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HELLENIC REPUBLIC
H.Q.A.A.
HELLENIC QUALITY ASSURANCE AGENCY
FOR HIGHER EDUCATION

EXTERNAL EVALUATION REPORT

DEPARTMENT OF PLANT SCIENCE
AGRICULTURAL UNIVERSITY OF ATHENS
June 6-11, 2011

External Evaluation Committee (EEC)

The Committee responsible for the External Evaluation of the Department of Plant Science of the Agricultural University of Athens consisted of the following four (4) expert evaluators drawn from the Registry compiled by HQAA in accordance with Law 3374/2005:

1. Constantin Genigeorgis (Coordinator), Professor Emeritus University of California, Davis, U.S.A and Professor Emeritus, Aristotle University, Thessaloniki, Greece.
2. Konstantinos Giannakas, Professor, University of Nebraska-Lincoln, U.S.A.
3. Andronikos Mauromoustakos, Professor, University of Arkansas, Fayetteville, Arkansas, U.S.A.
4. George Vellidis, Professor, University of Georgia, Tifton, Georgia, U.S.A.

Introduction

The Department was visited by the EEC on June 6 to June 8, 2011. The EEC worked on its report in a hotel room provided by HQAA on June 9-11. On the morning of June 6 there was a two-hour information meeting with the management of HQAA concerning our visit, the process of evaluation, and the documents provided to us.

Next, the EEC had a warm welcome meeting with the Rector of the University, Professor Kostas Feggeros, the Vice-rector Professor Epaminondas Paplomatas, and the Head of the Plant Science Department Professor Andreas Karamanos. The general discussion was friendly, open, and informative. The fact that the top management of the University expressed their serious personal interest for this external evaluation, the second one concerning an Agricultural University of Athens Department, was indicative of their support and dedication to the Hellenic Quality Assurance for Higher Education national program.

From 12 noon to 4 PM the EEC met with the members of Internal Evaluation Committee (IEC) Professors A. Karamanos, H. Passam, G. Skarakis and G. Papadoulis. Professor Karamanos reviewed extensively the Self Evaluation Report. During his presentation, the opportunity was given to all the members of EEC to discuss in more depth specific areas and particular issues related to the scope of this evaluation and requested additional information related to the productivity, curriculum and hiring practices. In the afternoon of June 6 the EEC members met for three hours in their hotel and initiated discussions on the day's activities with respect to their External Evaluation Draft Report.

On Tuesday, June 7, the EEC met with the following groups: Administrative staff (3/4 members participated), members of three special groups of academic and technical staff namely E.E.ΔΙ.Π (2/4 present), E.T.E.Π (8/12 present) and Ι.Δ.Α.Χ (3/8 present) undergraduate (13 present) post-graduate (Masters) students (9 present), doctoral candidates (9 present) and alumni (17 present). Later in the day the EEC met with academic staff (31/45 present) belonging to all ranks. Following this meeting, at our special request, the EEC met with academic staff at the rank of lecturers and assistant professors (14).

On Wednesday, June 8 the EEC met with the academic and technical staff of 9 Departmental laboratories. Unfortunately, due to time limitations, the EEC was unable to visit with the personnel of the laboratories of Ecology and Environmental Protection and Agricultural Pharmacology. Due to restriction

of time the EEC was also unable to visit the Central Library, University cafeteria and the athletic facilities. Fortunately, two members of the EEC were familiar with these facilities from previous visits to the campus either as members of other EECs or during other work-related visits.

On Thursday, Friday and Saturday morning (for two members), June 9-11, the EEC devoted its time in developing the first draft of its External Evaluation Report. The final report was completed by e-mail communications of the members after their return to their respective Institutions in the USA.

Department Structure (Self Evaluation Report page 7)

The Department is structured in four sections with each section containing two or more laboratories. The sections and their associated laboratories are as follows:

- a. Pomology and Viticulture:
Pomology Laboratory
Laboratory of Viticulture
- b. Agronomy, Plant Breeding and Biometry:
Agronomy Laboratory
Plant Breeding and Biometry Laboratory
- c. Vegetable Crops, Floriculture and Landscape Architecture:
Floriculture and Landscape Architecture Laboratory
Vegetable Crops Laboratory
- d. Plant Protection and Environment:
Agricultural Zoology and Entomology Laboratory
Agricultural Pharmacology Laboratory
Ecology and Environmental Protection Laboratory
Sericulture and Apiculture Laboratory
Plant Pathology Laboratory

The Department does not have its own by-laws but follows those of the University. The formal academic personnel (April 2011) for the ranks of lecturer, assistant, associate and full professor is 10, 14, 8, and 10 respectively. An additional 22 persons (per table provided by HQAA) of a variety of educational levels and work status contribute to the educational processes. Furthermore 20 persons are recorded as Administrative personnel. Of the academic personnel, 59.6 % hold doctoral degrees from Universities other the Agricultural University of Athens.

The Department generates and transfers new knowledge through basic and applied research in order to enhance production of plant origin foods in ways that do not result in environmental and human health problems. In addition, the Department contributes in a variety of ways to continuing education at different scientific and practical levels for professionals and non-professionals and provides extension-type advice to farmers and producers to solve plant production and plant protection problems.

A. Curriculum

APPROACH

The Department offers a single undergraduate program, a postgraduate program, a doctoral degree program and participates in one interdepartmental postgraduate program in Enology.

Undergraduate program

The main goal of the Department of Plant Science is to provide high-level education to future plant scientists who will contribute in a qualitative and quantitative way to the development of agriculture in Greece. The Curriculum is designed as a five-year program. The curriculum content for the first three years is based on a University-wide agreement, and the Department has little authority to define or change it. This program is reviewed annually by the Inter-Departmental Committee of the University and approved by the University Senate. The Curriculum's structure consists of sequences of theoretical courses most of which are accompanied by laboratory sections. Attendance is not mandatory for the vast majority of the theoretical courses – especially in the first four years of study. Laboratory section attendance is mandatory.

According to the Self Evaluation Report, the first 4 semesters are devoted to general science, foundation building courses and the next 2 to general agriculture. Semesters 7 and 8 are devoted to courses reflecting the major of the studies. From a list of elective courses, one course is required for each of semesters 1, 3, 6, 7 and 8. The 9th semester offers the students 5 areas of specialization. Each specialization area requires core courses and 1-3 electives. The last semester is devoted to a research based Thesis. Six English courses are also required of all students. Including English, students are required to take eight courses during semesters 1, 3, and 5, seven courses for semesters 2, 4, and 6 and six courses for semesters 7, 8 and 9. A total 106 courses are offered in the curriculum. Of these, 67 are required while 35 are electives. According to an April 2011 summary form given to us by HQAA, the total electives are reported as 47.

