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ΑΡΧΗ ΔΙΑΣΦΑΛΙΣΗΣ ΚΑΙ ΠΙΣΤΟΠΟΙΗΣΗΣ
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΣΤΗΝ ΑΝΩΤΑΤΗ ΕΚΠΑΙΔΕΥΣΗ

HELLENIC REPUBLIC

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HELLENIC QUALITY ASSURANCE
AND ACCREDITATION AGENCY

Accreditation Report
for the Undergraduate Study Programme
(Integrated Master) of: Biotechnology
Institution: Agricultural University of Athens
Date: 17 November 2019

Report of the Panel appointed by the HQA to undertake the review of the Undergraduate Study Programme (Integrated Master) of **Biotechnology** of the **Agricultural University of Athens** for the purposes of granting accreditation

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PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The Accreditation Panel

The Panel responsible for the Accreditation Review of the Undergraduate Study Programme (Integrated Master) of **Biotechnology** of the **Agricultural University of Athens** (AUA) comprised the following five (5) members, drawn from the HQA Register, in accordance with the Law 4009/2011:

- 1. Prof. Emeritus Spyridon Agathos (Chair)**
Université Catholique de Louvain, Louvain-la-Neuve, Belgium
- 2. Prof. Emerita Maria Lazaridou**
Aristotle University of Thessaloniki, Thessaloniki, Greece
- 3. Prof. Spyros Pavlostathis**
Georgia Institute of Technology, Atlanta, Georgia, USA
- 4. Assoc. Prof. Vasileios Fotopoulos**
Cyprus University of Technology, Limassol, Cyprus
- 5. Dr. Spyridon Stachtiaris**
Geotechnical Chamber of Greece, Greece

II. Review Procedure and Documentation

The External Evaluation Procedure was conducted with no major problems. Meetings were smoothly conducted to the Panel's satisfaction, documents requested by the Panel were provided on time with the exception of the ones that had not been prepared by the Institution. Information on dates, meetings, the agenda, participants, etc. is provided in the work plan mentioned below.

The Accreditation Panel met at the Headquarters of ADIP in Athens on November 11, 2019 and was briefed by HQA President Dr. Pantelis Kyprianos and Director Dr. Christina Besta about the procedures to be followed during the site visit and was also provided with additional documents regarding the quality assurance (QA) mission and guidelines of the accreditation process.

The first visit to the Department of Biotechnology of the Agricultural University of Athens (AUA) took place on November 12, 2019 at 09:30. The visit lasted until approximately 17:30. We would like to mention that the second site visit on November 13 was canceled because students banned our entry into the building. For that reason, the Rector arranged for the Panel a meeting on November 13 with selected faculty members and administrative staff (MODIP and OMEA) at the Stratos Vassilikos Hotel. For the same reason the Panel did not have the opportunity to visit facilities such as the Museum, Publishing House, Gym, Liaison Office and Erasmus+ Office. During the first visit on November 12, at the welcome meeting, the Panel was informed through ppt presentations regarding all QA processes related to the undergraduate curriculum, including the Department's QA processes, its curriculum's design and approval process, and its detailed information management flow. Professor Spyridon E. Kintzios, Rector and Professor Elias Eliopoulos, Dean discussed and presented an overview of the AUA history and current status. The discussion was focused on the University's vision and mission and the new challenges the Institution is facing in view of the recent merging with the former Technological Education Institutes (TEI) of Thiva, Amfissa and Karpenisi. The discussion proved very useful as the Panel gained a good understanding of the University's current status and future plans.

Later on the same day, the Panel had a meeting with members of OMEA and MODIP, as well as MODIP staff. Spyridon E. Kintzios, President of MODIP and Assistant Professor Dimitris Vlachakis, represented MODIP. The internal Evaluation Group (OMEA) members Professor Nikolaos Labrou, Assistant Professor Nikolaos Kosmidis, Associate Professor Emmanouil Fliemetakis, Assistant Professor Stamatis Rigas and Assistant Professor Kostas Bethanis also participated in the meeting. Members of MODIP explained all QA processes related to the undergraduate curriculum and related processes. The discussions were centered on the activities of QA and compliance with the Internal Quality Assurance System. A series of questions posed by the Panel were answered, providing supplementary information on a number of topics.

The day meetings continued with undergraduate, graduate, doctoral students as well as postdoctoral fellows, alumni, heads of administration services and external stakeholders and partners.

Meeting with teaching staff (faculty) members

Professors: Polydefkis Hatzopoulos and Anna Kourti; Associate Professors: Michael Karpouzas, Dimitra Milioni, Eleni Douni and Marianna Chatzidimitriou; Assistant Professors: Nikolaos Alvertos, Georgia Moschopoulou and Gerasimos Daras; Lecturer: Trias Thireou. The Panel had the opportunity to discuss a number of topics, including faculty members' professional development and career advancement, teaching and research workloads, faculty members'

mobility, workload, evaluation by students; competence and adequacy of the teaching staff to ensure learning outcomes, link between teaching and research, teaching staff's involvement in applied research projects and research activities directly related to the curriculum and possible areas of weakness.

Undergraduate students

25 undergraduate students were present.

During this important meeting, the Panel discussed the students' experience of studying at the Department and their career path. Moreover, the Panel asked students about their satisfaction with the Department and the study programme, their involvement in feedback and evaluation processes, their perception of their study programme, and the opportunities afforded to them to actively participate in research activities. Overall, the students expressed their positive opinion about their relationship with the members of the teaching staff and they also expressed their general contentment with their overall learning procedure and teaching experience.

Meeting with graduates

Dr. Marianna Hatzikonstantinou, Dr. Foteini Pouliou, Dr. Fereniki Perperopoulou, Dr. Aggeliki Rambou, Dr. Evaggelos Rinotas (NSRC Fleming), Dr. Fotini Violitzi (NSRC Fleming), Ms. Maria Sigala MSc. UoA, Dr. Dimitrios Skliros and Dr. Dimitrios Beis (IBRAA).

The participants expressed their positive impression about the Department and its students, highlighting the wide knowledge gained. They also expressed their willingness to provide any support needed to the Department towards the continuous evolution of its study programme. The graduates provided their experience of studying at the Department, their career path and confirmed that their professional development and career opportunities benefited greatly from their study in the Department and the study programme.

Employers and Social Partners

Dr. Andreas Persidis (President BioVista, Pres. HBiO), Dr. Sarantis Hlamidas – Manager, ActiveMotif, USA, Dr. Sissy Efthymiadou ELGO-Dimitra, and Dr Efi Alexopoulou (KAPE-CRES; Center for Renewable Energy Sources & Saving); Dr Sot. Kakabacos (IΠΠΕΤΕΑ-NCSR-Demokritos) and Dr. Pen. Bouzioti (IΠΠΕΤΕΑ-NCSR-Demokritos).

During the meeting the group of participants discussed relations of the Department with external stakeholders from the private and the public sector. The representatives expressed their positive impression about the Department and its students, highlighting the wide knowledge background students gain throughout their study programme.

