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

EXTERNAL EVALUATION REPORT

DEPARTMENT OF FOOD TECHNOLOGY

SCHOOL OF AGRICULTURAL TECHNOLOGY

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF KALAMATA

May 2013



External Evaluation Committee

The Committee responsible for the External Evaluation of the Department of Food Technology of the School of Agricultural Technology, Technological Educational Institute of Kalamata consisted of the following three (3) expert evaluators drawn from the Registry constituted by the HQAA in accordance with Law 3374/2005 :

1. **Prof. Sophia Kathariou**, North Carolina State University, Raleigh, North Carolina, U.S.A. (**Coordinator**)
2. **Prof. Vassilis Fotopoulos**, Cyprus University of Technology, Lemessos, Cyprus
3. **Dr. Amalia Tsiami**, University of West London, London, United Kingdom

***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 School of Agricultural Technology, Technological Educational Institute of Kalamata from May 27th to May 29th 2013. On the afternoon of May 27th, the EEC met for about two hours with TEI Vice-President Dr. Demopoulos and four of the six permanent faculty of the Department: Department Head Dr. Zakynthinos, Associate Department Head Dr. Varzakas, Dr. Spiliopoulos and Dr. Papadelli. Faculty present included the departmental self-evaluation committee (OMEA) members Dr. Papadelli, Dr. Varzakas and Dr. Spiliopoulos. No student member was present at the meeting (the Department subsequently indicated that students did not respond to solicitations for student participation in the OMEA). On the following day, May 28th, the EEC met separately with the following: The TEI President, Dr. Velissariou; five of the six permanent faculty members (the sixth was on sabbatical); ten (10) of the temporary faculty members (Έκτακτο Εκπαιδευτικό Προσωπικό); two technical support staff (Ε.Τ.Π.); the Department's Administrative Secretary; about 35 undergraduate students. The EEC also visited several laboratories, including an actual laboratory session. On May 29th, the EEC met with owners or representatives of nine (9) local food / beverage businesses dealing with development, manufacture, distribution and exports of diverse products (e.g. olive oil and other oils, dry foods such as raisins and figs, food flavoring agents, distilled spirits, wine and water). In addition, the EEC met with several students and laboratory instructors, including individuals in the course of actual laboratory sessions. The EEC also toured several labs; greenhouse facilities; the TEI Library; and the Laboratory of Olive Oil Sensory Analysis (Yefsignosia), where Dr. Vassilis Deimopoulos and his staff gave a tour of

the facility and described the sensory testing process.

Our meeting with Department faculty was productive. We met with five of the 6 permanent teaching faculty (EII) and 10 of the 20 nonpermanent teaching staff. Each meeting lasted approximately 60 minutes.

Our meeting with the Department's two of the three Technical Support Staff (E.T.II.) was extremely positive as was the meeting with the Administrative Secretary for the Department. In general, the technical and administrative staff were satisfied with working conditions and their interactions with faculty and students.

The students with whom the EEC met (approximately 35 individuals) ranged from first-semester students to students who had been in the Department for 6-7 semesters. The students were highly engaged and eager to offer their opinions and ideas.

After the interviews and tours, the EEC met with the Department's faculty to obtain clarification on issues discussed during the visit and to provide a synopsis of our assessment. Then the EEC met with the TEI president and vice-president, the Director of MODIP and the Department Head over a late lunch at the TEI's restaurant to discuss and summarize the findings from the site visit.

During the preparation of the external evaluation report, the EEC considered the self-evaluation report, which is extensive and well prepared, and the discussions that occurred during the site visit. In addition, the EEC considered several documents and information provided by the Department upon request of the EEC. An additional set of documents was requested subsequent to the EEC visit, but responses to that request were not received, apparently due to lapses in communication as the Department's leadership transitioned from Dr. Zakyntinos to the next Department head.

The site visit took place in an atmosphere of professionalism and collegiality. The EEC is unanimous in thanking the staff, faculty and students of the Department for their assistance during the evaluation site visit.

The Department's teaching facilities are very good. Of special note are the well-equipped and well-maintained teaching laboratories, several of which had state-of-the-art equipment, and the pilot plant units. These facilities are all used to fulfill the Department's teaching mission and provide an excellent environment for hands-on teaching. Courses are mostly taught by highly qualified personnel who also conduct research disseminated in peer-reviewed journals, books, electronic venues and conferences.