Data on the student work load in terms of hours devoted to lectures and laboratories are given in the Self Evaluation Report. From semester 1 to semester 9 the work load ranges from 30-34 hours per week. This work load does not include the time devoted to Thesis, at least one field trip and the 4-months of building practical experience working in the private or government sectors dealing with plant production.

Course grading is based on the mean of the final scores obtained in the lecture and laboratory segments of a course. Final grade may be based only on one final examination (written or oral) or, in some courses, on cumulative performance in midterms, term-papers, laboratory notes and plant collections, and the final examination.

Post-Graduate Programs

The Department offers its own post-graduate program and also participates in an interdepartmental post-graduate program in Enology. Both lead to a post-graduate degree similar to a Master of Science.

The Department's post-graduate degree program is entitled *Science and contemporary systems of plant production, plant protection and landscape architecture*. The aim of the program is the advancement of scientific knowledge in order to improve the quantity and quality of agricultural products, the development and use of contemporary effective and environmentally friendly plant protection methods, landscape improvements and to produce well-educated specialists to fill the needs of public and private sector related to plant production. The program offers the following four specializations:

Vegetable Crops and Floriculture
Plant Protection and Environment
Landscape Architecture
Field Crops and Plant Breeding.

The duration of the Postgraduate program is two semesters with the possibility of a one-semester extension. The semester duration is at least 10 weeks with an additional two weeks for examinations. According to Self Evaluation Report (page 29), there are two regular examination periods (February 10-20 and July 1-10). To pass a course a student should score at least 6.5 on a scale 1-10. The Self Evaluation Report also states that attendance is mandatory and that a student attending <80% of the required teaching hours of a course is considered as failed and has to repeat the course the next academic year. The program is subject to frequent revisions based on student responses, external evaluations and faculty experiences.

The student guide provided to us by the Department was published in 2003. A total of 21 courses are offered during the first semester and 24, including a seminar (in 12 areas) during the second semester. Students are required to submit a research-based Thesis usually of experimental nature of publishable quality and they are subjected to an examination administered by a committee of five professors. Effort is being made to minimize overlapping between undergraduate and graduate courses. Final grading is based on a number of indicators including written and oral examinations, midterms, laboratory progress and thesis assessment. Contribution of external scientists to the teaching program is estimated at 2-3%. Attendance of the program by foreign students is estimated to a 2% (usually students from Cyprus fluent in Greek). No course is offered in English. Faculty of the Department contribute to the interdepartmental graduate program in Viticulture and Enology. The program is supported financially mainly by student fees (1.320,62 € per semester). Currently (i.e., in 2011) there are 29 students in the program.

Doctoral program

This program has a minimum duration of 4 semesters. Acceptance requires a previously obtained Postgraduate degree. Preparation of an experimental Thesis and final examination before a committee of 7 professors is required for graduation. Due to financial reasons, no foreign examiners are invited. Currently (2011) there are 68 candidates in this program including 3 foreigners. A Thesis may be written in a foreign language.

IMPLEMENTATION

The Department and the University have effectively implemented the curriculum for the undergraduate and postgraduate programs. The content of the courses offered in the broad area of plant science is appropriate and of high quality. The scientific staff is qualified at the national and international level. Resources are in general adequate. Teaching rooms are sufficient, but require improvements to

make them more appropriate for the today`s modern teaching methods. The adequacy, suitability and quality of the laboratory sites are good. The adequacy, suitability and quality of the laboratory equipment are considered moderate to satisfactory. The Department does not have sufficient study rooms for undergraduate students. A state of the art University Library is provided. Space is available for doctoral students.

RESULTS

Two major issues were identified by the EEC for the undergraduate program. The first represents the percentage of students passing a course within 1-2 attempts. Table P 1.2 (pages 90-101) of the Self Evaluation Report tabulates the data. It is not clear whether the data of Table P7 of the Self Evaluation Report represent passing percentages after the first and second examination or overall passing percentages of students taking the examination. For this reason, we do not discuss the data included in this table. Overall, our observation is that some courses have relatively high pass rates while others have unacceptably low pass rates. This discrepancy may originate from student and professorial attitudes, and course overloading, scheduling and examination methods.

The second major problem is the extensive delay in graduation time. The Self Evaluation Report states (page 43) that, between the academic years 2003-4 and 2008-9, 635 to 661 students in their 1st to 5th year of study enrolled in the Department`s undergraduate program. During the same period there were between 317 and 399 students per year struggling to graduate after the 10th semester. Finally, there were between 254 and 403 students who did not renew their registration or did not sit for an exam. The total number of students in the above three categories ranged from 1226 to 1437 per year during the academic years 2003-4 to 2008-9. A summary of the data included in the Self Evaluation Report also shows that over the same 5-year period, incoming students averaged 144/year but the number of students who graduated during the academic years of 2007-8, 2008-9 and 2009-10 were only 93, 70, and 89, respectively.

This is not an isolated problem of this Department but a chronic and socially unacceptable problem in Greek higher education. Table P3 of the Self Evaluation Report presents a revealing picture of the problem. The Department`s personnel are fully aware of the reasons behind this Greek phenomenon, which in many ways lies beyond the scope of their responsibility. Yet within the framework provided by the Greek State`s regulations on higher education, the EEC feels that sufficient freedom of action is provided for developing innovative academic programs concerning curriculum development, teaching quality and grading.

Though the students indicated that they acquire the intended knowledge and practical skills the course scheduling may generate time segments of inactivity. Furthermore, a highly loaded curriculum, and time spent in class attendance, may generate lack of motivation resulting in a significant extension of the duration of the studies. In so many foreign universities, the great majority of students in professional and non-professional schools graduate at the end of the last semester of their studies. In contrast, it takes significantly greater time for the Greek University students to graduate, a fact contributing to significant economic expenses for the State, hardships for student families, delaying of student employment, outdated of the acquired knowledge and, probably, a decreased trust in his/her professional potential.

IMPROVEMENT

The EEC was impressed by the breadth and depth of agricultural knowledge offered to the students. The students have the opportunity to obtain knowledge in great detail in the 5 specializations

offered. The Curriculum has maintained its basic structure for decades and was designed to meet the market needs of the mid-20th century. This observation does not imply that courses reflecting modern science are not included in the Curriculum. Rather, the EEC's opinion is that the specialized training offered by the five specializations currently available is not necessary for today's stakeholder needs. Specialization can be obtained in post-graduate programs. 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 2-year Masters from another EU nation, the marketability of the Department's graduates may be lower because they appear to have a single degree. This may not be fair but it is the reality of today's market place.