At noon, before meeting with the Employers and Social Stakeholders, the Panel had the opportunity to visit the main facilities of the Department, including classrooms, lecture halls, libraries, other facilities (computer rooms, etc.), research and teaching labs.

The next day, November 13, according to the amended visit programme, the Panel met with members of the OMEA & MODIP representatives at the hotel. During these meetings, the Panel held extensive and informative discussions and elaborated on several points/findings which needed further clarification.

The Panel recognized a genuine cooperative spirit by all parties involved in the meetings and willingness to cooperate and support the University's QA policy at all levels with a view towards upgrading the quality standards of the University.

The Panel received several documents provided by the AUA, for study and evaluation prior to the visit. These documents included a Progress Report, an Accreditation proposal of the Internal Quality Assurance System, the quality manual, the Strategic Plan and related documentation. Furthermore, additional documents were provided efficiently during the visit upon request of the Panel.

The Panel was received with a positive attitude by all parties involved and would like to thank the University Administration and all faculty members for their cooperation and fruitful discussions.

Starting on November 14, the Panel members worked on drafting the Accreditation report, based on the documentation received and the information gathered during the site visit.

III. Study Programme Profile

The Agricultural University of Athens (AUA) was established by law in 1920 (Law 1844/1920) as an Independent Higher Education Institution with university status under the name of the Highest Agricultural School of Athens (HASA). In 1989 it was renamed Agricultural University of Athens (Presidential Decree 377/1989). The AUA provides education at both undergraduate and postgraduate levels covering all sectors of agricultural activities. The AUA consists of six schools: Crop Science, Animal Science, Environment and Agricultural Engineering, Food Science and Nutrition, Applied Biology and Biotechnology, Applied Economics and Social Sciences. The Department of Biotechnology (Government Gazette Issue No. 1 of Leaflet 119 of 28 May 2013) constitutes a distinct academic profile in the field of Biotechnology. In 2020, the Department will be completing 30 years of education and research.

The Department admits on average 150 students annually, out of whom around 110 actually pursue their studies. This leads to a total of ca. 550 students in total following the undergraduate programme in Biotechnology.

The structure of the undergraduate curriculum in Biotechnology is based on the European Credit Transfer System (ECTS). The currently running version has been in effect since the academic year 2017-2018. It covers 9 semesters, while the 10th semester is intended for the Diploma Thesis. It is required to attend 57 courses (Compulsory and Elective) and a total of 300-312 ECTS units are required for successful completion of the program and the acquisition of the degree in Biotechnology. Its structure is presented in detail in Appendix B10Aa, Accreditation Proposal and the breakdown of courses in Appendix B3. The Panel found that the curriculum was complete and in line with modern concepts in the broad field of Biotechnology. It is organized in four categories of courses (General Knowledge Courses; Biotechnology Specialization Courses; Complementary Skills Courses; Advanced Courses).

Integral parts of the Curriculum are the following: Seminars, Diploma Thesis and Internships and Exchange Programmes.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Academic Unit Policy for Quality Assurance

INSTITUTIONS SHOULD APPLY A QUALITY ASSURANCE POLICY AS PART OF THEIR STRATEGIC MANAGEMENT. THIS POLICY SHOULD EXPAND AND BE AIMED (WITH THE COLLABORATION OF EXTERNAL STAKEHOLDERS) AT ALL INSTITUTION'S AREAS OF ACTIVITY, AND PARTICULARLY AT THE FULFILMENT OF QUALITY REQUIREMENTS OF UNDERGRADUATE PROGRAMMES. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.

The quality assurance policy of the academic unit is in line with the Institutional policy on quality, and is included in a published statement that is implemented by all stakeholders. It focuses on the achievement of special objectives related to the quality assurance of study programmes offered by the academic unit.

The quality policy statement of the academic unit includes its commitment to implement a quality policy that will promote the academic profile and orientation of the programme, its purpose and field of study; it will realise the programme's strategic goals and it will determine the means and ways for attaining them; it will implement the appropriate quality procedures, aiming at the programme's continuous improvement.

In particular, in order to carry out this policy, the academic unit commits itself to put into practice quality procedures that will demonstrate:

- a) the suitability of the structure and organization of the curriculum;*
- b) the pursuit of learning outcomes and qualifications in accordance with the European and the National Qualifications Framework for Higher Education;*
- c) the promotion of the quality and effectiveness of teaching;*
- d) the appropriateness of the qualifications of the teaching staff;*
- e) the enhancement of the quality and quantity of the research output among faculty members of the academic unit;*
- f) ways for linking teaching and research;*
- g) the level of demand for qualifications acquired by graduates, in the labour market;*
- h) the quality of support services such as the administrative services, the Library, and the student welfare office;*
- i) the conduct of an annual review and an internal audit of the quality assurance system of the undergraduate programme(s) offered, as well as the collaboration of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU);*

Study Programme compliance

According to the Accreditation Proposal, the Department aims to develop, promote and implement current advanced branches of knowledge, know-how and skills related to biotechnological processes, as well as the study and application of biosystems across life sciences. The Department aims to train scientists capable of studying, researching, understanding and promoting fields of science related to: genetics, agronomy and its applications to biology and biotechnology, genomics, molecular biology, evolution and genetic modification, understanding of the functioning and development of organisms as well as their genetic management through recombinant or editing DNA technology, and integral technologies in synthetic biology and cellular engineering. Additional areas of study include bio- and enzymatic processes, proteomics as well as the fundamentals and applications of enzymes and other proteins in all life sciences and industry; biophysics and bioinformatics for

understanding the structure and function of biomolecules; and modern techniques and tools including nanobiotechnology, biosensors and microelectronics, and modern bioassay methods.

Graduates of the Department have the background to study, research, understand and apply fundamental concepts and modern methods for the development of biotechnology within the specific scientific areas stated above. They can be employed in the private and public sectors for research, development and quality control, including laboratories of agro-industrial, food, pharmaceutical and biotech companies, hospitals and microbiological laboratories. Other outlets for employment include higher education and research institutions as well as national agencies and supervisory / regulatory authorities, and organizations overseeing processes and products of biological origin. The graduates seemed to be pleased with their studies in the Department. It should be noted that the Department is the only academic unit in Attica dedicated exclusively to biotechnology. The Biotechnology Department's Quality Assurance Policy is in full harmony with the legal and regulatory framework governing the operation of higher education institutions. In addition, this policy implements the "Principles and Guidelines for Quality Assurance in the European Area of Higher Education", according to the European Union Declaration on Quality Assurance in Higher Education (ENQUA 2009, Helsinki). Therefore, the Quality Assurance Policy is aimed at the pursuit of specific objectives related to the educational, research and extension activities offered by the Department of Biotechnology and contributes to the continuous improvement and upgrading of the academic work and the overall operation of the Department.

