



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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Accreditation Report
for the New Undergraduate Study Programme in
operation of:

Aerospace Science and Technology

Institution: National and Kapodistrian University of Athens

Date: 13 July 2024



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 New Undergraduate Study Programme in operation of **Aerospace Science and Technology** of the **National and Kapodistrian University of Athens** 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. New Undergraduate Study Programme in operation Profile.....	8
Part B: Compliance with the Principles	10
Principle 1: Strategic Planning, Feasibility and Sustainability of the Academic Unit.....	10
Principle 2: Quality Assurance Policy of the Institution and the Academic Unit.....	18
Principle 3: Design, Approval and Monitoring of the Quality of the New Undergraduate Programmes.....	21
Principle 4: Student-centred Approach in Learning, Teaching and Assessment of Students.....	24
Principle 5: Student Admission, Progression, Recognition of Academic Qualifications and Award of Degrees and Certificates of Competence of the New Study Programmes.....	28
Principle 6: Ensuring the Competence and High Quality of the Teaching Staff of the New Undergraduate Study Programmes	31
Principle 7: Learning Resources and Student Support of the New Undergraduate Programmes...	34
Principle 8: Collection, Analysis and Use of Information for the Organisation and Operation of New Undergraduate Programmes	37
Principle 9: Public Information Concerning the New Undergraduate Programmes	40
Principle 10: Periodic Internal Review of the New Study Programmes.....	42
Principle 11: Regular External Evaluation and Accreditation of the New Undergraduate Programmes.....	45
Principle 12: Monitoring the Transition from Previous Undergraduate Study Programmes to the New Ones.....	47
Part C: Conclusions	49
I. Features of Good Practice	49
II. Areas of Weakness	49
III. Recommendations for Follow-up Actions	49
IV. Summary & Overall Assessment	51

PART A: BACKGROUND AND CONTEXT OF THE REVIEW

I. The External Evaluation & Accreditation Panel

The Panel responsible for the Accreditation Review of the new undergraduate study programme in operation of **Aerospace Science and Technology** of the **National Kapodistrian University of Athens** comprised the following five (5) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Professor Tassos G. Karayiannis (Chair)**
Brunel University London, United Kingdom
- 2. Dr Fivos Andritsos**
European Commission, Joint Research Centre, Ispra, Italy
- 3. Prof. Konstantinos Salonitis**
Cranfield University, United Kingdom
- 4. Mr Georgios Papamichail**
Student of Mechanical Engineering, National Technical University of Athens
- 5. Prof. Emeritus John Botsis**
École Polytechnique Fédérale de Lausanne, Switzerland

II. Review Procedure and Documentation

Introduction

The External Evaluation and Accreditation Panel (EEAP) carried out a review of the 4-year Undergraduate Programme of Aerospace Science and Technology of the School of Sciences of the National Kapodistrian University of Athens (NKUA) at the request of the Hellenic Authority of Higher Education (HAHE). The on-line review was performed between the 8th and the 13 July 2024.

The Review Processes

The EEAP had a pre-meeting on Monday the 8th to discuss preliminary findings after a first read of the paperwork submitted by the Department/University via HAHE staff. It noted some points that required further clarification, such as student pass rates per year, sample of student evaluation reports and minutes of staff meetings that addressed their comments, paperwork on staff promotion process and student professional standing, which were communicated to the Department. At the same time EEAP agreed their approach procedure for the meetings to follow and allocated particular tasks to each member of the panel.

In the afternoon of Tuesday, the 9th the EEAP met with the Vice-Rector for Academic Affairs, International Relations, and Extroversion of the NKUA and President of University Quality Assurance Unit (MODIP) Professor Sophia Papaioannou and the Head of the Department of Aerospace Science and Technology Professor Vaios Lappas. Professor Lappas provided an overview of the Department, followed by an introduction of the UG-AST programme. The presentation covered the reasons for its development, current status, strengths and any possible areas of concern. The meeting was very informative and helped set the background for the subsequent meetings that followed. Professor Papaioannou forwarded later an overview of the NKUA highlighting its history, strengths, aspirations and future plans as a national/international centre of excellence.

On completion of the above, the EEAP had a meeting with members of MODIP and the Departmental Evaluation Committee (OMEA). The members of OMEA presented the proposal for academic accreditation of the UG-AST programme and responded to questions from members of EEAP. Members of MODIP and OMEA provided their views on the degree of compliance of the Undergraduate programme for full accreditation.

The EEAP continued its meetings on Tuesday the 9th with a discussion with eight members of the academic staff. This focused, among others, on the academic professional development opportunities, possible mobility in Greece or overseas and workload in relation to teaching, research and administration duties. Further comments were made of the appropriate matching of the staff expertise with the subject matter of the UG-AST programme, opportunities and funding available for research and possible applied research in collaboration with industry. The meeting concluded with a discussion on strength and weaknesses of the Department and the programme and suggestions for improvements.

At the end of the day, the EEAP members had a private meeting to review first findings and prepare for the next day.

The EEAP met with six students on Wednesday the 10th of July. The student representatives were in the 1st, 2nd, 3rd (2 students) and 4th (2 students) of their studies plus one PhD student. They were able to provide information on their study experience starting with induction, on quality assurance issues -particularly in response to the end of course questionnaires and the learning facilities including laboratories, study space and library support. The discussion also assessed information available to students on possible career or further education paths following their graduation.

The day progressed with a meeting with staff to discuss departmental teaching research facilities. The EEAP was able to confirm adequate learning materials, equipment and support facilities for a successful delivery and meeting the targeted learning outcomes of the UG-AST programme. A video of the laboratory facilities was made available in advance to the EEAP members, <https://1drv.ms/v/s!AntJYdJkPmYaifU3SSaxrgZwJfbjKQ?e=tM5W2i>.

The relation of the Department with external stakeholders was discussed in a subsequent meeting on this day. The possible employers and social partners were well represented by seven colleagues covering both private and public sector organisations. The industrial colleagues were very supportive of the programme and the work of the Department. The meeting was very informative and useful helping EEAP members identify the industrial input in a future planning the programme of study and the continuing advisory role of practitioners in supporting programme revision and development.

The EEAP had a short debriefing meeting and prepared for the on-line meeting with representatives of OMEA and MODIP, with a chance to discuss preliminary points and findings that required further clarification.

A final meeting was held with the Head of Department and members of OMEA and MODIP. The EEAP provided the panel members a first opportunity to present some of their key findings.

Documentation Reviewed

The Hellenic Authority for Higher education provided detailed documents including an introduction to the accreditation process, expectation of the visit plus a format for the final EEAP report. In general, the documentation provided, as well as all relevant presentations and videos, were of good quality, fully adhering to the HAHE standards and requirements. The documents received included information on the NKUA, with a brief history of the institution, quality assurance plans plus its strategic development plan. The Department of Aerospace Science and Technology provided documents that covered the rationale for the development of the programme relating back to 2019, their proposal for accreditation, the four-year departmental plan and their objectives, a detailed document describing the individual courses offered, laboratory provision staff profiles and departmental operational processes. As mentioned above the specific material reviewed by the EEAP covered all aspects of the accreditation visit.

Evaluation Process and Accreditation Report

The evaluation process which consisted of an initial and subsequent review of the original and paperwork and later additions plus detailed meetings as outlined in the schedule by HAHE was extensive and thorough. The final EEAP report reflects clearly the current status of the Department and the Aerospace Science and Technology programme. It relates to the strategic planning, feasibility and sustainability of the Department based on key current and possibly projected parameters, the quality assurance policy including monitoring and student-centred education as reported by the staff, entry requirements-admission process and recognition of academic qualification in Greece and overseas.

The work carried out by the EEAP with the support of HAHE aimed to ensure, through this reporting process, the adequacy of high-quality teaching staff (Full time and Part time), research-informed and research-led teaching, adequate facilities and learning resources, and engagement with stakeholders and the community that will enable the Department to progress and develop.

Conclusion

The review process was quite straightforward despite some remote connection delays that stressed the already compressed interaction between the Panel and the Department. Most of the documentation provided was very well written but more recent relevant information was missing because most reports were written two years ago. This is too long, especially for a new, rapidly evolving department.