The EEC highly commends the Department for its valuable and honest self-assessment. In response to their own observations, the Department has initiated an effort to revise the curriculum. The effort is in process. During our site visit, several members of the academic staff shared their opinions with us on this topic. The opinions varied greatly but the EEC was encouraged to see that the members of the academic staff were quite passionate about this topic. We strongly encourage the Department to consider the following recommendations during this process. We also strongly encourage the Department to complete this revision in a timely manner while acknowledging that there are both University and national regulatory constraints that may delay the process.

The EEC **strongly** believes that the course load is unrealistically/impossibly large and greatly contributes to the inability of most students to graduate within 5 to 6 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 theory and laboratory sections) and, in our opinion, negatively affects students' ability to successfully complete a course. According to data presented by the Department, average time to graduation is 7.8 years. For 2006, 2007, and 2008 no students graduated within 5 years and only 12, 7, and 5, respectively graduated in 6 years. Approximately 130 students enter the program each year. This means that less than 10% of incoming students graduate within 6 years.

The EEC recommends a significant reduction in the number of courses in the Curriculum. One approach to doing this is by eliminating one or two mandatory courses in a sequence which provides a high degree of specialized knowledge. There are several of these sequences. As an example only, we provide the following sequence of courses: General Pomology, Special Pomology A (Deciduous Fruit Trees), Special Pomology B (Evergreen Fruit Trees). These are three required courses which provide general and very specialized knowledge in Pomology. By reviewing the description of these and similar courses we find that the content is excellent but, again, we question the need for providing such specialized knowledge to students at the B.S. level. Again, the sequence discussed here is selected only as an example and is one of several such sequences included in the Curriculum. Furthermore in an already heavily overloaded curriculum, it doesn't seem reasonable to require students majoring in the plant sciences to take courses on the anatomy and physiology of farm animals and animal nutrition.

Many of the general courses offered by the Department (i.e, Introduction to Agriculture) have very high enrollment (>200 students). This large number of students prevents the effective interaction of the student with the instructor in multiple dimensions and in the early years of study acts to disengage the students from the Major and the Department. We recommend that these large classes be divided into multiple sections with a maximum of 30 students. Under these conditions, faculty can develop and grade homework assignments to maintain student engagements, implement midterm tests and quizzes and employ other techniques which have been proven to increase student engagement and interest. In our

opinion, 13 weeks of lectures assessed by a single final examination are probably the least effective means of teaching students – particularly if the final exam consists of only a few questions.

New instructional media and technologies can be used to engage students in courses with large enrollments which cannot be reduced in size as recommended above. These technologies include audience response systems (commonly referred to as "clickers"), quizzes and mid-term tests with multiple choice answers which can be graded electronically, etc. Teachers use clickers to informally assess students' knowledge of a topic before lecturing to see whether students understand a point after it has been explained, and to ask survey or opinion questions during the lecture. This strategy keeps the students engaged during the lecture and encourages attendance.

One of the rationalizations for including the very large number of courses in the Curriculum is that each member of the academic staff is required to teach at least 6 hours per week during the semester. By introducing multiple sections in high enrollment courses, as suggested above, teaching hours can be maintained while decreasing the number of courses and concurrently increasing the effectiveness of teaching.

The EEC recommends that the Department's Curriculum Committee regularly review the content of courses to avoid overlaps and ensure that new technologies and concepts are introduced in a timely fashion, and that the content of each course meets the course objectives.

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 not only the number of courses offered but also whether the degree should be a 3, 4 or 5 year degree. However, the EEC recommends that the Department conducts an evaluation 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. The evaluation should include an assessment of both the public and private sectors.

According to the data provided by the Department, 35 of 106 total courses (including laboratory sections) are electives. The EEC feels that the proportion of elective courses to required courses in the curriculum is very small making the overall program inflexible and rigid and strongly recommends the significant increase of the share of electives in the overall program of studies. This is quite feasible because the Department offers a significant number of elective courses (47) – the students simply don't have the freedom to select them. It is possible that this skewed ratio is also, at least in part, the result of the legal requirement that all faculty members teach a minimum of 6 hours/week!

The Committee recommends that the Department institutes and enforces the principle of pre-requisite courses. 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.

The EEC's meeting with the undergraduate and graduate students was very productive in terms of discussing the positives and negatives of the Curriculum. In general, the students enjoyed the agriculture related courses and especially those in Plant Science. They were particularly satisfied with the hands-on approach they encountered in the laboratory sections. In contrast, they were quite dissatisfied with the core courses taken during the first 2 years of study (chemistry, physics, mathematics, etc.). The students'

overall opinion was that these courses, while necessary, were taught at a high degree of difficulty and covered material far beyond what they needed for their degree. They suggested a reduction in the general science requirements. They also indicated that as a result of the existing requirements they lose interest in the main objective of their studies, which is the area of plant science, with serious effects on attendance which affects graduation time and grades. The EEC recommends that the Department closely examines the content of these early required courses to ensure they are delivering the knowledge required for preparing the students for the specialized agricultural courses. If necessary, the Department should negotiate with the University to establish more appropriate “service” courses for the Department’s students. Courses which “turn-off” student interest and discourage participation have the effect of lowering retention and graduation rates.

The EEC recommends that the Department offers more courses in the major during the first 2 years and shift some of the core courses to the 3rd year whenever possible from a didactic point of view. This will have the effect of providing more professional courses which interest the students earlier in their academic career and encouraging them to maintain such an interest for the rest of their studies.

B. Teaching

APPROACH

According to the Self Evaluation Report, the formal academic personnel for the ranks of lecturer, assistant, associate and full professor is 10, 14, 8, and 10 respectively. An additional 22 persons of a variety of educational levels and work status contribute to the educational processes. Furthermore 20 persons are recorded as Administrative personnel. Per Self Evaluation Report most of the, so called, administrative personnel hold a University degree in Agriculture and may be used in support of the teaching objectives of the Department when needed. Graduate and doctoral students and postdoctoral scientists assist also in the teaching programs mostly in the laboratory sections of the courses. The permanent technical personnel per laboratory is not sufficient with only one on the average assisting 4-5 academic members. Teaching staff/ student ratio was reported by the Department to be 1 faculty member per 13.5 students.

Overall, the Department has at its disposal and uses modern teaching methods and tools including electronic provision of teaching materials, PowerPoint presentations, communication via email, etc. The use of these tools and methods by members of academic staff is variable – some use these tools consistently while others rarely or never.