Since 2001, the TEIs 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 the southern Peloponnese. The EEC considers this a positive trend with many opportunities for further growth.

The Department is new, having been established only in 2009. At the time of the EEC visit no students had yet graduated from the program. For this reason, it was not possible to make an assessment of the overall impact and quality of the program on the basis of the quality of graduates or their ability to find satisfactory employment in relevant fields.

The Self-Evaluation Report provided information for the 2007-2012 period. The Self-Evaluation Report was well written and followed the format provided by HQAA. It contained most of the information needed by the EEC for the evaluation. As noted earlier, the EEC requested additional information some of which was provided by the Department.

A. Curriculum

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

APPROACH

- What are the goals and objectives of the Curriculum? What is the plan for achieving them?
- How were the objectives decided? Which factors were taken into account? Were they set against appropriate standards? Did the unit consult other stakeholders?
- 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 in Food Technology, which was established in 2009 following modifications of the previously offered program in Agricultural Product Technology. The scope of studies of the Department covers production, processing, preservation, storage and distribution of food products, as well as the management and utilization of food industry byproducts. The Department's stated mission is to produce Food Technology professionals properly trained in state-of-the-art aspects of Food Science and Technology, with the

expectation that these individuals will be able to meet the new challenges of our times.

Description of the Curriculum

The curriculum was revised in 2009 in order to reflect the new name of the Department which changed from Agricultural Product Technology to Food Technology. The curriculum requires 240 ECTS units distributed over 8 semesters (4 years). It consists of 40 courses which result in 210 ECTS units, a Practical Training Project (Πρακτική Εργασία) which results in 10 ECTS units, and a Degree Thesis (Πτυχιακή Εργασία) which results in 20 ECTS units. Thirty eight of the 40 courses are required (core) courses and two are compulsory electives (from among a limited group of courses), while both the Practical Training and the Degree Thesis are also required. Many of the core and elective courses consist of lecture (θεωρία) and laboratory sections. The students must pass both sections separately to receive credit for the course. Students can take additional lecture courses/sections as electives but without credit towards graduation. The curriculum is adequately described in the Department's website, although course syllabi/descriptions found online could be further improved (see recommendations at end of Section).

Strengths and Weaknesses of the Current Curriculum

The EEC carefully reviewed the current curriculum and reports our findings below.

- (1) The courses included in the curriculum range over a broad spectrum so that students acquire in-depth knowledge about all aspects of Food Technology.
- (2) Courses are clearly interconnected in most cases but a rather significant degree of overlap was observed in others.
- (3) No prerequisites are followed which potentially poses problems.
- (4) Some material is taught in excessive detail, while other areas are in need of stronger coverage. For example, there are 7 chemistry-related courses in the curriculum. Contrarily, other important courses such as Food Engineering are covered less extensively than expected.
- (5) The content of certain courses could be modified, while other courses of similar nature could be merged, leaving space for further elaboration in others when necessary. Specific recommendations can be found at the end of this section.

Certain major issues were identified by the EEC for the program of study:

- (1) Data from the 2011-2012 academic year in the Department's Internal Evaluation Report indicate that several courses (mainly lectures) have passing rates of approximately 10%. *The EEC finds these passing rates **unacceptably low** but acknowledges that there are many contributing factors.* In general, the lowest passing rates are in the earliest semesters. An important point to be noted is that

no such data were available to the EEC for 7th semester courses, due to the recent establishment of the program. At the curriculum level, factors affecting passing rates include course overload (discussed below), scheduling and the presence of initiatives (e.g. the first-semester course described below) to maximize student preparedness.

- (2) A large majority of the incoming students arrive at the Department without a clear understanding of the degree program or the employment opportunities which it can provide. Furthermore, many students do not understand the academic expectations and related workload. 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 to academic expectations is strongly suggested (more details are presented as a recommendation at the end of the Section).
- (3) The course load is rather large and could potentially contribute to the inability of most students to graduate within 4 years. This heavy course load makes the final examination period extremely difficult 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 recommended courses for each semester) and, in the opinion of the EEC, negatively affects students' ability to successfully complete a course.

