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

EXTERNAL EVALUATION REPORT

DEPARTMENT OF GREENHOUSE CROPS AND FLORICULTURE

FACULTY OF AGRICULTURAL TECHNOLOGY

TECHNOLOGICAL EDUCATIONAL INSTITUTE OF MESOLONGHI

March 2012

External Evaluation Committee

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

1. Professor George Vellidis (Coordinator)
University of Georgia, Tifton, Georgia, USA

2. Professor Andronikos Mauromoustakos
University of Arkansas, Fayetteville, Arkansas, USA

3. Professor Christos Olympios
Technological University of Cyprus, Limassol, Cyprus

***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 Greenhouse Crops and Floriculture (hereafter the Department) of the Faculty of Agricultural Technology, Technological Educational Institute of Mesolonghi from March 19th to March 21st 2012. On the evening of March 19th, the EEC met informally with TEI President Dr. Politis, TEI Vice-President Dr. Kougias, the Department Head Dr. Kapotis, Dr. Salahas, and Dr. Papatropoulos. Dr. Kapotis, Dr. Salahas, and Dr. Papatropoulos were members of the departmental self-evaluation committee (OM.E.A) which had undertaken the drafting of the Internal Evaluation Report. The same day the EEC met with the following groups from the Department: 15 undergraduate students and 2 alumni of the program, the four technical support staff (E.T.E.II.), and the faculty.

Our discussion with the students was extremely positive. The students were at minimum in their second year of studies with the majority being within the Department for at least 4 years. No first year students were available because no students entered the Department during the 2011-2012 academic since no students were assigned to the Department by the Ministry of Education. Seven of the 15 undergraduate students present had selected the Department as their first choice prior to the PanHellenic Exams – a much higher number than encountered in prior evaluations by the members of the EEC. When asked about this, the students provided several reasons for selecting the Department: 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 offers graduates certain professional rights and privileges (for example the right to sell

agrochemicals, apply pesticides, develop business plans for agricultural enterprises, etc.) which is a competitive advantage in the job market and provides greater opportunity for entrepreneurship. 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 90 minutes and ended only because of time limitations.

Our meeting with the Department's four Technical Support Staff (E.T.E.II.) – this was the entire technical support staff group – was also positive. In general, the staff were very satisfied with working conditions and their interactions with faculty and students.

Our meeting with Department faculty took place late in the afternoon of March 20th and was also very productive. We met with the 8 permanent teaching faculty (ΕΙΙ) and all 5 of the nonpermanent teaching staff (Συμβασιούχοι). The meeting lasted approximately 90 minutes.

In the evening we visited several of the Department's laboratories.

On March 21st we met with the Department's Secretariat (Γραμματεία) for approximately 30 minutes followed by visits to the remaining Department's research and teaching laboratories, research and teaching greenhouses, botanical garden, library, distance education conference/teaching space, cafeteria and restaurant. After the tours, the EEC met briefly with the Department's faculty to obtain clarifications and ask questions of topics discussed during the visit and provide a synopsis of our assessment. Then the EEC met with the TEI president, vice-president, the Department Head, and the O.M.E.A. over lunch to discuss and summarize our activities and exchange opinions.

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 two-day site visit. 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. 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 is unanimous in expressing our 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 greenhouses 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 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 internship (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 laboratory sections.

Since 2001, the TEI have been assigned research responsibilities. In response to this, the Department has developed research programs which address the needs of the agricultural community of west-central Greece. The EEC considers this as very positive and recommends that this trend continues.

The Self-Evaluation Report provided information for the period 2005-2010. Upon arrival for the site visit, the O.M.E.A. provided us with updated information for the period since 2011. 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 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 identified 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 curriculum was revised during 2005-2006 and the Department proposed to change both its name and the curriculum's name to better reflect the revisions. The proposed name was "Department of Agricultural Applications and New Technologies" (Τμήμα Γεωπονικών Εφαρμογών και Νέων Τεχνολογιών). The name change was approved by all the appropriate governing bodies except for the Ministry of Education. As a result, the content of the curriculum does not completely match its current (original) name. The goal of the curriculum is to provide students with the knowledge and ability to produce, preserve, process, and market crops with an emphasis on the intensive and organic production of vegetables, flowers, and fruits in a greenhouse environment. The importance and value of the Department and School to agriculture in west-central Greece cannot be overstated. In the opinion of the EEC, the Department should be given every opportunity to improve, expand and modernise its curriculum as we enter the era of climate change, globalization, increased world population growth, food safety concerns, increased consumption of vegetables (produce) and flowers, and great economic challenges to agriculture as a sustainable way of life.

The current curriculum consists of 46 (240 ECTS) courses, 35 of which are required (core) courses, 4 are compulsory electives (choice between a limited group of courses), and 7 two-credit electives (choice between 10 courses). The curriculum is well described in a modern, attractive, and easy to read Program of Study booklet which is available in printed form and from the Department's website.

Over the evaluation period (2005-2010), there were between 7 and 9 faculty members in permanent positions and between 28 and 54 part-time faculty (non-permanent) teaching the courses. Currently there are 8 faculty members in permanent positions and 6 part-time faculty (non-permanent) teaching the courses. The Department has its own teaching facilities but also used other campus facilities as described in the Self Evaluation Report. At current student numbers, the facilities are adequate.