The EEAP note that unfortunately, due to last minute technical problems, the NKUA Vice-Rector for Academic Affairs, International Relations, and Extroversion was not able contribute to the final meetings. This deprived the opportunity to explore the Institution's views on how to accommodate the evolution of the Department's study programme, in particular towards a 5-year offering in the engineering / ICT domain.

Finally, we take the opportunity to express our opinion that HAHE could consider possible in-person accreditation processes, *especially concerning new departments*, allowing for a direct evaluation of the facilities, the people and the conditions under which they operate. This can allow more time to the Panel members for discussion and exchange of opinions and, at the end, result in a more effective accreditation.

III. New Undergraduate Study Programme in operation Profile

Introduction

The National Kapodistrian University of Athens (NKUA) is the oldest Greek higher education establishment, dating back to 1837. Currently, it has 9 Schools and 41 departments located in 5 different sites. The university has more than 60,000 students with some 2,000 faculty members. The NKUA has developed and applies a university-wide policy of quality assurance which forms part the university strategy to deliver high quality undergraduate, postgraduate and research programmes. The University Quality Assurance Unit was established in 2008 and works closely with the schools and the departments to support the academic units and ensure high quality of provision. MODIP oversees the Internal System of Quality Assurance (ΕΣΔΠ) which cover all the functions and provisions of the University.

Department of Aerospace Science and Technology

The Department of Aerospace Science and Technology (DAST) was established in 2019, as part of the development at the Evripos complex at Psahna, near Chalkida, following the absorption by NKUA of the parts of the former TEI of Central Greece located in the area. It is one of the nine departments of the NKUA School of Science. The Department offers a 4-year programme of study entitled “Aerospace Sciences and Technology”. The degree offered covers multidisciplinary scientific and technological areas including information technology, communications, physics and engineering. The programme offered is unique in Greece.

The current student cohort is 335 across the four years of study plus 23 PhD candidates. The Department employs 13 permanent academic staff, 7 part time academic staff, 3 technical staff and is supported by 3 administrative staff. The Department aims to establish a unique centre of excellence covering aspects of (i) satellite technology, (ii) drones (iii) aerospace robotics and (iv) communications. At the same time, it aspires to provide well qualified graduates for the Greek industrial sector in aerospace and contribute to fundamental and applied research in this area. The research areas covered by the Department include small satellite and subsystems, satellite communications, remote sensing, weather monitoring/forecasting, wildfire detection drones, robotics and material research relating to the aerospace industry. The SWOT analysis presented and discussed during the meetings with the EEAP lists as strengths the unique educational offering, the support from the NKUA, the increase in sectors aligned to the aerospace industry and possible collaboration with other science departments of NKUA. Opportunities include, in addition to the increasing recruitment requirements of the related industries, the increasing funding nationally and in the EU and the needs of the national defence related organisations Challenges and weakness listed include the current government funding allocation plus the low staffing levels.

The undergraduate programme in Aerospace Science and Technology is structured in 8 semesters of a total of 240 ETCS. It consists of two study periods (learning cycles). The first 3-year period is dedicated to fundamental studies and includes an introduction course on the main principles of aerospace, 19 compulsory courses (3 per semester) and three laboratory-

based courses. This is followed by the specialisation year in the 7th and 8th semesters of the 4th year. It includes 1 compulsory course in the design of microsatellites and 7 electives plus the 15 ECTS final degree thesis. The students can also complete a 4-month industrial placement (10 ECTS) offered in the 7th semester supported, while in industry, by the academic staff. The placement period is evaluated and marked.

A serious point of concern is the fact that the final degree award is not currently recognised as meeting the requirements for employment at graduate level in the public sector. The Department is considering the development of its offering to a 5-year degree that could be recognised as an integrated master's in engineering (MEng). This should be encouraged and supported, on the condition that it is accompanied with a comprehensive study, in consultation with all relevant stakeholders, on the needs and requirements for the aerospace graduates and a consequent planning on how these requirements can best be achieved. It could also help alleviate the current recruitment level of the Department and help establish it as centre of excellence in the Aerospace area servicing Greece and beyond.

PART B: COMPLIANCE WITH THE PRINCIPLES

Principle 1: Strategic Planning, Feasibility and Sustainability of the Academic Unit

Institutions must have developed an appropriate strategy for the establishment and operation of new academic units and the provision of new undergraduate study programmes. This strategy should be documented by specific feasibility and sustainability studies.

By decision of the institutional Senate, the Institutions should address in their strategy issues related to their academic structure in academic units and study programmes, which support the profile, the vision, the mission, and the strategic goal setting of the Institution, within a specific time frame. The strategy of the Institution should articulate the potential benefits, weaknesses, opportunities or risks from the operation of new academic units and study programmes, and plan all the necessary actions towards the achievement of their goals.

The strategy of their academic structure should be documented by specific feasibility and sustainability studies, especially for new academic units and new study programmes.

More specifically, the feasibility study of the new undergraduate study programmes should be accompanied by a four-year business plan to meet specific needs in infrastructure, services, human resources, procedures, financial resources, and management systems.

During the evaluation of the Institutions and their individual academic units in terms of meeting the criteria for the organisation of undergraduate study programmes, particular attention must be placed upon:

a. The academic profile and the mission of the academic unit

The profile and mission of the department should be specified. The scientific field of the department should be included in the internationally established scientific fields of Higher Education, as they are designated by the international categorisation of scientific fields in education, by UNESCO (ISCED 2013).

b. The strategy of the Institution for its academic development

The academic development strategy for the operation of the department and the new study programme should be set out. This strategy should result from the investigation of the factors that influence the studies and the research in the scientific field, the investigation of the institutional, economic, developmental, and social parameters that apply in the external environment of the Institution, as well as the possibilities and capabilities that exist within the internal environment (as reflected in a SWOT Analysis: strengths, weaknesses, opportunities, and threats). This specific analysis should demonstrate the reason for selecting the scientific field of the new department.

c. The documentation of the feasibility of the operation of the department and the study programme

The feasibility of the operation of the new department should be justified based on:

- *the needs of the national and regional economy (economic sectors, employment, supply-demand, expected academic and professional qualifications)*
- *comparison with other national and international study programmes of the same scientific field*
- *the state-of-the-art developments*
- *the existing academic map; the differentiation of the proposed department from the already existing ones needs to be analysed, in addition to the implications of the current image of the academic map in the specific scientific field.*

d. The documentation of the sustainability of the new department

Mention must be made to the infrastructure, human resources, funding perspective, services, and all other available resources in terms of:

- educational and research facilities (buildings, rooms, laboratories, equipment, etc.)
- staff (existing and new, by category, specialty, rank and laboratory). A distinct five-year plan is required, documenting the commitment of the School and of the Institution for filling in the necessary faculty positions to cover at least the entire pre-defined core curriculum
- funding (funding possibility from public or non-public sources)
- services (central, departmental / student support, digital, administrative, etc.)

e. The structure of studies

The structure of the studies should be briefly presented, namely:

- **The organisation of studies:** The courses and the categories to which they belong; the distribution of the courses into semesters; the alignment of the courses with the European Credit Transfer System (ECTS).
- **Learning process:** Documentation must be provided as to how the student-centered approach is ensured (modes of teaching and evaluation of students beyond the traditional methods).
- **Learning outcomes:** Knowledge, skills and competences acquired by graduates, as well as the professional rights awarded must be mentioned.

f. The number of admitted students

- The proposed number of admitted students over a five-year period should be specified.
- Any similar departments in other HEIs with the possibility of student transfers from / to the proposed department should be mentioned.

g. Postgraduate studies and research

- It is necessary to indicate research priorities in the scientific field, the opportunities for interdisciplinary research, the challenges towards new knowledge, possible research collaborations, etc.
- In addition, the postgraduate and doctoral programmes offered by the academic unit, the research projects performed, and the research performance of the faculty members should be mentioned.