Specific recommendations

Recommendation A1: The Department must consider European, national, and regional scientific and economic trends and *make appropriate adjustments to its curriculum* to enhance relevance, ability to provide marketable skills and knowledge, and ability to attract high quality students. A relevant example would be further emphasis on olives and olive oil production, possibly via modules in existing courses, with new stand-alone courses to be developed as part of a future post-graduate program currently being contemplated by the Department.

Recommendation A2: The EEC recommends that the Department commits itself to *reevaluating its curriculum on a regular basis*. One of the issues that should be addressed during this self-evaluation is whether the degree should be reduced to a 3-year degree to match similar EU programs of study. The EEC encourages and supports the Department's stated intentions towards specialization as part of post-graduate programs in collaboration with other TEI departments and with focus on regional food products.

Recommendation A3: *Establish an Introductory course* to provide an overview of the profession and familiarize the students with its biological, environmental, technical and economical components. The class should be team-taught with presentations by alumni and area employers invited to deliver lectures. This course should also

include field trips to local industries and could be added to the curriculum by merging some of the course sequences described earlier.

Recommendation A4: The ECTS given per course may require a reassessment.

Certain cases have relatively high ECTS credited considering that grading is usually based solely on final exams and teaching hours rarely exceed 2-3 hours of theory and 2 hours of laboratory practicals per week. Examples include the courses of Food Packaging and Meat Technology and Quality which are credited with 7 ECTS.

Recommendation A5: The EEC recommends a *reduction in the number of background courses in the curriculum*. One possible approach is to combine related background courses into a single course worth more credit hours. For instance, Mathematics I and Mathematics II, or Statistics I and Statistics II could be combined into a single course. Chemistry-related courses could also be combined to result in a more compact Syllabus (a total of seven such courses are taught, including *General & Inorganic Chemistry, Organic Chemistry, Biochemistry, Physical Chemistry, Analytical Chemistry etc*).

Recommendation A6: We strongly believe that the Department consider enriching the content of some (mostly background) courses with *material that provides the students with contextualized knowledge* on technologies particularly important locally and nationally. An example is Olive and Olive Oil Technology and Quality, which could actually be the result of a trans-departmental collaboration with the sister Department of Plant Production. The Department of Plant Production is equipped with a state-of-the-art olive oil sensory evaluation laboratory, which could be extremely useful for exposing the students to the important field of sensory evaluation. Furthermore, other existing courses of paramount importance can be intensified by increasing hours of teaching or even introducing a second course, such as the course of Food Engineering which is currently covered by 2 hours of theory and 2 hours of laboratory practicals per week, for one semester.

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 and fieldtrips. Some courses place class-related material on electronic platforms (e-classroom). At the time of the site visit, the academic staff did not demonstrate the e-classroom material for all subjects but printed the material and handed it to the EEC members (see B1 recommendation). The faculty commented that only a limited number of students actively used the site. In general, current students with whom we spoke were pleased with the teaching methods used by the Department, placing an emphasis on the exceptional dedication and assistance they receive by the hourly-paid academic staff. The students provided positive comments for some of the permanent academic staff, while concerns were raised about others.

One of the problems which the Department faces with respect to teaching is that few students attend the lecture classes (see B1 recommendation). Both staff and students indicated that typically only a small fraction of students attend lectures (e.g. 20 students from a class of more than 120). To their credit, some faculty give the lectures regardless of the number of students present.

Several of the faculty with whom the EEC spoke have adopted a variety of tactics to improve attendance. These include scheduling regular tests, assignments, and similar activities which contribute to the final grade for the class. Some faculty would change the weight of the assignment during the semester when participation was minimal. Such an approach might confuse the students and also discourage those that do participate. Alternative lecture formats that may include participatory components (presentations by students, group discussions) would promote student engagement and attendance. Another approach might be to combine the lecture and laboratory sections, which would likely also enhance students' ability to process the information. Specific recommendations are provided below.

The EEC commends the fact that the laboratory sections are of relatively small size, limited to no more than 20 students. The EEC briefly observed two laboratories in progress. In both cases students were working in groups of four and appeared fully engaged in the lab activities, but they did not wear laboratory-coats, safety goggles and gloves (see B5 recommendation). Students generally expressed their overall satisfaction with the quality of the instruction in the labs. The theory and laboratory sections of some courses have different instructors, but there appeared to be coordination between the instructors.