The content of the courses included in the curriculum is rather diverse, a fact that is explained by the nature of the Department. Courses are clearly interconnected and have a small degree of overlap. Discussions with students indicated that most teaching materials are current and relevant. PowerPoint files and other electronic media used by faculty are commonly posted in the e-class system so that it is available to students.

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 their first

choice was considerably higher in the group of students we met in Mesolonghi 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 curriculum are better understood and appreciated by the local community than most similar departments. 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 agriculture in Greece and perhaps most importantly;
- 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.

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. Faculty told the EEC that prior to the current budget cuts, temporary teaching faculty provided help sessions for students in these topics. However, with the loss of resources, this is no longer feasible. It is evident to the EEC that the Department's faculty were making efforts to provide their students with the tools needed to successfully complete their program of study.

Two major issues were identified by the EEC for the program of study. It should be noted that based on the experience of the EEC members, both of these issues are endemic to departments offering agricultural degrees at Greek Institutions of Higher Education (AEI.)

1. The first major issue is the low percentage of students passing courses (data provided by the Department to the EEC upon request). Of the data provided, there are 8 courses (lecture and/or lab) which have passing rates of less than 10%. **Some of these courses have a 0% passing rate.** The EEC finds these passing rates **unacceptably low** but acknowledges that there are many factors at play. Some of these factors are identified in the Self Evaluation Report and include student and professorial attitudes, course overloading (discussed below), scheduling, taking courses out of sequence, taking advanced course without having passed courses taken earlier in the program of study, and examination methods.
2. The second major problem is the extensive delay in graduation time. The

graduation rate data provided by the Self Evaluation Report (Table 7.4) and an updated table provided to the EEC during the site visit provide conflicting data when compared to the number of students entering the Department. For example, Table 7.3 indicates that 243 students entered the Department during the 2005-2006 academic year. Table 7.4 accounts for only 124 (3 who graduated and 121 who have not) of the 243 students who entered the Department during that academic year. Even using the numbers from Table 7.4 (3 graduated, 121 not graduated), fewer than 4% of the students have graduated from the 2005-2006 class. Graduation rates from before the evaluation period appear to be much higher (ranging from 25% to 50% of students graduating within 6 years) although these graduation rates could not be verified as data on numbers of students entering the Department were not provided for academic years prior to the evaluation period. If the data from the 2005-2006 academic year are indicative of the evaluation period, they must be considered unacceptable. Again, there are many factors affecting graduation rate many 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 where possible. The areas which we believe can be addressed by the Department are:

- a. The course load is very 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 offers a comprehensive study of greenhouse crop (vegetables and flowers) production with the students obtaining highly specialized knowledge in a large number of areas of agricultural production. 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.
- b. There are very low student attendance rates in the theoretical courses. The students attribute this to high workloads. According to the official

Program of Study, students must be in class 30 hours per week to attend every class session (lecture and laboratories) which is indeed quite high if students are also dedicating time to these courses outside the classroom. But there are many factors driving low attendance including an ingrained attitude in the students that theoretical 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. Students and some faculty recommended the use of 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.

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. For the compulsory elective courses, students can select from 4 of 8 electives. However, in reality, the selections

are more limited than that as student have two select one of two possible course during 3 semesters and then 2 of 4 courses during a fourth semester. For the 2-credit elective courses, students can select 7 of 10 courses. When the curriculum is modified again, special care should be taken allow students more choices.

Students provide hard-copy evaluations for classes. Evaluations were initially conducted in May and November 2008 since then have been conducted annually. Results are processed by one faculty member of the Department. To date, the data have been used only for the Self-Evaluation report. The evaluations are not distributed to the faculty and consequently not used for self-improvement. Students did not know how the evaluation results are used.

The curriculum seems to be consistent with the requirements of the society, and it was reported to us that a limited number of stakeholders were involved with the most recent revision of the curriculum. Student input was not included in this process. High involvement of stakeholders is required in order that the department trains students according to meet the needs of the agricultural industry.

Recommendation A1: The Department must consider European and global trends in the field and make appropriate adjustments to its curriculum to enhance its relevance, its ability to provide marketable skills and knowledge, and its ability to attract high quality students. The EEC recognizes that the some of the proposed changes cannot be implemented unless there is change in Government policies regarding entrance examinations and student assignment to degree programs.

Recommendation A2: Establish a mandatory 1-hour seminar for all students in the Department, but particularly incoming students, during which faculty members, alumni, or members of the agricultural industry will present information about agriculture and job opportunities in the field. This seminar can be held once or twice per semester. Alumni suggested that seminars and/or courses in the last year of studies relevant to marketing, agro-business, and preparation of graduates for job placement would be extremely helpful to future graduates. Additional topics for discussion will include changes in the curriculum, ERASMUS, the importance of student evaluations and how they will be used to improve teaching, and other topics that directly affect the students. We emphasize that a method must be found to make participation by the students mandatory.

Recommendation A3: Develop and distribute a detailed syllabus at the beginning of each course. The detailed syllabus should also be available on-line along with the course description. The syllabus should contain a detailed description of what material will be covered in class, how the students will be evaluated, what the professor expects of the students, what the students should expect of the professor, office hours and contact details for the professor. Opportunities for students to earn added points towards their final grade should be clearly described in the syllabus. The syllabus acts as a contract between the student and professor. The syllabus may

also positively affect student participation since the students will have a better idea of what each lecture entails.