Relevant documentation

- Introductory Report by the Quality Assurance Unit (QAU) addressing the above points with the necessary documentation
- Updated Strategic Plan of the Institution that will include its proposed academic reconstruction, in view of the planned operation of new department(s) (incl. updated SWOT analysis at institutional level)
- Feasibility and sustainability studies for the establishment and operation of the new academic unit and the new study programme
- Four-year business plan

Study Programme Compliance

I. Findings

The Department of Aerospace Science and Technology (DAST) is one of the recent NKUA departments, established in 2019. It is one of the nine departments of the NKUA School of Science. In general, the documentation provided, and all relevant presentations were of high quality, fully adhering to the HAHE standards and requirements and providing information on

all points (a to g) above. Documents B3a and B3b on strategy refer to the host institution (NKUA) rather than the Department.

Document B11 (study guide) gives an outline of the evolution of the study offerings and the structure of NKUA as well the reasoning for the existence, the academic offering, the sustainability and the structure of the Department. Successively, B11 focuses on a comprehensive description of the DAST academic offering, including the expected outcomes, the structure of the programme and a brief outline of each of the courses offered. The list of the core subjects, mandatory for everybody, is distributed along the three first years of study. They are complemented by a fourth year of focused studies in 'upstream' and 'downstream' space applications. B11 document is comprehensive and of high quality.

Document B12 describes each and every course given in much more detail than in B11, including a short description, teaching methods, eventual pre-requisites, evaluation criteria, recommended bibliography, etc., in standard, well designed tabular forms.

The Department claims to be part of the following UNESCO (ISCED 2013) categories: 0533 (physics) and 0714 (electronics & automation).

The Department is staffed with 13 academics, 3 laboratory technicians, 2 administrative, 4 teaching support and 2 laboratory personnel.

The Department is very new for an effective evaluation of its postgraduate and research activities. No particular research projects were mentioned in the provided documentation while in the department's web pages only the ERMIS project was quoted. However, in the presentation of the Department Head, a completely different picture was presented, with many important research projects and collaborations. Such discrepancy has been attributed to the fact that the documents provided are two years old while most of the research and collaborations presented are very recent.

The Department aims in implementing as many as eleven (11) laboratories, eventually planned to function as research units. The bibliographical statistics of the Department are rather good. The Department participates in the inter-institutional Master's programme STAR (Space Technologies, Applications and seRvices).

To date, the Greek state has not guaranteed any professional rights for the graduates of the Department. This is considered a significant handicap, partially explaining the current low demand for the DAST academic offering.

II. Analysis

The Panel cannot but commend the effort of the University authorities and the Department's academic and support staff for setting up a novel Department, for successfully transitioning from the TEI status and for achieving some notable results. The Panel also commends the University and the Department for the quality and completeness of most documents and presentations provided which, however, are almost two years old, and in some cases, do not

reflect the actual situation. Care should have been taken to update these documents as well as the Department's web pages, which, apparently, are not to date.

The Department claims a distinct identity, in terms of application space, and uniqueness within the Greek high education system. This is evident in many of the provided supporting documents and presentations but not in the document on strategic development (B3a), which refers to the Institution rather than the Department.

Document B4 on the goals and the sustainability of the Department is very well written. It outlines well the international environment as well as the EU and national situation and goals, documenting convincingly the need for an 'aerospace' academic unit. However, a comprehensive plan quantifying this need, setting measurable goals and, finally, a comprehensive pathway towards its implementation, is missing. Consequently, the document is far less convincing on how well the offering of the Department, as currently implemented within NKUA, responds to the outlined societal needs and trends. More in particular, despite the commendable effort in the document B4, the expected Department's outcome (i.e. in terms of the qualifications required from an "aerospace professional") is not sufficiently defined, hence the inadequacy of a comprehensive and well-structured set of skills and specialisations to inject to the students during their studies. The distinction between upstream and downstream applications is quite reasonable and each application / stream is well described. However, the capacity of the Department's 4-year programme to accommodate for such a wide and demanding set of required competences / skills is questionable.

The Department's decision to limit itself just on the 0533 and the 0714 UNESCO (ISCED 2013) categories needs further consideration, as most of the courses offered fall under the 061 (ICT) categories.

The Panel is aware of the constraints and the limitations of the Greek educational and professional system. It is deplorable that the Greek State establishes public universities without any prior establishment of their graduates' professional rights. Even more so that some institutions or professional corporations claim exclusivity to terms like "engineering" and "technology". As per the Panel's experience, this is detrimental for many new academic units that, instead of being pulled towards novel and innovative approaches, are pushed towards established educational stereotypes, risking becoming bad copies of some mainstream educational establishments.

Another issue perceived throughout the received documents and confirmed during the presentations and the discussions with the Department's head and faculty has to do with the TEI legacy, which both the Department and NKUA want to shake-off, probably fearing that it downgrades its offering. The Panel does not agree with this approach. It is true that the Department's offering could be more attractive within the potential students' community. It is, however, an over-simplification to attribute the reason for low attractiveness to the TEI legacy or to the location of the Department's premises. There are examples of TEI-derived departments located even further from Athens that are quite attractive.

The Panel is aware of the difficulties and the constraints of the painful evolution of the technical education in Greece, from the KATEE to TEI, then ATEI, then AEI. In theory, a brand-

new Department, without such constraints on its study offering, character, structure or location, could be in a much better shape. However, without the TEI legacy, in particular that of the Department for Aircraft Technology, it is highly probable that DAST would not exist, in Chalkida or anywhere else. The Panel acknowledges this legacy, with all the derived difficulties and constraints, as well as the consistent efforts of the staff in overcoming such difficulties towards a novel consistent study programme.

In order to achieve maturity and sustainability, the Department and NKUA, need to redefine its educational offering, based on a comprehensive profile of aerospace professional (engineer?) and his/her projected role in a rapidly evolving society. This activity should involve many of the important stakeholders (academia, industry, ministries, relevant international bodies) with which the Department is already connected. It could take the form of a project assigned to a recognised external expert and/involve one or more dedicated workshops.

Finally, the Panel wish to underline the importance of further strengthening the relations with the Ministry of Defence as well as with the Military Academies. The importance of satellite applications to military or hybrid applications can never be underestimated. It is also advised to connect, as part of its “downstream” activities, with other sectors, like civil defence, territorial planning and monitoring and to integrate with other non-satellite-based technologies.

III. Conclusions

The Panel cannot but commend the effort of the University authorities and the Department’s academic and support staff for setting up a novel Department, for successfully transitioning from the TEI status and for achieving some notable results.

The Panel is not convinced that the goals outlined in the Department’s and the NKUA’s strategy documents are best achieved through an undergraduate department, such as the one under accreditation, rather than a number of postgraduate or integrated master programmes. However, given that the decision to set-up such a department has already been taken, the Panel cannot but highlight some inconsistencies and deficiencies, mostly due to transition constraints, along with its strong points and opportunities, in order to further develop and fulfil its stated goals.

The Department has a distinct identity in terms of a comprehensive set of goals and societal needs at national, European and international level., It has good prospects for a sustainable development, if some conditions, as highlighted in section ii above, are met. Its academic offering makes sense but there are notable limitations in terms of definition of the expected outcome, i.e. the requirements for an aerospace professional / engineer / IT expert and, consequently, a concise planning of the academic offering. Certainly, one 4-year programme appears to be very limiting and should be expanded.

In order to achieve maturity and sustainability, the Department, along with the NKUA, needs to address promptly all issues identified in section ii above. This will be better achieved through

interaction with established experts and/or professionals, home and abroad, through dedicated workshops or through a study commissioned to a recognised external expert.