Only 26% of the Curriculum's teaching load is taught by the Department's 6 permanent departmental members and by permanent faculty from other departments. The majority of the teaching during the winter semester is done by temporary

teaching faculty (74%) (B1 recommendation). The ratio does not change significantly during the second semester (permanent departmental members, 30% of the teaching load; temporary faculty, 70%). The Department had few faculty from its inception. Furthermore, one faculty retired last year and one is waiting to be appointed. The high calibre of the temporary teaching faculty ensures that teaching is done well, although continuing in this fashion is clearly risky.

Teaching staff/student ratio

The presented ratio of permanent teaching staff to student is 1 staff to 48 students, although this ratio does not represent the actual experience of the students as the majority are not present during lectures. The contribution of the temporary faculty is substantial, changing the ratio to 1 to 12.5 or 1 to 15 during the first and second semester, respectively.

It would be important for students to have an academic advisor during their study that would be appointed during the first semester as a point of contact for academic issues. Students should be appointed equally among the permanent faculty (see B11 recommendation).

Teacher/Student Collaboration

The students generally respected the faculty for their expertise. They were especially pleased with accessibility and time dedicated to their needs by the temporary faculty. However, students also complained strongly that on many occasions classes taught by certain permanent faculty were cancelled or delayed without advance notice.

As mentioned above, the Department employs part-time to full-time temporary teaching faculty. Due to budget cuts and fewer incoming students, the number of part-time teachers would be reduced during the 2013-2014 academic year, placing the Department at risk, as currently a substantial amount of teaching and student supervision in labs is done by such faculty.

Students that will take up their Practical Training (πρακτική) at a professional sites sometimes rely on the faculty to introduce them to industrial partners of the Department. During the visit the EEC discussed with industry representatives their generally positive experiences with student quality and work ethic. Students should be encouraged to take an initiative to contact companies for their Practical Training at an earlier stage of their study (ideally, by the end of the first year).

Adequacy of Means And Resources

At the time of the evaluation, one new faculty had been selected for the position of Food Quality Assurance but the position had not been funded yet by the Ministry of Education. The facilities (laboratory equipment, laboratory classrooms and lecture rooms) are excellent. The pilot plants are fully equipped but appeared under-utilized

as the facilities are used only for demonstration during student practicals. There is an excellent facility at the TEI for the sensory evaluation of olive oil and this facility should also be used to enhance teaching and learning while also possibly incorporating the sensory evaluation of other food products. It is noteworthy that sensory testing for wine was organised by the faculty the previous year and the sensory evaluation of beer will take place next year.

Use of Information Technologies

The faculty should be encouraged to use the 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 (see B2 recommendation). Common-use computers are available to the students in the library.

Examination System

Grades for most theoretical sections were based on a single final written examination. Midterm exams and/or assignments may provide additional opportunities for student learning and evaluation.

Performance in the laboratory section of each course is mostly assessed through laboratory exercises and usually by 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, usually with the weight 50/50. Students do not pass the course until they pass both sections, although if students fail one component, they do not have to be re-examined for the other.

Quality of Teaching Procedures

Most faculty members were enthusiastic about their teaching, but attendance of lecture courses is frequently low. Instructors could implement measures that might encourage and reward attendance, as indicated above (e.g. mid-term exams, bonus points for group discussions and presentations).

Interviewed students agreed that assignments and mid-term exams would increase participation. Students were quite pleased with the laboratory courses/sections because of the hands-on nature of these classes, but they were less pleased with laboratories where techniques were only demonstrated.

Experiential learning engages the students and every effort must be made to expand such teaching opportunities. Kalamata-area employers interviewed by the EEC emphasized that TEI students should have significantly more exposure to experiential learning (i.e. hands-on exposure to analytical equipment) so that they are more work-ready when they graduate.

Quality and Adequacy of Teaching Materials and Resources

When interviewed, students indicated satisfaction with teaching materials. The EEC examined books for selected classes and found them to be adequate. Books are available to students at no cost.