Recommendation A4: The EEC recommends that faculty develop teaching approaches and styles that enhance student engagement in classroom-based classes and reduce absenteeism, which currently is unacceptably high. Approaches can include grading schemes that have more than one criterion for grading and that reward participation; team work group discussion formats and other approaches which are definitely within the capacity of the highly dedicated faculty that the EEC met.

Recommendation A5: The EEC recommends that the Department make more courses pre-requisite and enforces this principle. In this suggestion it is implicitly understood that students will be required to pass pre-requisite courses prior to enrolling in more advanced courses. This suggestion will have multiple benefits. Firstly, it will prevent students from attempting to take the final examination of courses years after the course was initially attended. More importantly, it will improve the students' preparation thus providing them with the knowledge to improve their performance and success rate in the more advanced courses. Implementation of this suggestion also directly addresses both the problem of very high length of studies and the low average grades of students.

Recommendation A6: The EEC recommends that the Department commits itself to reevaluating its Curriculum on a regular basis and not limit changes to minor adjustments. One of the issues that should be addressed during this self-evaluation is the number of courses required by the Program of Study with the goal of reducing the number courses but also whether the degree should be reduced to a 3-year degree to match similar EU programs of study. However, the EEC recommends that the Department conducts an evaluation and analysis of market needs before revising the curriculum. This should provide information on the skills the market requires of graduating students and will make the students more employable and more competitive. The evaluation should include an assessment of both the public and private sectors.

Recommendation A7: The EEC recommends a reduction in the number of courses in the Curriculum. In its current form, the curriculum contains too many courses. The content of the courses is excellent but the depth of knowledge this curriculum provides to students at the B.S. level is excessive. There are several ways to reduce the number of courses. One possible approach is to combine related courses into a single course worth more credit hours but which overall reduces the course load, the examination load, and the overall credit hours. As examples only, we provide the following lists of courses which could be combined into single courses: Soil Science (202) and Soil Resources Management (406); Plant Protection Products (502) and Protection of Ornamental and Vegetable Crops (603); Introduction to Informatics (104) and Applied Informatics (201); Under Cover Vegetable Production I (404) and

Under Cover Vegetable Production II (501). All of these courses have lecture and laboratory sections.

Recommendation A8: We strongly believe that the Department consider replacing some traditional courses with courses that provide the students with the ability to used modern technologies which have become important to agriculture. Examples of these technologies are geographical information systems (GIS), remote sensing and other sensing systems, biotechnology, post-harvest processing; produce safety; agro-ecology, and precision agriculture. It has been demonstrated that having taken just one of the above mentioned courses provides graduates with a competitive advantage when pursuing job opportunities. New courses should be added as older courses are eliminated without over-burdening the curriculum with a larger number of courses.

Recommendation A9: Instructors are not available for Floriculture, Soil Science, Agricultural Chemistry (Ανθοκομεία, Εδαφολογία, Γεωργική Χημεία). Either funding should be provided by the Ministry to hire faculty to teach these courses or the Department should find alternative means of teaching the courses. One feasible option is to use the TEI's teleconferencing facilities to offer these course when taught by faculty at other institutions.

Recommendation A10: Modify course offerings to integrate the lecture section and the laboratory sections into a single course/grade. Although this will dramatically reduce the number of final exams each student encounters, it will not dramatically affect the overall content of the Curriculum. Alternatively, modify course offerings so that lecture courses are worth 2 credits and lab courses are worth 3 credits to capitalize on the fact that students attend laboratory courses.

Recommendation A11: The EEC recommends that the Department maintain a list of approved internship (Πρακτική) opportunities and carefully screen new opportunities to ensure that the internships are meaningful and productive. Students are currently permitted to identify and select the place at which they conduct their internship without significant involvement of the Department. Furthermore, we recommend that individual faculty members be assigned to supervise the internship and that the TEI set aside travel funds for the faculty to make unannounced visits to the site of the internship (this is also proposed in the Self-Evaluation Report). Finally, we strongly recommend that each student submit a written report describing his/her internship and then orally present this report to the faculty and students.

Recommendation A12: A two-course sequence of English should be required of all students in the first two semesters unless they hold certificates from accredited organizations which evaluate English proficiency.

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

Teaching methods include classroom teaching using PowerPoint presentations, laboratory exercises, activities in the Department's greenhouses and botanical garden, opportunities to engage in laboratory research, and fieldtrips in selected courses. Most of the faculty also place class-related material on electronic platforms (e-classroom). The EEC also believes that alternative lecture formats that may include participatory components (presentations by students, group discussions) would further student engagement and attendance.

It should be noted that the curriculum consists of a series of topics covered by lecture (θεωρία) and laboratory courses. These lecture courses and laboratory courses are designed to be taken concurrently but frequently students pass the laboratory course and do not pass the lecture course until several semesters later. Because the lecture courses have much lower pass rates than the laboratory courses, students are frequently in the position of enrolling for more advanced courses without having successfully passed the earlier lecture courses. According to faculty and staff, prerequisites (προαπαιτούμενα) exist and are enforced but it was not clear to the EEC how many of the advanced courses require prerequisites and how rigorously this is enforced. It is the EEC's opinion that students would benefit if a single class contained both lectures and laboratory; this would enhance engagement of the students, maximize their ability to process the information and also address the problem of non-attendance in lecture sections which is discussed in greater detail below.

