



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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Ανώτατης Εκπαίδευσης
Hellenic Authority
for Higher Education

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Accreditation Report for the Postgraduate Study Programme of:

Biomedical informatics

Department: Medical School

Institution: Democritus University of Thrace

Date: April 2026



Με τη συγχρηματοδότηση
της Ευρωπαϊκής Ένωσης



Πρόγραμμα
Ανθρώπινο Δυναμικό και
Κοινωνική Συνοχή



Report of the Panel appointed by the HAHE to undertake the review of
the Postgraduate Study Programme of **Biomedical informatics** of the
Democritus University of Thrace for the purposes of granting
accreditation

TABLE OF CONTENTS

PART A: BACKGROUND AND CONTEXT OF THE REVIEW	4
I. The External Evaluation & Accreditation Panel	4
II. Review Procedure and Documentation	5
III. Postgraduate Study Programme Profile.....	7
PART B: COMPLIANCE WITH THE PRINCIPLES.....	8
PRINCIPLE 1: QUALITY ASSURANCE POLICY AND QUALITY GOAL SETTING FOR THE POSTGRADUATE STUDY PROGRAMMES OF THE INSTITUTION AND THE ACADEMIC UNIT	8
PRINCIPLE 2: DESIGN AND APPROVAL OF POSTGRADUATE STUDY PROGRAMMES.....	11
PRINCIPLE 3: STUDENT-CENTRED LEARNING, TEACHING, AND ASSESSMENT.....	15
PRINCIPLE 4: STUDENT ADMISSION, PROGRESSION, RECOGNITION OF POSTGRADUATE STUDIES, AND CERTIFICATION.	19
PRINCIPLE 5: TEACHING STAFF OF POSTGRADUATE STUDY PROGRAMMES	22
PRINCIPLE 6: LEARNING RESOURCES AND STUDENT SUPPORT.....	25
PRINCIPLE 7: INFORMATION MANAGEMENT	28
PRINCIPLE 8: PUBLIC INFORMATION CONCERNING THE POSTGRADUATE STUDY PROGRAMMES.....	31
PRINCIPLE 9: ON-GOING MONITORING AND PERIODIC INTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES	33
PRINCIPLE 10: REGULAR EXTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES	37
PART C: CONCLUSIONS	39
I. Features of Good Practice.....	39
II. Areas of Weakness.....	39
III. Recommendations for Follow-up Actions.....	40
IV. Summary & Overall Assessment	42

PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The External Evaluation & Accreditation Panel

The Panel responsible for the Accreditation Review of the postgraduate study programme of Biomedical informatics of the **Democritus University of Thrace** comprised the following five (5) members, drawn from the HAHE Register, in accordance with Law 4653/2020:

1. KTISTAKIS NICHOLAS (Chair)
Babraham Institute
2. GRAMMATOPOULOS DIMITRIS
University of Warwick Medical School
3. SACHINIDIS AGAPIOS
Institut für Neurophysiologie, Zentrum Physiologie, Medizinische Fakultät, Universität zu Köln
4. Tzimogianni Valentini
University of Patras
5. VISVIKIS DIMITRIS
National Institute of Health and Medical Research

II. Review Procedure and Documentation

Following the requirements of Quality Assurance in Higher Education (laws 4009/2011 and 4653/2020), the Hellenic Authority for Higher Education (HAHE), upon individual invitation and after official acceptance, established an independent External Evaluation and Accreditation Committee (EEAP), with the mission of assessing the compliance of the Postgraduate Studies Program (PSP) in “Biomedical informatics” of the Democritus University of Thrace which was scheduled for 30/3 and 4/4 2026. The established EEAP consists of five experts, four from Universities and Institutes abroad, and one student representative from Greece.

The EEAP received and considered the following supporting documents through the HAHE Panel-Accreditations online information platform (in the order they had been deposited):

M0_new_Περιεχόμενα.pdf
M1.1_new_Πολιτική_Ποιότητας.pdf
M1.2_new_Στοχοθεσία_Ποιότητας.pdf
M2.1_new_Απόφαση_Ίδρυσης.pdf
M2.2_Κανονισμός_Λειτουργίας.pdf
M2.3_Οδηγός_Σπουδών.pdf
M2.4_Περιγράμματα.pdf
M2.5_Κατάλογος_Διδασκόντων.pdf
M3.1_Αξιολόγηση_Φοιτητές.pdf
M3.2_new_Κανονισμός_Παραπόνων.pdf
M3.3_new_Κανονισμός_ΑΣΣ.pdf
M3.4_new_Διδασκαλία.pdf
M4.1_new_Κανονισμός_Έρευνας.pdf
M4.2_new_Κανονισμός_Σπουδών.pdf
M4.3_new_Κανονισμός_ΗλεκτΜαθ.pdf
M4.4_new_Διπλωμ_Παραρτ.pdf
M5.1_Επίδοση_Διδασκόντων.pdf
M5.2_Επιλογή_Διδασκόντων.pdf
M5.3_Κανονισμοί_Εργασίας.pdf
M5.4_Ανάπτυξη_Προσωπικού.pdf
M6.1_Υποδομές.pdf
M6.2_new_Δίδακτρα.pdf
M6.3_new_Βιωσιμότητα.pdf
M6.4_Επάρκεια.pdf
M6.5_Προσωπικό_Υποστήριξ.pdf
M6.6_Ενημερωτικό_Υλικό.pdf
M7.1_new_ΟΠΕΣΠ.pdf
M7.2_Ηλεκτρ_Γραμματεία.pdf
M7.3_new_Λοιπά_Εργαλεία.pdf
M7.4_Αποτελέσμ_Ανάλυσης.pdf
M8.1_new_Συντήρ_Ιστοσελίδας.pdf

M8.2_Ιστοσελίδα.pdf

M9.1_Αξιολόγηση_ΜΟΔΙΠ.pdf

M10.1_Έκθεση_προόδου.pdf

M1.0_Πρόταση_Πιστοποίησης.pdf

The assessment/accreditation process was carried out exclusively remotely using the Zoom platforms. All times indicated are Athens time. During the Zoom meetings, staff members from the University were prompt in providing us with the necessary information.

The scheduled agenda of the certification review was as follows:

30/03/2026

15:00-16:00 Private meeting of the EEAP to discuss first impressions from the PSP and to assign specific principles for each member

16:00-17:30 Meeting with the director of the PSP Professor Eleni Kaldoudi, MODIP President Professor Marirena Grigoriou and Head of Department Professor Konstantinos Vadikolias.

17:30-18:30 Scheduled Online tour of the facilities of the PSP in the form of a short introductory video which was already seen by the EEAP. Instead, the conversation with the PSP directors was extended.

02/04/2026

15:00-16:00 Meeting with the teaching staff of the PSP: Dr. Stylianos Didaskalou Post-Pod Researcher, DUTH Associated Researcher, ATHENA, Dr. Chairi Kiourt Principal Researcher, ATHENA, Dr. Vassilis Katsouros Research Director, ATHENA Director of Institute of Language Processing, ATHENA, Ass. Professor. Vassilis Papadopoulos, Department of Medicine, Democritus University of Thrace, Dr. Petros Pistofidis Associate Researcher, ATHENA, Dr. Georgios Alexios Ioannakis Principal Researcher, ATHENA, Dr. Ioannis Kavakiotis Associate Researcher, Aristotle University of Thessaloniki, Prof. Aliko Fiska, Department of Medicine, Democritus University of Thrace. Because this PSP is a cooperation between University of Thrace and Athena Institute full affiliations are shown.

16:00-17:00 Meeting with 4 social partners of the PSP

17:30-18:30 Meeting with 4 graduates of the PSP, all having finished in 2025 and all in various employments.

18:30-19:30 Meeting with 6 students of the PSP, all in their 2nd semester and of vary diverse academic backgrounds (biology, engineering, medicine, computer science).

20:00-20:30 Closure meeting with the director of the PSP Professor Eleni Kaldoudi, MODIP President Professor Marirena Grigoriou and Head of Department Professor Konstantinos Vadikolias.

The EEAP members would like to thank everybody involved for their positive spirit and their cooperation with the EEAP during the whole online accreditation procedure.

III. Postgraduate Study Programme Profile

The Democritus University of Thrace (DUTH) was founded in 1973 and began operating in 1974-1975 with the introduction of students in the Departments of Civil Engineering and Law. The university was named after the ancient Greek philosopher Democritus. The university has eight schools, 20 departments, and a variety of postgraduate programs, with a student body of around 29,000 and a faculty of over 700. Its research and teaching activities focus on a wide range of fields, including agriculture, health sciences, education, law, and engineering. The School of Health Sciences at DUTH includes the Departments of Medicine and Molecular Biology, and Genetics.