Most teaching laboratories were well maintained and excellently equipped. In most cases teaching laboratory consumables were adequate and equipment was well maintained. Students, however, expressed disappointment that they were not able to closely observe demonstrations of the state-of-the art equipment due to high student numbers. This is particularly an issue for the Instrumental Analysis class, for which students have to demonstrate competency in handling the equipment.

The pilot plant is also excellently equipped, although there is limited use; for example, the extraction of olive oil and the production of orange juice are only done once or twice per year. The EEC felt that further efforts should be made by faculty to engage the industry for the full use of the facilities, thus also furthering partnerships with industry. Faculty expressed interest to expand the pilot plant in cheese making and meat technology in order to enhance student exposure in these areas. Such an expansion should be coordinated with industry partners to ensure the full use of the facilities throughout the year (see recommendation B4). Even though some faculty have links with local food production companies, a more targeted approach is needed for the use of pilot plants. It is expected that development of sustained contacts between the Department and local industries will require persistence, patience and creativity on the part of the Department but will be mutually beneficial in the long run.

Mobility of Academic Staff and Students

Overall, there was moderate mobility of staff, while students do not yet appear to take full advantage of opportunities such as Erasmus. It is also expected that students would be able to visit industrial partners during their Practical Training (Πρακτική). The EEC encourages the Department to continue to motivate the students to be extrovert and reach out for Erasmus and similar programs, in spite of known challenges with language, expenses etc.

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

According to the self-evaluation report, the average evaluation results are quite good. The self-evaluation report states that about 60% of the responding students were satisfied with lecture courses. However, few course evaluations were conducted prior to the self-evaluation report, and the data for lecture courses may not be sufficiently reliable due to the small number of students attending such courses. In the lecture courses, a total of 264 individual student responses were obtained over a period of one year for the 23 theoretical courses, indicating an average of 10 student

responses per course. Lab attendance is higher and this is reflected on the number of evaluation reports collected (694). The evaluation effort put forth by the Department needs to continue and expand.

Specific suggestions for improving the course evaluation process:

- (1) Discuss the importance of the evaluation process with the students and assure them that it will be used to improve the teaching program.
- (2) Review the evaluation form with an educational expert to ensure that the evaluation instrument provides the necessary data. Necessary data mining could be carried out by one of the available statistics experts at TEI Kalamata.

Specific recommendations

Recommendation B1: Introduce *weighted grading schemes* where student grades depend on midterm exams, quizzes (announced), assignments, group discussions or presentations, laboratory exercises and the final exam/assignment. Laboratory exercises should be completed and marked as a major percentage of the total grade for lab classes.

Recommendation B2: *Develop and distribute a more detailed syllabus at the beginning of each course.* The syllabus for certain courses (e.g. Food Chemistry) requires further description of what material will be covered in class. More importantly, syllabus **must** clearly present the class grading scheme and outline the instructor's expectations.

Recommendation B3: *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 and mid-term examinations may also increase student participation.

Recommendation B4: The faculty should assess the relationships between class pass rates, grades, attendance and class engagement.

Recommendation B5: The expansion of the department to include laboratories for dairy and meat products should be carefully planned, with the inclusion of *advisory input by industry*. It is important to plan and coordinate use of the laboratory equipment by the industry as well as for teaching demonstrations throughout the year and not sporadically.

Recommendation B6: Student use of all laboratories should include the *availability of safety glasses and gloves*. The students should not be allowed to participate in the laboratory without lab coats.

Recommendation B7: Student *evaluation of instruction* should be done each time a

courses taught and results shared with the instructor at the end of the semester. For the theory sections students can complete evaluations at the final exam, to ensure maximum participation.

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

Recommendation B9: 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.

Recommendation B10: *Instructors should not be absent or late for scheduled classes* without prior notice. Department leadership must clearly convey to the faculty the fact that unannounced absences or delays are unacceptable, even if they represent isolated incidents.

Recommendation B11: There are extremely low student attendance rates in the lecture (θεωρία) courses, which may negatively impact student success rate. The students with whom the EEC met acknowledged that they indeed did not attend at high rates, and largely attributed this fact to the frequent absences or late arrivals of instructors to class. However, students exhibited noteworthy engagement in laboratory or field settings that involve close interactions with faculty and teaching staff. This suggests that *changes can be made in the teaching methods* used in the classroom-based classes *to enhance and promote student engagement and reduce absenteeism*.