The EEC commends the fact that the laboratory sections are of relatively small size and are limited to 25 or less by rule. Because of the reduction in the numbers of incoming students, laboratory sections are rarely at capacity. The EEC briefly observed a plant pathology teaching laboratory in progress and it contained 8 students. Students expressed their overall satisfaction with the quality of the instruction in the labs. Attendance in the laboratory sections is mandatory and final

grades are a combination of activities conducted during the semester and the final exam.

In contrast, students provided few positive comments about the lecture courses. The complaints and problems were similar to those found at most other Greek institutions of higher learning and are driven largely by Greek National policy. Attendance is not mandatory and evaluation is only by a single final exam. This policy discourages student attendance, results in very few students attending the lectures, and most critically, greatly reduces the effectiveness of imparting knowledge to the students. 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. Real change is needed in the teaching methods used by this Department (and most other academic departments in Greek Institutions of Higher Learning). Several suggestions for improvement were provided by the students including making attendance mandatory, using mid-term exams, homework assignments, and class projects to improve attendance and determine their final grade in a course. A lively discussion about this topic took place when the EEC met with the Department's faculty. At the time of the meeting, no faculty were using methods other than the traditional lecture with a single final exam. During the discussion several faculty agreed that change was needed while others maintained that large teaching loads prevented them from implementing mid-term exams, homework assignments, and class projects because of the time required to develop and grade these activities. One of the younger faculty members indicated that he/she had implemented mid-term exams a few years ago but met great resistance from the students and abandoned those efforts. The EEC firmly believes that lecture courses in which quizzes, mid-term tests, homework assignments, and class projects significantly contribute to the final grade is the best approach for increasing student participation in lecture courses. Recommendations are provided below.

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 undergraduate students that the permanent teaching faculty are largely accessible and responsive to the students' needs. Office hours were posted on faculty doors 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.

The Department also employs several part-time teaching faculty. A few years ago, there were as many as 42 part-time teachers. But because of budget cuts and the reduction of incoming the students, the number of part-time teachers was 6 during the 2011-2012 academic year. Because of lack of space, these part-time faculty do not have offices on the campus and generally are on campus only to teach thus

reducing their accessibility. During the 2011-2012 academic year this problem has been minimized because several of the remaining part-time teaching faculty also contribute to the Department's research program and are on campus for extended periods and have space in the research labs.

Adequacy of Means And Resources

The Department lost a faculty member who taught floriculture courses to retirement during the evaluation period. This position has not been replaced and the remaining faculty have assumed those teaching responsibilities. Because floriculture is significantly removed from current faculty members' expertise, both the students and faculty expressed concern that the floriculture courses are no longer taught by experts in the field. This course also received the lowest student evaluations. Laboratory activities continue because of the experience of the technical support staff who worked with the retired faculty member. Offering a speciality in floriculture is dubious without the expertise of a trained floriculturalist. Although current budget constraints may prevent refilling this position, the EEC recommends that the Department explore distance education as an option for providing these courses.

This recommendation is described in detail below.

Overall students were satisfied with the available resources. In most cases teaching laboratory consumables were adequate and equipment was well maintained although some students did complain that laboratory consumables were limited because of recent budget cuts. Students have adequate access to major libraries and databases through the internet. The library is located on the campus and well stocked with books and other resources. It is open daily only from 08:00 to 14:00 because of staffing shortages so it is typically closed when most students have time to access the library. This problem could be easily rectified by shifting the library's operating hours so that it is open later in the afternoon.

Use of Information Technologies

All students and faculty have been issued university 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. All buildings of the Department (including cafeteria) are equipped with wireless connections. A computer lab is available as is IT support. However, the lab is also used for instruction and is thus not always available for student use. A fully equipped teleconference room is available on campus and is used for various meetings. It is not used for distance education.

Examination System

Grades for most theoretical sections were assigned from a single final written examination as described earlier.

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. Student do not pass the course until they have passed both sections. Data provided in the Self Evaluation Report (Table 7.4) indicate that most students graduate with an overall grade of between 6 and 6.9 with an average of 6.44 during the evaluation period. The EEC notes that during the evaluation period, no student graduated with an overall grade higher than 8.4.

Quality of Teaching Procedures

Most faculty members are dedicated and enthusiastic about their teaching, but attendance of lecture courses is frequently low. Current legislation does not allow for the instructor to introduce compulsory attendance. 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 quizzes and mid-term exams will increase participation.

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.

Most teaching laboratories were well maintained and well equipped with modern equipment (microscopes, stereoscopes, etc.)

Mobility of Academic Staff and Students

Overall, mobility of staff and students is very low. Only 4 students participated in study-abroad programs during the evaluation period. Even though the rate of incoming students dropped significantly during the evaluation period, the pool of enrolled students was still quite large. Because of time constraints, the EEC did not have an opportunity to visit the TEI's office of International Relations to discuss why there is such low participation. Six foreign students conducted study-abroad studies with the Department during the evaluation period. 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.

No faculty exchanges occurred during the evaluation period. Although some faculty members are well travelled (conferences, cooperative projects), others are not. A

concerted effort must be made to introduce this culture to the Department so that all its members have an opportunity to travel abroad and share ideas with colleagues at other institutes.