Panel Judgement

Principle 1: Strategic planning, feasibility and sustainability of the academic unit	
a. The academic profile and the mission of the academic unit	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
b. The strategy of the Institution for its academic development	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	
c. The documentation of the feasibility of the operation of the department and the study programme	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
d. The documentation of the sustainability of the new department	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
e. The structure of studies	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
f. The number of admitted students	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	
g. Postgraduate studies	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Principle 1: Strategic planning, feasibility and sustainability of the academic unit (overall)	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- R1.1** Within the next year, the Department needs to setup the basis for a new academic offering, i.e. a concise set of requirements for an “aerospace professional”, without prejudice on the wording, the UNESCO categories or eventual professional rights.
- R1.2** Consequently, in collaboration with the host Institution, the Education Ministry and other relevant stakeholders, the Department must plan on how its academic offering can be adapted so as to best fulfil the requirements from point 1 above. Such planning should consider a 5-year integrated master’s offering as well as more radical choices, i.e. such as the development of one or more dedicated postgraduate offerings

Principle 2: Quality Assurance Policy of the Institution and the Academic Unit

The Institution should have in place an accredited Internal Quality Assurance System, and should formulate and apply a Quality Assurance Policy, which is part of its strategy, specialises in the operation of the new academic units and the new study programmes, and is accompanied by annual quality assurance goals for the continuous development and improvement of the academic units and the study programmes.

The quality assurance policy of the Institution must be formulated in the form of a published statement, which is implemented by all stakeholders. It focuses on the achievement of special annual quality goals related to the quality assurance of the new study programme offered by the academic unit. In order to implement this policy, the Institution, among others, commits itself to put into practice quality procedures that will demonstrate: the adequacy and quality of the academic unit's resources; the suitability of the structure and organisation of the curriculum; the appropriateness of the qualifications of the teaching staff; the quality of support services of the academic unit and its staffing with appropriate administrative personnel. The Institution also commits itself to conduct an annual internal evaluation of the new undergraduate programme (UGP), realised by the Internal Evaluation Group (IEG) in collaboration with the Quality Assurance Unit (QAU) of the Institution.

The quality assurance policy of the academic unit includes its commitment to implement quality procedures that will demonstrate: a) the adequacy of the structure and organisation of the curriculum, b) the pursuit of learning outcomes and qualifications in accordance with the European and National Qualifications Framework for Higher Education, c) the promotion of the quality and effectiveness of the teaching work, d) the adequacy of the qualifications of the teaching staff, e) the promotion of the quality and quantity of the research work of the members of the academic unit, f) the ways of linking teaching with research, g) the level of demand for graduates' qualifications in the labour market, h) the quality of support services, such as administration, libraries and student care, i) the implementation of an annual review and audit of the quality assurance system of the UGP through the cooperation of the Internal Evaluation Group (IEG) with the Quality Assurance Unit (QAU) of the Institution.

Relevant documentation

- *Revised Quality Assurance Policy of the Institution*
- *Quality Assurance Policy of the academic unit*
- *Quality target setting of the Institution and the academic unit (utilising the S.M.A.R.T. methodology)*

Study Programme Compliance

I. Findings

The quality assurance policy of NKUA is well documented in the paperwork provided and in the slide presentation of the Vice-Rector for Academic Affairs, International Relations, and Extroversion of the NKUA and President of MODIP, which was submitted to the EEAP. The University has a clear quality assurance policy and its efforts to create an environment enabling staff and students to work together in the delivery of high-quality programmes at all levels of provision are clearly articulated. The university management is also committed to an on-going review and continuous improvement of programmes offered, with quality being one of the main pillars considered at each review. The above policy is directly related to the operational principles of the university and is in accordance with international benchmarks provided, for

example, through this accreditation organised by HAHE and based on the Principles and Directives for Quality Assurance in the European Higher Education Area (ESG2015).

The university formal policy for quality assurance forms part of its strategic objectives and includes contributions from all staff of the institution (management, academic and research staff, technical and administrative staff and students). The responsibility for implementation is delegated to MODIP, which works closely with schools and departments including OMEA for successful outcomes. This work involves the quality provision of existing programmes as well as the recommendations for new. The university has established and published the basic principles (21 in number) underpinning their policy of quality assurance and improvement to help the management evaluate the success of their processes.

II. Analysis

The departmental quality assurance policy is directly linked to the university-level recommendations. As indicated above, the department works closely with university (OMEA and MODIP) in an annual cycle of the evaluation of the Aerospace Science and Technology programme. The department's management is equally committed to continuous improvement and sets particular targets that relate to the expectations of all involved (academic/technical and administrative staff and students). It is clear to the EEAP that the department has defined targets and performance indicators and is committed to the provision of high-quality, student-centred education. It has an established process of evaluation that is transparent, communicated clearly with easily verifiable outcomes in all its provisions both at individual and team level. The evaluation process includes data collected from student questionnaires statistical input collated by the departmental administration staff including course results and staff contributions. These are evaluated by OMEA with a follow up assessment by MODIP and recommendations and final actions presented by the chair of OMEA. Note that the student questionnaires are well designed to cover all classroom and laboratory teaching. The rate of return of the student questionnaires is reasonable comparable to other institutions, indicating the importance placed on this process by the students.

The Panel had separate meetings with students at all levels of the programme and a group of external stakeholders. Feedback was very good. Both groups expressed unanimously their satisfaction with the academic level of the quality of provision and the processes in place.

The industrial members commented extremely favourably on the level achievement of students on placement and level of final year project involving their organisations.

III. Conclusions

It is obvious that the quality assurance (programme academic level and processes) is very high in the objectives of the department. This is based on the documents provided and subsequent discussions with the head of department, academic, technical and administrative staff plus students and external stakeholders. The Department of Aerospace Science and Technology has clear aspirations to continue to deliver a programme, which includes both fundamental

plus research-led and industrial relevant aspects, that meet the aspirations of its graduates and the needs of Greek industry and relevant organisations. The Panel concludes that the Department has an excellent quality assurance process in place and is delivering a high-quality set of QA procedures.

Panel Judgement

Principle 2: Quality assurance policy of the Institution and the academic unit	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- R2.1** Include student year representatives (one per year plus a representative of the PhD cohort) in a more formal way in departmental or OMEA discussions on quality.
- R2.2** Establish an Industrial Advisory Board, which will, among other things, periodically review the curriculum content and provide advice accordingly.

Principle 3: Design, Approval and Monitoring of the Quality of the New Undergraduate Programmes

Institutions should design the new 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.

The Institutions develop their new undergraduate study programmes, following a well-defined procedure. The academic profile, the identity 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 European and National Qualifications Framework for Higher Education are described at this stage. An important new element in the structure of the programmes is the introduction of courses for the acquisition of digital skills. The above components should be taken into consideration and constitute the subject of the programme design, which, among other things, should include: elements of the Institution's strategy, labour market data and employment prospects of graduates, smooth progression of students throughout the stages of the programme, the anticipated student workload according to the European Credit Transfer and Accumulation System (ECTS), the option of providing work experience to the students, the linking of teaching and research, the international experience in study programmes of similar disciplines, the relevant regulatory framework, and the official procedure for the approval of the programme 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 Quality Assurance Unit (QAU).

Relevant documentation

- *Senate decision for the establishment of the UGP*
- *Curriculum structure: courses, course categories (including courses for the acquisition of digital skills), ECTS awarded, expected learning outcomes according to the EQF, internship, mobility opportunities.*
- *Labour market data regarding the employment of graduates, international experience in a related scientific field.*
- *Student Guide*
- *Course outlines*
- *Teaching staff (list of areas of specialisation, its relation to the courses taught, employment relationship)*
- *QAU minutes for the internal evaluation of the new study programme and its compliance with the Standards*

Study Programme Compliance

I. Findings

The Department offers a 4-year Undergraduate study programme, which provides graduates the opportunity to acquire specialized scientific knowledge, skills and abilities at the field of aerospace science and technology.

The Department claims to have considered relevant programmes worldwide during the programme's design; however, evidence supporting such a claim in the proposal folder was rather limited. The discussions during the interviews highlighted that the department wishes to disassociate itself from its technical education heritage.

The programme structure is unique and novel. Two clearly defined study cycles are identified. The “basic cycle” is during the first three years of the studies, during which all students have to successfully complete 30 courses and 3 additional physics laboratory-based modules. During the fourth year, the students must select a specialisation focusing either on “space upstream” or “space downstream,” consisting of a project, seven elective courses, and a diploma thesis.

In total, the students must accumulate 240 ECTS to graduate.