Members of the faculty reported to us that a significant number of undergraduate students enrolled in the Major had not listed agricultural studies as their top choice prior to taking the university entrance examinations. For some students, agricultural studies were listed as a choice of last resort. Survey data containing this information are available but were neither provided to us nor included in the Self Evaluation Report. This situation presents the Department with an overwhelming problem of under-performing students that is beyond its control. This is a systemic problem of the Greek higher education system and should be evaluated at the highest levels of government. It is clearly not in the best interest of the country to continue this type of selection process. In addition, the Greek Ministry of Education consistently requires the Department to enroll considerably more students than the number of students desired by the Department. The enrollment number should be associated with societal needs for graduates with crop production expertise.

A major problem of the undergraduate teaching program is the very low student participation in the lectures. A by-product of this problem is that many students do not attempt to study the course content until just prior to the final examination. As can be expected, if students are studying the course material for several courses for the first time during the final few weeks of the semester, pass rates will be (and are) low.

Because of the large number of students enrolled but the relatively few number who attend class (discussed in earlier sections), instructors have no idea how many students will sit for a final examination. One may count on 130 and at the time of the examination 200 may appear. This obviously has an impact on grading time for the teacher. Yet more serious is the case with the laboratory examinations where certain preparations (especially diagnostic) have to be made in advance to meet the examination objectives. A last minute effort to set the laboratory for twice as many than expected students makes the handling difficult and the efficiency of the examination questionable.

Table P1.2 (pages 90-101) of the Self Evaluation Report presents the percentage of students passing a course in the 1st to 2nd examination attempt. The passing rate of courses taught by the Department is extremely variable (3.5%-100%). Our own summary data are presented in Table 1. The median passing percentage is 70. In 41/101 courses less than 50% of the students passed after the first and second examination! By any standards, this record is unacceptable and should be explored by the department and the university administration. Although the reasons for this high variability and low passing rates are many, we strongly recommend that the Department establishes a committee to assess and evaluate this issue with an input from the students who can share their thoughts for the problem. It is patently unacceptable to have passing rates below 50% in required courses. Whatever the cause (poor student participation, poor instruction, material for which the students are not prepared, etc.) the issue must be addressed because it materially affects many of the items discussed earlier.

Table 1. Passing percentages in undergraduate (Table P 1.2 of Self Evaluation Report) and graduate courses (Table P 10 of Self Evaluation Report) after the first and second examination and number of courses at that level.										
%	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-100
A	Undergraduate courses (101)									
Number of Courses	2	4	10	10	15	3	10	10	6	31
B	Graduate courses (42)									
Number of courses										42

It is of interest to note that student success in the laboratory section of a course is better than in the theory section as table P7 of the Self Evaluation Report indicates. Thus, overall success rate in the laboratory examinations is 84.9% (range 35.7-100%) while the success rate in the lecture course examinations is 70.6% (range 3.5-100%). The fact that laboratory attendance is obligatory while lectures are not may contribute to a better understanding and retaining course content in the laboratory courses. Another potential reason for the higher pass rate may be that in laboratory sections, students submit assignments which are graded in addition to the final exams and, thus, students can build up their passing grade.

Table P4 of the Self Evaluation Report presents the Grade Point Average (GPA) of the graduating students. Of the students 48% graduated with a GPA of 6-6,9 and 50.9% with a GPA of 7-8,4. The latter is considered very impressive if we take into account performances in other Greek University Departments and Schools (See HQAA site concerning evaluations of other academic institutions). Figure 1 below reveals another important point. About half of the graduates finish with GPA 60-70% (C “sufficient”) and the other half with 70-85% (B “good”). Practically no students finish with high honors (GPA above 85%). Considering the high numbers of students one would expect a few with exceptional record. Maybe the examinations are not designed to discriminate the student knowledge in each course and that is the reason that even after multiple trials they manage to get a grade from 5-8.

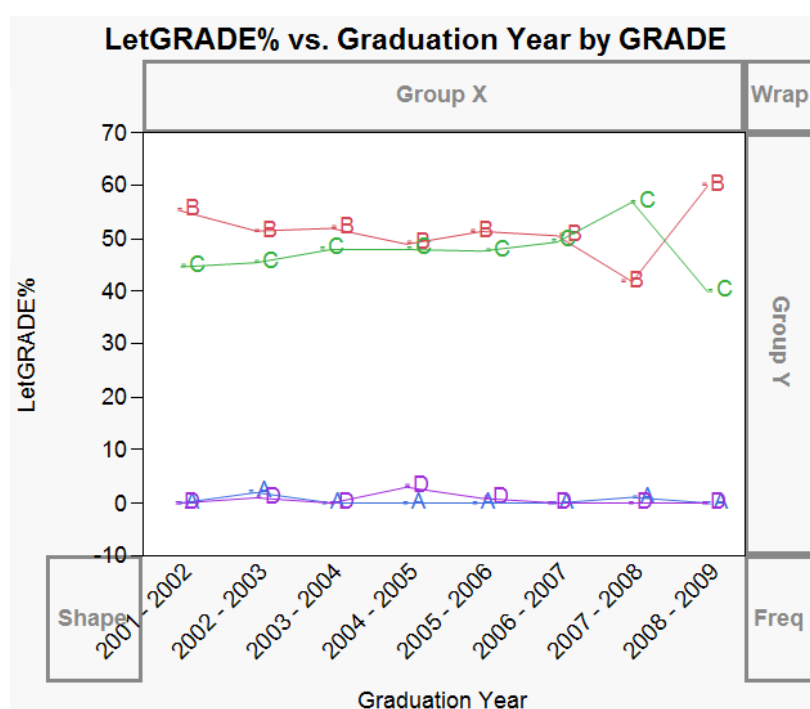


Figure 1. Percent distribution of graduation GPA's in terms of A, B, C, and D grades over a period of eight academic years.

The extensive delay in graduation time is a major issue which is not unique to this Department. It is a chronic and socially unacceptable problem in Greek higher education. Table P3 of the Self Evaluation Report presents a revealing picture of the problem. Thus, for 358 (49.5%) of 723 students who graduated between the years 2001-2008 the time required for graduation was over 7 years. The mean time for graduation is 7.85 years. The quality of students who enter the program is good, probably the upper 30% of high school graduates. Their academic performances at the graduate level studies within and outside the country as seen in Table1B and what we have experienced in our own academic institutions in USA is outstanding. The students' relatively poor performance when they enter Greek universities needs to be addressed seriously by all the stakeholders in the country because of the high social and economic costs that result from this issue.

The EEC was informed that only in some courses mid-term examinations are included. In a system that is overloaded and it takes so much time for a student to graduate, the final grade should be built up gradually throughout the duration of the course and not to be based only on a final examination. We understand that this is easy in the required laboratory courses. According to the Self Evaluation Report the use of more flexible and multiple assessment of student progress beyond the final examination is hindered by the large number of students in any particular semester.