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

The OM.E.A. provided the EEC with the results of student evaluations of courses taught in the Department. The evaluations were conducted twice – in May and November 2008 using the questionnaire provided by the HQAA for the purpose of the self-evaluation. They have continued since then on an annual basis. Overall evaluation results were average to good indicating that students are generally satisfied with both the course and the instructors. A total of 43 courses were evaluated during each evaluation. Sixty-four percent of the courses were rated between 3 and 4 (5 is best) by the students while the remaining courses were rated between 2 and 3. The top-rated course was Vegetable Production IV (3.87) while the courses with the lowest level of satisfaction were Agricultural Cooperatives (2.31 in May 2008 but 3.04 in November 2008) and Biotechnology (2.31 in May 2008 but 3.04 in November 2008). Any course consistently receiving evaluations results below 3 should be carefully reviewed both by the instructor and the Department. Satisfaction with instructors ranged from poor to very good: 2.5% from 1-2, 5% from 2-3, 59% from 3-4, and 33% from 4-5). Any instructor consistently receiving evaluations results below 3 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.

Student evaluation of instruction should be done in every semester and course and results shared with the instructor but only after final grades have been entered. 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 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.
- Ensure that the evaluation forms are distributed during class periods near the end of the semester so that students who participate in the course are the ones completing the evaluation.

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

Recommendation B2: 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 B3: 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 B4: Pre-requisites should be increased and enforced.

Recommendation B5: 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 B6: An outcomes assessment process with metrics should be gradually introduced for courses taught. The assessment should be referred to individual courses and examine if at the end of the course the student has achieved the learning outcomes as outlined in the syllabus.

Recommendation B7: Teaching Excellence Awards (or equivalent tools for recognition of excellence) should be instituted 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 B8: The EEC recommends that the Department 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 B9: The EEC recommends that the Department ensure that senior faculty are involved with teaching introductory courses. This impresses incoming students and has been proven to increase retention and graduation rates.

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 research that is important to regional and national stakeholders. It has made important contributions in several areas since it began its research programs approximately 10 years ago the most mature being the development of regionally relevant hybrids of economically important vegetable crops. From the beginning of the evaluation period, the Department's research programs have been focused primarily on greenhouse crop production techniques and vegetable crop production. Recent additions of highly-trained young faculty have significantly expanded the research potential of the Department. Research facilities and equipment ranged from highly instrumented dedicated research labs to a variety of greenhouses with state-of-the-art controls. The research infrastructure is very good to excellent.

The Self-Evaluation Report states repeatedly that the TEI of Messolonghi has approximately 60 ha (600 στρέμματα) of arable land available for teaching and research. The vast majority of this land has been rented to area farmers and is not used at all for educational or research purposes. This land provides an excellent opportunity for faculty and student to conduct teaching laboratories and applied research on working farms.

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. Younger TEI faculty realize that they must conduct research and publish in peer-reviewed journals to be promoted. However, there are as yet no national or institutional rules, guidelines, or expectations of research productivity. We have taken these observations into account in our evaluation of the research program. We have also taken into account that there is a common Agricultural- production related theme/relationship between the Department under evaluation and the Department of Agricultural Machinery and Irrigation and the Department of Aquaculture and Fisheries Management located on the same campus. These three departments may possibly share personnel, research and teaching facilities in the future. This is very positive initiative under the new fiscal constraints since it might allow the three Departments to work cooperatively and excel in multidisciplinary research projects.

The Department has joint research activities with both regional and national research groups including nearby TEI, the Universities of Patra and Ioannina, and the Agricultural University of Athens. It is also working with local and regional

cooperatives and governments on research activities important to these entities.

Because the Department does not have a post-graduate program, its research activities are heavily dependent on attracting graduate students from other research institutions to conduct their research with the Department's faculty. During the evaluation period, 4 Ph.D. dissertations and several Masters projects were completed this way.

The Department has not yet established research priorities on which most of the faculty members collaborate. A concentrated effort to add value to aromatic herb production (rosemary, lavender, oregano and other herbs endemic to Greece) is under discussion and may become a Departmental priority and the EEC agrees that this effort should be pursued aggressively because it will provide a unique contribution to the local and regional economy. In the meantime (and since research efforts began about 10 years ago) research goals are established by individual faculty members or through small research team collaboration. During the site visit and within the Self-Evaluation Report, the most discussed research activities were the development of a zucchini hybrid developed to match regional conditions and the evaluation of aeroponics for the production of vegetable and ornamental crops important to the local economy. Another applied research project of note was the use of thermal infra-red energy to heat greenhouses during the winter. This project is evaluating the use of well-established technology that has not been used extensively in greenhouses. The project team tested the technology during the winter of 2011-2012 on a large commercial greenhouse with excellent results. This technique results in more uniform heating and energy cost reductions of up to 50%. Additional projects included those in the areas of genetics and biochemistry which are already studying the properties of local aromatic herbs.

After considering that the Department under evaluation is within a teaching-intensive institution, the EEC compared its research activities to acceptable international standards for teaching-intensive institutions in Europe and the United States. The EEC also compared the Department with respective Departments of Greek universities. Compared to the above mentioned standards and the State policy towards TEI, the EEC finds that the overall research productivity is satisfactory for a department with only 8 permanent faculty members.