The Department of Medicine was founded in 1977 (L 641/1977) as “Medical School” and has first operated in the academic year 1984-1985 (L 573/1982) in Alexandroupolis, Thrace. Dealing with the difficulties due to its remote position from the center of Greece, it demonstrated an impressive development, with teaching Programs that fully correspond to current requirements of undergraduate education and high-level postgraduate Programs, participation in internationally recognized research projects, numerous scientific publications and the provision of high-quality health services provided to the population of the wider area.

With continuous efforts of scientific and technological improvement, it has become an attracting pole for prestigious scientists from Greece and abroad. Today, collaborations with domestic and foreign research and academic institutions and participation in funded research and innovative Programs are constantly increasing. The University Clinics and Laboratories organize a significant number of scientific events every year, with great impact in the scientific and the local community as well.

University Clinics established in the excellent infrastructure of the new University General Hospital in Alexandroupolis, provide high quality health services, as they are the only tertiary health center in the Thrace. In general, the Medical School of DUTH, contributes to the cultural and the intellectual life of the area as it ensures a valuable interaction with the local community.

The Department of Medicine of the School of Health Sciences of DUTH organizes and operates 26 postgraduate programmes all offering an MSc degree. The current PSP was initiated in 2022 and therefore is still a work in progress. It lasts for 3 semesters, offers 90 ECTS and it costs 2700 euros total. Surprisingly, this is a 25%-30% fast increase from its original price of 2000 euros. The goal of the programme is the provision of a high level of postgraduate education in Health Sciences and specifically the postgraduate specialization in the fields of Medical Informatics and Bioinformatics. It is a co-operation between two Institutions: the medical school at the DUTH and the ATHENA research centre which is a Research and Innovation Centre in Information, Communication and Knowledge Technologies. The first two semesters are taught courses, 11 in total, whereas the last semester is dedicated to research and writing of a thesis. Among course work there is significant emphasis on research methodologies, bioethics and innovation and entrepreneurship.

PART B: COMPLIANCE WITH THE PRINCIPLES

PRINCIPLE 1: QUALITY ASSURANCE POLICY AND QUALITY GOAL SETTING FOR THE POSTGRADUATE STUDY PROGRAMMES OF THE INSTITUTION AND THE ACADEMIC UNIT

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 THE POSTGRADUATE STUDY PROGRAMMES OF THE INSTITUTION AND THE ACADEMIC UNIT. THIS POLICY SHOULD BE PUBLISHED AND IMPLEMENTED BY ALL STAKEHOLDERS.

The quality assurance policy of the academic unit should be in line with the quality assurance policy of the Institution and must be formulated in the form of a public statement, which is implemented by all stakeholders. It focuses on the achievement of special goals related to the quality assurance of the study programmes offered by the academic unit.

Indicatively, 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 postgraduate study programme (PSP), its purpose and field of study; it will realise the programme's goals and it will determine the means and ways for attaining them; it will implement appropriate quality procedures, aiming at the programme's improvement.

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

- a) the suitability of the structure and organisation of postgraduate study programmes*
- b) the pursuit of learning outcomes and qualifications in accordance with the European and National Qualifications Framework for Higher Education - level 7*
- c) the promotion of the quality and effectiveness of teaching at the PSP*
- d) the appropriateness of the qualifications of the teaching staff for the PSP*
- e) the drafting, implementation, and review of specific annual quality goals for the improvement of the PSP*
- f) the level of demand for the graduates' qualifications in the labour market*
- g) the quality of support services, such as the administrative services, the libraries and the student welfare office for the PSP*
- h) the efficient utilisation of the financial resources of the PSP that may be drawn from tuition fees*
- i) the conduct of an annual review and audit of the quality assurance system of the PSP through the cooperation of the Internal Evaluation Group (IEG) with the Institution's Quality Assurance Unit (QAU)*

Documentation

- *Quality Assurance Policy of the PSP*
- *Quality goal setting of the PSP*

Study Programme Compliance

I. Findings

PSP is subject to the quality assurance policy of DUTH as implemented and monitored by the MODIP of the institution. The programme is one of 26 currently being offered by the DUTH, most of them strongly focused on medical fields but none related to rhinology.

There are clear statements from DUTH as well as the PSP relating to the procedures for ensuring that internal evaluation of the programme is designed to highlight features of good practice as well as those requiring further

improvement.

More specifically, the PSP ensures its quality control via the actions of the Steering committee, via course work sent and analysed via e-class, digital services of the DUTH following student progress and feedback, and by the overall digital monitoring system of MODIP.

There are also a large number of support facilities of the DUTH dealing with student counselling, equality and diversity office as well as career's office.

The PSP has been subjected to internal evaluation by MODIP on December 2024. Some comments for improvement related to the increase of the involvement of external stakeholders in the syllabus and an analysis of the comparative strengths and weaknesses of this programme in comparison to equivalent ones abroad.

The first two semesters of the programme are course work and some computer exercises whereas the last semester is dedicated to research and writing a thesis. Only 6 theses have been submitted which is to be expected owing to the young age of the PSP. Most are research-focused and not reviews.

II. Analysis

All Universities in Greece offer their own version of bioinformatics PSP, and in fact the biology programme of the DUTH also offers one. It is therefore a challenge to create an identity of this PSP so that it will be able to attract more students for a specific expertise or thematic area.

The PSP can take advantage of two facts as it establishes its identity: the connection with ATHENA which provides it with a significant amount of expertise in various aspects of computer science, and the proximity with the University hospital of Alexandroupolis with a very large number of patients and, according to its director that the EEAP met during the visit, very eager to be an integral part of the programme.

The EEAP applauds the policy of the PSP to offer courses every day, and in this way really establish that the students taking the programme are doing so on a full-time basis. At the same time, because the potential backgrounds and future interests of its students are quite varied the PSP could consider breaking up into two directions, more related to medicine and another related to computing during the second semester. This is a suggestion for the future as the PSP establish itself in the academic landscape of Greece.

The EEAP discussed during the concluding session the possibility of enhancing the visibility of the PSP via collaborations with prominent bioinformatics experts from abroad. In this context, some potential names will be provided to the director of the PSP in due course.

III. Conclusions

This is a PSP that cannot be characterized as unique because all Universities in Greece offer MSc degrees in Bioinformatics. It is therefore imperative as the programme finds its way in this landscape to also find an identity that will differentiate it and give it visibility. The connection with ATHENA, the strong desire of the University Hospital to be involved, and the appointment of some prominent bioinformaticians from abroad in an advisory role will all help towards this goal.

Panel Judgement

Principle 1: Quality assurance policy and quality goal setting for the postgraduate study programmes of the institution and the academic unit	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

Continue to discuss the identity of the programme as it matures

Consider the possibility of splitting into two directions (medical and computer-related) after the first semester.

Appoint some prominent bioinformaticians from abroad in an advisory role.

PRINCIPLE 2: DESIGN AND APPROVAL OF POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD DEVELOP THEIR POSTGRADUATE STUDY PROGRAMMES FOLLOWING A DEFINED WRITTEN PROCESS WHICH WILL INVOLVE THE PARTICIPANTS, INFORMATION SOURCES AND THE APPROVAL COMMITTEES FOR THE POSTGRADUATE STUDY PROGRAMMES. THE OBJECTIVES, THE EXPECTED LEARNING OUTCOMES AND THE EMPLOYMENT PROSPECTS ARE SET OUT IN THE PROGRAMME DESIGN. DURING THE IMPLEMENTATION OF THE POSTGRADUATE STUDY PROGRAMMES, THE DEGREE OF ACHIEVEMENT OF THE LEARNING OUTCOMES SHOULD BE ASSESSED. THE ABOVE DETAILS, AS WELL AS INFORMATION ON THE PROGRAMME'S STRUCTURE ARE PUBLISHED IN THE STUDENT GUIDE.

The academic units develop their postgraduate study programmes following a well-defined procedure. The academic profile and orientation of the programme, the research character, the scientific objectives, the specific subject areas, and specialisations are described at this stage.

The structure, content and organisation of courses and teaching methods should be oriented towards deepening knowledge and acquiring the corresponding skills to apply the said knowledge (e.g. course on research methodology, participation in research projects, thesis with a research component).

