areas should be selected to become Departmental priorities and pursued aggressively because it will provide a unique contribution to the local and regional economy.

Beginning in 2001, all TEI in Greece were legislatively empowered to conduct research and there is a clear expectation that TEI faculty are to conduct research. However, there are as yet no national or institutional guidelines on research productivity. We have taken these observations into account in our evaluation of the research program. The Department is encouraged to develop the potential to work cooperatively with other Food Technology programs at other relevant TEI Departments.

The Department does not have a post-graduate program. Regrettably it has not taken the initiative to create a graduate student presence on its campus by developing agreements with institutions offering post-graduate degrees. *As a result the research effort has been seriously hampered by the lack of graduate students.* However, all members of Faculty expressed their strong interest in establishing a Master's degree which would facilitate this goal.

The Department has joint research activities with both regional and national research groups including other departments of the TEI of the Ionian Islands, the Agricultural University of Athens, the Department of Viticulture and the Veterinary School at the Aristotle University of Thessaloniki, etc. It is also working with local and regional cooperatives and private companies on research activities important to these entities, including the Gentilini Winery and the Robola Cooperative Winery in Kefalonia, the

Apivita Cosmetics company etc.

After considering that the Department under evaluation is within a teaching-intensive institution, the EEC compared its research activities to modest international standards for teaching institutions. The EEC also compared the Department with respective Departments of Greek TEI. Compared to the above mentioned standards and the State policy towards TEI, *the EEC finds that the overall research productivity is rather low for the department.* The EEC notes, however, that the Department has only eight permanent faculty members, one of whom has joined the Department three years ago and is currently under training leave of absence.

#### *Research Productivity*

Measuring and documenting research productivity is always difficult. Some of the means typically used are presentations at international conferences, publications in international peer-reviewed journals, and impact on the stakeholders. The EEC has used these three parameters to gage the research productivity of the Department's current eight permanent faculty members. *Based on our assessment, the Department ranks medium to low in research productivity when compared to similar departments at peer institutions in Greece and the EU.*

Post-graduate students drive research activity at academic institutions. The Department's faculty members recognize this and are considering offering a post-graduate degree. Until recently, TEI were not legally permitted to offer post-graduate degrees. To overcome this obstacle, other TEI developed agreements with academic institutions abroad which allowed students to conduct their research at the TEI while obtaining their post-graduate degree from the foreign institution. Because of a number of factors, the Department has not been able to pursue this approach which has put them at a competitive disadvantage with other similar TEI departments in Greece when comparing research productivity. However efforts are now underway to participate in an already established International Masters program in environmental viticulture that is a collaborative effort between the University of Basilicata (Italy) and the University of Reims (France). Bilateral ERASMUS agreements have already been established as a precursor to further cooperation.

Using curriculum vitae (CVs) of the eight permanent faculty members which we requested from the Department and which were provided to us during the site visit, we evaluated the research productivity of the faculty. Research productivity was evaluated through publications and grant funding over the last seven (7) years. We also evaluated productivity by academic rank. However, the number of faculty in each academic rank has varied over the evaluation period. In addition, it is possible that some publications and grants were not included in the CVs. Consequently the metrics should be viewed as indicators of trends rather than absolutes.

*Peer-reviewed publications:* The faculty members have published 31 refereed articles in international journals. This is an average of 0.55 refereed publications per

faculty member per year which is lower than similar departments at other TEI. Detailed analysis of publications per academic rank shows that there is wide variability in the publication rate among individual faculty. Overall, faculty members at the Professor and Assistant Professor rank are the least productive at 0.14 papers per year and 0.19 papers per year, respectively, while one faculty member alone accounts for 45% of the total refereed journal article publications of the Department during this 7-year period.

*Conference proceedings, other publications, and presentations:* The faculty members have published 62 conference proceedings in international and national conferences over the 7-year period. This is an average of 1.1 publications per faculty member per year which is also lower than similar departments at other TEI. As with the refereed publications, there is wide variability in the publication rate. Detailed analysis of these publications per academic rank shows that members of faculty at the Professor and Associate Professor rank published 0 and 0.21 conference proceedings per year, respectively. One faculty member accounts for 61% of all the publications during this 7-year period. It should be noted again that these metrics were extracted from the CVs provided to us by the department.

*Other items:* The total number of citations is high (13.5 per publication). It should be noted that some refereed articles were published in high-impact journals which are however important in fields other than Organic Farming and Food Technology (i.e. Immunology) and are highly cited. Also some faculty members serve as ad hoc reviewers for journals.