The EEC observed that half of the Department's permanent faculty are young, have recently completed their Ph.D., and have a strong interest in their research programs. Because of this, the EEC believes that the Department has a bright future in terms of research if these young faculty members are nurtured and allowed to succeed. We find it somewhat ironic that by Ministry of Education rules, the youngest and potentially most productive members of the Department (in terms of research) may have up to two times as much teaching load as a faculty member at the rank of professor (16, 14, 12, and 10 hours per week respectively for lecturer, assistant

professor, associate professor, and professor).

The EEC noted that in general the faculty members of the Department are very enthusiastic about their research and are actively involved in research and mentoring. Many faculty members are currently supervising MS students and Ph.D. from other institutions who are conducting their research within the Department.

However, research productivity is not distributed equally among current faculty members. For example, one current faculty member does not have any measurable research activities during since the beginning of the evaluation period. In contrast several others have very active and relevant research programs. Research productivity in terms of peer-reviewed publications is discussed below.

Research Productivity

Measuring and documenting research productivity is always a difficult task. Some of the means typically used are presentations at international conferences, publications in peer-reviewed journals, and impact on the stakeholders. The EEC has used these three parameters to gage the research productivity of the Department's eight permanent faculty members.

Department faculty members have presented at international conferences. Table 1 summarizes data aggregated from CVs provided by the Department. Recognizing the financial constraints under which the Department operates and the excessively high cost of attending international conferences, we find that the Department's permanent faculty generally compare well to faculty from peer institutions in this category. The Department should establish the goal that every faculty member should make at least one presentation at an international conference per year.

Table 1. Presentations at international conferences with published abstracts or proceedings by permanent faculty by rank during the evaluation period (2005-2010).

Rank (number in rank)	2005 – 2010	Presentations Per Person Per Year
Professor (2)	9	0.9
Associate Professor (0)		
Assistant Professor (4)	18	0.9
Lecturer/Researcher (Καθηγητές Εφαρμογών) (2)	19	1.9
Totals	46	1.2

Some permanent faculty members of the Department have published extensively while others have not published anything since their dissertation. In total, the permanent faculty published 46 refereed journal articles or book chapters during the evaluation period (Table 2), which corresponds to a ratio of approximately 1.2 peer-reviewed publications per faculty member per year. This rate is similar to that of other agricultural departments at TEI around Greece and peer institutions of higher education abroad. Productivity as measured by peer-reviewed articles appears to be increasing as from 2011 to the present (mid-March 2012), an additional 16 articles were published by the Department's permanent faculty members. We also note that

some research results have been disseminated in peer review journals that are highly regarded in their field. Our assessment is based on review of CVs provided by each faculty member and not on data included in the Self-Evaluation Report.

Table 2. Refereed journal articles and book chapters by permanent faculty by rank during the evaluation period (2005-2010).

Rank (number of permanent faculty members in rank)	Evaluation Period (2005 – 2010)		2011 - Present	
	Number of Publications	Presentations Per Person Per Year	Number of Publications	Presentations Per Person Per Year
Professor (2)	11	1.1	5	2.1
Associate Professor (0)				
Assistant Professor (4)	29	1.5	6	1.3
Lecturer/Researcher (Καθηγητές Εφαρμογών) (2)	6	0.6	5	2.1
Totals	46	1.2	16	1.6

As with any academic institution, the level of productivity as measured by publishing varies significantly among scientists. This assessment is further complicated by the fact that in some sectors of agricultural science, data from which publications are created can be collected rapidly while in others, several years of data are required in order to publish. Nevertheless, the data in Table 3 are indicative of individual productivity.

Table 3. Number of peer reviewed publications of permanent faculty during the evaluation period (2005-2010)

Range of Publications	Number of Faculty
0-2	2
3-4	2
5-6	1
7-8	2
9-10	0
>10	1

In the lowest performing category, there is one permanent faculty member without any publications. Under the current academic structure, there are no repercussions for not publishing. Not publishing only affects a faculty member when that person is interested in promotion as research productivity is a criterion for advancement. As academics we all know that faculty members have different interests. If a particular faculty member is not interested in conducting research, then it should be possible for the Department Head or a more senior administrator at the TEI to assign that person a higher teaching load and proportionally relieve the teaching load of faculty member actively pursuing research.

Certain faculty members have extensive research activities that contribute significantly to the local and regional economy. During the evaluation period, permanent faculty members of the Department secured 500.000 € in extramural funding to support research or research infrastructure from private local, state and

European Union funds. There was extensive discussion during the site visit about the importance of addressing local and regional agricultural 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. 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 appreciates the healthy balance struck by most faculty members between pursuing external funding, executing grants, publishing results (papers, reports, conferences, etc.), teaching activities and committee service.

There are excellent supporting library services, shared by the whole TEI. However, students expressed their concern with the old computers and the time required to download information and scientific papers from the internet.

Recommendation C1: The EEC urges faculty and staff to maintain high levels of quality research and outreach despite the acknowledged obstacles posed by the current crisis in the Greek economy.

Recommendation C2: The EEC urges faculty to 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 and spin-off companies are valid outputs for this sort of work.

Recommendation C3: 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 C2.

Recommendation C4: Further align the Department's research with the strategic needs of Greek Agriculture and particularly those of west-central Greece.