The expected learning outcomes must be determined based on the European and National Qualifications Framework (EQF, NQF), and the Dublin Descriptors for level 7. During the implementation of the programme, the degree of achievement of the expected learning outcomes and the feedback of the learning process must be assessed with the appropriate tools. For each learning outcome that is designed and made public, it is necessary that its evaluation criteria are also designed and made public.

In addition, the design of PSP must consider:

- *the Institutional strategy*
- *the active involvement of students*
- *the experience of external stakeholders from the labour market*
- *the anticipated student workload according to the European Credit Transfer and Accumulation System (ECTS) for level 7*
- *the option of providing work experience to students*
- *the linking of teaching and research*
- *the relevant regulatory framework and the official procedure for the approval of the PSP by the Institution*

The procedure of approval or revision of the programmes provides for the verification of compliance with the basic requirements of the Standards by the Institution's Quality Assurance Unit (QAU).

Documentation

- *Senate decision for the establishment of the PSP*
- *PSP curriculum structure: courses, course categories, ECTS awarded, expected learning outcomes according to the EQF, internship, mobility opportunities*
- *Labour market data regarding the employment of graduates, international experience in a relevant scientific field*
- *PSP Student Guide*
- *Course and thesis outlines*
- *Teaching staff (name list including of areas of specialisation, its relation to the courses taught, employment relationship, and teaching assignment in hours as well as other teaching commitments in hours)*

Study Programme Compliance

I. Findings

The Postgraduate Study Programme (PSP) in Biomedical Informatics is an interdisciplinary postgraduate programme delivered by the Department of Medicine of the Democritus University of Thrace in collaboration with the Research Centre ATHENA. The programme consists of three academic semesters corresponding to a total workload of 90 ECTS credits, including taught modules delivered during the first two semesters and a dissertation component scheduled in the third semester.

The programme admits graduates from a range of disciplines related to health sciences, biomedical sciences, engineering, and information technology, supporting a multidisciplinary learning environment. The student cohort typically includes graduates from medicine, biomedical sciences, informatics, and related fields, reflecting the interdisciplinary nature of biomedical informatics.

The programme enrolls a defined number of students annually (typically within the range expected for postgraduate programmes of similar scope), allowing interaction between students and faculty, although evidence indicates variability in progression and completion patterns among enrolled students.

The overall aim of the PSP is to provide specialised education and training in biomedical informatics, focusing on the application of information technologies to the analysis, management, and interpretation of biomedical data. Particular emphasis is placed on developing competencies in biomedical data processing, machine learning techniques, and computational approaches relevant to healthcare and biomedical research.

More specifically, the objectives of the programme include:

- Providing advanced theoretical knowledge in biomedical informatics principles and technologies
- Developing skills in computational analysis of biomedical and clinical data
- Supporting the application of machine learning and artificial intelligence methods in biomedical contexts
- Enabling graduates to understand biomedical data structures, sources, and analytical workflows
- Promoting interdisciplinary collaboration between health sciences and information sciences
- Supporting research literacy and the development of independent scientific investigation skills

The curriculum includes core modules covering biomedical data modelling, programming techniques, machine learning, bioinformatics, medical signal and image processing, biomedical text mining, and data privacy and security. These modules aim to provide a broad foundational knowledge base relevant to biomedical informatics and digital health applications.

II. Analysis

Despite the presence of appropriate foundational modules, the Panel identified important concerns regarding the balance, modernity, and depth of the curriculum as well as relevance to a medical school delivered course.

In particular: The curriculum appears broad but insufficiently specialised, with uneven coverage of key biomedical informatics domains.

There is limited structured exposure to modern and rapidly evolving areas, including:

- o Digital pathology and computational histopathology
- o Polygenic Risk Scores (PRS) and genomic risk modelling
- o Biobank informatics and large-scale biomedical repositories
- o Real-world health data analytics
- o Clinical data science and digital health infrastructure
- o Translational and population-level biomedical informatics

Furthermore, a significant structural concern identified by the Panel is the limited proportion of students completing a research dissertation. This weakens the research orientation expected for postgraduate programmes at Level 7.

The Panel also observed that:

- The linkage between coursework and research activity appears inconsistent
- Progression from foundational knowledge to advanced applications is not always clearly structured
- Opportunities for exposure to contemporary biomedical informatics workflows are limited
- The integration of emerging digital health technologies into the curriculum remains insufficient

These observations collectively indicate that although the programme has a structured design and defined objectives, its current implementation does not fully align with contemporary expectations for postgraduate biomedical informatics education.

III. Conclusions

The PSP has an established structure and includes relevant critical components in biomedical informatics. However, significant concerns exist regarding curriculum balance, dissertation completion and the integration of modern biomedical informatics domains.

A substantial curriculum refresh is required to enhance relevance, depth, and alignment with contemporary biomedical informatics practice.

Panel Judgement

Principle 2: Design and approval of postgraduate study programmes	
Fully compliant	
Substantially compliant	
Partially compliant	X
Non-compliant	

Panel Recommendations

Redesign the curriculum structure and introduce dedicated modules in emerging concepts in computational biomedicine

Enhance dissertation completion rate and introduce other measures of research exposure such as journal and poster presentations, journal clubs

Enhance research training through structured teaching in research methodology, data science workflows, and reproducible research practices.

Establish clearer progression pathways from introductory to advanced computational and biomedical informatics competencies.

PRINCIPLE 3: STUDENT-CENTRED LEARNING, TEACHING, AND ASSESSMENT

INSTITUTIONS SHOULD ENSURE THAT POSTGRADUATE STUDY PROGRAMMES PROVIDE THE NECESSARY CONDITIONS TO ENCOURAGE STUDENTS TO TAKE AN ACTIVE ROLE IN THE LEARNING PROCESS. THE ASSESSMENT METHODS SHOULD REFLECT THIS APPROACH.

Student-centred learning and teaching plays an important role in enhancing students' motivation, their self-evaluation, and their active participation 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 by adopting 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*
- *strengthens 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 the students' complaints*
- *provides counselling and guidance for the preparation of the thesis*

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.*
- *Assessment is consistent, fairly applied to all students and conducted in accordance with the stated procedures.*
- *A formal procedure for student appeals is in place.*
- *The function of the academic advisor runs smoothly.*

Documentation

- *Sample of a fully completed questionnaire for the evaluation of the PSP by the students*
- *Regulations for dealing with students' complaints and appeals*
- *Regulation for the function of academic advisor*
- *Reference to the teaching modes and assessment methods*

Study Programme Compliance

I. Findings

This PSP in biomedical informatics has as objective the specialized training and practice in information technologies as applied to the analysis of biomedical data, with an emphasis on machine learning and artificial intelligence.

This PSP requires students to complete 90 ECTS credits over the course of three semesters (60 ECTS the first two semesters on theoretical subjects and 30 ECTS on the third semester with the thesis work). The courses in which postgraduate

students are examined in each of the two semesters of study are the following: Biomedical Science: Data and Contemporary Needs, Modeling and Representation of Biomedical Data, Programming Techniques for the Processing and Analysis of Biomedical Data, Data security and privacy, academics skills, Retrieval and Mining of Biomedical Information from Text, Computational Analysis of Biomolecules, Processing and Analysis of Medical Images and signals, Machine Learning and Artificial Intelligence, Bioethics, Innovation and Entrepreneurship.

The third semester is dedicated to the thesis work which takes place remotely. The students are encouraged to present their work in conferences and eventually produce articles. The complete program courses are online mostly held in the afternoons given the fact that the PSP clearly targets students that have already a daytime job. There is a visit during the first two semesters in the university.

The operation of the DUTHNET eClass electronic distance learning platform of the School of Medicine of DUTH, for the use of synchronous and asynchronous distance education methods, serves the following purposes: posting course presentations and supporting digital material per semester of study; assignment of coursework per subject; creation of exercises; posting of announcements and informational updates related to the educational and teaching process; communication and information of postgraduate students via email. Student assessment examinations at the end of each semester are conducted remotely using digital evaluation methods.

The instructors and courses are evaluated each semester by students through anonymous questionnaires that are developed online on the relevant platform provided free of charge by the European Union, EUSurvey. The evaluation of instructors by postgraduate students is conducted regularly towards the end of the semester (8th–11th teaching week), in an anonymous manner, through the completion of course evaluation questionnaires by students. Upon completion of the evaluation process, statistical analysis of the questionnaires is carried out in order to produce aggregated results, with the aim of continuously improving the teaching work of the PSP.

The concept of the academic advisor exists but it is not totally clear how this is communicated to the students and whether all of the teaching staff participate in this role.