It should be noted that several members of faculty show increased mobility and participation in multiple international conferences, denoting high level of networking and increased potential in the establishment of international collaborations. In addition, recognizing the high cost of attending international conferences, we find that the Department's permanent faculty members generally compare extremely well (if not better) to faculty from peer institutions in this category or even AEI Departments. The Department should establish the goal that every faculty member should make at least one presentation at an international conference per year.

Special mention should be made to the research productivity of the supporting members of staff, who have also published 14 refereed articles in international journals during this 7-year period and thus show increased levels of productivity considering their heavy teaching schedule and other obligations which even include administrative tasks in certain cases.

*Extramural research funding:* Several faculty members have pursued and received extramural funding from competitive grant programs. More specifically, five out of eight faculty members appear to have secured funding from a variety of research programs funded both by the EU and GSRT as coordinators or as participating researchers, including Archimedes III, LIFE, Interreg III and IV etc. *In general, this is a respectable level of activity but the Department is encouraged to increase their*

*proposal writing activities even further.*

**Research activities:** During the last 5 years, a significant number of the Department's students used the Department's facilities for their Degree Thesis (Πτυχιακή) research. During our discussion with the students it was clear that they were eager to participate in research, even without monetary compensation (although in certain cases students were able to receive salaries). Furthermore, some Degree Theses were presented in national/international conferences and published in conference proceedings. Funded programs that would support research involvement for a larger number of TEI students are needed.

During the site visit, there was extensive discussion about the importance of addressing local and regional agricultural and food technology research problems and securing funding from local and regional business and agencies to support this research. There was high awareness from faculty members that this was a priority and several faculty members are already working with local and regional businesses and agencies especially on viticulture and oenology, as well as promotion of local food produce by organising training seminars and summer schools through life-long learning initiatives. The EEC finds this to be an excellent way to increase the relevance of the Department to these groups and also to increase the dependence of these groups on the Department to solve their problems. Successful outreach activities can make a huge difference in these types of relationships.

The EEC propose the involvement of the faculty members with more research projects national and international as well as with the private sector which is quite active in the region.

**Recommendation C1:** *Align the Department's research with the strategic needs and opportunities of regional food industries* and relevant sectors of the economy. Local wines, figs, etc., are good options. This will entail that the Department's faculty members agree to pursue common activities and focus their resources to solve these problems rather than each faculty member pursuing individual interests.

**Recommendation C2:** In the context of C1 above, develop an *advisory group consisting of regional stakeholders* to identify and support research needs of the regional and national food industry. This group would need to meet at regular intervals (e.g. semi-annually) with Department faculty for information exchanges, updates and brainstorming.

**Recommendation C3:** Become further engaged in organized *collaborations with other AEI and TEI Departments*. This would enhance research productivity and would help build critical mass necessary for future post-graduate (Masters) programs.

**Recommendation C4:** Include *paid student workers or students* conducting their Practical Exercise to support the Department's research activities. This has two major advantages: students gain significant research experience and researchers

obtain research support at relatively low cost. This approach is used successfully at universities around the world and by some of the laboratories in the Department.

**Recommendation C5:** Develop a post-graduate program focused on the research areas identified by Recommendation C1. Post-graduate students will help drive research activity which can easily be done by faculty members loaded down with teaching responsibilities.

**Recommendation C6:** Faculty and staff should maintain high levels of quality research and outreach despite the acknowledged obstacles posed by the current crisis in the Greek economy.

**Recommendation C7:** Faculty must improve the visibility of their work, especially their applied research and the relatively small projects undertaken for individual growers and producers. The results of this work are conveyed to those that ask for it, but little use is made of it elsewhere. The internet, local and national newspapers, and informative seminars are valid outputs for this sort of work which can benefit other stakeholders.

**Recommendation C8:** All permanent faculty members should be encouraged and incentivized to participate and present at international meetings and publish their research findings in peer-reviewed journal articles. This will further the goals of Recommendation C7.

**Recommendation C9:** Research Excellence Awards (or equivalent tools for recognition of excellence) should be established at the institute level (TEI) to recognize individuals who excel in research. These awards should be presented at gatherings of the entire faculty of the TEI to increase their prestige. When possible, the awards should be accompanied by a one-time allocation of TEI resources to towards the research program of the awardee.