In the Self Evaluation Report (page 44) it is stated that the average weekly didactic time devoted to the undergraduate and graduate programs per faculty member is 12 hours (6+6 for undergraduate and graduate courses) beyond the time devoted for teaching laboratory courses and seminars. These numbers do not reflect the total contact hours a faculty member devotes to teaching which should include contact hours for class teaching in theory and laboratory sessions, field trips, time to supervise undergraduate, graduate and doctoral thesis, time devoted to examinations and mentoring, if that becomes a reality.

IMPLEMENTATION

The quality of teaching is now evaluated formally by the use of questionnaires. In the Self Evaluation Report it was indicated that a questionnaire is being distributed at the end of each course for the evaluation of the course and the teaching staff. This is modeled after the one proposed by HQAA. This system was introduced for all courses during the academic year 2008-2009 and the results of the assessments are reviewed by the Department and the central academic administration. Such data have been included in the Self Evaluation Report from which significant conclusions can be drawn. In the EEC's opinion, the responses to questionnaires present an important tool in order to get a realistic picture of the teaching methods, their delivery and their impact upon student learning.

The committee encourages the Department and the central administration to summarize the assessment data so that they reflect not only the performance of individual instructors but also the relative ranking of the individual when compared to the overall teaching scores of the Department. This approach will allow the identification of individual teaching deficiencies in terms of lecture delivery and educational means and methods used. This approach may also reveal reasons for variability in the percent of students passing a course. Such deficiencies should be identified at the administrative level and corrective actions should be implemented. In case of significant teaching deficiencies, the EEC recommends that the central administration organizes appropriate seminars, which will assist the faculty in improving their teaching skills. Statements that "I have been teaching for 25 years and I know what I am doing" are not compatible with the goal of achieving excellence in teaching. Teaching methods have evolved to meet the learning needs of new generations and instructors must adapt to these methods.

With respect to the quality and adequacy of teaching materials and resources, according to the academic personnel and undergraduate and graduate student opinions, the course material in terms of books, hand-outs, including power-point presentations and up-to date relevant content are all supplied to the students. In general, few complaints were voiced during the student meetings with the EEC. The only complaint voiced repeatedly was that for a few courses, the teaching materials were considered obsolete.

Because of the Department's impressive research programs, the faculty acquires additional knowledge and skills, which they pass on to the students during their research projects. There is no doubt that the knowledge gained from cutting-edge research should flow into the Department's teaching programs. We were left with the impression that it does but the Department should make sure that course content is updated to reflect new knowledge.

There is no strategic planning on the mobility of the members of the academic staff. However, the Department has currently several schemes (Erasmus, Socrates) in place with many Universities throughout Europe, and a significant number of academic staff and students have utilized these programs. Also, a limited number of students and scientists from other countries have come to the department.

RESULTS

Student evaluations

Tables P16, P17 and figures 1-7 of the Self Evaluation Report present the overall student responses to the various course evaluations (theory and laboratory). Unfortunately all tables and figures present average scores. As extreme scores may affect the mean score, we consider this method of tabulation as not appropriate for displaying the central tendency of the data. Furthermore, no data on the range of scores were provided. Faculty members indicated to us that they responded only to what HQAA model templates required. The purpose of the end-of-course evaluations is to reveal the true picture of the course material and instructor effectiveness so that corrective actions can be implemented in an objective and effective way. In their current form, the tables and the figures indicate general satisfaction by the students for all courses and instructors (scores range from 3-4 on a scale of 1-5 with 5 as excellent). However, the current presentation in no way shows the “very good, the good, the bad and the ugly” and, therefore, no pragmatic and effective corrective action can be taken.

The EEC would like to strongly encourage the Department to continue its recently implemented policy of student evaluation of all undergraduate courses offered by the Department. Properly constructed and applied, student evaluations can provide a meaningful measure of the Unit’s teaching performance, the course’s effectiveness, and the instructor’s ability to convey the material to the students. We strongly suggest that these evaluations are made available to the teaching faculty soon after the completion of the final examination of the course. Many members of the academic staff noted that they had never seen the results of the student evaluation of their courses. The EEC understands that this might not be a result of intentionally withholding information but a result of the high work load of the administrative support staff. Nevertheless, providing faculty with the results must be made a priority. Improvement in instruction is impossible without this type of feedback. The EEC feels that comparative data concerning all courses and all faculty members become accessible to everybody. Personal performances and comparative performances of the rest of the faculty should be a vital comparative indicator in promotional processes. Those who make the difference should be recognized. The Department chair should communicate to a faculty member how his course and his performance are rated in relation to the other courses and faculty members and indicate that corrective actions should be taken in case of underperforming. The EEC recommends that two additional criteria be added to the evaluations namely: (1) this course is one of the better ones I have taken so far and (2) this teacher is of the better ones I have been exposed to so far.

Academic staff teaching contact hours

No documented overall teaching workload for academic staff other than the 12 hours per week of teaching undergraduate and graduate theoretical courses was provided to the EEC. It is the feeling of this committee that tabulated information of the workload per academic staff, per semester or academic year should be collected and included in internal evaluation reports. This should include teaching contact hours, administrative workload and graduate student research supervision, student advising, etc. This

information is of significance to an academic person when he/she goes through the promotional process as it provides a frame of reference in terms of mean, range and standard deviation of work load and allows more equitable sharing in the teaching duties among personnel.

IMPROVEMENTS

EEC Recommendations

Student Mentoring:

To establish closer relationships between members of academic staff and students during the early stages of their academic career we suggest that the Department fully implements a mentoring/advising program. Although the Department does offer such an opportunity during the first year of enrollment, it is hardly ever used by undergraduate students. Under this program, incoming students will be assigned to a member of the academic staff as their mentor/advisor. The student and advisor will meet regularly to discuss progress, plan for the next semester, discuss student mobility, and other appropriate issues and even personal difficulties. Meetings should, at a minimum, be scheduled once a semester and to ensure that these meetings take place, students should not be allowed to enroll for the following semester without the proof of advisement (signature from their advisor).

The EEC strongly recommends that the Department introduces mandatory attendance of the theoretical part of the courses to complement the mandatory attendance of laboratory sections already in place. In addition to promoting a more meaningful educational experience, student attendance would also facilitate the use of quizzes and midterm examinations in student evaluations.

It is unacceptable for a student to arrive in the 9th semester and not having passed courses of the earlier semesters, which are essential for the more specialized courses taught in the later semesters. Corrective actions in this area may not have a significant effect on cutting the time required for graduation but for sure will have a beneficial effect in helping students understand and perform well in more specialized and advanced courses.

