



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
**Α.ΔΙ.Π.**  
ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ  
ΑΝΩΤΑΤΗΣ ΕΚΠΑΙΔΕΥΣΗΣ

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

## **EXTERNAL EVALUATION REPORT**

DEPARTMENT OF OENOLOGY AND BEVERAGE TECHNOLOGY

TEI OF ATHENS

## **External Evaluation Committee**

The Committee responsible for the External Evaluation of the Department of Oenology and Beverage Technology of TEI of Athens consisted of the following five (5) expert evaluators drawn from the Registry constituted by the HQAA in accordance with the Law 3374/2005.

- 1) Dr. Konstantinos Petritis, Associate Professor, Laboratory Head, Center for Proteomics, Translational Genomics Research Institute (TGen), Phoenix, Arizona, U.S.A. (Coordinator)
- 2) Dr. Yiannakis Georgiades, Expert on Economic and Wine Issues, former General Director of the Wine Products Council of Cyprus, Nicosia, Cyprus
- 3) Dr. Damir Magdic, Professor, University of Osijek, Osijek, Croatia
- 4) Dr. John Sheppard, Professor, North Carolina State University, Raleigh, North Carolina, U.S.A.
- 5) Dr. Ioannis Voyatzis, Expert-Oenologist, Thessaloniki, Greece

## **Introduction**

The External Evaluation Committee (EEC) visited the TEI of Athens and the Department of Oenology and Beverage Technology 23-25 of May 2011. On the first day (05/23/11), after visiting the HQAA headquarters where we were briefed on the procedures and rationale behind the HQAA, we were taken to the Department of Oenology and Beverage Technology of the TEI of Athens. At the department, we met with the majority of the senior faculty and during a short presentation, we were given an overview of the Department, its staff and a tentative schedule for the next few days. The faculty indicated that the program was flexible and that we could suggest changes as desired. During the meeting, there was an extensive discussion on the current/main challenges the department faces.

The second day (05/24/11), the EEC met again with the senior faculty, who made detailed presentations on the student course and teaching evaluations, described collaborations with other universities and their participation/organization of MSc level studies and finally presented some statistics on the distribution in occupations of the Department's graduates. Later that day we visited the Department's laboratories and lecture rooms to observe the various teaching facilities. In the afternoon, the EEC interviewed graduates of the program who are now working in various facets of the wine and beverage industry.

The third day (05/25/11), the EEC met with around 30 undergraduate students from different years of study. During the interview, it became apparent that only a

small fraction of the students were willing to talk in the presence of the group. As a result, the EEC decided to split the students into groups of five and each member of the EEC was assigned to one group. We found this to be extremely effective and found the interactions to be very insightful. The EEC, would like to thank the Department for accommodating our request for separate space on such a short notice. In the afternoon, the EEC continued with visits to the TEI library, the secretariat and concluded with a meeting with the TEI Vice President of Academic Affairs.

The ECC received the following reports and documents:

The 400 page Internal Evaluation Report and Appendices dated February 2011 which was drafted by Professors Kaldis, Dourtoglou, Neratzis, Tsakiris, Banilas and Chatzilazarou.

A page entitled "Department Identity A.E.I." ("TAYTOTHTA TMHMATOS A.E.I.") dated April 2011 with updated numbers of registered students broken down by category, number of faculty/staff etc).

Examples of completed exams

Student work assignments

Student dissertations

List of books from the Evdoxos database

The guide for this review has been the HQAA's template.

## **A. Curriculum**

### **APPROACH**

In its curriculum development, the Department follows the principles established by the International Organization of Vine and Wine (OIV), as well as the curricula of corresponding University Departments worldwide. The Department revised its undergraduate curriculum and after the approval of the International Operating Regulations of T.E.I. of Athens has offered it since the winter semester of the academic year 2009/2010.

The Curriculum is well-prepared and meets the goals in the field of oenology and beverage technology by combining lectures, laboratory work, practical training and visits to commercial activities of the wine sector.

The objectives of the curriculum were decided by a consensus among the stakeholders and are fulfilled by requiring 36 compulsory and 4 elective-compulsory courses that can be chosen among 8 that are offered. Five of the elective courses are from the area of financial sciences, business, administration, marketing and legislation.

The Curriculum Committee of the Department established and received a mandate to monitor the implementation and propose amendments to the Department Council for consideration in future revisions.