An adequate but generic and basic QA policy (specialised into procedures) is in place that allows for the approval, evaluation and, eventually, revision of the program.

The student guide is concise, complete, and very well written.

II. Analysis

The Department fulfils the HAHE requirements regarding the design, approval, and monitoring of the quality of the new undergraduate program. The Panel was not provided with any information regarding the approach followed for designing the course. Regarding the monitoring of the programme, all due procedures and mechanisms are in place and documented. However, their effectiveness cannot be verified due to the very short period of operation under the new undergraduate status. For example, no general assembly meeting minutes were provided with proof of discussing and implementing the set procedures.

The Department is unique in Greece; no similar programme exists, including engineering schools; there are only postgraduate level programmes, in which the Department actively participates. This fact offers a relative flexibility in designing a study programme but, at the same time, the department's graduates do not have state-recognised professional rights, resulting to a rather low attractiveness among the candidate incoming students.

The department is well staffed (considering the number of students enrolled per year), with 13 academic staff members, 3 technical staff members and 3 full time administrators. Seven part-time academics also support the department, although from 2024-25 onwards, this number will drop to 2.

The present number of incoming students is too small and risks compromising the sustainability of the Department. Evidently, the measures that the Department has already adopted are not enough.

Faculty have the required qualifications to fulfil their role. The students interviewed commented positively on their engagement with the faculty. They were also aware of the importance of their feedback and were happy with how the management department addressed it and took action.

III. Conclusions

As per the above findings and analysis, the EEAP believes that the Department is substantially compliant with Principle 3. All HAHE requirements are met with regards the monitoring and approval of the programme, however the feasibility study and the rationale of the programme design needs to be further articulated and evidence need to be provided.

The present number of enrolled students is too small and their quality (in terms of grade at the exams for entering the higher education establishments) rather low. This fact risks compromising the sustainability of the Department and should be tackled with the outmost urgency.

Panel Judgement

Principle 3: Design, approval and monitoring of the quality of the new undergraduate programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- R3.1** In line with R1.1 and R1.2, revisit the Department's offering and, consequently, update the feasibility study, promote it to potential students and industrial stakeholders.
- R3.2** Take any additional measures towards increasing the Department's attractiveness and increase the enrolment of students.

Principle 4: Student-centred Approach in Learning, Teaching and Assessment of Students

The academic unit should ensure that the new 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.

In the implementation of student-centered learning and teaching, the academic unit:

- ✓ *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 application of 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*

Relevant documentation

- *Questionnaires for assessment by the students*
- *Regulation for dealing with students' complaints and appeals*
- *Regulation for the function of the academic advisor*
- *Reference to the planned teaching modes and assessment methods*

Study Programme Compliance

I. Findings

Students are provided the opportunity to give feedback on courses and their personal progress through questionnaires. Each student is assigned an Academic Advisor to provide guidance and support throughout their tenure. Student testimonials indicate a respectful and satisfactory interaction with academics, fostering a positive educational environment.

The department strives to provide resources for comprehensive understanding of course material. The university maintains well-equipped laboratories. Various student teams, such as "Beyond Robotics" and "Spin", participate in European competitions, enhancing students' knowledge and skills. Diploma theses are predominantly practical, contributing to departmental growth. Numerous research projects are conducted, often in collaboration with other universities and industries.

Students are offered a four-month internship in the aerospace industry, with many securing permanent employment post-internship. This extended internship duration is advantageous compared to the two-month standard at other universities.

The academic staff employ diverse teaching methods, including illustrative examples and projects that assess technical aptitude and facilitate student development.

The undergraduate programme features well-designed and sequentially arranged courses, supporting seamless progression through the curriculum.

The EEAP noted that there is no official student representation in the quality assurance processes for the undergraduate programme. There is a lack of formal mechanisms for addressing student complaints, including the absence of a Student Complaints Management Coordinator and an official complaint site. Students must rely on direct communication with teaching staff. This may not be a problem now, given the relatively low number of students, but may become a significant problem if the student body increases significantly. Student psychological support is available and related services are available through NKUA.

There is a perception among the academic community that digital materials are not easily accessible to undergraduate students, although PhD students and research fellows do not face this issue. Students are generally unaware of access to Heal-link. The quality and availability of books in the library are sufficient, but the library's operating hours are limited to five hours daily.

The University's electronic services are satisfactory, but improvements are still needed. The Department's secretarial services have improved significantly since 2019, though they are supported by only three staff members.

There are no official student clubs (e.g. athletic, musical), and the department does not yet participate in ERASMUS+ program.

II. Analysis

Drawing from the information provided to the EEAP and the virtual tour of the university, several key observations can be made regarding the undergraduate study programme at DAST/NKUA.

There are no significant concerns regarding the interaction between students and staff. Students consistently receive equitable and respectful treatment, fostering a positive educational environment. Laboratories are readily accessible to students, who are actively encouraged to utilize these facilities for study purposes and to seek guidance from their professors as needed.

The presence of student groups is significant as it enables students to actively engage in topics of personal interest and apply their knowledge practically. This engagement fosters a deeper understanding of concepts covered during lectures.

The current four-month internship period is more than adequate, allowing students sufficient time to familiarize themselves with industry intricacies and gain comprehensive knowledge. An extension to six months could further enhance these benefits.

Projects assigned to students effectively hone their technical and soft skills. The multiple research projects available provide students with ample opportunities to work on and specialize in topics of personal interest.

The lack of readily accessible digital materials for undergraduate students is concerning, as it impedes their efforts to enrich their knowledge and fully engage with the course content.

Students receive adequate support, ensuring they can continue their studies with confidence, knowing they are not alone.

Based on the above we can state that the undergraduate study programme at DAST/NKUA is satisfactory. However, there are areas that require enhancement to ensure comprehensive coverage of the curriculum necessary for students' academic and professional pursuits.

III. Conclusions

The undergraduate study programme at DAST/NKUA demonstrates a strong commitment to student-centred learning, with positive interactions between students and staff, accessible laboratories, and active student groups fostering deeper engagement. The extended internship period and diverse project work enhance both technical and soft skills, while multiple research opportunities allow for specialization in personal interests. Most importantly, and as pointed out by all external stakeholders, the Department claims high-quality graduates. Without any doubt, this is a very strong indication of the attention and the great care that the Department gives to its students.

The Department, however, has some deficiencies regarding the digital material accessibility and the absence of formal complaint mechanisms. It could also benefit from additional support services and extended library hours. These deficiencies are bound to gain importance when/if the number of students increases significantly.

Panel Judgement

Principle 4: Student-centred approach in learning, teaching and assessment of students	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- R4.1** Expand campus student support services (i.e. psychological support, library opening hours etc.), support extracurricular activities and student clubs.
- R4.2** Further promote student mobility establishing partnerships and engaging with esteemed student organizations such as BEST (Board of European Students of Technology) or ERASMUS+.
- R4.3** Enhance digital material accessibility in support to the students' learning and research needs, including formal complaint mechanisms.
- R4.4** Officially introduce student representation in the quality assurance (QA) processes (see also Principle 2).

Principle 5: Student Admission, Progression, Recognition of Academic Qualifications and Award of Degrees and Certificates of Competence of the New Study Programmes

Academic units should develop and apply published regulations addressing all aspects and phases of studies of the programme (admission, progression, recognition and degree award).

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

- ✓ *the registration procedure of the admitted students and the necessary documents - according to the law - and the support of the newly admitted students*
- ✓ *student rights and obligations, and monitoring of student progression*
- ✓ *internship issues, granting of scholarships*
- ✓ *the procedures and terms for writing the thesis (diploma or degree)*
- ✓ *the procedure of award and recognition of degrees, the duration of studies, the conditions for progression and assurance of the progress of students in their studies*

as well as

- ✓ *the terms and conditions for enhancing student mobility*

Appropriate recognition procedures rely on relevant academic practice for recognition of credits among various European academic departments and Institutions in line with the principles of the Lisbon Convention on the Recognition of Qualifications concerning Higher Education in the European Region. 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).