The Department of Biotechnology has defined and published realistic strategic goals of their Quality Assurance Policy as follows:

1. The continuous upgrading, modernization and update of the education and training of the Department's students in accordance with European standards and guidelines
2. The production of new knowledge, innovation and high-quality applications with international impact
3. Extroversion, promotion of the Department's achievements, connection with the economy of primary production, entrepreneurship and the strengthening of partnerships with other national and international institutions, in view of disseminating and enhancing research projects and broader synergies
4. Enhancing student-centered learning, facilitating the integration of students within the university and improving their training and performance
5. Continuously ensuring the acquisition of external resources such as participation in international programs, self-funded curricula, sponsorships, grants, endowments, contracts for special services and analyses for third parties, etc.
6. Extension and liaison with the society-at-large by organizing primary and secondary school visits, workshops on biotechnology applications, and seminars for biotech company professionals
7. Establishing a friendly and creative environment by modernizing student care services, online education services, data searching, as well as management and administration,

by incorporating technological advances and taking into account self-assessment tools and recommendations from external QA panels

The means of achieving the above QA strategic goals, include:

1. The continuous internal evaluation and improvement of the quality and efficiency of teaching within the Department of Biotechnology
2. The development and enhancement of the capabilities and qualifications of the faculty members
3. The continuous improvement of the quality of the research work of the faculty members
4. The continuous effort to link teaching with research
5. The acquisition of skills and qualifications of Biotechnology graduates in view of competitive market penetration
6. The continuous strengthening of the network of support services for the students

Panel judgement

Principle 1: Institution Policy for Quality Assurance	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

Principle 2: Design and Approval of Programmes

INSTITUTIONS SHOULD DEVELOP THEIR UNDERGRADUATE PROGRAMMES FOLLOWING A DEFINED WRITTEN PROCESS WHICH WILL INVOLVE THE PARTICIPANTS, INFORMATION SOURCES AND THE APPROVAL COMMITTEES FOR THE PROGRAMME. THE OBJECTIVES, THE EXPECTED LEARNING OUTCOMES, THE INTENDED PROFESSIONAL QUALIFICATIONS AND THE WAYS TO ACHIEVE THEM ARE SET OUT IN THE PROGRAMME DESIGN. THE ABOVE DETAILS AS WELL AS INFORMATION ON THE PROGRAMME'S STRUCTURE ARE PUBLISHED IN THE STUDENT GUIDE.

Academic units develop their programmes following a well-defined procedure. The academic profile and orientation of the programme, the objectives, the subject areas, the structure and organisation, the expected learning outcomes and the intended professional qualifications according to the National Qualifications Framework for Higher Education are described at this stage. The approval or revision process for programmes includes a check of compliance with the basic requirements described in the Standards, on behalf of the Institution's Quality Assurance Unit (QAU).

Furthermore, the programme design should take into consideration the following:

- *the Institutional strategy*
- *the active participation of students*
- *the experience of external stakeholders from the labour market*
- *the smooth progression of students throughout the stages of the programme*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System*
- *the option to provide work experience to the students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the programme by the Institution.*

Study Programme compliance

The curriculum was designed to meet modern knowledge, challenges and advances in Biotechnology by taking into account the practices and activities related to Biotechnology departments of Universities in the country and abroad. The specific Departments in Greece were:

1. Biochemistry and Biotechnology, University of Thessaly (Larissa) (<http://www.bio.uth.gr/index.php?lang=en>),
2. Molecular Biology and Genetics, Democritus University of Thrace (Alexandroupolis) (<https://www.mbg.duth.gr/index.php/en/>),
3. Biological Applications and Technologies, University of Ioannina (<http://www.bat.uoi.gr/>).

The curricula and practices of fifteen international (Europe, USA, Canada) departments of Biotechnology and/or Biological Sciences were also consulted. In addition, external stakeholders from the labor market have contributed to the structure of the study programme.

The curriculum of the Department of Biotechnology is based on the application of modern and efficient methods of teaching, training and assessment designed to stimulate student participation in attending courses, reducing exam stress (e.g. mid-term exams), attaining learning outcomes in a student-friendly and creative environment following the institutional strategy of AUA.

Elective courses give the opportunity to the students to build their own program by choosing courses from a wide selection.

Student oral presentations to their peers are based on recent international publications in the presence of the faculty. They develop team spirit, a sense of collaboration, organizational skills and goal setting.

Students gain experience by participating in small group exercises; some laboratory exercises are held over a continuous period of about two weeks reflecting biological processes in order to keep students interested. Computers are used, as well as web tools, bioinformatics tools and data analysis.

By applying academic quality criteria, new, dynamic members have recently been incorporated into the Department's teaching staff necessary for broadening the Department subjects (e.g. Synthetic Biotechnology, Enzyme Engineering, etc.).

Online tools (e-Class Platform, e-Student Portal and EVDOXOS facilitate and streamline the learning processes.

Through ERASMUS+ and IAESTE programs, the Department has developed agreements with European institutions for student and staff mobility with the assistance of the European Affairs Office, reinforcing intercultural links in higher education.

The students asked for some courses not to include laboratory practical classes (e.g. Ecology), as there is a great degree of overlap between lectures and practicals. Instead, they would prefer for the curriculum to include more extended courses (Level I and II) for Immunology, Biophysics, Molecular Biology and DNA Synthesis, as well as Cellular Development (among others). Detailed syllabi are available in the Study Guide. The syllabi clearly define the course's content, learning outcomes, teaching and learning approaches and how to evaluate student performance.

The structure and organization of the curriculum is satisfactory: The content of the courses is structured according to the type and level of study, it is appropriate to achieve the intended learning outcomes, while the content of the programme reflects the latest developments in science and technology. Elective courses are placed in specific semesters, thus preventing students from choosing from a wide pool.

The purpose of students' training with the Diploma Thesis in Biotechnology and internship processes is both scientific and vocational, taking into account the students' diverse interests.

The workload is around 28-30 hours per week, 6-7 courses per semester (~30 ECTS units/semester), combining theory and laboratory exercises while trying to avoid significant overlaps between courses and overloading of the programmes. Learning outcomes are compatible with the National Higher Education Qualifications Framework. However, learning outcomes are not fully linked to student workload but they are assessed in evaluation processes (e.g. exams, etc.). The above processes follow Articles 14 and 16 of Law 3374/2005, "Quality Assurance in Higher Education. Credit Transfer and Accumulation System" and Issue B ',

nonetheless the diploma grade of the graduates does not take into consideration the workload of the courses, thesis and internship.

More than 36 mandatory courses are offered from a pool of a total of 46 elective courses (see Annexes B3 & B10Aa), divided into five (5) directions, as follows: 1) Food & Chemistry; 2) Health & Nutrition; 3) Biology; 4) Agriculture; 5) Economy & Entrepreneurship. For their Internship, the students choose areas beyond the Department of Biotechnology and other departments of the AUA from a long list of public and private entities, domestic or foreign.

The faculty members apply a variety of pedagogical methods and means designed to stimulate the students' classroom participation and reduce their stress of exams. With group oral presentations they anticipate to develop the students' autonomy as well as team spirit, cooperation and experience of interacting with the public. The Department's consistent policy is to use information and communication technologies. Conventional lectures in classrooms are supported by viewing slides and/or explanatory videos to stimulate students' interest and enhance their active participation.

The Department's website is designed to be "user-friendly", especially to the students.