#### IMPLEMENTATION

The curriculum is very perspective in meeting the goals that the Department wants to achieve and in the educational sense meets all requirements for knowledge transfer and ensures that students will gain new skills appropriate to their discipline in every semester.

The curriculum seems to be rational and very clearly articulated in the field of oenology and beverage technology. In spite of that fact, according to some students some overlaps were found. The lack of space in laboratories is also problematic. Ideally, students need to be taken in smaller groups for their exercises, which would require the teaching staff to repeat the exercise.

Teaching and technical staffs are qualified for implementation of the curriculum and with more resources could be more successful in their mission.

#### RESULTS

The implementation of the curriculum achieves the predefined goals and objectives and promises new generations of well-qualified and skillful oenologists and beverage technologists. A very high percentage of students that have low-level knowledge in the field of chemistry and are permanently absent from the lectures decreases the efficacy of the Department and becomes a de-motivating factor for lecturers. The EEC members are concerned about this issue and consider it to be the biggest obstacle in the implementation of the curriculum.

The Department is aware of that problem and makes an extra effort to motivate students in taking an active role in their study by involving them in practical work involving wine production and by organizing visits to the wine industry in Greece and abroad.

#### IMPROVEMENTS

All efforts taken by the Department must be on a continuous and systematic basis in order to increase the motivation of existing students for taking a more active role in their higher education. If possible, the faculty should take steps to create awareness of the department with the goal of attracting school graduates with background in the field of chemistry.

Additional teaching facilities, including space for a bigger vineyard, could help teaching staff to better achieve knowledge transfer and expected learning outcomes. The EEC recommends the formation of an advisory board consisting of wine professionals working in all aspects of the wine and alcoholic beverage industry (production, marketing, research, etc). The purpose of this board would be to advise the Department on the needs of the industry and suggest changes (if any) in redefining goals and objectives in future revisions of the curriculum. The

Department plans to refresh the curriculum with new knowledge and suggestions from their graduates. The EEC members are in favor of increasing the number of courses or parts of existing courses that deal with viticulture, ampelography and molecular biology.

Better communication with students about their mobility options should be also taken into consideration as a measure for increasing their motivation for study.

Based on the fact that the Department of Oenology and Beverage Technology of T.E.I. of Athens is the only department in Greece that offers a specialized education in the field of oenology for the last 25 years, and there are no institutions that offer postgraduate study in oenology, the idea of establishing a postgraduate study of oenology should be taken into consideration. This can be an additional promotion of the national higher education system and be an attractive opportunity for students from abroad to become postgraduate students in Greece. This would be more preferable than the current situation that Greek postgraduates need to go abroad to obtain a PhD in oenology. This would not be difficult to implement as the Department is already involved in the organization and implementation of two postgraduate programs in oenology and viticulture in collaboration with several foreign institutions.

## **B. Teaching**

### **APPROACH**

The science of oenology is a practical subject that requires a particularly strong basis in chemistry and biology. Thus, the pedagogic approach is to provide the basic science tools in the first 3 semesters, followed by specific application to the various aspects of wine production and, to a lesser extent, other alcoholic beverages such as beer and distilled spirits. The format of the curriculum, as previously described, is generally based on the combination of lectures and laboratory exercises focused on topics relevant to the study of oenology.

The professors that comprise the academic faculty have specific expertise and as such typically have the responsibility only for courses within that specialty. This can result in a relatively heavy burden for some of the teaching staff and it would be desirable for the department to have additional faculty that could assist in some of the more demanding subjects, especially those related to chemistry and its application. For at least the majority of students, good relationships are maintained with the faculty and the students feel as if they are part of an extended family concerned about their problems and wishing to assist in whatever is necessary to facilitate their success.

The practical nature of the oenology program puts heavy emphasis on the laboratory component and unlike the lectures has a mandatory attendance

requirement. This puts considerable strain on the laboratory resources, both for basic supplies and for space within the laboratory. Indeed, many exercises are conducted in groups of 4 or more, resulting in a less than an ideal level of individual participation. Furthermore, since the laboratory exams are written rather than practical, it is very possible that many students successfully complete the laboratory component without developing any real practical skills. Although the teaching of viticulture has increased in recent years, the department still lacks adequate space for its vineyard.

In general, both the Department and individual faculty members, utilize modern information technology in the courses by providing on-line notes, references, grades etc. However, there are some exceptions in which the courses could benefit from some modernization, especially with respect to updating laboratory notes. The fact that several faculty members are also involved with the supervision of graduate students, final year projects and their own research projects, helps the faculty to stay up to date with current information and the students seem to be highly appreciative of this effort.