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. Research facilities and equipment include state-of-the-art research labs, especially in biomolecular separations and analysis, excellent pilot plant units and a variety of other laboratory facilities. In addition, at the TEI Kalamata the Department has access to extensive greenhouse facilities and to the Olive Oil Sensory Laboratory. Several additional state-of-the-art pieces of equipment are expected for biomolecular separations,

metabolomics and electron microscopy. *Available equipment, lab spaces and pilot plant were well maintained. The research infrastructure is excellent.*

The internal evaluation report documented a certain level of research productivity. The EEC commends the existing efforts, especially considering the small number of faculty and their heavy teaching and administrative load. The EEC strongly encourages development of research projects that would reflect the specific mission and unique attributes of the Department. **It was difficult for the EEC to identify major research themes or focus areas associated with the Department.**

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. The EEC has taken this into account, along with the fact that there are numerous commonalities between TETRO and other agricultural programs on the same campus. The Department is encouraged to utilize and further develop the potential to work cooperatively with other programs at the TEI Kalamata. Due to the small number of faculty (who also have substantial teaching and administrative duties) and limited staff the Department should identify a small number of areas that would become departmental research priorities and pursued aggressively.

The Department does not currently have a post-graduate program and the research effort has been seriously hampered by the lack of graduate students. The EEC supports and encourages the Department in its intentions towards a post-graduate program with specialization on regional food commodities, to be developed and implemented in collaboration with other TEI departments.

Research Productivity

The EEC used awarded grants (research programs), publications in peer-reviewed journals, presentations, book chapters and stakeholder impact to assess research productivity of the Department's six permanent faculty members. The Department has a good record in faculty presentations in conferences, and covers some of the costs for one annual conference presentation for each faculty.

The OMEA report suggested limited participation in research and pronounced variability in publication output. Three faculty had substantial publication records, however only one had a strong track record in a well-defined area of direct relevance to Food Technology.

The EEC assessed the Department's research activities using modest international standards for teaching institutions, and also compared the Department with Food Technology programs in other TEIs. The EEC identified certain areas of strength but considers the overall research productivity of the Department as rather modest. The EEC also noted, however, that the Department has only 6 permanent faculty

members; in addition, the faculty have heavy teaching and administrative loads.

The EEC noted that some faculty are aware of the importance of addressing regional agricultural research problems and are securing funding from local and regional stakeholders to support this research. Some faculty are already working with local and regional stakeholders by organising training seminars through continuing education initiatives. The EEC commends such efforts and encourages the Department to become further engaged with the local food industry, including research projects that would utilize the Department's expertise, pilot plant units and equipment to help address specific industry problems. This may not be an easy task. Substantial persistence and creativity will be needed to develop and maintain a culture of fair and productive give-and-take between the Department and regional stakeholders. Encouraging the engagement of students (both current and from the future post-graduate program) in such efforts will be beneficial in multiple ways.

Specific recommendations

Recommendation C1: *Align the Department's research with the strategic needs and opportunities of regional food industries and relevant sectors of the economy.*

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. annually) with Department faculty for information exchanges, updates and brainstorming.*

Recommendation C3: *Become further engaged in organized collaborations with the other agricultural programs at TEI Kalamata. 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 TEIs in Greece.*

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?

Services to the academic community (Department faculty, staff, and students) are of high quality. Classrooms and labs were nicely designed and well maintained. The Department's secretariat appeared well organized and conscientious, although both the secretariat itself and the faculty believe that it is under-staffed and in need of more personnel.

Internet access for faculty and staff is excellent, but students are limited to the library or computer labs if they need internet access on campus. Library services are excellent and these services were in high demand both by students and faculty. Food services were impressive, significantly above average and also in high demand by students, faculty, and staff. Food costs are subsidized by the TEI and meals are available at very low prices.

The Department is moving toward simplifying administrative procedures by processing many procedural items electronically. For example, all final grades are posted electronically and can be viewed by students electronically. Overall, the TEI makes consistent efforts to increase student presence on campus by providing attractive and comfortable facilities, including laboratories and classrooms. The TEI Kalamata also operates an excellent student residence facility near the city center.