The student educational experience could be further enhanced with an increased reliance on research projects both as means of learning and student evaluation.

Teaching effectiveness could also be increased through an extensive updating of the teaching material (textbooks, course notes). While the EEC did not have the opportunity to examine all the teaching materials used, students pointed out that some textbooks given to them are dated. We were able to briefly review a few of the books written by members of academic staff which are currently used as text books and those we examined appeared current and appropriate. We were not provided with notes or other supplemental materials provided to students.

At the undergraduate level, international student exchanges are low for a student body of this size even though extramural resources (Erasmus, etc.) exist to fund exchanges and place students. The EEC suggests that the Department encourages and supports the student participation in the Erasmus and similar programs. Suggestions for increasing student exchanges are provided below.

Regarding the post-graduate program, the EEC recommends the adoption of English as the official language of instruction. In addition to exposing the participants to the main language of the scientific literature of their field, adoption of the English language will make the Department's course offerings more accessible to foreign students with an interest in studying in Greece and bring additional financial resources to the Department.

The EEC recommends that the Department establishes a mandatory seminar for all students in the Department during which academic members will present operational information about the Department to the students. This seminar can be held once or twice per semester. 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.

The EEC recommends that each instructor develops and distributes a syllabus at the beginning of each course. The 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, and what the students should expect of 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 the professor.

With respect to the contact hours devoted to teaching, the EEC recommends that the current system crediting all members with 12 contact hours per week becomes more realistic and records the true overall contact hours as follows: hours devoted to teaching theoretical courses, laboratory sections, examinations, field trips and seminars. Furthermore a formula should be devised which will give a faculty member additional contact hours for interactions with undergraduate, graduate and doctoral students with respect to their thesis project. Finally if the concept of advisors for undergraduate students is enacted formally then that faculty time should be tabulated also. Such an approach will realistically demonstrate the true faculty time devoted to teaching activities. Faculty with administrative duties should also tabulate the time devoted to such duties. Summary tables should be known to all members of the Department for comparative purposes and also used in the promotional processes. Obviously, a member overloaded with teaching contact hours could not have the time for research and publishing productivity as another person with very light teaching schedule. This will allow the University to document faculty activities if and when it is audited by the Ministry of Education or other government agencies. There is no need to add additional courses required or electives so each faculty can meet the legal teaching hour requirement. As an example we note that when the State government ordered the University of California (all campuses), sometime ago, to record the true faculty weekly work load over a period of three years the results indicated a median work load of 61.5-63 hr/week!

Course grading should be based on a system of multiple assessments (coursework, tests, essays, etc.) throughout the semester leading to a final grade, rather than a grade acquired by a final examination only. Such a system, among other things, will significantly enhance the student attendance in the theoretical part of the courses. In cases of identification of trends in student failures, corrective actions should be taken by the Department or the University, such as training, improving in teaching aids, professorial attitude adjustment etc. It is of interest to all of us that in international academia we rarely see formal training to develop academic teaching skills. Such training, however, has been introduced recently in some foreign universities designed specifically for entry-level academic staff performances.

C. Research

APPROACH

The Departmental research focuses on the thrust of its eleven laboratories and captures a broad area of the Plant Sciences.

IMPLEMENTATION

The Faculty has been encouraged by the Department and the University to seek research funding from national and international agencies and the private sector.

As it appears in the Self Evaluation Report, the Department's research activities and success in securing grants for the academic years 2004-2008 overall is impressive. In 2008, for example, there were 114 grants accounting for 4.93 million €. Also impressive is the overall number of research publications published by the faculty. The Self Evaluation Report indicates 295 referred journal articles with ISI, 32 referred journal articles without ISI, and 394 papers in conference proceedings (with some level of review) as well as 1694 citations during this five-year period. Furthermore, members of the faculty were invited speakers in 33 international meetings, had 70 invitations as participants in committees of scientific meetings and served as article reviewers 539 times. The Self Evaluation Report also records 34 distinctions/awards/honorable titles. In terms of research collaborations, there are collaborations with other Departments within the University, as well as with other Greek Universities and international institutes.

Research Publications

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. The table in section 5.4, page 63 of the Self Evaluation Report summarizes the Department's productivity in publications. Our own Table 2 below shows the distribution of publications within the Department over the past five years. These data were not included in the Self Evaluation Report. Rather, they were provided by the Department Head upon request of the EEC.

Table 2 indicates that during the 5-year review period, 28% of the faculty published between 0 and 1 refereed journal articles per year. Under most circumstances, this type of publication record at a major research university is considered low for agricultural scientists regardless of the specific discipline. The data mask the effect of rank and are not useful in identifying individual productivity.

Table 2. Publications per Faculty Member per Year from 2004 – 2008 (provided by the Department Head)		
Publications per faculty member per year from 2004 – 2008	Percentage of Faculty	
	ISI Refereed Journal Articles	Conference-Related Publications
0-1	28%	49%
1-2	42%	14%
2-3	17%	14%
3-4	8%	12%
More than 4	5%	11%

Since Table 2 masks the individual productivity of faculty by rank, Table 3 was created by EEC to address this issue. Data for Table 3 were accumulated by enumerating the publications listed in the abbreviated faculty CVs provided with the Self Evaluation Report. This summary indicates the tremendous variability in publication productivity which exists within the Department. Quite worrisome is the productivity of 2 faculty members at the rank of Professor who have fewer than 1 publication per year. The data provided do not allow us to discriminate the publication record of Ph.D. students although

comments from individual faculty members led us to believe that student publication productivity is low. To rectify this situation, the Department is considering requiring Ph.D. students to publish one refereed journal article prior to graduation. Although we agree that Ph.D. students should be strongly encouraged to publish, a better strategy may be to require that Ph.D. students compile their dissertations as a series of journal articles and require them to submit these articles prior to graduation. The faculty member can then ensure that the articles reach the publication stage. The proposed style of preparing the thesis document is already extensively used around the world.