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

Relevant documentation

- *Internal regulation for the operation of the new study programme*
- *Regulation of studies, internship, mobility and student assignments*
- *Printed Diploma Supplement*
- *Certificate from the President of the academic unit that the diploma supplement is awarded to all graduates without exception together with the degree or the certificate of completion of studies*

Study Programme Compliance

I. Findings

The Department has developed and implements internal regulations that describe the student's admission and their development and education during their entire time as a student. These rules aim at the support of students, their progress, available means, mobility programs and relevant stipulations of credit transfer and financial support. In addition, the quality standards for the final year diploma project and training on research methodologies are included and explained.

The Department organizes, at the beginning of each academic year, a formal welcoming event for the new incoming students by the head of department, academic staff and the administrative support of the department. Furthermore, an academic advisor for each incoming student is assigned at this time and will serve as such for the entire duration of the study period. An entire day is dedicated to this event.

Students stay informed about the programme requirements, the credit hours and the five pillars through the AST web site, and through their academic advisor.

Also, students are informed about practical training in industry, the Erasmus and Erasmus+ programmes through the NKUA web page, in addition to obtaining information from the academic advisor. Similar documentation is in place about practical training programmes. After completion of the requirements for graduation, a diploma, and a diploma supplement with details on the education are provided to the student.

II. Analysis

The number of first year students is not fully controlled by the AST/NKUA since the number of admitted students is decided based on national higher education entrance examinations that take place every year. Statistical data is tracked through the student 'handbook' and through MODIP, such as percent participation and success in exams, spread of grades and percent of students excelling in exams, duration of studies, and percent of students graduating in the 4-year timeframe. All such statistical data are reported in the annual report by OMEA.

The DAST/NKUA programme is new (since 2019). Data show that only a small number of students completed their studies in the four-year timeframe. It is not clear to the Panel if this low number reflects the difficulties of the students with the programme or other personal student's issues. The relevant information was not clear.

Regarding the mobility programmes and the advantages, the students are informed via the NKUA central site. However, no student has benefited from such programs so far.

It is noted that the final year project is mandatory and conducted during the 8th and ultimate semester of studies, while practical training is optional and conducted at any four-month period near the semester of graduation. The participation in the programme is healthy but relatively low.

III. Conclusions

The four-month practical training is well planned and executed by the Department. A number of steps are taken to avoid problems noted in the past.

The hiring of additional administrative staff has improved the smooth operation of the department.

The mobility via the ERASMUS+ programs is not yet in operation. Detailed information of students with disabilities was not evidenced.

The academic staff are active in research. Information and training on research methodology and practice, participation of students in research projects and practical training are promoted and supported by the staff.

The Department suffers from the issues that have been outlined in Principle 1: inconsistent categorisation of its offering and lack of professional rights for its graduates. The Panel is aware of the fact that these issues, especially the second one, goes far beyond the responsibility of the Department or even the host University. However, these problems remain to be addressed by the Department and the NKUA.

Panel Judgement

Principle 5: Student admission, progression, recognition of academic qualifications, and award of degrees and certificates of competence of the new study programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- R5.1** The Department, in collaboration with the host Institution and the Ministry of Education must address the inconsistency in the Department’s study programme categorisation and the lack of professional rights for its graduates.
- R5.2** The Department should exploit avenues for improving the low mathematics level of the incoming students.

Principle 6: Ensuring the Competence and High Quality of the Teaching Staff of the New Undergraduate Study Programmes

Institutions should assure themselves of the competence, the level of knowledge and skills of the teaching staff of the academic units, 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, the appropriate staff-student ratio, the suitable categories of staff, the appropriate subject areas and specialisations, 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 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 members (with respect to attendance requirements, performance, self-assessment, training, etc.); develop policies to attract highly qualified academic staff.

Relevant documentation

- *Procedures and criteria for teaching staff recruitment*
- *Regulations or employment contracts, and obligations of the teaching staff*
- *Policy for staff recruitment, support and development*
- *Performance of the teaching staff in scientific-research and teaching work, also based on internationally recognised systems of scientific evaluation (e.g., Google Scholar, Scopus, etc.)*

Study Programme Compliance

I. Findings

The department is well staffed (considering the number of students enrolled per year), with 13 academic staff members, 3 technical staff members and 3 full-time administrators. 7 adjunct professors also support the department, although from 2024-25 onwards, this number will drop to 2.

According to the staffing plan, another two academic posts are in the final stages of selecting a successful candidate. The department is also expecting two more academic posts to be allocated to them. In total, the department expects to have 17 academic staff by the end of 2027.

Staff is engaged in teaching, both at the undergraduate and postgraduate level (delivered with other academic institutions), supervising diploma theses, research, and other academic and administrative duties (committees). The Department focuses on several contemporary

research subjects to ensure a high educational level and attract funding and PhD students. The educational process is linked to research through the development of research groups.

As highlighted in the accreditation proposal report, the faculty's teaching workload ranges from 15 to 25 hours per week (an average of 18 hours/week). This is considered quite high and will increase further when the department loses the 5 part-time positions. EEAP believes that this should be reduced as to improve the student experience. The interview with the faculty and the students indicated that all teaching staff are committed and passionate about their roles.

The relevant Greek government regulations and legislation clearly define the procedures and criteria for teaching staff recruitment. The Department prequalifies the positions, the announcement is uploaded to the APELLA system, an electoral body formed from the registers of internal and external evaluators and the selection is made based on the relevance of the candidates' academic subject and that of the position. For the further development and promotion of the permanent staff, the evaluations of the students are considered.

II. Analysis

During the interviews with the students, it was evident, that faculty members are highly praised for their engagement and practices.

The number of academics in the faculty is considered sustainable. However, their workload is above the sector average, limiting their time to work on research. It has to be noted though, that the department has a very good track record in winning research grants. The research strategy is clear.

Teaching staff mobility has not been activated in the department, but the teaching workload can be a prohibiting factor.

No training courses specific on teaching and learning methods have been documented at Departmental or NKUA level. This is important for both well-experienced and, even more so, for new academics.

Gender equality in the teaching staff is also a concern, with only one faculty member being female.

III. Conclusions

A research-focused department with good track records both in winning research projects and publishing high-quality papers. Staff mobility is not activated either through educational leave or through dedicated academic staff exchange programmes. Staff have a rather heavy workload, including administrative tasks.

Panel Judgement

Principle 6: Ensuring the competence and high quality of the teaching staff of the new undergraduate study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- R6.1** The department should aim to reduce the teaching workload to further focus on their research but also provide the required “space” for activating staff mobility and educational leaves.
- R6.2** The department should set an unambiguous strategy promoting gender equality and attracting more female teaching staff.

Principle 7: Learning Resources and Student Support of the New Undergraduate Programmes

Institutions should have adequate funding to meet the needs for the operation of the academic unit and the new study programme as well as the means to cover all their 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 resources, on a planned and long-term basis, to support learning and academic activity in general, in order to offer students the best possible level of studies. The above means include facilities such as, the necessary general and specific libraries and possibilities for access to electronic databases, study rooms, educational and scientific equipment, information 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. Students should be informed about 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.

Relevant documentation

- *Detailed description of the infrastructure and services made available by the Institution to the academic unit to support learning and academic activity (human resources, infrastructure, services, etc.) and the corresponding specific commitment of the Institution to financially cover these infrastructure-services from state or other resources*
- *Administrative support staff of the new undergraduate programme (job descriptions, qualifications and responsibilities)*
- *Informative / promotional material given to students with reference to the available services*

Study Programme Compliance

I. Findings

The Department inherited part of the old Evripos campus of the ex-TEI at Psahna, near Chalkida. Inevitably, there has been a lot of restructuring work, which, due to the endemic lack of funding, has dragged over time. Some restructuring work is taking place now, giving rise to some provisory shortages, mainly concerning the office space. All classrooms and laboratories presented appeared to be tidy and clean. There is a library on the campus and students can also use the central NKUA library in Athens.

There exist a comprehensive range of support services available to the students including free meals for low-income students, low-cost transport and career counselling. There are no boarding dormitories but there is a service that helps students in finding accommodation externally to the campus.