The EEC had a long and productive discussion with two of the three technical support staff (E.T.II.) They appear to be well educated and trained and provide critical support for the teaching and research missions of the Department. They are to be commended for their enthusiasm and dedication. They were generally quite satisfied with working conditions in the Department.

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

1. *Student advising and orientation.* Students are not allocated a "faculty advisor", a service which the EEC strongly recommends. Students were frustrated by lack of knowledge of TEI procedures in cases of grievances over academic issues (regarding grades, etc.)
2. *Student access to information about job openings* for possible employment upon graduation. TEI Kalamata Placement / Professional Development Office (Γραφείο Διασύνδεσης) is a useful venue to provide such services, but students indicated that they had received little or no help in identifying possible positions for employment and some were not even aware of this service. There appeared to be confusion even among the faculty about what services were available. This is a critical area especially under today's economic conditions in Greece and must be addressed.

Specific recommendations

Recommendation D1: Assign an active *faculty advisor to each incoming student* upon their arrival at the Department. Depending on the number of students,

advising duties should be evenly distributed among permanent faculty. Regular advising may contribute to reduced class failure rates 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 (e.g. IT, Library). Orientations should also be done periodically to familiarize students with mobility programs such as Erasmus.

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

Recommendation D4: *The TEI should institute a regular program for reward of excellence to students*, which could be sponsored by local food industries/companies, thus further strengthening the bonds between the Department and the Industry.

Recommendation D5: *Student evaluation results* for all courses should be made available to the instructors soon after the course is completed. This should include temporary faculty.

Collaboration with social, cultural and production organizations

The Department's initiatives are mainly oriented towards maintaining active outreach programs to the community and the regional food industry sectors. It has developed several initiatives with regional organizations. However, there is need for improvement. For instance, workshops on specialized applied topics can be offered (free or for a nominal fee to cover the cost of meetings) to farmers and food businesses. Seminars open to the public can be given on a regular basis (e.g. once each semester) to present those aspects of faculty research programs that are of special relevance and interest to the Department and to the community.

Recommendation D6: Faculty, staff and students should organize *field days* where an important problem and /or problem solving activities can be demonstrated to the public. These events should be geared towards problems that affect local food processing and value-added 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.

Synergistic Arrangements: Cooperation with the Department of Agricultural Technology will be vital in development of areas of emphasis such as Olive and Olive Oil Technology. An example is the utilization of the Olive Oil Sensory Evaluation Laboratory.

Development of unique identity: Efforts must be made to differentiate the newly organized TETRO Department from similarly reorganized departments at other TEIs. The Department should develop attributes that give it a distinct identity and offer students something that is not currently (or commonly) available in Greece.

Three-Year B.S. Degree: The EEC recommends that the Department considers offering a 3-year B.S. degree compliant with the Bologna process. 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 highly employable graduates.

Post-Graduate Degrees: The Department has expressed the desire for the future development of a post-graduate degree program with focus on regional foods, in collaboration with other TEI departments. The EEC considers this an excellent plan for the future. Current students also expressed the desire to be able to pursue a graduate degree in Kalamata. Post-graduate students will likely become major contributors to the future research program of the Department.

Incoming Students: The number of students entering the Department from 2009 to the present has fluctuated widely (ranging from about 38 in 2009 to 124 in 2011) as a result of Greek Ministry of Education policies. These types of fluctuations compromise planning and administration of teaching programs. TEIs in general have been allocated students who scored poorly on the PanHellenic exams and may have limited interest or aptitude for their degree programs. The admission system for the Greek higher education institutions must be radically modified so that incoming students can pursue the careers to which they truly aspire.

Industry 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 regional and national economy. 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 Practical Exercise or Degree Thesis (Πτυχιακή Εργασία). Regular involvement with industry can also lead to significantly better employment opportunities. In the past year, the Department made significant strides in outreach, even resulting in the award of research grants

(Κουπόνια Τεχνολογίας) promoting research collaborations between members of faculty and local food and beverage industries.