In addition to textbooks and notes, printed and electronic, distributed free of charge, all students of the Department have access to a modern Library. The Information System allows online access to scientific journals, books and databases. A reading/studying room of 80 places, equipped with 20 PCs with network connection operates daily. The Library and Information Center Supervisory Committee ensures the adequacy and continuous updating of the Library's material.

Apart from conventional training in lecture halls and laboratories, tutorials, field exercises, supplementary lectures, seminars and workshops take place. Students evaluate all courses (theoretical and laboratory) anonymously through written/electronic questionnaires. Evaluation includes every aspect of the educational process, including instructor's competence, supervisory means, educational material, etc. The evaluation system is based on recording of objective indicators - qualitative and quantitative (Law 3374/2005). Continuous improvement of all aspects of teaching is based on the results of the evaluation. Statistics on course evaluation are available in the MODIP Portal to all teaching staff (Faculty, EDIP and other instructors; Presidential Decree 407/80). Questionnaires are examined by the course instructors and the Department's OMEA Committee. OMEA reports the results to the Undergraduate Studies Committee and propose improvements to the General Assembly of the Department where in-depth discussions and final decisions take place. Through this process, improvement and continuous update of the curriculum occurs. Additionally, instructors follow developments in related departments, domestic and foreign, to make continuous improvements and adjustments to the content of the courses, the means and the pedagogical approaches to teaching.

For several courses, the students' examination is supplemented with optional and mandatory (in the case of laboratory exercises) individual or group work where students, under

the guidance of the instructor, cultivate critical thinking, use of literature, to comprehend useful information and present their conclusions.

The Department of Biotechnology ensures that appropriate measures are taken through institutionalized or informal procedures to solve student problems wherever possible.

Faculty members are accessible and available for personal communication with their students.

The performance of students is evaluated with transparent and merit-based methods. In accordance to AUA regulations, exams may take place in the middle and end of the semester. Information on examination procedures and assessment methods of students are published in detail on the website of each course and are disclosed to the students at the beginning of each course. Similarly, for the Diploma Thesis, the written work is received by the three-member committee (supervisor and two other members) in accordance to institutional policy.

Panel judgement

Principle 2: Design and Approval of Programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

The Accreditation Panel agrees that this Programme leads to a Level 7 Qualification according to the National & European Qualifications Network (Integrated Master)	YES	NO
	X	

Panel Recommendations

- A re-examination/re-assessment of ECTS units credited to each course might be in order.
- An immediate improvement is proposed in the form of placing optional courses preferably in the 8th and 9th semester in order to achieve a higher flexibility of options according to students' personal needs/requirements. This placement will also facilitate and increase the number of student mobility for study and internship in the ERASMUS+ programme (percentage of outgoing ERASMUS+ students as a whole accounted for a low of 0.52%) consolidating the communication, mobility and cooperation with other institutions, notably of the European Charter.
- Courses involving both theory and laboratory work (e.g. Ecology), must be re-examined to avoid unnecessary overload. Instead, it would be preferable for the curriculum to include more extended courses (Level I and II) for Immunology, Biophysics, Molecular Biology and DNA Synthesis, as well as Cellular Development (among others).
- Learning outcomes should be more fully linked to student workload. The final diploma grade of the graduates should take into consideration the workload of the courses, thesis and internship.

Principle 3: Student- centred Learning, Teaching and Assessment

INSTITUTIONS SHOULD ENSURE THAT THE UNDERGRADUATE PROGRAMMES ARE DELIVERED IN A WAY THAT ENCOURAGES STUDENTS TO TAKE AN ACTIVE ROLE IN CREATING THE LEARNING PROCESS. THE ASSESSMENT METHODS SHOULD REFLECT THIS APPROACH.

Student-centred learning and teaching plays an important role in stimulating students' motivation, self-reflection and engagement in the learning process. The above entail continuous consideration of the programme's delivery and the assessment of the related outcomes.

The student-centred learning and teaching process

- *respects and attends to the diversity of students and their needs, enabling flexible learning paths;*
- *considers and uses different modes of delivery, where appropriate;*
- *flexibly uses a variety of pedagogical methods;*
- *regularly evaluates and adjusts the modes of delivery and pedagogical methods aiming at improvement;*
- *regularly evaluates the quality and effectiveness of teaching, as documented especially through student surveys;*
- *reinforces the student's sense of autonomy, while ensuring adequate guidance and support from the teaching staff;*
- *promotes mutual respect in the student - teacher relationship;*
- *applies appropriate procedures for dealing with students' complaints.*

In addition :

- *the academic staff are familiar with the existing examination system and methods and are supported in developing their own skills in this field;*
- *the assessment criteria and methods are published in advance;*
- *the assessment allows students to demonstrate the extent to which the intended learning outcomes have been achieved. Students are given feedback, which, if necessary is linked to advice on the learning process;*
- *student assessment is conducted by more than one examiner, where possible;*
- *the regulations for assessment take into account mitigating circumstances;*
- *assessment is consistent, fairly applied to all students and carried out in accordance with the stated procedures;*
- *a formal procedure for student appeals is in place.*

Study Programme compliance

We have found that the curriculum reflects a student-centred learning and teaching process.

It respects the diversity of students and their individual needs and, given the availability of electives and a variety of pedagogical means, flexible learning paths are possible. Evaluation is carried out regularly, aiming at improvement of these practices. The academic staff of the Department are familiar with the existing examination system and develop their own skills in offering a fair assessment of the students taking into account the course's learning outcomes. Students' performance may be evaluated by more than one examiner. The assessment criteria

and methods are published in advance and are included in the course outlines on the webpage. Instructors make an effort to give feedback to the students and, if necessary, offer advice on the learning process.

Student surveys are institutionalized and are used to evaluate the quality and effectiveness of teaching.

The frequent use of presentations and projects contributes to the student's sense of autonomy under the guidance and support from the teaching staff.

The Department of Biotechnology considers as important the mutual respect in student-teacher relationships. It also ensures that appropriate measures are taken through institutionalized or informal procedures to solve student problems wherever possible. Faculty members are accessible and available for personal communication with their students. Student Representatives of the Department participate in the General Assembly of the Department and expose their concerns, positions or complaints.

Of particular importance is the institution of the Academic Adviser. His role does not appear to be well communicated to students, who were not aware of such a function. Nevertheless, Faculty members were praised by students as generally being available and willing to assist with various issues of concern. Also, any student can report any problems or complaints to the President of the Department or through appropriate committees or by the General Assembly of the Department. Effective teaching is accomplished with dialogue and active student involvement, dividing the large number of the first-time enrolled students into smaller groups, distributing university textbooks and notes early enough, offering diverse and flexible learning directions, monitoring learning outcomes and assessment.

The Liaison Office provides specialized counseling support for students with physical or learning disabilities. The Disability Committee with the help of the Department's representative provides the aforementioned students the opportunity for individual appointments and workshops. The teaching staff are also obliged to offer alternative oral or combined oral/written and/or supplementary oral examination for such cases as the Disability Committee deems necessary. Foreign students with difficulties in the Greek language are supported by the Foreign Languages Office of the AUA, the Academic Advisors assigned by the Department and the teaching staff of each course, with personal communication and guidance, material from the library, as well as online resources. Newly admitted students with different backgrounds, especially during the 1st year are also helped. In all of the above cases, the Academic Advisor plays an important role.