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

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

### **APPROACH**

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

Classrooms and labs were nicely designed and well maintained. The Department's secretariat appeared well organized and conscientious. Internet access for faculty

and staff is good although library access is very limited. The library is open but students cannot check out books because there is not a librarian on staff. These seems completely paradoxical – why can't the person who currently staffs the library be trained to check out books?

We were not able to visit the TEI restaurant as it was not on the main campus in Argostoli. It is located about a 15 minute walk from campus. Students complained that they were not able to use the restaurant for mid-day meals because they typically did not have enough time to visit the restaurant and return to campus for their next class.

The Department is moving toward simplifying administrative procedures by processing many procedural items electronically. For example all final grades can be posted electronically and can be viewed by students electronically although only a few faculty members are using these resources.

Unlike other TEI, this institution does not operate a student residence. Students stay in rented accommodations.

Areas under the umbrella of “Other Services” with room for improvement include:

1. Student advising and orientation. The internal report and the students with whom we met both emphasized that a “faculty advisor” is both desired and needed.
2. Students who entered the Department before the most recent degree name change were upset that their diploma would now read “Food Technology” rather than the name under which they entered. Some of these students specifically entered the Department for the Organic Farming degree. So even though these students will be able to complete the original curriculum, their degree will not correspond to their curriculum. *This is something that the Governing Board of the Ionian Islands must address promptly.*
3. Student access to information about job openings for possible employment upon graduation. The EEC was not informed, and did not ask, if the TEI has a Placement / Professional Development Office (Γραφείο Διασύνδεσης). Typically these offices are an excellent venue to provide placement services
4. Athletic and cultural facilities. No mention of athletic and cultural activities.
5. Transportation. Limited public transport is available in Argostoli. Students receive discounts on any public transportation.

The four technical support staff (E.T.II.) appear to be very well educated (2 with Masters degrees) and trained and provide critical support for the teaching and research missions of the Department. They were all quite satisfied with working conditions and interactions with the faculty and students.

**Recommendation D1:** Assign an active faculty advisor to each incoming student upon their arrival at the Department. Depending on the number of students, faculty members will need to advise several students simultaneously. Access of students to

academic advisors may contribute to reduced class failure rates, reduced frequency of classes that must be taken multiple times, and reduced absenteeism.

**Recommendation D2.** Implement an orientation program for new students to familiarize them with expectations and standards of the Department as well as available services. Such orientations should also be done periodically to familiarize students with mobility programs such as Erasmus.

**Recommendation D3.** Enhance assistance and services offered through the TEI Placement / Professional Development Office (Γραφείο Διασύνδεσης) to students and to alumni regarding professional opportunities, position openings and networking.

**Recommendation D4.** Find ways to organize athletic events at the nearby municipal athletic facilities. Intramural athletics typically boost morale and esprit de corps of the student body.

**Recommendation D5.** *Enhance services through the TEI Ionian Island Placement / Professional Development Office (Γραφείο Διασύνδεσης) to students and alumni regarding professional opportunities, position openings and networking.*

**Recommendation D6:** The TEI should institute a regular program for reward of excellence in teaching (Recommendation B9), research (Recommendation C9), service and outreach for faculty and staff.

**Recommendation D7:** Student evaluation of all courses should be implemented immediately and *results made available to the instructors soon after the course is completed.* Under current conditions, the data do not return to the Department after the evaluations are sent to the offices of the Governing Board for processing. We also recommend that the instructor of each course be provided with the cumulative (of all courses) high, median, average, and low evaluation scores for that semester so that they can compare themselves to their colleagues. This should promote an interest in improving teaching methods when necessary.

#### **Collaboration with social, cultural and production organizations**

During 2013, the TEI of the Ionian Islands began a significant effort to reach out to local residents by establishing a series of seminars, workshops, and summer school sessions on a variety of topics including local cuisine, entrepreneurship associated with local food production, and other topics. Also included in this is an effort to accredit local restaurants who offer menu items recognized as being authentic local dishes prepared from local products. *Several members of the Department are involved in this effort and both the TEI and the involved faculty members should be strongly applauded for these efforts.* It is such efforts that will bring recognition to the TEI and make it an indispensable part of the community. In the long term, it will also result in more local students taking an interest in the institution.

**Recommendation D8:** Faculty or other academic personnel should regularly organize workshops during which food producers could have the opportunity to see first-hand an important problem and /or problem solving activities. These workshops should be geared towards solving important food production issues that affect local added-value industries.