Incoming students are informed on such services during a welcome ceremony. Furthermore, the small number of students coupled to an open and accommodating faculty and support staff ensures an effective information flow despite some deficiencies in the formal information mechanisms.

The ERASMUS+ program is not yet implemented in the Department.

II. Analysis

Most student support services seem to be in place. The very positive attitude and role of the administrative and other support staff, including temporary contract or post graduate students, has been highlighted in various occasions.

It is very difficult to evaluate the laboratories and other teaching infrastructure remotely, based on short video walk arounds. The presented labs and the classrooms were brand new. In fact, they seemed too clean and tidy, giving the impression that they have not been used intensively.

The Department is staffed with only 3 laboratory technicians plus 2 other laboratory personnel. This is far too few for maintaining and keeping active as many as 11 laboratories, especially as these are eventually planned to function as research units. The Department claims that the laboratory technicians are complemented by post graduate students and by the academic faculty. This may function for a while but, in the long run, it risks compromising the operability of the labs, especially if the number of incoming students increases significantly.

Regarding ERASMUS+, the Department claims that the necessary actions are being taken to implement it in the near future.

III. Conclusions

There appears to be sufficient and competent administrative staff to ensure the smooth operation of the student support services. However, with increased student numbers, additional staff may be required promptly. Formal student information services through the Department's web page should be improved.

The commendable practice of a 4-months long practical training must be retained and complemented with the ERASMUS+ and other student mobility schemes.

Panel Judgement

Principle 7: Learning resources and student support of the new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- R7.1** The Department must increase the number of permanent laboratory technicians.
- R7.2** The Department must improve the formal communication channels with the students, preferably through its website.
- R7.3** The Department must take all necessary steps towards the full implementation of the ERASMUS+ student exchange programme (See also Principle 4).

Principle 8: Collection, Analysis and Use of Information for the Organisation and Operation of New Undergraduate Programmes

The Institutions and their academic units 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.

Effective procedures for collecting and analysing information on the operation of Institutions, academic units and study programmes feed data into the internal quality assurance system. The following data is of interest: key performance indicators for the student body profile, student progression, success and drop-out rates, student satisfaction with the programme, availability of learning resources and student support. The completion of the fields of National Information System for Quality Assurance in Higher Education (NISQA) should be correct and complete with the exception of the fields that concern graduates in which a null value is registered.

Relevant documentation

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

Study Programme Compliance

I. Findings

The AST/NKUA has established and operates an information system for the management and monitoring of data concerning students, academic staff, programme structure and organization, teaching and provision of services to students and the academic community.

Then, the QA and OMEA analyse the answers through special digital platform, provide the results to the academic staff for action on their activities in teaching if necessary.

On-line information systems are used for the collection of data about students' satisfaction on the curriculum that are conducted annually.

The data seems reliable, essential for accurate information and decision making as well as for identifying areas of smooth operation and areas for improvement as it is evidenced by the information provided.

II. Analysis

It appears that there are procedures for collecting and analysing information on teaching, study programmes, project work and other activities. The data is fed into the internal system of QA, as evidenced by information that was also provided on student population profile, student progression, student satisfaction with their programme(s), availability of learning resources, student support and career paths. It seems that, the procedures are working well,

but some may require improvements like for example tracking the career paths of graduates. The KPIs should also be established and easily accessible.

A number of methods are used for collecting information and further effort is required to ensure that both students and staff are involved in providing and analysing information and planning the follow-up activities. The student progression data is collected and visible through the e-class and digital grade platforms where they are presented for the academic year.

The course evaluation questionnaire includes 21 questions that students are asked to answer once a year to provide information about the academic staff's teaching performance. The participation of the students is about 23%, which can be improved.

The data from the course satisfaction surveys is systematically analysed, as evidenced by the information provided, and communicated for use by OMEA for further programme improvement.

The graduates' employability can be assessed and seems excellent, but their number so far is small.

III. Conclusions

The DAST/NKUA has established procedures to collect data, analyse and communicate the results to the relevant bodies. The provided data were well presented in graphs, demonstrating trends and allowing direct interpretation and comparisons. More detailed data relevant to the analysis and evaluation related to the availability and accessibility of resources (equipment, social services, IT facilities, etc.) were not easily accessible.

Panel Judgement

Principle 8: Collection, analysis and use of information for the organisation and operation of new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- R8.1** The Department has a good system in place to register and follow up the students' education, practical training, research and other pertinent activities. However, the impression of the EEA is that the system is not fully developed, and further improvement is required.
- R8.2** The Department should increase its efforts to obtain a satisfactory level of students' participation in the programme's evaluation.

Principle 9: Public Information Concerning the New Undergraduate Programmes

Institutions and academic units should publish information about their teaching and academic activities in a direct and readily accessible way. The relevant information should be up-to-date, clear and objective.

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 new undergraduate programmes they offer, the intended learning outcomes, the degrees awarded, the teaching, learning and assessment procedures used, the pass rates and the learning opportunities available to their students. Information is also provided, to the extent possible, on graduate employment perspectives.

Relevant documentation

- *Dedicated segment on the website of the department for the promotion of the new study programme*
- *Bilingual version of the website of the academic unit with complete, clear and objective information*
- *Provision for website maintenance and updating*

Study Programme Compliance

I. Findings

The National and Kapodistrian University of Athens and the Department of Aerospace Science and Technology have developed a well-structured website, available in both Greek and English. The website provides detailed information on various aspects of the department, including news and announcements, department overview, academic programmes, research activities, faculty and staff, student community, useful documents, and contact information. The presentation of undergraduate studies is comprehensive and clear. The website also offers extensive details on student services and wellbeing. However, the information about the laboratories is limited. NKUA and DAST effectively communicate information about their new undergraduate programs to the public through various channels. In addition to the website, they maintain a LinkedIn page and social media accounts on Facebook and Instagram. The department also has some videos on YouTube that provide insights into the department. A dedicated hub provides news and achievements of NKUA, including updates from the Department.

II. Analysis

The website is not updated with the many ongoing research projects while there is rather limited emphasis on awards, distinctions, publications, and noteworthy accomplishments. Post-accreditation, a dedicated section should be added to highlight this achievement.

The English version of the website has some content still in Greek, such as the "Curriculum Summary," "Full Curriculum," "Diploma Project Regulation," and "Internship" documents.

There are also minor bugs, particularly with the "Curriculum Summary," "Full Summary," and "Important Development for the Subject of Aerospace Science and Technology" buttons, which either load the Greek version or are unresponsive. The department's LinkedIn page is active and well-structured, but the Instagram page is mostly inactive, and there are few YouTube videos available.

Also, the section on the student community, including science teams and clubs, could be expanded.

III. Conclusions

The Department's website generally includes the necessary information. However, it is not regularly updated, resulting in some important information missing (i.e. research projects). In general, there is ample potential for further development and improvement.

Panel Judgement

Principle 9: Public information concerning the new undergraduate programmes	
Fully compliant	
Substantially compliant	X
Partially compliant	
Non-compliant	

Panel Recommendations

- R9.1** Maintain and further develop the department's website to include updated information on the Department's course offering, laboratories, ongoing and past research projects, team clubs and activities, awards, distinctions, publications, and other noteworthy accomplishments.
- R9.2** Create an alumni section to include comprehensive details about alumni activities and achievements.
- R9.3** Expand the Student Community Section by increasing the content on student science teams, clubs, and community initiatives. Enhance Social Media Engagement: Increase activity on Instagram and YouTube with regular updates, posts, and engaging content to enhance visibility and interaction.

Principle 10: Periodic Internal Review of the New Study Programmes

Institutions and academic units should have in place an internal quality assurance system, for the audit and annual internal review of their new 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 the new 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: 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.

Relevant documentation

- *Procedure for the re-evaluation, redefinition and updating of the curriculum*
- *Procedure for mitigating weaknesses and upgrading the structure of the UGP and the learning process*
- *Feedback processes on strategy implementation and quality targeting of the new UGP and relevant decision-making processes (students, external stakeholders)*
- *Results of the annual internal evaluation of the study programme by the QAU and the relevant minutes*

Study Programme Compliance

I. Findings

A good infrastructure is in place for extensive data collection, objective analysis of quantitative metrics, and qualitative assessment based on student and staff surveys. Data collected for quality indicators include enrolment, grades, course enrolment, exam attempts, teaching load, faculty performance metrics, and others. The administration reviews and analyses this data annually in a comprehensive report.