Course evaluation procedures are in the process of being carried out electronically. This capability was piloted in a sample of academic courses during 2018-2019 and because of a better participation this action will be extended to evaluate all courses of the Undergraduate Curriculum.

Panel judgement

Principle 3: Student- centred Learning, Teaching and Assessment	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

The role of the academic advisor, as set by law, should be more clearly communicated to all students, preferably during the first weeks of joining the Department. Accordingly, students should be advised to seek relevant guidance by their appointed advisors, as this will ensure a more evenly distributed advisory workload for some members of the staff.

Principle 4: Student Admission, Progression, Recognition and Certification

INSTITUTIONS SHOULD DEVELOP AND APPLY PUBLISHED REGULATIONS COVERING ALL ASPECTS AND PHASES OF STUDIES (ADMISSION, PROGRESSION, RECOGNITION AND CERTIFICATION).

Institutions and academic units need to put in place both processes and tools to collect, manage and act on information regarding student progression.

Procedures concerning the award and recognition of higher education degrees, the duration of studies, rules ensuring students progression, terms and conditions for student mobility should be based on the institutional study regulations. Appropriate recognition procedures rely on institutional practice for recognition of credits among various European academic departments and Institutions, in line with the principles of the Lisbon Recognition Convention.

Graduation represents the culmination of the students' study period. Students need to receive documentation explaining the qualification gained, including achieved learning outcomes and the context, level, content and status of the studies that were pursued and successfully completed (Diploma Supplement).

Study Programme compliance

The curriculum is compatible with the European and international practices and its objectives are linked with the labor market. The curriculum is structured based on the European Credit Transfer System (ECTS), but the relative workload is not taken into consideration for the final Diploma grade since the GPA is calculated based on the average grade of all the courses that the student attended during his studies with a 4/5 load, while the Diploma Thesis grade accounts for 1/5 of the GPA (although the Diploma Thesis accounts for 1/10 in terms of ECTS units awarded). Furthermore, another point of concern is the ECTS units credited to each course, as 77% of the courses were awarded 5 ECTS units which is rather unusual as it would imply that around $\frac{3}{4}$ of all courses require an equal workload, be it general courses, biotech-focused ones or in-depth ones.

The Department has created practices for students' progression and recognition of credits among various European Academic Institutions according to the Lisbon Recognition Convention.

Diploma Supplement is not given automatically to graduates in Greek and English.

The educational experience of the students is enhanced by research activities throughout their study path. They are exposed to research as participants in research projects, in internships and while conducting their diploma thesis.

The Department, following the Institution's policy, has introduced and implemented a "Welcome Day" for its new students, which is taking place at the beginning of the academic year. Incoming students do not find it difficult to attend university courses upon their transition from high school.

Panel judgement

Principle 4: Student Admission, Progression, Recognition and Certification	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- The curriculum must be strictly harmonized with the regulation as far as the ECTS policy is concerned.
- The final diploma grade must be weighted based on the workload which must be 300 ECTS units as in all AUA diplomas. In case a student has covered more ECTS units by following optional courses, these have to appear in the Diploma Supplement but the corresponding extra ECTS units must not be counted in the diploma degree following the student's request.
- Sheet No. 1091/2006 Diploma Supplement "(A' 189) must be given automatically to graduates in Greek and English.

Principle 5: Teaching Staff

INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE QUALIFICATIONS AND COMPETENCE OF THE TEACHING STAFF. THEY SHOULD APPLY FAIR AND TRANSPARENT PROCESSES FOR THE RECRUITMENT AND DEVELOPMENT OF THE TEACHING STAFF.

The Institutions and their academic units have a major responsibility as to the standard of their teaching staff providing them with a supportive environment that promotes the advancement of their scientific work. In particular, the academic unit should:

- *set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff and offer them conditions of employment that recognize the importance of teaching and research;*
- *offer opportunities and promote the professional development of the teaching staff;*
- *encourage scholarly activity to strengthen the link between education and research;*
- *encourage innovation in teaching methods and the use of new technologies;*
- *promote the increase of the volume and quality of the research output within the academic unit;*
- *follow quality assurance processes for all staff members (with respect to attendance requirements, performance, self-assessment, training etc.);*
- *develop policies to attract highly qualified academic staff.*

Study Programme compliance

The Department offers opportunities for professional development to all Faculty members. They are expected to be active in research and are offered funding to travel to conferences to present their work and interact with other colleagues, in order to remain current in their research and the fast-changing technology bringing back an extra value to the Department. The Department has recently recruited meritocratically a number of young Faculty members with educational background in non-agricultural fields of research (e.g. biomedical), thus assisting in the broadening of the teaching and research scope and focus of the Department.

The number and specialties of the teaching staff are adequate to teach the curriculum courses. The scientific training of teaching staff is suitable to ensure that the learning outcomes of the programme are achieved. Future retirements and hires of academic staff ensure the smooth implementation and further development of the curriculum over a five-year period. The Department supports the professional development of teaching staff in relation to the requirements of the curriculum and enables faculty members to teach advanced courses relating research activities with the learning outcomes of the courses.

Instructors use a variety of teaching tools/methods, as well as assessment approaches. Traditional hand-written as well as electronic questionnaires are used; the latter decreases the workload and increases the participation rates in the evaluation of courses.

There is lack of a mechanism for the systematic handling and documentation of repeated, low-score student evaluations of individual faculty instructors.

It is noteworthy that a number of Diploma Theses result in scientific publications. In terms of metrics, it was found that there is an average of 0.1-0.5 research articles published annually per faculty member since the establishment of the current form of the Department in 2013

where undergraduate students participate as co-authors. However, this average is mainly formed by less than half of the Faculty members.

The Department has attracted highly qualified Faculty members. This is evident by the high volume and quality of the academic research publications of the Faculty but also by their teaching dedication as shown by the students' evaluation of their teaching.

In terms of overall research output by the Department, productivity is at relatively high levels resulting in approx. 4 peer-review journal articles per Faculty member for the period 2016-2017 as opposed to 0.75 articles per Faculty member for the period 2017-2018 (from the document "Research Activity"). However, cumulative information was not provided for previous or later periods. In addition, these averages are skewed and are therefore not representative, as many publications include multiple Faculty members which are thus counted in duplicate or even triplicate in some cases.

On the one hand, this suggests a high degree of collaboration which is positive, but on the other the specific KPI is not realistic.

There is a positive correlation of faculty members' research activities with the core subjects of the Department including the participation of students in the research projects.

Panel judgement

Principle 5: Teaching Staff	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- In cases where repeated, low-score student evaluations of individual faculty instructors exist, an institutional procedure must provide opportunities to re-evaluate and improve the instructors' pedagogical approaches and techniques; help should be given by both University support offices, as well as by knowledgeable, successful faculty members who voluntarily accept to serve the role of academic mentor.
- Multiple counting of joint publications involving multiple authors from the Department should be avoided and these joint publications should only be counted once (as derived from the document DEP_Publications 17_18_19).
- Publications emanating from research by a faculty member prior to joining the Department should not count in the Department's productivity.