Table 3. Publication Record of Individual Faculty Members by Rank Between 2004-2008 (from faculty CV's)				
Individuals	Refereed International Journal Articles Published Between 2004 – 2008			
	Professors	Associate Professor	Assistant Professor	Lecturer
1	8	7	8	1
2	4	7	15	0
3	2	7	12	3
4	18	11	6	1
5	8	6	4	5
6	26		10	0
7	6		10	2
8	10		3	14
9	10		17	2
10	10		7	
11			17	
12			15	
13			1	
14			13	
15			3	
Totals	102	38	141	28
Average	10.2	7.6	9.4	3.1

Funding for Research

For the academic year 2010-11, the Department received approximately 200.000 € in operational funding from the University (indirectly from the Ministry of Education) some of which is allocated for research purposes to the 11 laboratories. Under the current economic conditions, this budget will be reduced considerably making internal funds a very limiting factor for conducting research. Consequently, the Department's faculty have turned to extra-mural funding to meet their research mission. They have been quite successful in this endeavour and should be commended for their efforts. Extramural funding sources include EU competitive grant programs, national competitive grant programs, local governments, industry contracts, and a variety of other sources. This is a very healthy distribution of funding sources. The data in the Self-Evaluation Report state that in 2007 there were 115 extramurally funded programs in the Department totaling 4,92 million €. Similarly in 2008 there were 114 extramurally funded programs in the Department totaling 4,93 million €. For clarification purposes, it should be noted that these data are repetitive. In other words, some of the same grants are reported in both years.

The Self-Evaluation Report included very limited data on extra-mural funding which prevented the EEC from determining the distribution of extramural funding within the Department. For example, we may assume from the data reported in the previous paragraph that there are 2.5 grants per faculty member. However, we have no way of assessing the distribution of grantsmanship. This, in our opinion, is a major omission of the current Self-Evaluation Report. Funding data should be analysed as thoroughly as the teaching program data and included in greater detail in future reports. It should be noted that two of the Department's laboratories provided us, during our site visit, with detailed reports of their activities. These reports included the laboratory's accomplishments, current research projects, publication record and funding record.

We strongly encourage all of the Department's laboratories to produce similar reports on regular intervals so that data can be integrated into subsequent Self-Evaluation Reports and can become the topic of discussion during faculty meetings.

Throughout our site visit, there was a pervasive complaint by faculty members about the level of state support for the research mission of the Department. It is vitally important that faculty appreciate the reality that state support will continue to diminish in the near future and the only way to sustain a productive research program is through extramural funding. Throughout the developed world, research scientists are now expected to conduct research with extramural funds (grants). The public research institutions have transitioned from being state-supported to being state-assisted. All Department scientists must accept this new reality and prepare themselves to participate in this new competitive environment. Clearly, some have made this transition successfully while others have not.

The situation for Greek scientists is more difficult than in many other EU countries and certainly more difficult than for scientists in the USA. This is primarily because in Greece there are relatively few competitive funding sources at the national or local government scale. Consequently, Department scientists must compete for resources at the EU level. There the competition is fierce and success depends on joining interdisciplinary teams from several EU institutions. Several Department scientists have accepted this reality and are working hard to join EU teams and submit proposals. These scientists should be commended and rewarded for their efforts. In contrast, some faculty members made the comment that they were not interested in participating in these efforts. They must be motivated to participate in these efforts.

In our opinion, extramural funding through EU teams is an important means to ensure the Department's viability at times of financial crisis. Extramural research funding is the only way to break the vicious cycle of low productivity-no research money experienced by many Universities in Greece. This is the only answer to the standard line of defense/excuses blaming the lack of public funding for the problems that this Department and other academic Departments in Greece are experiencing.

Another source of funding which some faculty members are already pursuing is contracts with business/industry and local governments. These types of contracts are typically for applied research but are important because they contribute quite directly to economic development and the stakeholders' positive perception of the University. Faculty should be strongly encourage to diversify their funding sources and pursue many opportunities.

However, scientists cannot be competitive if they work in laboratories with antiquated equipment. Extramural funding rarely provides funding for major pieces of equipment. State funding must be made available to properly equip research laboratories with the major infrastructure needed to conduct research – especially for new scientists. The Self-Evaluation Report contains an extensive list of needed laboratory improvements (pages 60-63).

RESULTS

Based on the publication and funding record of the Department's personnel, we conclude that the Department's research objectives are, in general, successfully implemented. Through these accomplishments the members of the Department have acquired a significant reputation and, as a result, they have been invited to conferences, scientific forums, editorial boards, and reviewers in journals and became recipients of important awards including foreign recognitions. Impressive is also the fact that currently there are 68 students enrolled in the Department's doctoral degree program.

IMPROVEMENT

During the discussions with the faculty, the EEC identified improvement needs in certain administrative areas at the government/University level, which are not conducive to the efforts of preparing, securing and executing research projects. We highlight the following: The flow of information concerning calls for submission of proposals funded by the Greek government frequently is not systematic and often leaves a very short time for preparation and submission. However, the existence of ELKE facilitates the investigators' efforts in terms of the payments, financial and legal implications.

The committee identified the lack of an effective University plan with respect to health and safety. In research there are often issues with the handling of toxic chemicals, toxic fumes and dangerous procedures for the investigators. In view of the fact that several research laboratories are also used for teaching purposes, the potential risks are amplified. This problem cannot be resolved by ad hoc measures, but by the implementation of a coherent health and safety system. The system should include a health and safety officer, standard operating procedures, safety records, and it should be subject to regular reviews. In the absence of such a system, the legal implications might be extremely serious for the University.

Although we were not able to visit the research farm at Kopaida, it was mentioned several times as an underutilized resource. Because we did not visit the site, we are not able to make specific suggestions for improvement. However, the EEC also feels that the Department can benefit through an enhancement and better utilization of its facilities in Kopaida.

It was made very clear during our discussion with the younger faculty that expectations for publications is very high and is the driving force for promotion and tenure. Although this is a positive influence for research productivity, the EEC strongly recommends that faculty be evaluated based on their performance over all their assigned responsibilities rather than research productivity exclusively.

C. All other services

APPROACH

Members of the Department are generally satisfied with the level of support services, however they identified a number of areas that need extra attention.

Much of the interaction with upper administration and the Ministry of Education takes places with paper documents. Likewise, many intra-university communications still take place on paper. For example, dossiers of candidates for faculty positions or dossiers of faculty members being considered for promotion are distributed on paper resulting in the consumption of large amounts of time and resources. All these things could be done electronically. Some of the inhibiting factors are national and/or university

rules which require paper. We strongly encourage all levels of governance to transition to electronic forms of communication. This paper-shuffling cause some of the problems discussed below.

The Department does not have a policy to increase student presence in the campus, and unfortunately there are limited facilities in the campus or in the Department to help do this, such as common rooms, coffee shops, etc. The only available facilities where the student can socialize and entertain themselves are the library and certain athletic facilities (including a gym).

IMPLEMENTATION

In the presence of 47 faculty members, a large undergraduate program, numerous postgraduate students and postdoctoral staff, as well as extensive research activities, the administrative staff can only partially cover the needs of the Department. The extensive paperwork requirements take up a lot of the staff's time. This time could be better used serving the Department's needs.