Recommendation C5: Explore the possibility to joining forces with Department of Agricultural Machinery and Irrigation and the Department of Aquaculture and Fisheries Management to further enhance synergism, collaboration, and critical mass which can be brought to solve important local and regional research problems. This critical mass can also be used to pursue a post-graduate program which does not seem feasible within the boundaries of the Department alone.

Recommendation C6: Identify novel areas for research (with accompanying training) to address current needs and trends, e.g. in organic production, safety of produce, unique minor crops whether conventional or organic, and promotion of niche markets for agricultural commodities (for example, aromatic herbs as discussed

above.) Utilize TEI land which has been rented to area farmers for faculty and students to conduct applied research on working.

Recommendation C7: The EEC recommends that the president of the TEI establish an Excellence in Research Award to given every 2 in recognition of the best research completed within that time period. A TEI-wide multidisciplinary committee should evaluate nominated projects and select the winner. The award, along with the Excellence in Teaching award discussed earlier should be presented at gatherings of the entire faculty of the TEI to increase the prestige of the TEI and encourage younger faculty members to excel.

Recommendation C8: Encourage the development of a group consisting of stakeholders and/or local authorities and private sector for possible financial support of research and solving local and regional problems (see comments about advisory board under Section E.)

Recommendation C9: The EEC recommends that the TEI develop a protocol for the Department Head or a more senior administrator at the TEI to assign a person not interested in conducting research to a higher teaching load and proportionally relieve the teaching load of faculty members actively pursuing research.

Recommendation C10: The EEC recommends that the Department begin to use paid student workers or students conducting their internship to support its research activities. This has two major advantages: students gain significant research experience and researchers obtain research support at relatively little cost. This approach is used successfully at universities around the world and is used by some TEI 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?

Adequate administrative infrastructure (Γραμματεία) is in place. Three people work in this office (2 full-time and one part-time) and handle all of the Department's administrative responsibilities. Faculty members enter grades electronically and students are able to create registration documents and other similar documents electronically. This has greatly reduced the work load of the administrative group.

The Department has access to web support and computer stations are available to students in a computer laboratory. Wireless is available in virtually everywhere in the institution.

Food services were impressive and significantly above average. Athletic facilities are available but not open on a regular basis because of staffing shortages.

Based on the information provided in the Self Evaluation Report, discussions with faculty members and students, and actual visits to the Department and related facilities, the EEC considers the functionality of the Department's administrative services and infrastructure effective. When the EEC met with 15 undergraduate students and 2 alumni, we were told that the administrative services were satisfactory.

The four technical support staff (E.T.E.II.) appear to be very well educated and trained and provide critical support for the teaching and research missions of the Department. Their primary complaint was lack of on-campus support for repairing mechanical and electrical problems associated with the greenhouses and research laboratories.

Recommendation D1: The EEC recommends the development of an organized mentoring system for junior faculty on issues related to professional growth and development, teaching and scholarly activity. This is also critical for members of the non-permanent instructional staff on annual contracts. In this process senior faculty and academics outside the institution could be also involved.

Recommendation D2: The EEC recommends that the TEI institutes a regular program for reward of excellence in teaching (Recommendation B7), research (Recommendation C7), service and outreach for faculty and staff.

Recommendation D3: Student evaluation of courses should be made available to the instructors soon after the course is completed. We recommend that completed evaluations be submitted to the administrative staff where data will be digitized and summarized. 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

The Department's initiatives are mainly oriented towards maintaining active outreach programs to the community, the local agricultural sectors and the industry. It has developed a number of initiatives with local and 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 agricultural 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 TEI and to the community.

Recommendation D4: The EEC recommends that faculty or other academic personnel organize field days where growers could have the opportunity to see first-hand an important problem and /or problem solving activities.

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.

Major Reorganization: The Faculty of Agricultural Technology at the TEI of Messolonghi has developed a proposal to merge the three departments currently within the Faculty (Department of Aquaculture & Fisheries Management, Department Of Greenhouse Crops and Floriculture, and Department Of Agricultural Machinery & Irrigation) into a single academic unit. The Faculty of Agricultural Technology would then be renamed and would offer three degrees similar to the ones offered by each of the current departments. The degrees would be modified to meet regional and national agricultural needs not addressed by other institutions of higher learning. The degrees would also be streamlined and a set of core courses which are common to students in all three degree programs would be established. Students would be admitted into the new Faculty rather than into a department and would have the opportunity to select a degree program after they have been in the program for a period of time. The ability of students to select a degree program after they have been given the opportunity to explore their interests through coursework and contact with their instructors is a radical idea for Greek higher education and should be seriously considered. The EEC agrees with this proposal. It is a forward-thinking and worthy initiative that should be implemented by the TEI and the Faculty of Agricultural Technology. It has the potential to markedly increase both the effectiveness and the marketability of the teaching and research programs of the Faculty of Agricultural Technology. However we note that we did not have the

opportunity to discuss this proposal with members of the Department of Aquaculture & Fisheries Management and Department Of Agricultural Machinery & Irrigation. Members of the Department Of Greenhouse Crops and Floriculture where in general very enthusiastic about this proposal.

Parallel to the reorganization proposal is the proposal to rename the Department of Greenhouse Crops and Floriculture as discussed earlier. Pursuing a name change that better matches the current departmental focus and degree programs is worthwhile but the Department should prioritize these ideas and pursue the top priority with maximum energy.