Principle 6: Learning Resources and Student Support

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER TEACHING AND LEARNING NEEDS. THEY SHOULD –ON THE ONE HAND- PROVIDE SATISFACTORY INFRASTRUCTURE AND SERVICES FOR LEARNING AND STUDENT SUPPORT AND–ON THE OTHER HAND- FACILITATE DIRECT ACCESS TO THEM BY ESTABLISHING INTERNAL RULES TO THIS END (E.G. LECTURE ROOMS, LABORATORIES, LIBRARIES, NETWORKS, BOARDING, CAREER AND SOCIAL POLICY SERVICES ETC.).

Institutions and their academic units must have sufficient funding and means to support learning and academic activity in general, so that they can offer to students the best possible level of studies. The above means could include facilities such as libraries, study rooms, educational and scientific equipment, information and communications services, support or counselling services.

When allocating the available resources, the needs of all students must be taken into consideration (e.g. whether they are full-time or part-time students, employed or international students, students with disabilities) and the shift towards student-centred learning and the adoption of flexible modes of learning and teaching. Support activities and facilities may be organised in various ways, depending on the institutional context. However, the internal quality assurance ensures that all resources are appropriate, adequate, and accessible, and that students are informed about the services available to them.

In delivering support services the role of support and administrative staff is crucial and therefore they need to be qualified and have opportunities to develop their competences.

Study Programme compliance

Departmental funds come mainly from State funding for HEIs, the Public Investment Program (ΠΔΕ), and Special Accounts for Research Funds (ΕΛΚΕ). This funding is initially allocated to the HEIs and subsequently to Departments based on their funding requirements and the strategic plan of the University. Furthermore, the Department has a postgraduate MSc programme in ‘Systems Biology’ which runs on tuition fees paid by participating students (self-funded programme). It should be noted that the University is participating in a large H2020 grant which aims to develop pan-European Universities that will offer exchange undergraduate programmes (‘Connexus’) and this is expected to cover partial funds for teaching and learning needs.

The infrastructure and service facilities are considered to be adequate in general both in size and quality of the premises at the level of the University. Certain laboratories are rather old and need refurbishment, while others are more modern. However, we identified the need for more laboratory teaching space as the capacity is often limited based on the number of students taking these classes (i.e. capacity of circa 30 students for practical classes numbering over 150 participants, leading to multiple practicals taking place for the same exercise which greatly increases Faculty and teaching staff workload). Equipment used in teaching and learning (laboratory and electronic equipment, consumables, etc.) is sufficient quantitatively and qualitatively for research but not sufficient for teaching; equipment in most cases is purchased through grants of individual Faculty members who are also responsible for their maintenance. There is an appropriate environment that encourages and facilitates the practice of students except for the absence of recycling collection bins, the graffiti, wall plaster maintenance and repair, and the poor quality levels of the toilets.

There are adequate library services supported by electronic infrastructure thus encouraging students to use modern bibliography and databases.

Teaching materials (books, textbooks, scientific journals, databases) are accessible to students, and there are a number of PC workstations using state-of-the-art computer equipment covering student needs. The teaching staff uses electronic means to support the learning process (e-Class and e-Student), while electronic means are also being introduced to improve other processes such as the completion of student questionnaires, leading to improved response rates compared with previous hand-written approaches.

The institution ensures a satisfactory level of academic, social and medical support for students. There is a University Liaison office – Committee for physical and mental disabilities (<https://www2.aua.gr/el/info/ameea-amea>) available and which assists in relevant cases using tailor-made examination of students with such disabilities.

In regard with the adoption of flexible modes of learning and teaching and the overall use of e-approaches, it was noted that a large part of the relevant effort is made by individual Faculty members who are proficient in electronic skills and not centrally through the University, thus leading to potentially increased workload for these exceptional instructors.

The study curriculum has been designed to cover identified national industry / economy needs. The curriculum is designed to prepare professionals for business and organizations capable of successfully coping with today's and future technological, economic and social challenges. Additionally, the courses offered during the first two years are compulsory and include foundation courses and general knowledge in earth sciences. This fact gives the opportunity to the graduates to register in the Geotechnical Chamber of Greece.

Teaching staff invites distinguished scientists and executives of biotechnology and life sciences companies for weekly lectures to undergraduates of the 10th semester. Students are informed about the program of seminars in the beginning of the semester. This is an important element that should be praised as it brings students closer to the industry and potential outlets for employment opportunities.

Moreover, the mandatory diploma thesis project is considered as one of the major characteristics that enable students to acquire special skills, establishing links with industry and reaping all the training and potential employment benefits from such links. In the same vein, the mandatory 4 months' internship gives the opportunity to the students to get in touch with the labor market.

There is an important social services dimension, with cultural groups (Theatrical, Volunteering, Mountaineering, Natural Environment), organizing events such as Music Workshop, Dance, etc. An alumni club exists but needs to be expanded and have its own structure because it will be very helpful to many sectors of the Department (funding, teaching, research). Awards are well organized by giving scholarships and prizes to the students, awards to instructors as well as a series of special awards.

Panel judgement

Principle 6: Learning Resources and Student Support	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Centralization of equipment purchase and maintenance could potentially improve usage by more Faculty and students.

- More laboratory space for practical classes is needed in cases of courses followed by numerous students in order to avoid multiple classes for the same exercise that are leading to increased workload and less detailed practicals due to lack of time (according to students' comments).
- Electronic tools of teaching and evaluation in particular (e.g. student questionnaires) should be further exploited as they provide more automated data collection and analysis, while at the same time improving participation rates (as evidenced by a relevant pilot program run in 2018 which improved student participation from 25% to 89%).
- Optimization and use of e-tools should be centralized and ideally not assigned to Faculty with expertise in IT in order to reduce their workload.
- Attention needs to be paid to the English webpage of the Department and the automatic delivery of the Diploma Supplement in Greek and in English. These will help in the dissemination of high-quality research products through the participation of students and faculty in exchange and research programs and creating conditions for innovation, extroversion, interconnection with society, and the labor market, helping to reverse the brain drain and support the country's growth prospects.

Principle 7: Information Management

INSTITUTIONS BEAR FULL RESPONSIBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF UNDERGRADUATE PROGRAMMES OF STUDY AND RELATED ACTIVITIES, IN AN INTEGRATED, EFFECTIVE AND EASILY ACCESSIBLE WAY.

Institutions are expected to establish and operate an information system for the management and monitoring of data concerning students, teaching staff, course structure and organisation, teaching and provision of services to students as well as to the academic community.

Reliable data is essential for accurate information and for decision making, as well as for identifying areas of smooth operation and areas for improvement. Effective procedures for collecting and analysing information on study programmes and other activities feed data into the internal system of quality assurance.