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

RESULTS

The committee did not visit the library facilities as a whole. Two of its members have done it before. They were impressed with the facilities and conference room; the environment was extremely pleasant and inspiring for the students and staff using it. However, the working hours are very limited (closed in the evening and during the weekends). Also the gym has limited working hours, whereas the athletic courts are neglected and need regular maintenance.

IMPROVEMENT

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

Collaboration with social, cultural and production organizations

According to the Self-Evaluation Report, the Department demonstrates a significant activity and services at a local, regional, national and international level. More specifically, there are contributions to the activities of the Department of Agriculture Development and Foods, county and city agencies, non-profit organizations, agricultural cooperatives, private industry and participations to agricultural fairs. Members of the Department participate also in numerous committees at the national and international level and contribute as lecturers in other Greek universities at the undergraduate and graduate level.

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

The Department's Self Evaluation Report indicates the following positive actions:

- Plans to revise the undergraduate curriculum to meet the current challenges.
- A revised postgraduate program curriculum has been submitted to the ministry of Education.
- New postgraduate programs in Landscape Architecture and "Phytomedicine" are in the stages of planning.

- The Department declares its intention of attracting new faculty of the highest potential through meritocratic procedures.
- No effective strategic plan exists to attract students of the highest caliber other than improving the Department's site in the Web.
- Administrative support at the Department and University level is considered satisfactory. All 11 laboratories are functioning in a satisfactory manner. Special needs exist in the area of laboratory technicians.
- On pages 79-81 of the Self Evaluation Report, the positive and negative aspects concerning mission, programs, means, results and plans for improvements are presented. Therefore, we will proceed into summarizing our proposals.

F. Final Conclusions and Recommendations of the EEC

Curriculum

- The EEC feels that the number of required courses per semester is excessive and could help explain both the high average length of studies in the Department and the very low average passing grade of students.
- The EEC also feels that the share of elective courses in the curriculum is very small making the overall program inflexible and rigid.
- The EEC strongly recommends the reduction in the number of courses in the curriculum as well as the significant increase of the share of electives in the overall program of studies.
- The Committee also suggests that the Department institutes and enforces pre-requisite courses as a ways of ensuring a more meaningful and fulfilling educational experience for those involved. In addition, the introduction of pre-requisite courses should go long ways in addressing both the problem of very high length of studies and the low average grades of students.

Teaching

- The EEC strongly recommends that the Department introduces mandatory attendance of the theoretical part of the courses to complement the mandatory attendance of laboratory sections already in place.
- In addition to promoting a more meaningful educational experience, student attendance would also facilitate the use of quizzes and midterm examinations in student evaluations.
- The student educational experience could be further enhanced with an increased reliance on research projects both as means of learning and student evaluation.
- The teaching effectiveness could also be increased through an extensive updating of the teaching material. While the EEC did not have the opportunity to examine all the teaching material used, students pointed out that a large number of locally authored books and notes are dated. Whether this is the case or not, the Department is encouraged to develop an effective quality control of its teaching and the material available to students.
- Finally, the EEC suggests that the Department encourages and supports the student participation in the Erasmus program.

- Regarding the post-graduate program, the EEC recommends the adoption of English as the official language of instruction. In addition to exposing the participants to the main language of the scientific literature on the field, adoption of the English language will make the Department's course offerings more accessible to foreign students with an interest in studying in Greece and also bring financial benefits and prestige to the Institution.
- Last but not least, the EEC would like to strongly encourage the thorough and meaningful analysis of the collected student course and teacher(s) evaluation questionnaires of all courses offered by the Department. If combined with the mandatory attendance of the theory part of the courses suggested earlier, this evaluation can provide a meaningful measure of the Unit's teaching performance. It is also suggested that these evaluations are made available to the teaching faculty soon after the completion of the final examination of the course.

Research

- The Committee has been impressed with the facilities and research infrastructure of the Department. The EEC notes and applauds the significant grant activity and research productivity of some faculty members. The Committee also notes that the productive faculty constitutes a small share of the Department (less than a third) and recommends that measures should be taken to address this issue. Encouragement for re-tooling through sabbatical leaves, participation in seminars and workshops and collaboration with more active colleagues could assist in enhancing the Departmental productivity.
- The faculty is also encouraged to disseminate their research findings through high quality publication outlets. In addition to enhancing the impact of its research findings, publication in high profile journals will bolster the reputation of the Department.
- The EEC feels that the Department should actively encourage and support the professional development, growth and productivity of its junior faculty members (lecturers and assistant professors). A way to do that could be through the effective mentoring by senior faculty members as well as through the allocation of some ELKE funds to the research activity(ies) of the junior faculty members (e.g., small research grants, equipment and travel grants) and the development of an active research seminar series.
- Regarding the ELKE funds, the EEC feels very strongly that, at least part of these funds, should be returned to the faculty member that has been responsible for their generation.
- The determination and clear communication of the Department's vision and minimum quality standards associated with hiring, promotion and tenure decisions are paramount for facilitating fairness and the Department's relevance, development and success. Finally the EEC feels that it is unacceptable for a faculty member who succeeded in being promoted to full professor at 45 or 50 that he will not be evaluated again by the system in all categories of judgment up to the time of his/her retirement at 67!

Other Services

- The EEC notes and encourages the Department's efforts to enhance its diversity and pluralism through the hiring of faculty that are not its graduates.
- The EEC feels that the Department needs to be more proactive in its relationship with the private sector extending its research findings and communicating (through popular publications, workshops and seminars) its ability to address important current and emerging issues of relevance to the private

sector. In addition to enhancing the impact of the Department's research, reaching out to the private sector could increase the goodwill and resources available to the Department, motivate the research on new relevant and significant issues, and create important employment opportunities for its graduates.

- The EEC also feels that the Department can benefit through an enhancement and better utilization of its facilities in Kopaida and greater collaboration among faculty members in applying for competitive interdisciplinary research grants.
- The Department is also encouraged to secure its intellectual property rights by patenting its most important discoveries and develop a system of awards/rewards where the important effort of its members in research, teaching, advising and service can be recognized.

Concluding Remarks

With only a few days to spend in the Department, the EEC team acknowledges that it was an impossible task for us to gain a full and complete understanding of the many intricate details of each of the diverse programs in the Department. There is always the possibility that our conclusions and recommendations on certain items may "miss the mark", but we certainly hope that is not the case. We leave you our Best Wishes for the Department of Plant Production at the AUA. You are certainly a productive, important Department that is achieving its mission and goals in many ways. We truly hope that our efforts will assist you in reaching higher levels of excellence and improve your service to your students, society and most of the stakeholders.

The Members of the Committee

AGRICULTURAL UNIVERSITY OF ATHENS

DEPARTMENT OF CROP SCIENCE

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