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

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

Please, comment on the Department's:

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

The Department faces many challenges in the coming years. It has been tasked to teach a new Curriculum in Food Technology when many of its faculty are trained in agronomy, soil science, and other related disciplines needed for the Organic Farming curriculum. The Department is the only agriculture/food-related department in the TEI resulting in the absence of synergy with colleagues. The number of faculty in the Department is small – only 8.

One good way to overcome these obstacles and provide significant service to the local economy of the Ionian Islands is to convert the Department into a School (Σχολή) of Agriculture and Food Technology and gradually add related degrees and faculty to create a synergistic and productive total. Any future degrees should be specifically designed to be synergistic with the existing degree and to address regional agricultural problems of the Ionian Islands. There are many opportunities available including organic production of grapes, figs, animals, cheese, olive oil, and other traditional products. Marketing of these products is also vitally important otherwise new industries will not survive. Aquaculture appears to be a strong industry in Kefalonia as well.

Creating a School of Agriculture and Food Technology with additional undergraduate degrees and more faculty will make it easier to offer a single graduate degree in Agriculture and Food Technologies with areas of emphasis. Without the regular presence of graduate students, the research program will always be stymied.

**Three-Year B.S. Degree:** *The EEC strongly recommends that the Department*

*consider offering a 3-year B.S. degree compliant with the Bologna process* instead of the current 4-year degree. The focus of the degree should be to develop work-ready students. Such a B.S. degree, complemented by a post-graduate degree when appropriate, would create a highly employable graduate. The emphasis should be on graduating students in 3 years. This will provide a significant competitive advantage over the current programs in Greece which take students 6 or more years to complete.

Incoming Students: The number of students entering the Department from 2008 to the present has fluctuated wildly (ranging from about 17 in 2008 to 135 in 2010 to 0 in 2011 and up to 127 again in 2013 as a result of Greek Ministry of Education policies. Some of the fluctuation is a function of changes in the minimum PanHellenic exam score used by the Ministry to admit students. When the minimum score was set to 10 for the TEI as well as the universities, the number of students allocated to the Department dropped dramatically. In 2011, no students were allocated to the Department by the Ministry. These types of fluctuations make planning and administration of teaching programs incredibly difficult and are deplorable. Furthermore, they negatively affect the morale and productivity of the Department as well as its reputation.

The EEC finds the current method of admitting and allocating students to be counterproductive. The TEI in general have been allocated students who have scored poorly on the PanHellenic exams and have no interest or aptitude for their degree programs. The admission system for the Greek higher education system must be radically modified so that incoming students are allowed to pursue the careers to which they aspire.

Stakeholder Involvement: Stakeholder involvement is critical to the success of the Department. If stakeholders become involved and feel that the Department is providing a valuable service, they will support it both financially and politically. Stakeholder involvement would also facilitate the Department's ability to target research and outreach to the needs of the local economy (and the larger economy of Greece's agricultural sector). Industry can serve as source of funding for specific applied projects as well as for scholarships for students who excel in their studies and/or become involved in relevant work or research as part of their (Πρακτική Εργασία), Degree Thesis (Πτυχιακή Εργασία), and post-graduate program. Regular involvement with industry can also lead to significantly better employment opportunities. In the past year, the Department has made significant strides in outreach with extremely successful recent workshops and summer school sessions. The faculty are encouraged to strengthen and expand these outreach efforts through additional regular workshops that familiarize local growers, industry and other stakeholders on the programs and expertise of the Department and that maintain a regular give-and-take between the Department and the local community and economy. Active participation of students in the organization and delivery of

outreach (e.g. workshops) will provide students with valuable experience and will enhance student networking and engagement. There is a tremendous potential for success.

Our discussion with a two Department alumni (one in Argostoli and one in Athens) produced many ideas to improve the visibility and effectiveness of the Department. Both were very complimentary of the education they received and stated that their education had provided them with the tools to be successful. The alumni also expressed a keen interest in having closer ties with the Department and receiving newsletters, seminar announcements, and other information at regular intervals. They also expressed a strong interest in continuing education opportunities and suggested that the Department organize seminars on issues important to local and regional food and wine producers and invite producers, businessmen, and other relevant people.

One alumnus was very supportive of the idea that the New Department create an Advisory Council consisting of stakeholders which would serve the dual purpose of providing the Department with feedback on what issues are relevant to the stakeholders while also increasing the visibility of the Department among its stakeholders. This ideas was not discussed with the second alumnus.

