



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ
HELLENIC REPUBLIC



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

Mineral Resources Engineering

Institution: University of Western Macedonia

Date: 11 June 2023



Επιχειρησιακό Πρόγραμμα
Ανάπτυξη Ανθρώπινου Δυναμικού,
Εκπαίδευση και Διά Βίου Μάθηση
Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



Report of the Panel appointed by the HAHE to undertake the review of the New Undergraduate Study Programme in operation of **the Department of Mineral Resources Engineering** of the **University of Western Macedonia**, for the purposes of granting accreditation.

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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 **the Department of Mineral Resources Engineering** of the **University of Western Macedonia**, comprised the following five (5) members, drawn from the HAHE Register, in accordance with Laws 4009/2011 & 4653/2020:

- 1. Prof. Panos Papanastasiou (Chair)**
University of Cyprus, Nicosia, Cyprus

- 2. Prof. Emeritus Panagiotis (Pete) Scarlatos**
Florida Atlantic University, Florida, USA

- 3. Prof. Tassos G. Karayiannis**
Brunel University London, United Kingdom

- 4. Mr. Georgios Kornelakis**
Mineral Resources Engineer, Technical Chamber of Greece,

- 5. Ms. Eleni Papadopoulou**
Student, Department of Environmental Engineering, International Hellenic University, Thessaloniki, Greece

II. Review Procedure and Documentation

The External Evaluation & Accreditation Panel (EEAP) carried out the on-line review of the undergraduate programme on Mineral Resources Engineering of the University of Western Macedonia from 06/06 to 11/06/2023. The review process followed the planned schedule provided by the Department as follows:

In the afternoon of Tuesday June 6, 2023, the EEAP had a two-hour discussion on the scope of the evaluation, the provided material, discussed issues for the review and made an allocation of tasks for the preparation of the report. Next, the EEAP met on-line with the Prof. Nikolaos Sariannidis, Vice-Rector of Academic Affairs / President of MODIP and the Head of the Department Associate Professor Ioannis Kapageridis. Professor Sariannidis presented the University of Western Macedonia and Professor Kapageridis provided a short overview on the Department and on the Undergraduate Programme (UGP). The presentations covered the goals, history, departments, academic profile, external collaborations, current status, strengths and areas of concern. Subsequently, the EEAP had a teleconference with members and staff of the University Evaluation Unit (MODIP) and the members of the Department Evaluation Committee (OMEA). The members of the OMEA presented the proposal for the academic accreditation of the Undergraduate Programme. The discussion included the degree of compliance of the UGP to the Quality Standards for Accreditation. The EEAP asked the two Committees to provide student assignments, and examination papers. MODIP provided the next day in electronic form samples of the examinations from four courses.

The next day on Wednesday June 7, the EEAP started its on-line meetings with teleconference with teaching staff of the Department that included academic and laboratory staff. During this meeting additional information was provided on professional development opportunities, mobility, workload, student evaluations, the competence and adequacy of the teaching staff, the research activities and opportunities and the link between teaching and research and the involvement in applied research and projects related to the programme. The EEAP tried to identify possible areas of weakness and where changes could be recommended. Next, the EEAP met on-line separately with undergraduate students covering all the semester studies (2nd to 8th).

The students provided information from their study experience, on quality assurance satisfaction and on Department/Institution facilities concerning student life and welfare. In the next meeting the academic and laboratory staff presented the equipment, the teaching and research activities of seven laboratories. In the same meeting presentations were given by the Department's secretary, the Library vice-head and the Career Office director. A link to video on infrastructure was also provided <https://youtu.be/WkkXnq9SHGk>. EEAP used the information for the evaluation of facilities and learning resources to ascertain that the learning materials, equipment and facilities are adequate for a successful achievement of the programme goals. In the next meeting, the EEAP had a teleconference with employers and social partners. Nine representatives all members also of the external advisory body of the department participated in the meeting. The discussion covered the relations of the

Department with external stakeholders from the private, public sector and other universities, the employment opportunities, research collaboration and the future prospects of the Department.

The EEAP, after a short debriefing session, had the last meeting with the Vice-Rector, the Department Head and the members of the MODIP and OMEA. During this meeting the members of EEAP discussed several points and findings, asked for some clarifications and conveyed the main points of the outcome of the on-line review. Starting on Thursday, throughout to Sunday, the EEAP members worked to author the present report. The final report was agreed on Sunday, 11/06/2023.

The EEAP feels that it would have been appropriate to meet the PT staff to clarify their contribution, qualifications and how they are treated by the institution, especially since they are contributing a significant load. It would have been also appropriate to meet PhD students and Post-Doctoral Research Fellows as they generally link to the research-led teaching ethos and do actually contribute to laboratories.