The information gathered depends, to some extent, on the type and mission of the Institution. The following are of interest:

- *key performance indicators*
- *student population profile*
- *student progression, success and drop-out rates*
- *student satisfaction with their programme(s)*
- *availability of learning resources and student support*
- *career paths of graduates*

A number of methods may be used for collecting information. It is important that students and staff are involved in providing and analyzing information and planning follow-up activities.

Study Programme compliance

The necessary information is collected in a transparent, uniform and fully standardized manner to improve the quality of education. The most important parameters for quality assurance are systematically recorded, monitored, and examined in relation to set goals based on quantitative and qualitative information. Staff members work on mutually accepted QA standards, criteria and indicators set by HQA. For the collection, management and utilization of information, AUA institutionalized procedures are used as well as information collected from archived data of the Secretariat, as well as faculty and staff members.

Relative to students' performance, the following information is recorded: a) Registration of students, including their special needs, students' contact information, details of their entry, etc.; b) courses attended per semester, student performance scores, etc. These files are accessible to members of the Secretariat and the faculty members with their personal codes. The rates of early completion or drop-out are verified in the e-Student information system on the website. Additionally, an internship diary is kept and evaluated; c) The key individual and contact details related to staff members are collected and archived by the Secretariat of the Department, and posted on the Department's website, as well as on personal websites; d) Infrastructure data are posted on the Department's website.

The Department's website is designed to be user-friendly, especially to the students. All courses have their own website with all relevant and necessary information according to HQA

standards. Important educational resources as well as links to Greek and foreign sites are provided. This material is constantly updated and enriched. Multimedia presentations are also used in teaching. Laboratory guides and add-ons are posted on the respective web pages. Many of the courses use the AUA Open e-Class online platform. Questionnaires are posted and evaluation is directly online, students submit their work electronically and are graded for their performance. Frequently asked questions and answers are communicated via email and group discussions take place.

Questionnaires from the evaluation of the quality of the courses, laboratory exercises and instructors are processed and archived by MODIP of the University.

The secretariat of the Department manages financial data information about funding from foreign or domestic public/private bodies related to teaching and research programmes.

The Department of Biotechnology collects, analyzes and utilizes the above information by the preparation of periodic Internal Evaluation Reports which are public, posted on the website of the Department and the General Assembly. The Department has activated all the necessary procedures to create the legislative framework ensuring that the collection and processing of personal data of students and staff adheres to the General Data Protection Regulation 2016/679 (EU).

Panel judgement

Principle 7: Information Management	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

-Career paths of graduates should be documented, recorded, updated and used for the benefit of the Department and its students.

Principle 8: Public Information

INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES WHICH IS CLEAR, ACCURATE, OBJECTIVE, UP-TO-DATE AND READILY ACCESSIBLE.

Information on Institution's activities is useful for prospective and current students, graduates, other stakeholders and the public.

Therefore, institutions and their academic units provide information about their activities, including the programmes they offer, the intended learning outcomes, the qualifications awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students, as well as graduate employment information.

Study Programme compliance

The Departmental website includes a wide range of publicly available information that includes: A general description; Information (including CVs) of all teaching and administrative staff; Detailed description of the undergraduate and postgraduate programmes (course outlines according to HQA standards), including a comprehensive study guide as well as information regarding the thesis project and internship; Description of Research laboratories and their activities; Information regarding alumni and the Career Office. Furthermore, the website provides links to the AUA website with information regarding disability services, consulting, health care, housing, awards and scholarships, the Library and the Fitness center. Information provided is comprehensive and covers most topics in a satisfactory manner.

A point to consider however is that all information is available in Greek but not English (this is the case only for central services linked to the main AUA website). Furthermore, we failed to spot presence in social media (such as Twitter, Facebook, Instagram etc.) commonly employed by foreign departments in order to promote activities, provide up-to-date information etc. Finally, there was no direct link regarding student exchange programmes with the Department, such as Erasmus+ programs.

Additional public information exists regarding scientific conferences, publications, workshops, daily press and mass media, innovation festivals and the *Triptolemos* magazine.

Panel judgement

Principle 8: Public Information	
Fully compliant	
Substantially compliant	
Partially compliant	X
Non-compliant	

Panel Recommendations

- The Department should provide all available information in English for the international audience, and particularly for people interested in joining the Department through exchange programmes such as Erasmus+ (such information must also be available in Greek). There appears to be an English version, which however reverts to Greek texts when selected.
- The Department is also encouraged to establish its presence in popular social media, in line with current worldwide trends. This will provide a universal forum to advertise available curricula, provide news and updates in regard with Departmental activities etc.

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes
INSTITUTIONS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM FOR THE AUDIT AND ANNUAL INTERNAL REVIEW OF THEIR PROGRAMMES, SO AS TO ACHIEVE THE OBJECTIVES SET FOR THEM, THROUGH MONITORING AND AMENDMENTS, WITH A VIEW TO CONTINUOUS IMPROVEMENT. ANY ACTIONS TAKEN IN THE ABOVE CONTEXT SHOULD BE COMMUNICATED TO ALL PARTIES CONCERNED.

Regular monitoring, review and revision of study programmes aim to maintain the level of educational provision and to create a supportive and effective learning environment for students.
The above comprise the evaluation of:
the content of the programme in the light of the latest research in the given discipline, thus ensuring that the programme is up to date;
the changing needs of society;
the students' workload, progression and completion;
the effectiveness of the procedures for the assessment of students;
the students' expectations, needs and satisfaction in relation to the programme;
the learning environment, support services and their fitness for purpose for the programme;
Programmes are reviewed and revised regularly involving students and other stakeholders. The information collected is analysed and the programme is adapted to ensure that it is up-to-date. Revised programme specifications are published.

Study Programme compliance

Programmes are reviewed and revised regularly involving students and other stakeholders. The self-assessment procedure of the curriculum is scheduled to take place annually, with the cooperation of OMEA and MODIP.

The first self-evaluation was concluded in 2010 and approved in 2011 with the external evaluation. The last revision of the Department was done in 2013 with the revamping of the Department of Biotechnology.

The study programme assessment is performed relative to the quality principles as dictated by HQA. The findings of the self-assessment procedure are made available to HQA/MODIP, students and faculty members. However, some KPIs seem not to be fully cross-checked with the faculty members.

Panel judgement

Principle 9: On-going Monitoring and Periodic Internal Review of Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- Attention needs to be paid in the English webpage of the Department and the automatic delivery of the Supplement Diploma in Greek and in English. These will help the dissemination of high-quality research products through the participation of students and faculty in exchange and research programmes and in creating conditions for innovation, extroversion,

interconnection with society, the labor market and the economy, helping to reverse the brain drain and support the country's growth prospects.

- The discrepancies between the indicators and the accreditation reports. Also, many of the values of the HQA indicators are probably incorrect (e.g. none of the members of the Department is shown as coordinator of a scientific grant). The staff must cross-check all the indicators.

Principle 10: Regular External Evaluation of Undergraduate Programmes
PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY COMMITTEES OF EXTERNAL EXPERTS SET BY HQA, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HQA.