The examination system in both the lecture and laboratory components of the courses is based on a traditional model that incorporates written exams at the end of the term that cover the entire breadth of course material. This approach to examinations can be problematic in several respects:

- It does not encourage participation and involvement of the students during the semester, who believe that it is only necessary to “cram” at the end.
- Some students may not be particularly adept at memorizing a great deal of material at one time and their grades would benefit from an opportunity to demonstrate their knowledge more frequently during the semester.
- In some cases there develops an overlap in examination material between the lecture and laboratory components of a course, resulting in the perception by the students that they need only to attend the labs to learn the material to pass the lecture component.

The Internal Evaluation Report and the “ΤΑΥΤΟΘΗΤΑ ΤΜΗΜΑΤΟΣ Α.Ε.Ι.” documents state an excess of 50% (126 instead of 80) in registered numbers for the academic year of 2010-2011 over the “optimal” capacity (80) of the Department. The majority of the extra 46 students have been transferred from other Departments through social criteria. The Department is required to accommodate the additional influx of students with the same infrastructure and budget, which puts considerable strain on the laboratory resources, both for basic supplies and for space within the laboratory.

#### IMPLEMENTATION

The graduates of the oenology Department are held in high regard within the wine industry in Greece and this attests to the quality and standards upheld by the

Department with regards to their teaching program. Many of the students demonstrate the high level of their knowledge through their project and final dissertation, as well as through a non-credit exercise in actual wine making from start to finish. Unfortunately not all students reach the same high level and this is often due to their inadequate preparation, especially with regards to chemistry, before entering the program. This lack of preparation disadvantages many students from the very beginning and has resulted in a rather high level of course failures and extended lengths of time to graduate. The department is well aware of this problem, however, for various reasons there has not been much improvement in the situation and therefore needs to be addressed with a more concerted effort.

The students and staff within this program would seem to have rather limited mobility. Although many of the staff have studied abroad at some stage to complete their post-graduate education, few of the undergraduate students have been able to take courses abroad (for example through the Erasmus program). It would be desirable if the Department could develop additional exchange programs to facilitate increased mobility and devote more administrative effort into assisting students to take advantage of these programs. This mobility would also benefit from implementation of a formal Masters program, which would improve the linkage of the Department with other institutions.

For the first time in 2010 the Department conducted written evaluations of all courses by the students attending final examinations. The detailed results of these evaluations were presented in the internal evaluation report prepared by the Department. Generally the results showed a good degree of satisfaction among the majority of students, with 10-15% being very satisfied with both the teaching and content of the courses. However, the results from this evaluation need to be considered carefully for the following reasons:

- Only about 50% of the students completed the evaluation.
- The final examination period is not an ideal time to ask for an evaluation.
- The results were not broken down by semester, by course or by professor and it is expected that there would be considerable variation when viewed from these perspectives.

Thus, it is recommended that future evaluations be conducted differently (for example electronically) and that the results be presented in a more meaningful format than simply pooled all together.

## RESULTS

As previously described, the graduates of the program are generally held in very high regard within the wine industry in Greece and have very little difficulty in finding employment following graduation. Unfortunately as many as 2/3 of the students that enter the program either never graduate or take exceedingly long periods of time to finish the program. The principal causes of this are known to be

the inadequate preparation of many of the incoming students, especially with regards to chemistry, their lack of interest in the subject and lastly the difficulty of some of the courses and corresponding high failure rates. This should be a major concern of the Department as it is a serious waste of both human and material resources that could be better utilized elsewhere.

#### IMPROVEMENT

The Department understands that there are a number of changes that could be initiated to improve the performance without requiring significant new resources, including:

- Providing compulsory tutorials for those students in need of help
- Modifying the examination system to better reflect efforts throughout the semester and reduce overlap between courses
- Clarifying the expectations for each course at the beginning of the semester
- Increasing student interest and motivation by encouraging summer work programs and fostering closer contact with the wine industry
- Increasing the use of information technology to enhance communication
- Investigating the use of alternative instructors for specific problematic courses

With the addition of new resources, specifically faculty, space and equipment, the department could increase linkages between teaching and research as well as ensuring that the graduates would continue to be at the forefront of the wine industry in Greece.