Student assessment in courses is well structured. OMEA/MODIP collects feedback on the programme content through a range of sources.

Stakeholders are generally satisfied with the preparation of the students and feel that the programme provides a strong foundational preparation for industrial practice. The Panel's interviews with stakeholders confirmed this high level of interaction and alignment of the programme with their needs.

Changes to courses and the Programme are proposed and evaluated through a formal process and are approved by the Committee for Undergraduate Studies. However, no meeting minutes

of such committee meetings were provided. When faculty were interviewed, it was stated that the department has not undertaken any major change since the launch, in anticipation of the first external review.

Student workload is monitored primarily through course surveys. Student assessment in courses is well structured.

II. Analysis

The Department collects feedback on the programme content through various sources. Specific faculty members are actively in contact with external industrial groups, providing critical input and having a good level of interaction.

The committee's interviews with employers confirmed this high level of interaction and the programme's alignment with their needs.

III. Conclusions

Student workload is monitored primarily through course surveys. However, the participation of the students in the surveys can be improved.

The Department has designed and implemented a platform to follow up with its alumni. The EEAP found this action necessary to benefit the programme and the long-term image of the Department.

Panel Judgement

Principle 10: Periodic internal review of the new study programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

- R10.1** The Panel recommends that reports of the annual internal evaluations submitted by students are discussed between relevant staff and the head of department to address issues that arise in an effort for continuous improvement. Summary reports could be made available and discussed at departmental meetings.
- R10.2** An industrial advisory board should be established and actively engaged to the monitoring of the programme. Several of the industrial partners interviewed as part of this exercise expressed interest in further engagements of this type (see also Principle 2).

Principle 11: Regular External Evaluation and Accreditation of the New Undergraduate Programmes

The new undergraduate study programmes should regularly undergo evaluation by panels of external experts set by HAHE, aiming at accreditation. The results of the external evaluation and accreditation are used for the continuous improvement of the Institutions, academic units and study programmes. The term of validity of the accreditation is determined by HAHE.

HAHE is responsible for administrating the programme accreditation process which is realised as an external evaluation procedure and implemented by a panel of independent experts. HAHE grants accreditation of programmes, based on the Reports submitted by the panels, 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 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.

Relevant documentation

- *Progress report on the results from the utilisation of the recommendations of the external evaluation of the Institution and of the IQAS Accreditation Report.*

Study Programme Compliance

I. Findings

The Department was established in 2019. As such, the present evaluation is the first ever. The quality manual has provisions for addressing comments and acting on the evaluation's recommendations.

II. Analysis

Faculty, support staff and administrative personnel are aware of the importance of the external evaluation and have done their best to comply with the whole process. All involved parties seemed willing to contribute to the evaluation.

III. Conclusions

There is some evidence that external stakeholders and employers are consulted for programme content, but there is no industrial advisory board or any other formal interaction to make this correspondence more efficient towards improving the curriculum.

Panel Judgement

Principle 11: Regular external evaluation and accreditation of the new undergraduate programmes	
Fully compliant	X
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

No additional recommendations to make at this stage.

Principle 12: Monitoring the Transition from Previous Undergraduate Study Programmes to the New Ones

Institutions and academic units apply procedures for the transition from previously existing undergraduate study programmes to new ones, in order to ensure compliance with the requirements of the Standards.

Applies in cases where the department implements, in addition to the new UGPs, any pre-existing UGPs from departments of former Technological Educational Institutions (TEI) or from departments that were merged / renamed / abolished.

Institutions should implement procedures for the transition from former UGPs to new ones, in order to ensure their compliance with the requirements of the Standards. More specifically, the institution and the academic unit must have a) the necessary learning resources, b) appropriate teaching staff, c) structured curriculum (courses, ECTS, learning outcomes), d) study regulations, award of diploma and diploma supplement, and e) system of data collection and use, with particular reference to the data of the graduates of the pre-existing UGP. In this context, the Institutions and the academic units prepare a plan for the foreseen transition period of the existing UGP until its completion, the costs caused to the Institution by its operation as well as possible measures and proposals for its smooth delivery and termination. This planning includes data on the transition and subsequent progression of students in the respective new UGP of the academic unit, as well as the specific graduation forecast for students enrolled under the previous status.

Relevant documentation

- *The planning of the Institution for the foreseen transition period, the operating costs and the specific measures or proposals for the smooth implementation and completion of the programme*
- *The study regulations, template for the degree and the diploma supplement*
- *Name list of teaching staff, status, subject and the course they teach / examine*
- *Report of Quality Assurance Unit (QAU) on the progress of the transition and the degree of completion of the programme. In the case of UGP of a former Technological Educational Institution (TEI), the report must include a specific reference to how the internship was implemented*

Study Programme Compliance

I. Findings

This principle is not applicable in the current UGP, since the Department claims no obligations or links whatsoever with any of the old TEI departments hosted in the Evripos campus.

II. Analysis

As mentioned above, this principle is not relevant to this evaluation. All old TEI students graduated under the old status. The new undergraduate programme started with an entirely new cohort of students.

III. Conclusions

Not applicable.

Panel Judgement

Principle 12: Monitoring the transition from previous undergraduate study programmes to the new ones	
Fully compliant	
Substantially compliant	
Partially compliant	
Non-compliant	

Panel Recommendations

None.

PART C: CONCLUSIONS

I. Features of Good Practice

- Effective learning / training procedures resulting to quality graduates despite the low level of incoming students.
- Departmental staff (academic, technical and administrative) fully dedicated to their mission.
- Very supportive prominent stakeholders, willing to contribute to the development of the Department.
- Well organized 4-month long practical training in prominent industries of the sector.
- Good personal communication, even if informal, between the students and the staff.
- Good level of research activity involving staff and post graduate students that allows research-led teaching.

II. Areas of Weakness

- Academic offering inconsistent with the Departments ambitious goals, both in terms of study categories (lack of “engineering” and “ICT” fields) and curriculum content and duration. The current 4-year offering is insufficient for the breadth and depth of the aerospace field.
- Low student intake, in terms of quality and quantity, that risks compromising the Department’s sustainability.
- Degree with no professional rights (regarding the public sector).
- Low number of faculty and support staff in relation to the Department’s application field and goals.

III. Recommendations for Follow-up Actions

Detailed recommendations are given in each section above under each principle and we request that the management of the UKUA and the Department of Aerospace Science and Technology consider these and the bullets points under “Areas of Weakness” and implement corresponding action following the submission of this report. The list below summarises the main EEAP recommendations:

- Setup the basis for a new academic offering, through a concise set of requirements for an “aerospace professional”, without prejudice on the wording, the UNESCO categories or eventual professional rights. This activity could be the object of a dedicated study involving prominent experts and stakeholders.

- Consequently, in collaboration with the host Institution, the Education Ministry and other relevant stakeholders, the Department must plan on how its academic offering can be adapted so as to best fulfil the requirements from point 1 above. Such planning should consider a 5-year integrated master's offering as well as more radical choices, i.e. such as the development of one or more dedicated postgraduate offerings.
- Consider additional measures to increase the student intake levels and quality, on top of the recommendations 1 and 2 above.
- Formalise the good relations with stakeholder and establish an Industrial Advisory Board to review curriculum content and advise on developments.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: **2, 6, 7, 8, 10, and 11.**

The Principles where substantial compliance has been achieved are: **1, 3, 4, 5, and 9.**

The Principles where partial compliance has been achieved are: **None.**

The Principles where failure of compliance was identified are: **None.**

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

The members of the External Evaluation & Accreditation Panel

Name and Surname

Signature

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- 2. Dr Fivos Andritsos**
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- 3. Prof. Konstantinos Salonitis**
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- 5. Prof. Emeritus John Botsis**
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