Post-Graduate Degrees: The research capacity of the Department Of Greenhouse Crops and Floriculture is limited by human resources and the current permanent faculty members expressed a strong desire to offer a post-graduate degree as a solution to this problem. In the opinion of the EEC, the teaching load of the permanent faculty members in the Department of Greenhouse Crops and Floriculture is currently too high for them to consider offering additional courses for a post graduate degree. If the three departments currently in the Faculty of Agricultural Technology reorganized their curricula thus reducing the undergraduate teaching load, they could offer a joint post-graduate degree.

Incoming Students: The number of students entering the Department from 2005 to the present has fluctuated wildly (ranging from 243 in 2005 to 0 in 2011) 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 from 243 to 9 but in subsequent years stabilized at around 25. 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.

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.

Our discussion with two Department alumni produced many ideas to improve the visibility and effectiveness of the Department. Both alumni are successful entrepreneurs who own companies providing agricultural services. Both were very complimentary of the education they received and stated that it had provided them with the tools to be successful. They also expressed the opinion that the majority of

the Department's graduates could find employment in agribusiness in west-central Greece even under the current economic conditions. 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 agriculture and invite producers, businessmen, and other relevant people.

The alumni were very supportive of the idea that the 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. Both alumni expressed the willingness to serve on an Advisory Council.

Recommendation E1: The EEC strongly recommends that the TEI of Messolonghi pursue the idea of merging the three departments of the Faculty of Agricultural Technology (Department of Aquaculture & Fisheries Management, Department Of Greenhouse Crops and Floriculture, and Department Of Agricultural Machinery & Irrigation) into a single academic unit with new and novel degree offerings which would meet local, regional, and national stakeholder needs.

Recommendation E2: 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.

Recommendation E3: The EEC strongly recommends that the Greek Ministry of Education allocate students to the Department for the 2012-2013 academic year.

Recommendation E4: The Department 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 in west-central Greece. Included in this should be a clear understanding of who are the Department'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; development of an Arboretum where aromatic herbs including native and introduced flora could be demonstrated. This could not only be used for teaching and research purposes but would also provide excellent community outreach, become a source of potential fundraising through private donors and regular plant sale events, and could involve both students and the community at large in volunteer positions for the maintenance of the Arboretum.

Recommendation E6: The EEC recommends that the Department develop an Advisory Council consisting of stakeholders, the Department Head, and the Head of

the Faculty of Agricultural Technology. Stakeholder members should include leading agricultural producers (farmers) from key commodity groups, 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**.

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 excellent IT support and very good library facilities. 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 internship ("Practical Exercise"). Despite this, fewer than 4% of the students have graduated from the 2005-2006 class. Graduation rates from before the evaluation period appear to be much higher (ranging from 25% to 50% of students graduating within 6 years) from what is officially a 4-year program. 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 both terrestrial and aquatic food production issues. 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 offering English to its students and encouraging them 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 of the School). A system must be established to recognize and reward high performers and motivate underperformers. Underperformers who refuse to improve their performance should be removed from the Institute. 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, School, and TEI.

Curriculum

The EEC recommends that the Department: streamline its curriculum using the strategies described earlier; introduces a compulsory policy with respect to the availability of a detailed syllabus for every course; that it introduces measures to prevent registration for courses for which the appropriate pre-requisites have not been successfully completed; that it incorporates components (availability of additional grading options; group discussions and class participation etc.) to encourage attendance; and that it introduces a faculty-led student advisement program to assist students in decision-making for enrolment and reduce time to degree completion. Students, staff and faculty need to work together to reduce the length of the degree program, which is currently unacceptably high.

Teaching

The Department should establish processes to assess the efficacy of teaching and act upon the findings. It should fully utilize the student evaluations of courses to improve instruction as discussed earlier. Teaching excellence should be acknowledged and rewarded through a TEI-based assessment system as described earlier.

Research

The Department should concentrate its activities in targeted areas of demand that can

catapult the program into excellence while maintaining the present high quality of research. 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 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 in west-central Greece. In turn, the Greek Ministry of Education should support the Department in its effort to redefine itself.

The School of Agricultural Technology of TEI Mesolonghi has developed a noteworthy proposal for the future (Πρόταση Μετεξέλιξης της Σχολής Τεχνολογίας Γεωπονίας του TEI Μεσολογγίου.) The proposal is to merge the three departments of the Faculty of Agricultural Technology (Department of Aquaculture & Fisheries Management, Department of Greenhouse Crops and Floriculture, and Department Of Agricultural Machinery & Irrigation) into a single academic unit. The Faculty of Agricultural Technology would then be renamed and would offer three degrees similar to the ones offered by each of the current departments. The degrees would be modified to meet regional and national agricultural needs not addressed by other institutions of higher learning. The degrees would also be streamlined and a set of core courses which are common to students in all three degree programs would be established. Students would be admitted into the new Faculty rather than into a department and would have the opportunity to select a degree program after they have been in the program for a period of time. The EEC agrees that this is an interesting and worthy initiative that should be pursued further.

The Members of the Committee

**TECHNOLOGICAL EDUCATIONAL
INSTITUTE OF MESSOLONGHI
DEPARTMENT OF GREENHOUSE CROPS &
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