#### **C. Research**

Technological Education Institutes are not obliged to carry out research; as a result, institutional financial support for research is minimal to none. Nevertheless, the Department has created several research groups covering a broad area of research disciplines such as Oenology, Biotechnology, Microbiology, Viticulture and Marketing applied to the oenology field. The Department does not have a formal policy in research, although according to its mission statement, the department promotes: “the development and dissemination of knowledge in wine and beverage technology and sciences by means of teaching and research.”

For the last five years, research has been funded primarily through six national research grants. However, there have been no new funded projects since 2010, something that the EEC finds particularly worrisome. Research infrastructure is not adequate as there is no space dedicated to research and although there are some commendable instruments (such as Winescan, GC-MS and LC-DAD-RI) the Department needs to invest in more state-of-the-art instrumentation such as liquid chromatography coupled to high-resolution mass spectrometry and a next generation sequencer such as Ion Torrent etc.



In terms of scientific output, in the last 5 years, the faculty have published 23 books and 44 peer-review papers. They have also been invited to give 14 lectures and have had some recognition for work presented in conferences. Overall the ECC finds these results satisfactory considering the number of faculty, funding situation, and time available. There are only a few research collaborations with national and international universities, an area with a lot of room for improvement. As mentioned above, several research programs are under way in different fields related to oenology. The faculty needs to focus on research projects, that are within the national/European research priorities (while staying as close to the department's field as possible), to maximize the possibility for future funding. Furthermore, they need to expand their network by establishing more collaborations with other institutions and try to participate/submit inter-institution grant proposals. The Department could also investigate the possibility of joint grants with industry, where a certain amount of matching funds is often required and provided by the industrial partner.

It must be noted here that, in academic settings, there is a link between the ability to do research through funded work and the availability of post-graduate students that are able to undertake long-term projects. Currently, research is undertaken by undergraduate students during their 6-month internship and the faculty themselves. This is an inefficient way to do research and adds a lot of workload to the faculty and staff.

Graduate students and in particular PhD students are the backbone of academic research teams. TEI-centric post-graduate education does not exist today. Currently, graduate students need to be officially registered in an MSc/PhD granting university and only co-mentored by a TEI staff member, even though the research can take place at TEI facilities. Although this arrangement is very appropriate in cases of inter-institution collaborations, it is inflexible in cases where funding for the program comes solely through national or international grants awarded solely to TEI. It is also detrimental in some ways in terms of the development of the department's brand name and international recognition. As mentioned previously, 10-15% of the Department's graduates choose to continue their studies through graduate school; and they do so by registering in other schools. It must be also noted that currently there is no Greek university that provides a PhD program in the field of oenology.

#### **D. All other services**

The Department is an integrated unit of TEI of Athens and makes good use of the institutional resources available. The Department is very concerned about the lack of space for students, staff and the infrastructure. The EEC fully shares this view. The EEC believes that there are obvious obstacles as far as space needs are

concerned which may have negative effects in the fulfillment of the Department's mission.

Administrative procedures have been simplified and most of them are processed electronically. The existing policy to expand electronic communication and the handling of information must continue and cover all fields of communication activities within the Department.

The Department does not have a policy to increase student presence on the campus, while both the Department and the EEC are highly concerned about student attendance in classes.

The Department has a two-member secretariat which satisfies the current secretarial needs. The EEC considers that any expansion of the activities of the Department shall avoid the involvement of academic staff with any administrative or secretarial tasks.

The EEC considers the library facilities as well as the Evdoxos system allowing access to books very satisfactory, although the book selection was somewhat lacking in titles relevant to oenology and beverage technology. The EEC considers that students must be encouraged to make good use of both facilities. The PCs infrastructure and free Internet access are also satisfactory. The EEC did not visit any athletic facilities of the Department.

The EEC believes that the creation of a faculty advisor mechanism, as described in the strategic plan of the Department included in the internal evaluation report, is very positive and may be of great importance in short and medium term changes.

In the future, if research becomes one of the deliverables of the Technological Education Institutes, the EEC recommends the creation of core facilities, which will host an array of instrumentation valuable to more than one Department/School. The financing of the infrastructure, instrumentation and personnel needs to be provided by the State with an expectation that after 5-10 years, part of the personnel, reagent, consumables and service-contract cost will be subsidized through research grants. Core facilities equipped with state-of-the-art instrumentation could increase the competitiveness of TEI grant proposals and facilitate collaboration with universities and industry. The state will need to announce periodic requests for proposals in order to upgrade older equipment or the purchase of new technologies.