HQA is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure, and implemented by a committee of independent experts. HQA grants accreditation of programmes, with a specific term of validity, following to which revision is required. The accreditation of the quality of the programmes acts as a means of verification of the compliance of the programme with the template’s requirements, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees.

Both academic units and institutions participate in the regular external quality assurance process, while respecting the requirements of the legislative framework in which they operate.

The quality assurance, in this case the accreditation, is an on-going process that does not end with the external feedback, or report or its follow-up process within the Institution. Therefore, Institutions and their academic units ensure that the progress made since the last external quality assurance activity is taken into consideration when preparing for the next one.

Study Programme compliance

The External Evaluation process, consistent with HQA standards, took place from 3 to 7 October 2011. The final report of the External reviewers was submitted on 5/12/2011 and posted on the website Section http://gbt.aua.gr/sites/gbt.aua.gr/files/eval2011_ext.pdf as well as on the AUA MODIP website.

The recommendations of the external evaluators were taken into account and significant changes have been incorporated (more than 90%). On the other hand, the restrictions of the Greek national legislation or the rules of operational procedures of the Department were the main obstacles which led to non-implementation of the rest of the recommendations (e.g. infrastructure issues).

Panel judgement

Principle 10: Regular External Evaluation of Undergraduate Programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

Part C: Conclusions

I. Features of Good Practice

The Department students and faculty members are highly motivated and dedicated to continuous excellence. There is also a culture of cooperation and solidarity that contributes to a friendly atmosphere.

The Study Programme and the research activities of the Department are up to date and reflect the current state of the art in the disciplines related to Biotechnology. However, the expansion to broader areas of Biotechnology should not be at the detriment of Agricultural Biotechnology.

The faculty members are aware of the increased need of students for interconnection and mutual information on both academic and day-to-day services, thus they make use of online tools.

Several faculty members make substantial efforts to involve the students in the evaluation processes and the improvement of the pedagogical processes.

The MODIP and OMEA members are open to suggestions and continuous improvement towards a culture of excellence.

The students are well prepared for the workplace and for post-graduate studies based on the strengths of the curriculum and the focus and breadth of Diploma Thesis topics and Internships.

II. Areas of Weakness

Efforts should be focused on the dissemination of information regarding the Department's accomplishments, especially in the English language webpages.

An adaptation of the Study Programme regarding elective courses could facilitate and increase the number of Erasmus+ exchanges and other forms of mobility.

The excessive number of laboratory courses in some fields might be an impediment in going more in-depth in some other subjects.

The interactions with other Departments of AUA could be improved.

III. Recommendations for Follow-up Actions

A re-examination/re-assessment of ECTS units credited to each course is suggested. Overall, the curriculum must be strictly harmonized with the regulations as far as the ECTS policy is concerned.

An immediate improvement is proposed in the form of placing optional courses preferably in the 8th and 9th semester in order to achieve a higher flexibility of options according to students' personal needs or requirements. This arrangement will also facilitate and increase the number of students participating in mobility for study and / or internship through the ERASMUS+ programme, thus consolidating the communication, mobility and cooperation with other institutions.

Courses involving both theory and laboratory work (e.g. Ecology), must be re-examined to avoid unnecessary overload. Instead, it would be preferable for the curriculum to include more extended courses (Level I and II) for Immunology, Biophysics, Molecular Biology and DNA Synthesis, as well as Cellular Development (among others).

Learning outcomes should be more fully linked to student workload.

The final diploma grade of the graduates should take into consideration the workload of the courses, thesis and internship. The total workload must be 300 ECTS units as in all AUA diplomas. In case a student has covered more ECTS units by following optional courses, these have to appear in the Diploma Supplement but the corresponding extra ECTS units must not be counted in the diploma degree following the student's request. Sheet No. 1091/2006 Diploma Supplement "(A' 189) must be given automatically to graduates in both Greek and English.

The role of the academic advisor, as set by law, should be more clearly communicated to all students, preferably during the first weeks of joining the Department. Accordingly, students should be advised to seek relevant guidance by their appointed advisors, as this will ensure a more evenly distributed advisory work load for some members of the staff.

In cases where repeated, low-score student evaluations of individual faculty instructors exist, an institutional procedure must provide opportunities to re-evaluate and improve the instructors' pedagogical approaches and techniques; help should be given by both University support offices, as well as by knowledgeable, successful faculty members who voluntarily accept to serve in the role of academic mentor.

Multiple counting of joint publications involving multiple authors from the Department should be avoided and these publications should only be counted once (as derived from the document DEP_Publications 17_18_19). Moreover, publications that have resulted from research by a faculty member well before joining the Department should not count in the Department's productivity.

Centralization of equipment purchase and maintenance is encouraged in order to improve usage by more Faculty and students. More laboratory space for practical classes should be foreseen in cases of courses attended by numerous students in order to avoid multiple classes for the same exercise which inevitably lead to increased workload for faculty and less detailed hands-on experience for students due to lack of time.

Electronic tools of teaching and evaluation (e.g. student questionnaires) should be further exploited as they provide more automated data collection and analysis, while at the same time improving participation rates. More generally, optimization and use of e-tools should be centralized and ideally not assigned to specific Faculty members with expertise in IT in order to reduce workload.

Attention needs to be paid to the breadth and comprehensiveness of the Department's English webpage. In fact, the totality of the Department's information should be presented also in English for the international audience and especially for students and faculty interested in joining the Department through exchange programmes like Erasmus+.

The Department is encouraged to establish its presence in popular social media (Facebook, twitter, etc.), in line with current worldwide trends. This will provide a universal forum to advertise available curricula, provide news and updates in regard with Departmental activities etc.

Career paths of graduates should be documented, recorded, continuously updated and regularly used for the benefit of the Department and its students.

The discrepancies between the indicators in the various primary documents and the Accreditation Report should be examined and corrected, including metrics with wrong values (e.g. Department faculty members that are grant coordinators). The staff must cross-check all the indicators and present them on a graph to follow their evolution through the years, for reasons of self-assessment.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: Principles 1,3,5,6,7,9,10

The Principles where substantial compliance has been achieved are: Principles 2,4

The Principles where partial compliance has been achieved are: Principle 8

The Principles where failure of compliance was identified are: None

Overall Judgement	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

The Accreditation Panel agrees that this Programme leads to a Level 7 Qualification according to the National & European Qualifications Network (Integrated Master)	YES	NO
	X	

**The members of the Accreditation Panel for the Undergraduate Programme
Biotechnology (integrated master) of the Agricultural University of Athens**

Name and Surname

Signature

- **Prof. Emeritus Spyridon Agathos (Chair)**, Université Catholique de Louvain, Louvain-la-Neuve, Belgium
- **Prof. Emeritus Maria Lazaridou**, Aristotle University of Thessaloniki, Thessaloniki, Greece
- **Prof. Spyros Pavlostathis**, Georgia Institute of Technology, Atlanta, Georgia, USA
- **Assoc. Prof. Vasileios Fotopoulos**, Cyprus University of Technology, Limassol, Cyprus
- **Mr Spiros Stachtiaris**, Geotechnical Chamber of Greece, Greece