A few faculty members were very actively involved with applied research programs directly relevant to two local wineries. One of the research programs has resulted in identifying, isolating, and reproducing a local yeast which is now being used by the two local wineries on an experimental basis. Both wineries were extremely pleased with the results and foresee economic benefit from this cooperation. Another applied research effort is seeking to identify endemic cultivars of Robola – a native grape of Kefalonia with protected status. A third project is attempting to identify endemic cultivars of figs. *These are excellent examples of the type of applied research that the Department can conduct which benefits the local economy, employs local graduates, and greatly enhances the reputations of the faculty, the Department, and the TEI.*

#### Governing Board of the TEI of the Ionian Islands

Because the TEI of the Ionian Islands has relatively few faculty, by Greek law, it cannot be self-governing. Instead it is managed by a Governing Board based in Athens. Members of the Board are selected directly by the national government. For the recent past, all members of the Board are natives of either Kefalonia, Lefkada or Zakynthos (the three islands on which the TEI has campuses). Presumably, this allows the Board to better understand the local needs of the Ionian Islands and better manage the seven departments that make up the TEI. *There are no faculty members serving on the Board.* Unfortunately this also creates an atmosphere of distrust between the departments and the Board despite good intentions by all. Because we met with three members of the Board, including the Chairman and the two vice chairmen, we were convinced that at least these members of the Board were very

well informed about the TEI in general and the Department being evaluated specifically. In addition the Board members with whom we met impressed us with their initiatives to develop TEI-based outreach programs that will certainly strengthen the visibility of the TEI and its standing in the local community.

Nevertheless, the problem of being managed from afar by a non-elected Board remains and will continue to cause distrust and misunderstandings. The EEC recommends that the heads (προϊστάμενοι) of the TEI's seven departments be made members of the Board. Under this model, the Board would consist of the Chairman, Vice-Chairman, and one ad-hoc member all three of which would be assigned by the national government and the 7 department heads. We were told by current Board members that this type of model would not be workable because of the difficulty in traveling between the islands and Athens during the non-tourist period but with the available video technology which the TEIs around the country have already invested in, it would be very simple for meetings to be held electronically.

**Recommendation E1:** The TEI of Ionian Island should convert the Department into a School (Σχολή) of Agricultural and Food Technology and gradually add related degrees and faculty to create a synergistic and productive total.

**Recommendation E2:** The New School described in E1 should offer 3-year B.S. degrees compliant with the Bologna process instead of the current 4-year degree.

**Recommendation E3:** The New School should offer a post-graduate degree in Agricultural and Food Technology with areas of emphasis.

**Recommendation E4:** The New School should define a clear novel identity, mission, and operational niches compatible with: the capabilities and technical competencies of its staff and the needs of the agricultural sector, the food industry and related socio-economic stakeholders of the Ionian Islands. Included in this should be a clear understanding of who are the School's stakeholders.

**Recommendation E5:** The Department should develop focused plans to increase its visibility and impact on the local community. Outreach efforts could involve: workshops on their area of departmental expertise and stakeholder interest (wine and olive oil production for example) and field days during which improved production, harvest, and storage methods can be demonstrated. These efforts should build on and expand on recent successes.

**Recommendation E6:** The Department (or future School) should develop an Advisory Council consisting of stakeholders, and the Department Head. Stakeholder members should include leading agricultural producers (farmers) from key commodity groups, food and beverage industries, agribusiness leaders, and community leaders. The Advisory Council should not be constituted exclusively of alumni. The Advisory Council will serve the dual purpose of providing the Department with feedback on what issues are relevant to the stakeholders while also

increasing the visibility of the Department among its stakeholders. The Advisory Council should be involved with recommendations **E4** and **E5**.

**Recommendation E7:** Expanded mobility, internationalization, and participation in international research teams

**Recommendation E8:** The Governing Board of the TEI of the Ionian Islands should be modified to include faculty member participation. A recommended model is that the Board would consist of the Chairman, Vice-Chairman, and one ad-hoc member all three of which would be assigned by the national government and the 7 department heads of the TEI.

**Recommendation E9:** The current method used by the Greek Ministry of Education to allocate students to different universities, TEI and departments within these institutions is absurd. It must be replaced by a system in which students are allowed and encouraged to pursue their career interests.