The faculty are encouraged to strengthen and expand these outreach efforts through additional workshops that familiarize local 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 regional community and economy. Active participation of students in the organization and delivery of outreach (e.g. workshops) will provide them with valuable experience and will enhance student networking and engagement. There is a tremendous potential for success.

The EEC's discussion with local food industry stakeholders also produced ideas to improve the visibility and effectiveness of the Department (via initiatives such as described above).

Expanded mobility, internationalization, and participation in international research teams: The Department will improve from further emphasis on mobility and internalization through programs such as Erasmus, sabbaticals (in Greece and elsewhere) and hosting of seminars by other scientists visiting the area. Such efforts will be extremely useful both for students and faculty, and will promote research competitiveness and growth. In addition, it is important that faculty members become involved with multinational research teams and poise themselves for European research programs. Significant growth of extramurally-funded research will require long-term strategic planning.

Specific recommendations

Recommendation E1: The Department should consider offering a *3-year B.S. degree* compliant with the Bologna process.

Recommendation E2: The Department should continue its plans to offer a *post-graduate degree* relevant to the new B.S. degree, *provided that necessary support will be given by the State.*

Recommendation E3: The Department should *define a clear novel identity, mission, and operational niches* compatible with: the capabilities and technical competencies of its faculty and staff and the needs of the food industry and related socio-economic stakeholders in the Peloponnese. Included in this should be a clear understanding of who are the Department's stakeholders.

Recommendation E4: The Department should develop focused plans to increase its visibility and impact on the local community. *Outreach efforts* could involve: workshops on areas of departmental expertise and stakeholder interest (olive oil production, for example) and field days during which improved production, processing, packaging and storage methods can be demonstrated. These efforts should build on and expand on recent successes.

Recommendation E5: The Department should develop an *Advisory Council* consisting of stakeholders, faculty, and the Head of the School of Agricultural

Technology. Stakeholder members should include producers from key commodity groups, food business leaders, and community leaders. 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.

Recommendation E6: The Department should promote *expanded mobility, internationalization, and participation in international research teams.*

F. Final Conclusions and recommendations of the EEC

Foreachparticularmatter, pleasedistinguishbetweenunder- andpost-graduate level, if necessary.

Conclusionsandrecommendations of the EEC on:

- thedevelopmentoftheDepartmenttothisdate 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 research and teaching facilities available to the students includingwell equipped laboratories and pilot plant units. There was excellent IT support and excellent cafeteria and library facilities.

The Department should develop an identity in the Food Technology arena and a cohesive, long term mission based on strategic planning. In so doing, it must strengthen its responsiveness to needs of the Food Industry and related stakeholders at the regional and national level. The Department is in a unique position to excel in such efforts due to is location in a key food production region (especially olives, olive oil, fruit and produce) and its excellentlaboratory and pilot facilities. The Department shouldalso enhance its international outreach and mobility of its students and faculty (e.g. through Erasmus, sabbaticals or other initiatives).

Curriculum

The EEC recommends that the Departmentcontinues to re-define and streamline its curriculum and that it introduces a faculty-led student advisement program to assist students in enrolment and other academic issues.

Teaching

Faculty should enhance efforts to promote attendance and enhance student

engagement and participation in classes (e.g. ensuring that classes are not cancelled or delayed; posting course syllabus on e-class at the beginning of the semester; mid-term exams and other assignments). An award system should be developed to recognize student academic performance at the Department.

Low pass rates for several courses are a major issue directly associated with long time to graduation. Factors affecting passing rates include student and instructor attitudes, course overload, scheduling, lack of adequate student preparedness, and examination methods. The Department indeed recognizes the problem and is investing in efforts to more effectively convey to students the key importance of good study habits, hard work and motivation. Academic advising, alternative course delivery and grade assignment schemes and the implementation of prerequisites may also prove useful in ensuring better student performance.

Research

The Department should establish its own identity in research, and utilize its excellent technical resources and faculty expertise to strengthen its connections with the regional and national Food Technology sector.

Planning

The Department is new, and as expected is in the process of re-defining its curriculum and assessing the effectiveness of its program (students have not yet graduated from the Department). A post-graduate program in conjunction with other agricultural programs at TEI Kalamata is being considered a high priority by the Department. The EEC strongly recommends a cohesive Strategic Plan for this and other Department priorities.

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