II. Analysis

This PSP at DUTH is a comprehensive program covering different aspects of biomedical informatics. It spans three semesters, requiring 90 ECTS credits, with a combination of compulsory courses, some limited practical sessions and thesis work in the third semester. The PSP is targeting medical graduates but also non-medical specialties (biologists, physicists, computer scientists). The proportion of medical graduates following this PSP seems to have been increasing over the past 4 years. This is really challenging given the fact that programming courses (eg. Python) may be difficult for medical doctors while some of the medically oriented courses may be difficult for the other categories of students. This aspect makes it also difficult to give a real identity on the course. From the discussion of the panel with the students and some graduates they seem to be able to follow all of the courses irrespective of their background, which is clearly encouraging. On the other side the number of graduates is very low and therefore it may be that

through the interviews the EEAP only saw a small part of the student population. The hybrid format where most of the courses are carried out online is highly appreciated by the students since most of them have already a daytime job. On the other side the small number of visits to the university clearly reduces the cohesion as a group. This was also mentioned during the interview of the panel with the students which would like to have the opportunity to meet more times during the first year of their studies. Assessment of the students is done through exams and assignments. A thesis is carried out in the last semester with clear definition of objectives and evaluation criteria. The rate of graduation seems extremely low (4 out of 9 in 2022, 0 out of 6 in 2023, 2 out of 12 in 2024). This is a clear issue, and the origin of this low graduation rate needs to be understood and addressed.

The concept of the academic advisor is present but clearly there seems to be a lack of details in terms of its role and associated implementation. Similarly, there seems to be a confusion between the role of the academic advisor and the PSP coordinator. Most of the teaching staff need to assume the role of academic advisor for a few students. There seems to be a satisfactory level of communication between the PSP coordinator and the students in terms of thesis subjects but there is a clear need to improve the rate of graduation in addition to reducing the number of literature reviews (including meta-analysis) subjects by increasing their research component. There is clear potential to further engage stakeholders such as the local university hospital as a source of data and thesis subjects.

There is a system in place for the evaluation of the teaching staff. Questionnaires include the assessment of the following items:

- Technical and administrative organization (scale responses: 1–5)
- Quality of teaching per instructor (scale responses: 1–5)
- Expression of overall evaluation of the positive and negative aspects of the session

All responses were above 4 except for the Innovation and Entrepreneurship course. This has now been dropped and replaced by a course on emphasis on competitive funding and preparation for professional career development.

A clear procedure for students' complaints is in place through the DUTH general rules but needs to be better communicated to the students at the beginning of their studies.

III. Conclusions

This PSP is open to both medical doctors and other specialty scientists with a curriculum in biomedical informatics. Although this may be considered as a positive aspect, the low graduation rate is a warning sign and could be related to the lack of a real identity of this course in terms of student population and corresponding curriculum. Although distant teaching is appreciated by the students who in their majority are already working full time, efforts need to be made to improve the cohesion of the group. There is an adequate assessment of the students through projects and examinations. To fully explore this advantage an Increase in the number of practical sessions should be considered.

The level of graduation is extremely low (<25%) and therefore efforts need to be made to improve this. A closer relation between the academic advisor and the

students may help towards this objective. The role of the academic advisor needs to be more explicitly defined to the students at the beginning of their studies and most of the teaching staff need to be involved in this role. More effort needs to be given to the research component of the PSP and closer interactions with the stakeholders. Such actions will improve also the research component of the students' theses. There are clear procedures in place to ensure that students are evaluating the curriculum and the teaching staff but actions need to be taken to ensure a high rate of student's response to the corresponding questionnaires.

Panel Judgement

Principle 3: Student-centred learning, teaching, and assessment	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

A clear definition of the academic advisor and their role. Encourage most teaching staff to assume this role.

Improve counselling in the thesis subject definition with the objective of improving the graduation rates and enhancing the research component

Ensure that the rate of students' response to the curriculum, teaching staff and practical sessions' evaluation questionnaires is high in order to draw credible conclusions

Investigate the reasons behind the very low graduation rates to ensure that corrective action is taken sooner rather than later

PRINCIPLE 4: STUDENT ADMISSION, PROGRESSION, RECOGNITION OF POSTGRADUATE STUDIES, AND CERTIFICATION.

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

All the issues from the beginning to the end of studies should be governed by the internal regulations of the academic units. Indicatively:

- *the student admission procedures and the required supporting documents*
- *student rights and obligations, and monitoring of student progression*
- *internship issues, if applicable, and granting of scholarships*
- *the procedures and terms for the drafting of assignments and the thesis*
- *the procedure of award and recognition of degrees, the duration of studies, the conditions for progression and for the assurance of the progress of students in their studies*
- *the terms and conditions for enhancing student mobility*

All the above must be made public in the context of the Student Guide.

Documentation

- *Internal regulation for the operation of the Postgraduate Study Programme*
- *Research Ethics Regulation*
- *Regulation of studies, internship, mobility, and student assignments*
- *Degree certificate template*

Study Programme Compliance

I. Findings

The PSP was established in 2022 and has a 3-semester duration (30 ECTS per semester) with tuition fees of 2700 euros. Scholarships are awarded to 3 students per year based on objective criteria of excellence. Admission to the programme is conducted transparently and objectively, in accordance with the Department's official announcement of available positions. Most announcements appear on the program's website, in both Greek and English, which are very up to date.

The selection of applicants is based on their degree grade, detailed grades in undergraduate courses relevant to the master's program, performance on the thesis, proficiency in English, and other foreign languages, research or professional activity relevant to the subject area of the M.Sc. program, publications and writing activity, academic awards and relevant distinctions in academic competitions, and interview by the Admissions Selection Committee.

The programme admits a maximum of 40 students every year. Applications are open to graduates in Medicine, Molecular Biology and Genetics, Biochemistry and Biotechnology, Biology, Biological Applications and Technologies, Computer Science, Electrical Engineering and Computer Engineering, Industrial Engineering and Management, and Environmental Engineering.

Lectures and academic activities are delivered online every afternoon. At the end of each of the two semesters, students travel to Alexandroupoli for the exams and hands-on lessons and seminars. Attendance at all lectures is compulsory. A compulsory research master's thesis is included during the third semester.

Students are evaluated with oral presentations, exams, and multiple-choice tests at the end of each semester. At the same time, students complete assignments in certain courses during the semester.

Erasmus+ mobility and Erasmus+ internships are not widespread in this programme.

After finishing their studies, students receive a diploma certificate in both Greek and English that reflects their academic accomplishments. This document can be used for continuing education or to pursue future career opportunities.

At the same time, many students may need twice as long as the master's program's actual duration to complete their thesis.

The meeting with current and past students left the impression that the communication between students and staff is excellent. The panel had a very positive impression of the quality and level of courses given by the faculty of this PSP. Students admitted that both biomedicine and informatics were taught from the very beginning, so that all students could follow along.

II. Analysis

The PSP “Biomedicine Informatics” concerns a rapidly growing field of modern science that combines life sciences and research with computer science and programming.

Although most students are already working, lectures are held every day, which is a very positive observation made by the committee.

The length of PSP studies (3 semesters) is appropriate. The panel believes that both Greek and English websites are modernized and updated.

The courses are delivered in Greek. Both students and graduates highlighted the importance of the seminars given in English by foreign tutors.

Student mobility through Erasmus+ and Erasmus+ Traineeships is not highly encouraged in this PSP.

Although the PSP is at its beginning, low graduation rates are a concern.

III. Conclusions

The PSP provides an excellent opportunity for research and advanced study in bioinformatics for professionals seeking to enhance their academic qualifications and career prospects. Students reported high levels of satisfaction with the programme, the teaching staff, the knowledge gained, and the professional advantages it offers. However, the panel considers that the long delay in completing the thesis is an issue to be considered.

Panel Judgement

Principle 4: Student admission, progression, recognition of postgraduate studies and certification	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

The long delay in completing the thesis is an issue to be considered.
The panel suggests encouraging Erasmus mobility.

PRINCIPLE 5: TEACHING STAFF OF POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD ASSURE THEMSELVES OF THE LEVEL OF KNOWLEDGE AND SKILLS OF THEIR TEACHING STAFF, AND APPLY FAIR AND TRANSPARENT PROCESSES FOR THEIR RECRUITMENT, TRAINING AND FURTHER DEVELOPMENT.

The Institution should attend to the adequacy of the teaching staff of the academic unit teaching at the PSP, the appropriate staff-student ratio, the appropriate staff categories, the appropriate subject areas, the fair and objective recruitment process, the high research performance, the training-development, the staff development policy (including participation in mobility schemes, conferences, and educational leaves-as mandated by law).