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

The student's internship is very well organized. There is excellent communication with a large number of wineries and other professionals of the wine sector, fulfilling the needs of both the wine sector and the educational and professional skills of the students. The EEC considers the initiative of the Department to apply for the EU ESPA program, which allows the funding of student internships, to be excellent. As mentioned above the EEC recommends the creation of an advisory board consisting of wine professionals working in all aspects of the wine and alcoholic beverage industry (production, marketing, research, etc) that could advise on the needs of the industry and suggest changes (if any) during subsequent reviews and modifications of the curriculum.

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

The EEC notes the existence of the strategic plan of the Department and considers it coherent and satisfactory. At the same time the EEC believes that this strategic plan is contingent on the availability of future space, infrastructure and academic staff. The EEC supports the provisions of the strategic plan for upgrading the research capability of the Department as well as the establishment of a mechanism for providing a faculty advisor for every student. The EEC encourages the Department to try to elaborate and build up a coherent and sustainable plan of scientific collaborations which will allow it to increase its level of integration with both the current priorities of research at the European Union level and the scientific trends. In order to have an efficient internal control mechanism to follow up the application of the strategic plan, the Department needs to establish short, medium and long-term strategic goals and direct its goals in the defined priorities of the European Union, especially in the context of the green economy and information and communication technologies.

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

For 25 years (1985-2010), the Department of Oenology and Beverage Technology has been the unique Department in Greece offering a fully integrated education in oenology and beverage technology with a four-year education. The graduates of the oenology department are held in high regard within the wine industry in Greece and this attests to the quality and standards upheld by the department with regards to their curriculum and teaching program. Indeed, during the last 20 years, graduates of the Department have not only met the required international and professional standards, but have also positively impacted the Greek wine industry through a shift towards higher quality that has translated into international recognition of Greek wines.

Below the EEC summarizes the strengths and weaknesses identified through the External Evaluation process and our recommendations for improvement:

### **Strengths:**

The curriculum follows the principles established by the International Organization of Vine and Wine (OIV) and delivers in response to the needs of the wine industry.

The Department and individual faculty members, utilize modern information technology in the courses by providing on-line notes, references, grades etc.

The Department has demonstrated capability in organizing and/or participating in post-graduate multi-university programs.

The graduates of the program are generally held in very high regard within the wine industry in Greece and have very little difficulty in finding employment following graduation.

Most of the faculty/staff are motivated to perform research, and do their best considering the resources available.

10-15% of the Department's graduates choose to continue their studies through graduate school and are successful in doing so.

The administrative structure and institutional resources such as library and restaurants are deemed satisfactory to very good.

The student's internship is very well organized. The in-house wine production pilot plant was excellent.

### **Weaknesses**

It must be noted here that many of the weaknesses that the EEC identified derive from regulations imposed on the Department and Higher Education in general.

As many as 2/3 of the students that enter the program either never graduate or take exceedingly long periods of time to finish the program.

There is an excess of over 50% in registered numbers over the optimal capacity of the Department.

The Higher Education entrance exam system in Greece allow students to enter the Department's program from a theoretical or technological background that lacks adequate preparation in important courses such as chemistry and biology.

The minimal attendance in theory classes is unsatisfactory.

Laboratory and teaching space as well as the number of faculty and the overall level of institutional funding are inadequate.

No research funds have been obtained since 2010.

### **Recommendations**

1. Create an advisory board consisting of wine professionals working in all aspects of the wine and alcoholic beverage industry (production, marketing, research, etc) that could advise on the needs of the industry and suggest changes (if any) during the review and updating of the curriculum.
2. Consider the introduction of more viticulture classes and an introductory course in molecular biology
3. Provide compulsory tutorials for those students in need of help, especially in the early semester courses.
4. Modify the examination system to better reflect efforts throughout the semester and reduce overlap between courses.
5. Clarify the expectations for each course at the beginning of the semester.
6. Increase student interest and motivation by encouraging summer work programs and fostering closer contact with the wine industry.
7. Increase the use of information technology to enhance communication.
8. Investigate the use of alternative instructors for specific problematic courses.
9. Focus on research projects that are within the national/European research priorities (while staying as close to the department's field as possible), to maximize the possibility for future funding.

The Members of the Committee

TECHNOLOGICAL INSTITUTE OF ATHENS  
DEPARTMENT OF OENOLOGY AND  
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