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

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

Conclusions and recommendations of the EEC on:

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

***The most important conclusions reached by the EEC are assembled here.***

### *General*

The EEC was impressed with the teaching and research facilities available to the students including lecture rooms, well equipped laboratories, and greenhouses. There was good IT support. We found a very positive relationship among faculty, staff, and students. Faculty and staff were focused on providing the best possible education to the students. This included providing advising, after class tutoring, an open door policy, and an opportunity to do meaningful work for their Practical Training. Despite this, only 10 – 15% of the enrolled students graduate each year. It should be noted that based on the experience of the EEC members, this issue is endemic to departments offering agricultural degrees at Greek Institutions of Higher Education (AEI) but must be resolved if these programs are to survive in the current competitive environment.

The Department should develop a novel identity and a cohesive, long term mission. In so doing, agricultural sectors of local and regional importance must be taken into account. In particular, the new strategy should take into account factors such as the prime geographical location of the Department which allows it to address important established and emerging regional agricultural industries such as wine, olive oil, animal and cheese production. Additional advantages include the excellent facilities, available farm, and the overall excellent quality of human capital. The Department should add a strong international dimension to its future by encouraging more of its students and faculty to participate in international exchange programs.

Unbiased evaluation metrics of performance for members of the faculty must be established at the Institute, School, and Department level. These metrics must be used to evaluate the performance of individual members of the faculty, the Department, and the School and must include teaching and research performance (and outreach if that becomes a future mission). A system must be established to recognize and reward high performers and motivate underperformers. Performance evaluations must be conducted regularly – we suggest annually. Faculty members, Departments, and Schools which are not fulfilling the mission entrusted to them by the taxpayers of the state are consuming resources which should be allocated to those who are performing.

Similarly, an award system should be developed to recognize student academic performance at multiple levels – Department and TEL.

### *Curriculum*

The Department offers a single undergraduate program currently titled “Food Technology”. However the curriculum has changed twice since the Department was founded in 1999 to offer an “Organic Farming” curriculum. In 2009 both the Department’s name and curriculum were changed to “Organic Farming and Food Technology”. In 2013 the names were changed again to “Food Technology”. With each change, the course offerings were updated to meet the needs of the new curriculum. It should be noted that the 2009 and 2013 changes were made by the Ministry of Education *without* the input of the Department. Now the Department is faced with teaching a Food Technology curriculum while it is primarily staffed by faculty members who have expertise in agricultural production because they were hired to meet the needs of the original curriculum (Organic Farming). *This provides a daunting and somewhat unfair challenge to these educators. Overall the EEC recognizes the clear effort by the Department to develop a new undergraduate programme that meets the requirements and expectations associated with its recently acquired identity as a Food Technology Department.* However, in its current form, the curriculum needs revisions to reduce redundancy and enhance its Food Technology focus.

### *Teaching*

In general, current students and recent graduates with whom we spoke were pleased with the teaching methods used by the faculty. In sharp contrast to other evaluations in which the EEC members have been involved, the current and former students with whom we spoke provided very positive comments about the lecture courses. Of course, these positive comments were provided by the students who attend their classes regularly. *Both the limited number of student evaluations and the EEC evaluation shows that the Department's faculty provide excellent teaching value to their students.* Nevertheless, the biggest problem which the department faces with respect to teaching is that very few students attend the lecture sections.

No student course evaluations were conducted prior to the development of the self-evaluation report. These evaluations were distributed in 20 courses during 2012 only using the questionnaire provided by the HQAA. Overall, the student and course evaluation effort put forth by the Department can only be described as inadequate.

### *Research*

The Department should concentrate its activities in targeted areas of demand that can catapult the program into excellence. Research excellence should be acknowledged and rewarded through a TEI-based assessment system as described earlier.

### *Planning*

The Department should develop a long term vision with main aims to carry out a thorough review and restructuring of the curriculum to truly reflect the core aims and objectives. The Department should also draft a research strategy that will include specific methods and procedures for the identification, fostering and development of high-impact, high-relevance research areas. Lastly, the Department should encourage and assist faculty, staff and students in design and implementation of novel and expanded outreach efforts. This Department meets or exceeds the standards of a teaching-intensive institution in most areas with clearly strong potential for sustained excellence, innovation, and strategic planning to best address current trends, needs and opportunities related to agriculture the Ionian Islands. In turn, the Greek Ministry of Education should support the Department in its effort to redefine itself.