More specifically, the academic unit should set up and follow clear, transparent and fair processes for the recruitment of properly qualified staff for the PSP and offer them conditions of employment that recognise 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 (with respect to attendance requirements, performance, self-assessment, training, etc.); develop policies to attract highly qualified academic staff.

Documentation

- *Procedures and criteria for teaching staff recruitment*
- *Employment regulations or contracts, and obligations of the teaching staff*
- *Policy for staff support and development*
- *Individual performance of the teaching staff in scientific-research and teaching work, based on internationally recognised systems of scientific evaluation (e.g. Google Scholar, Scopus, etc.)*
- *List of teaching staff including subject areas, employment relationship, Institution of origin, Department of origin*

Study Programme Compliance

I. Findings

On the submitted documents the total number of teaching faculty are 8 members from DUTH and 6 members from the research structure ATHENA. 8 others are mentioned but no details are given with respect to the number of courses they cover. For comparison purposes the total number of students in the current year is 12. In any case the number of teaching staff seems sufficient with respect to the number of subjects covered but also in terms of the number of students. Overall, the teaching staff are well qualified and suitably specialized to carry out teaching and research in the subject matter of the program. The teaching load seems acceptable.

The evaluation of candidates for faculty positions considers their research output, teaching experience, and professional work. Assessment is based on minimum criteria set by the Senate, along with additional indicators such as journal impact, authorship position, citations, and collaboration metrics. Teaching ability is evaluated through trial lectures conducted before the selection process. These lectures are attended by students, faculty members, and the selection committee. The evaluation procedures are governed by institutional regulations in line with national legislation. All election and promotion processes are carried out through the APELLA electronic system to ensure transparency.

The academic unit supports high-quality research by enabling staff at all levels to participate in national and international research programs. Faculty are strongly encouraged to develop and submit proposals to competitive funding schemes. Support is provided by ELKE during both the submission and implementation phases of research projects.

Research activity is a key criterion in evaluations for promotion to higher academic ranks. This serves as a strong incentive for continuous personal and professional development. Faculty members produce a substantial body of research, disseminated through journals, conferences, and books. Most of this work is published in peer-reviewed journals and presented at reviewed scientific conferences, ensuring its quality. The Institution also supports staff mobility by covering part of the travel and accommodation costs for conference participation on an annual basis.

At DUTH, various opportunities support the professional and scientific development of teaching staff. These include educational leave of varying duration, depending on years of service. Such leave enables faculty to teach or work at universities abroad. These leaves are planned annually to ensure compliance with the institution's approved budget. The DUTH, aiming to recognize teaching excellence, promote student-centered learning methods, and enhance the quality of teaching within the broader academic community, awards every two years a prize for outstanding teaching to active teaching staff of the university. The goal is to recognize teaching excellence, encourage the adoption of student-centered learning methods, and improve the quality of teaching across the wider academic community.

II. Analysis

The faculty involved in the program are experienced in the different specialties appropriately covering the different subjects in this PSP. The number of faculty members is appropriate in terms of the subjects covered, the number of students and the teaching load is appropriate and not overwhelming. The number of invited members from international institutions is extremely limited and should be largely increased. These invited lecturers should also include some appropriate members from industry. The publication record of most of the faculty members is good but not excellent. This is very strange given the success of obtaining funding from EU projects, particularly for the members of the faculty related to ATHENA. Efforts need to be made to increase the publication record of the faculty and staff. At the same time the number of research-oriented theses for the students need to be increased. Finally, the faculty members should engage more with the students within the role of academic advisor but also in terms of thesis supervision.

III. Conclusions

As far as the DUTH faculty members are concerned there are appropriate procedures in place for the competitive recruitment of the faculty members of this PSP. The experience and number of members of the faculty is appropriate with respect to the subjects covered by this PSP. There is a need to increase the participation of international experts as lecturers on the course. Most of the faculty members should increase their publications' record. They should also

engage more with the students within the role of academic advisor and thesis supervision. Finally stronger engagement with the stakeholders of the PSP is necessary.

Panel Judgement

Principle 5: Teaching staff of postgraduate study programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

Increase the participation of international external lecturers
Most faculty members need to improve their publication record
Increase the research oriented theses for the students

PRINCIPLE 6: LEARNING RESOURCES AND STUDENT SUPPORT

INSTITUTIONS SHOULD HAVE ADEQUATE FUNDING TO COVER THE TEACHING AND LEARNING NEEDS OF THE POSTGRADUATE STUDY PROGRAMME. 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, CAREER AND SOCIAL POLICY SERVICES ETC.).

Institutions and their academic units must have sufficient resources and means, on a planned and long-term basis, to support learning and academic activity in general, so as to offer PSP students the best possible level of studies. The above means include facilities such as the necessary general and more specialised libraries and possibilities for access to electronic databases, study rooms, educational and scientific equipment, IT and communication services, support and 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 students, students with disabilities), in addition to 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 proves -on the one hand- the quantity and quality of the available facilities and services, and -on the other hand- that students are aware of all available services.

In delivering support services, the role of support and administration staff is crucial and therefore this segment of staff needs to be qualified and have opportunities to develop its competences.

Documentation

- Detailed description of the infrastructure and services made available by the Institution to the academic unit for the PSP, to support learning and academic activity (human resources, infrastructure, services, etc.) and the corresponding firm commitment of the Institution to financially cover these infrastructure-services from state or other resources
- Administrative support staff of the PSP (job descriptions, qualifications and responsibilities)
- Informative / promotional material given to students with reference to the available services
- Tuition utilisation plan (if applicable)

Study Programme Compliance

I. Findings

Funding for this PSP comes from the tuition fees and covers primarily teaching staff salaries (30%), administrative and technical support salaries (13%), travel expenses for instructors for teaching and professional development (12%), expenses for equipment and logistical infrastructure (20%), other operating expenses, mainly communication and publicity costs (20%) and scholarships (5%). The PSP is part of a larger University Department, and this is helpful in the effort to find some additional resources from the overall resources and equipment of the Department.

Students are supported by a wide range of educational resources, including curriculum-specific digital materials and updated electronic library databases. Teaching is mainly delivered online. At the end of each semester, students have

in-person exams, seminars, and hands-on courses.

Moreover, students are thoroughly informed about the infrastructure, services, and support mechanisms available to them. They receive explicit guidance on how to navigate these resources throughout their studies.

PSP students also benefit from a range of additional resources, including access to departmental facilities for practical training, support from the secretariat, and the use of hospital patient data for their thesis.

The Programme is supported by experienced and well-trained staff who contribute significantly to both its academic and research activities. Their duties extend from managing student enrolment procedures to offering academic advising and ensuring comprehensive administrative assistance for both students and faculty members.

The absence of Academic Advisor is an issue to be considered.

II. Analysis

The PSP benefits from well-developed and high-standard infrastructure, while student support throughout the duration of studies is considered outstanding. Students have access to a broad range of institutional services, including the Academic Identity card, digital platforms, counselling support, the Student Ombudsman, the Foreign Language Teaching Center, cultural student activities, and services dedicated to students with disabilities.

Although feedback from both current students and alumni indicates that communication with faculty members is excellent, an alumni association should be established.

The evidence reviewed by the panel demonstrates that students clearly understand PSPs academic requirements, as well as their career prospects upon graduation.

III. Conclusions

Overall, the Program “Biomedical Informatics” promotes student academic and professional growth and supports both students and the faculty throughout the teaching and learning process.

Panel Judgement

Principle 6: Learning resources and student support	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

Panel suggests creating an alumni association.

The panel believes that having an academic advisor for each student would elevate the learning experience.

PRINCIPLE 7: INFORMATION MANAGEMENT

INSTITUTIONS BEAR FULL RESPONSIBILITY FOR COLLECTING, ANALYSING AND USING INFORMATION, AIMED AT THE EFFICIENT MANAGEMENT OF POSTGRADUATE STUDY PROGRAMMES 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.

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

The information collected 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 programmes*
- *availability of learning resources and student support*

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

Documentation

- *Report from the National Information System for Quality Assurance in Higher Education (NISQA) at the level of the Institution, the department, and the PSP*
- *Operation of an information management system for the collection of administrative data for the implementation of the PSP (Students' Record)*
- *Other tools and procedures designed to collect data on the academic and administrative functions of the academic unit and the PSP*

Study Programme Compliance

I. Findings

The EEAP conducted a thorough assessment of the documents delivered by the HAHE of the information management policy of the MSc program in “Biomedical Informatics” at the medical department of DUTH. The Department of Medicine implements procedures for collecting information on:

- Student evaluations of teaching via electronic surveys and teaching reports (MO.DIP DUTH); Integrated Information System (OIS) of MO.DIP DUTH
- Students and the MSc program (e.g., grades, number of active students) via the Electronic Registry System (Universis)
- Infrastructure (equipment, buildings) via records from Department Heads and Technical Services
- Research projects and funding via data extraction from resCom (Research Project Management System, ELKE-DUTH)
 - Student welfare data via the Academic Affairs Directorate (D.A.STA.)
 - Service delivery data via the Student Ombudsman, D.A.STA., Library, Information Center, Counseling & Psychological Support Unit, etc.
 - National Integrated Quality System (OPESPA) of EOAAE

The OMEA (Academic Evaluation Committee) collects, processes, and uses data to improve teaching and research. Key indicators include the number of scientific publications and citations per year by faculty (DEP/EDIP), Student evaluation data used to assess teaching quality, and data analyzed and reported to the Department's General Assembly. The communication channels are the Official Website of the MSc program, the Study Guide available in Greek, and partly in English. E-Learning materials, such as course materials, are stored in Dropbox with access only to enrolled students. Continuous Monitoring & Periodic Internal Evaluation(annual) is conducted in collaboration with MO.DIP DUTH and the Internal Quality Assurance System (IQAS).

II. Analysis

The digital system systematically collects and evaluates data on students, faculty, and course delivery through standardized forms, aiming for evidence-based decision-making, curriculum refinement, and transparent communication.

The information management system of the PSP is well-structured, functional, and internally robust, meeting many Level 7 criteria. However, it falls short in public transparency, international benchmarking, and research integration, key features of Level 7. To fully align with the European and National Qualifications Framework, the programme must publish key performance data, integrate research metrics, engage external evaluators, and adopt international best practices in data openness and accountability. In particular, the following lacks have been identified.

The current system, while technically robust, lacks essential components of modern digital learning ecosystems. Key weaknesses include the absence of e-portfolios, digital badges, public dashboards, and accessibility compliance (WCAG), which limit lifelong learning, international recognition, transparency, and inclusivity. Additionally, the lack of Erasmus+ tracking, alumni feedback, and employer input hinders the assessment of long-term impact and internationalization efforts. These gaps collectively undermine the system's ability to support equitable, measurable, and globally recognized learning outcomes. While the system is comprehensive, there is no mention of benchmarking against international MSc programmes in other European countries in terms of data transparency, student support, or research integration.

Moreover, although data are collected and used internally, the public-facing website does not display key performance indicators (e.g., graduate employment rates, research output, student satisfaction scores), which are standard in top-tier international programmes. Finally, the programme depends heavily on internal evaluation and self-reporting, with limited use of external feedback (e.g., from employers, alumni networks, or international peer reviews). Additional limitations include a lack of transparency in the information management system, as data on graduate outcomes, stakeholder engagement, and centralized initiatives—such as collaborations with international programs—are collected and assessed without clear visibility. Furthermore, the system's limited international reach reduces its global impact and visibility.

III. Conclusions

The PSP's information management system is technically sound and supports effective internal evaluation, but it falls short in public transparency, international benchmarking, and integration with global learning standards. The absence of e-portfolios, digital badges, public dashboards, and accessibility compliance limits its ability to support inclusive, lifelong, and internationally recognized learning. Without external validation, public performance data, or engagement with alumni and employers, the program's long-term impact and global competitiveness remain difficult to assess.

Panel Judgement

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

Panel Recommendations

Develop and implement public-facing dashboards to display key performance indicators (e.g., graduate employment rates, student satisfaction, research output) in alignment with European and national quality frameworks.

Introduce digital credentials such as e-portfolios and micro-credentials to enhance student recognition, lifelong learning, and international mobility.

Establish an e-learning module (Interface) to enhance intensive contact between the students.

Establish formal mechanisms for collecting and integrating feedback from alumni, employers, and international peers to strengthen program evaluation and relevance.

Ensure full compliance with WCAG accessibility standards and integrate Erasmus+ and international mobility tracking to enhance inclusivity and global engagement.

Benchmark against leading European MSc programmes by comparing practices in transparency, student support, and research integration with top international programmes.

PRINCIPLE 8: PUBLIC INFORMATION CONCERNING THE POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS SHOULD PUBLISH INFORMATION ABOUT THEIR TEACHING AND ACADEMIC ACTIVITIES RELATED TO THE POSTGRADUATE STUDY PROGRAMMES IN A DIRECT AND READILY ACCESSIBLE WAY. THE RELEVANT INFORMATION SHOULD BE UP-TO-DATE, OBJECTIVE AND CLEAR.

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

Therefore, Institutions and their academic units must provide information about their activities, including the PSP they offer, the intended learning outcomes, the degrees awarded, the teaching, learning and assessment procedures applied, the pass rates, and the learning opportunities available to their students. Information is also provided on the employment perspectives of PSP graduates.

Documentation

- *Dedicated segment on the website of the department for the promotion of the PSP*
- *Bilingual version of the PSP website with complete, clear and objective information*
- *Provision for website maintenance and updating*

Study Programme Compliance

I. Findings

The EEAP conducted a thorough assessment of the public information policy of the MSc program on the content and structure of its official website: <https://bmi.med.duth.gr/>

The website is available in Greek and in English. The PSP provides a documentation outlining the programme's structure, duration, objectives, and other essential elements required for a robust MSc offering. All key information of the programme's internal quality assurance framework is available. The website is well-integrated within the Faculty of Medicine and linked to relevant departments and schools across DUTH, facilitating access to additional resources such as library services, study guides, and other academic support systems. All key components of the programme's internal quality assurance framework are transparently available. This includes official regulations on student conduct, academic advising, research ethics, study regulations, mobility, internships, thesis preparation, and a fully detailed curriculum with clear pathways and course structures. Communication with students is effective and well-structured, with course content and administrative information readily accessible via email and the programme's online platform.

II. Analysis

The website provides a functional overview of the program. While the program offers a modern curriculum and research focus, its public-facing materials could be improved in several ways such as course syllabi in both Greek and English, international mobility opportunities and graduate's testimony and career progression.

III. Conclusions

The DUTH MSc in Biomedical Informatics presents a modern and research-oriented curriculum, but its public information needs to be improved for full compliance with Bologna/ESG standards, and stakeholder trust.

Panel Judgement

Principle 8: Public information concerning the postgraduate study programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

As the PSP matures, these are some items that could be included in public information documents including the website:

Publish downloadable course syllabi in both Greek and English, including learning outcomes, ECTS credits, workload, and assessment methods.

Clarify admission requirements by specifying required programming languages (e.g., Python), statistical tools (e.g., R), mathematical prerequisites, and minimum GPA.

Develop and publish measurable, course-specific learning outcomes aligned with EQF Level 7 and the Bologna framework.

Provide detailed descriptions of the research project, including scope, methodology, supervision model, and expected deliverables.

Release annual graduate outcomes data, including employment rates, sectoral placement, and PhD progression.

Promote career support services, internships, and industry partnerships (e.g., with hospitals, biotech firms) on the program website.

Highlight international mobility opportunities, such as Erasmus+ exchanges and research collaborations, to enhance global engagement.

Feature student testimonials, alumni profiles, and success to build trust and program visibility.

PRINCIPLE 9: ON-GOING MONITORING AND PERIODIC INTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES

INSTITUTIONS AND ACADEMIC UNITS SHOULD HAVE IN PLACE AN INTERNAL QUALITY ASSURANCE SYSTEM FOR THE AUDIT AND ANNUAL INTERNAL REVIEW OF THEIR POSTGRADUATE STUDY PROGRAMMES, SO AS TO ACHIEVE THE OBJECTIVES SET FOR THEM, THROUGH MONITORING AND POSSIBLE AMENDMENTS, WITH A VIEW TO CONTINUOUS IMPROVEMENT. ANY ACTIONS TAKEN IN THE ABOVE CONTEXT SHOULD BE COMMUNICATED TO ALL PARTIES CONCERNED.

The regular monitoring, review, and revision of postgraduate study programmes aim at maintaining the level of educational provision and creating a supportive and effective learning environment for students.

The above comprise the evaluation of:

- a) the content of the programme in the light of the latest research in the given discipline, thus ensuring that the PSP is up to date*
- b) the changing needs of society*
- c) the students' workload, progression and completion of the postgraduate studies*
- d) the effectiveness of the procedures for the assessment of students*
- e) the students' expectations, needs and satisfaction in relation to the programme*
- f) the learning environment, support services, and their fitness for purpose for the PSP in question*

Postgraduate study 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.

Documentation

- *Procedure for the re-evaluation, redefinition and updating of the PSP curriculum*
- *Procedure for mitigating weaknesses and upgrading the structure of the PSP and the learning process*
- *Feedback processes concerning the strategy and quality goal setting of the PSP and relevant decision-making processes (students, external stakeholders)*
- *Results of the annual internal evaluation of the PSP by the Quality Assurance Unit (QAU), and the relevant minutes*

Study Programme Compliance

I. Findings

The Postgraduate Study Programme (PSP) in Biomedical Informatics operates within the institutional Internal Quality Assurance System (IQAS) of the Democritus University of Thrace. The programme participates in established institutional procedures for internal evaluation, including the annual collection of data related to student enrolment, progression, course delivery, and academic outcomes. These processes are coordinated in collaboration with the Institutional Quality Assurance Unit (MODIP), and annual evaluation reports are submitted as part of the institutional monitoring framework.

Student feedback is systematically collected through course evaluation questionnaires, and the results are discussed within the Programme Committee. Evidence indicates that the Programme utilises feedback mechanisms to monitor aspects of teaching delivery and administrative processes. In addition, meetings of

the Programme Committee provide a forum for discussing operational issues, curriculum implementation, and potential improvements.

Despite the existence of these formal mechanisms, the Panel observed that the operational effectiveness of monitoring processes in driving substantive academic improvements appears limited. In particular, the available evidence suggests that certain important structural issues affecting the programme have persisted over time without sufficient corrective action.

One of the most significant concerns relates to the limited proportion of students completing a full research dissertation, despite the formal inclusion of a thesis component within the third semester of the programme, which represents a core element of postgraduate education at Level 7 and is essential for the development of research literacy and analytical independence. The persistence of low dissertation completion rates suggests that monitoring data may not be systematically analysed or effectively used to inform programme-level decisions. Furthermore, the Panel observed that structured mechanisms for evaluating the relevance and currency of programme content appear insufficiently developed. There was limited evidence of systematic benchmarking against comparable international programmes or of structured engagement with external stakeholders from academia, healthcare, or industry to inform curriculum renewal. Given the rapid evolution of biomedical informatics as a discipline, the absence of robust forward-looking curriculum review mechanisms represents a notable weakness.

The Panel also noted variability in student progression patterns and outcomes, suggesting that longitudinal data monitoring may not yet be fully integrated into programme improvement strategies. While data collection processes are in place, the translation of these data into targeted corrective actions appears inconsistent. In particular, the lack of systematic intervention strategies to improve thesis engagement and completion highlights a gap between monitoring activities and academic enhancement.

Overall, while the programme demonstrates compliance with the formal requirements of institutional quality assurance processes, evidence suggests that internal monitoring activities are currently more procedural than developmental, with limited demonstrable impact on curriculum modernisation, research engagement, or programme balance.

II. Analysis

The existence of institutional monitoring procedures provides an appropriate structural foundation for programme quality assurance. However, the effectiveness of these processes depends on their ability to produce measurable academic improvements and to respond proactively to identified weaknesses.

In the case of the Biomedical Informatics PSP, several persistent structural issues — including curriculum imbalance, limited integration of emerging biomedical informatics domains, and reduced levels of dissertation engagement — indicate that existing monitoring mechanisms are not yet functioning at the level expected

for a postgraduate programme operating within a rapidly evolving scientific field. The limited evidence of systematic benchmarking against international standards further constrains the programme's ability to remain aligned with contemporary developments. Biomedical informatics is characterised by rapid technological advancement, and programmes in this field require continuous updating of content and delivery methods to maintain relevance.

The absence of clearly documented corrective cycles linking evaluation findings to implemented changes also reduces transparency in the programme's quality enhancement processes. Effective internal evaluation should result in demonstrable academic modifications, measurable improvements in student outcomes, and periodic curriculum renewal based on evidence-based decision-making.

Strengthening the analytical use of monitoring data, formalising external stakeholder engagement, and introducing structured curriculum renewal cycles would significantly enhance the effectiveness of the programme's internal evaluation system.

III. Conclusions

The Programme operates within the institutional quality assurance framework and demonstrates the presence of formal mechanisms for annual monitoring and internal evaluation. Student feedback is collected, and routine reporting processes are implemented in collaboration with the Institutional Quality Assurance Unit (MODIP). However, the EEAP identified that existing evaluation processes are not yet functioning as effective drivers of programme development. Overall, while the formal structure of internal monitoring is in place, its operational effectiveness in supporting continuous academic enhancement remains limited. Strengthening the systematic use of evaluation data to inform curriculum renewal, research engagement, and programme balance will be essential for achieving sustained quality improvement.

Panel Judgement

Principle 9: On-going monitoring and periodic internal evaluation of postgraduate study programmes	
Fully compliant	
Substantially compliant	
Partially compliant	X
Non-compliant	

Panel Recommendations

Strengthen monitoring of thesis engagement and completion, including systematic tracking of dissertation progression, identification of barriers to completion, and implementation of targeted supervisory and structural support mechanisms.

Establish structured curriculum review cycles that explicitly incorporate emerging areas of biomedical informatics, including digital pathology, polygenic risk scoring, biobank analytics, and large-scale health data science.

Enhance the analytical use of programme-level data, ensuring that evaluation findings lead to documented corrective actions, measurable improvements, and periodic curriculum updates.

Formalise systematic external benchmarking and stakeholder engagement, including consultation with academic, healthcare, and industry experts to ensure alignment with current international standards and workforce needs.

PRINCIPLE 10: REGULAR EXTERNAL EVALUATION OF POSTGRADUATE STUDY PROGRAMMES

THE POSTGRADUATE STUDY PROGRAMMES SHOULD REGULARLY UNDERGO EVALUATION BY PANELS OF EXTERNAL EXPERTS SET BY HAHE, AIMING AT ACCREDITATION. THE TERM OF VALIDITY OF THE ACCREDITATION IS DETERMINED BY HAHE.

HAHE is responsible for administrating the PSP accreditation process which is realised as an external evaluation procedure, and implemented by panels of independent experts. HAHE grants accreditation of programmes, based on the Reports delivered by the panels of external experts, with a specific term of validity, following to which, revision is required. The quality accreditation of the PSP acts as a means for the determination of the degree of compliance of the programme to the Standards, and as a catalyst for improvement, while opening new perspectives towards the international standing of the awarded degrees. Both academic units and Institutions must consistently consider the conclusions and the recommendations submitted by the panels of experts for the continuous improvement of the programme.

Documentation

- Progress report of the PSP in question, on the results from the utilisation of possible recommendations included in the External Evaluation Report of the Institution, and in the IQAS Accreditation Report, with relation to the postgraduate study programmes

Study Programme Compliance

I. Findings

This is the first time that the HAHE evaluates the PSP Biomedical informatics at the DUTH by panels of external experts set by HAHE. In the following report, the EEAP evaluated the progress made based on recommendations from the external evaluation of DUTH and its QMS certification, both conducted by international expert committees in 2015 and 2018, respectively. The resulting reports were automatically published on DUTH's official and MODIP websites. MODIP recorded all recommendations and implemented corrective actions, documenting them in the progress report. The action plan, approved in February 2021, was monitored through decisions, reminders, and best practice dissemination. The final Internal Quality Assurance System Monitoring Report was endorsed by MODIP and validated by the National Authority for Higher Education (HAHE) in late 2021.

II. Analysis

From the 2016 External Evaluation, key recommendations included strengthening data management and expanding multilingual curricula and resources to support internationalization, fostering a culture of excellence in teaching and research across all departments, and enhancing infrastructure, student services, and partnerships with industry and other universities. The 2018 QMS Certification emphasized the need for clearer student involvement in educational improvement, the provision of an accessible English version of the university's central and faculty websites, greater use of English in teaching and research activities, and improved interdepartmental collaboration, particularly important given the institution's presence across four campuses.

The QMS Certification Report (November 2018) from MODIP emphasized the need to clearly define student involvement in educational improvement, ensure an accessible English version of the university's central website and faculty pages, strengthen the use of English in teaching and research seminars, and enhance interdepartmental collaboration, particularly important given DUTH's presence across four campuses. These recommendations aim to improve transparency,

internationalization, and academic coordination.

The MODIP has responded to key recommendations from external evaluation and the 2018 Internal Quality Assurance System certification by developing an English-language program website and materials, awarding scholarships, supporting faculty international engagement, acquiring research equipment, implementing student evaluation questionnaires, and establishing a joint program with Athens University of Applied Sciences to foster interdepartmental collaboration. These actions have strengthened internationalization through English-language instruction and thesis options, improved quality assurance, and enhanced student involvement. The program Biomedical informatics demonstrates partial alignment with European MSc standards, particularly in quality assurance, internationalization, and responsiveness to institutional evaluations, with notable strengths in English-language delivery, student feedback mechanisms and inter-institutional cooperation. However, full compliance remains unmet due to critical gaps as discussed here.

III. Conclusions

MODIP has made meaningful progress in aligning with European MSc standards through enhanced internationalization, improved quality assurance, and strengthened stakeholder engagement, as evidenced by its response to prior evaluation. The program meets the European MSc benchmarks partially. To achieve full compliance with European standards, action is required from MODIP and HAHE to become a more competitive and internationally recognized MSc program.

Panel Judgement

Principle 10: Regular external evaluation of postgraduate study programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

Develop and publish formal learning outcomes aligned with EQF Level 7 and the Bologna learning outcomes framework.

Apply for EUR-ACE or similar international accreditation.

Establish a student representative body in the Program Committee.

Introduce career development workshops and industry partnerships.

Implement an alumni tracking system and publish graduate outcomes.

Publish a detailed ECTS handbook with workload, assessment, and credit distribution.

PART C: CONCLUSIONS

I. Features of Good Practice

The EEAP applauds the policy of the PSP to offer courses every day, and in this way really establish that the students taking the programme are doing so on a full-time basis.

The connection with ATHENA and the strong desire of the University Hospital to be involved in the programme are all positive indicators going forward

The length of PSP studies (3 semesters) is appropriate. The panel believes that both Greek and English websites are modernized and updated.

Students reported high levels of satisfaction with the programme, the teaching staff, the knowledge gained, and the professional advantages it offers.

The faculty involved in the program are experienced in the different specialties appropriately covering the different subjects in this PSP.

The number of faculty members is appropriate in terms of the subjects covered, the number of students and the teaching load is appropriate and not overwhelming.

The PSP benefits from well-developed and high-standard infrastructure, while student support throughout the duration of studies is considered outstanding.

The evidence reviewed by the panel demonstrates that students clearly understand PSPs academic requirements, as well as their career prospects upon graduation.

The information management system of the PSP is well-structured, functional, and internally robust, meeting many Level 7 criteria.

II. Areas of Weakness

The curriculum appears broad but insufficiently specialised, with uneven coverage of key biomedical informatics domains.

Limited proportion of students complete a research dissertation

The small number of visits to the university clearly reduces the cohesion as a group; the students would like to have the opportunity to meet more times during the first year of their studies.

The concept of the academic advisor is present but clearly there seems to be a lack of details in terms of its role and associated implementation.

The level of graduation is extremely low (<25%) and therefore efforts need to be made to improve this.

The research component of the PSP and closer interactions with the stakeholders need to be increased.

Student mobility through Erasmus+ and Erasmus+ Traineeships is not highly encouraged in this PSP.

The number of invited members from international institutions is extremely limited and should be largely increased.

The publication record of most of the faculty members is good but not excellent. The information management system falls short in public transparency, international benchmarking, and research integration, key features of Level 7. Operational effectiveness of monitoring processes in driving substantive academic improvements appears limited and the available evidence suggests that certain important structural issues affecting the programme (such as the low completion rate) have persisted over time without sufficient corrective action. There was limited evidence of systematic benchmarking against comparable international programmes or of structured engagement with external stakeholders from academia, healthcare, or industry to inform curriculum renewal.

III. Recommendations for Follow-up Actions

The overall view of the EEAP, and taking into account that the PSP is on its first steps, is that some mechanisms to ensure an identity of the programme and careful evaluation of its academic aims should be put in place to ensure future success. The EEAP also communicated with the director of the PSP potential bioinformaticians from abroad who would enhance the reputation and subject areas of the PSP. Continue to discuss the identity of the programme as it matures taking into account some of the suggestions below.

Consider the possibility of splitting into two directions (medical and computer-related) after the first semester.

Appoint some prominent bioinformaticians from abroad in an advisory role.

Redesign the curriculum structure and introduce dedicated modules in emerging concepts in computational biomedicine

Enhance dissertation completion rate and introduce other measures of research exposure such as journal and poster presentations, journal clubs

Enhance research training through structured teaching in research methodology, data science workflows, and reproducible research practices.

Establish clearer progression pathways from introductory to advanced computational and biomedical informatics competencies.

A clear definition of the academic advisor and their role. Encourage most teaching staff to assume this role.

Improve counselling in the thesis subject definition with the objective of improving the graduation rates and enhancing the research component

Ensure that the rate of students' response to the curriculum, teaching staff and practical sessions' evaluation questionnaires is high in order to draw credible conclusions

Investigate the reasons behind the very low graduation rates to ensure that corrective action is taken sooner rather than later.

The EEAP suggests encouraging Erasmus mobility.

Increase the participation of international external lecturers.

Most faculty members need to improve their publication record.

Increase the research oriented theses for the students

Panel suggests creating an alumni association.

Develop and implement public-facing dashboards to display key performance indicators (e.g., graduate employment rates, student satisfaction, research output) in alignment with European and national quality frameworks.

Introduce digital credentials such as e-portfolios and micro-credentials to enhance student recognition, lifelong learning, and international mobility.

Establish an e-learning module (Interface) to enhance intensive contact between the students.

Establish formal mechanisms for collecting and integrating feedback from alumni, employers, and international peers to strengthen program evaluation and relevance.

Ensure full compliance with WCAG accessibility standards and integrate Erasmus+ and international mobility tracking to enhance inclusivity and global engagement.

Benchmark against leading European MSc programmes by comparing practices in transparency, student support, and research integration with top international programmes.

Publish downloadable course syllabi in both Greek and English, including learning outcomes, ECTS credits, workload, and assessment methods.

Clarify admission requirements by specifying required programming languages (e.g., Python), statistical tools (e.g., R), mathematical prerequisites, and minimum GPA.

Develop and publish measurable, course-specific learning outcomes aligned with EQF Level 7 and the Bologna framework.

Provide detailed descriptions of the research project, including scope, methodology, supervision model, and expected deliverables.

Release annual graduate outcomes data, including employment rates, sectoral placement, and PhD progression.

Promote career support services, internships, and industry partnerships (e.g., with hospitals, biotech firms) on the program website.

Highlight international mobility opportunities, such as Erasmus+ exchanges and research collaborations, to enhance global engagement.

Feature student testimonials, alumni profiles, and success to build trust and program visibility.

Strengthen monitoring of thesis engagement and completion, including systematic tracking of dissertation progression, identification of barriers to completion, and implementation of targeted supervisory and structural support mechanisms.

Establish structured curriculum review cycles that explicitly incorporate emerging areas of biomedical informatics, including digital pathology, polygenic risk scoring, biobank analytics, and large-scale health data science.

Enhance the analytical use of programme-level data, ensuring that evaluation findings lead to documented corrective actions, measurable improvements, and periodic curriculum updates.

Formalise systematic external benchmarking and stakeholder engagement, including

consultation with academic, healthcare, and industry experts to ensure alignment with current international standards and workforce needs.

Develop and publish formal learning outcomes aligned with EQF Level 7 and the Bologna learning outcomes framework.

Apply for EUR-ACE or similar international accreditation.

Establish a student representative body in the Program Committee.

Introduce career development workshops and industry partnerships.

Implement an alumni tracking system and publish graduate outcomes.

Publish a detailed ECTS handbook with workload, assessment, and credit distribution.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are:

1, 4, 6

The Principles where substantial compliance has been achieved are:

3, 5, 7, 8, 10

The Principles where partial compliance has been achieved are:

2, 9

The Principles where failure of compliance was identified are:

0

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

The members of the External Evaluation & Accreditation Panel

Name and Surname	Signature
KTISTAKIS NICHOLAS	Signed by KTISTAKIS NICHOLAS
GRAMMATOPOULOS DIMITRIS	Signed by GRAMMATOPOULOS DIMITRIS
SACHINIDIS AGAPIOS	Signed by SACHINIDIS AGAPIOS
Tzimogianni Valentini	Signed by Tzimogianni Valentini
VISVIKIS DIMITRIS	Signed by VISVIKIS DIMITRIS