List of Reports, documents, other data examined by the Committee.

Members of the Committee reviewed before the meetings the documents provided by HAHE on qualifications standards, guidelines for the assessment and quality indices for the Department and UGP programme (by HAHE). They reviewed also the material provided on the UGP that include, among others, the proposal for accreditation, the four-year plan and objectives, the programme of study and rules and guidelines for the operations of the department. Information provided in the web page of the Department and University were also reviewed. The reports provided a full overview of the teaching and research activities of the department, undergraduate and graduate study guides, detailed description of all courses, and CVs of the faculty members.

The Evaluation & Accreditation report

The evaluation & accreditation report was thorough and extensive including information on several aspects of the Departmental activity and quality control. The furnished report reflects accurately the current status of the Department. It describes clearly the strategic planning, feasibility and sustainability of the Department, the quality policy, the design, approval and monitoring of the quality of the new UGP, Student-centered learning and assessment, admission, study patterns, recognition of academic qualifications and award of diplomas and skills certificates. The work carried out aimed to ensure the adequacy and high-quality teaching staff, learning resources and student support services, collection, analysis and use of information for the organization and operation, public Information, periodic internal and external evaluation and monitoring the transition from previous UGP to the new ones.

Conclusion

The department operates generally in an appropriate manner. The development of the DMRE to this date and its present situation is satisfactory but strong influenced by the economic constrains and recent student enrolment. The aspiration to improve is notable across the UoWM and DMRE and the leadership is dedicated, committed and capable. The institution provides reliable and robust administrative services although they operate with limited human resources. The academic development strategy is appropriate. The programme of studies meets or exceeds generally accepted requirements. The Institution provides high quality education meeting the demands of the region. The QA policy and strategy of the UoWM is of appropriately high level comparable to good international standards. An efficient and comprehensive information system has been developed for the recording and analysing data indicators. It's attitude towards internal and external evaluation is positive. DMRE contribute to economic and social development in the region.

III. New Undergraduate Study Programme in operation Profile

The University of Western Macedonia (UoWM) was established in 2003. It has 7 schools and 22 departments which are based in 5 cities in states of W. Macedonia. The UoWM has 12,572 active undergraduate students and 2,264 graduate students in 32 postgraduate programs. It has 209 academic staff, 73 teaching support staff and 131 administrative staff. In 2019 the UoWM integrated the Technological Institute of W. Macedonia. The UoWM has many international agreements for students and staff exchange (Erasmus) and research collaborations within EU and other countries. It has modern facilities with €50 million planned for a new campus. Last year based on targeted policies the UoWM increased substantially its research funding and scientific output and it is now listed in established international university ranking lists.

The Engineering School is based in Kozani, and it has 5 departments covering the main engineering disciplines other than civil engineering. The Department of Mineral Resources Engineering (DMRE) is the only one in N. Greece on mineral and geo-energy engineering. Its key objective is to provide education and conduct research in mineral resources engineering from undergraduate to advanced postgraduate level, with strong emphasis on basic sciences, special knowledge and preparation for the professional career and generation of knowledge through research at fundamental and applied level. The DMRE has in particular an ambition to contribute to the reconstruction and development of the wider region of Western Macedonia by collaborating with businesses and enterprises and through excellence, research and innovation. DMRE has currently 9 faculty members, 3 teaching support staff and 2 administrative staff.

It has 340 students but only 25 students in the 1st year which is a point of concern for the Department. The objectives of the Undergraduate Programme (UGP) reflect those of the Department. The listed areas of emphasis of UGP include ; a) mining and processing of common and rare metals of strategic importance b) development of extraction technologies for conventional and renewable energy raw materials (e.g. geothermal) c) development of technologies for efficient use of the above energy sources d) integration with renewable energy sources e) electrochemical ceramic cells f) restoration of the natural environment g) solving environmental problems with the main emphasis on climate change h) development and integration of CO₂ reduction technologies generated by the exploitation of mineral resources and i) sustainable recovery of critical metals (see also point a) above). The plan is to cover the breadth and depth of subsurface engineering by delivering a number of courses in all areas of specialization.

The UGP is structured in 10 semesters of 300 ECTS. The first 4 semesters offer the scientific background in basic sciences and engineering, the next 3 semesters (5th to 7th) include courses in the field of study that the students will subsequently follow. In the 8th semester the students choose one of the three directions of studies: (a) Mining and geotechnical engineering (b) Energy resources (c) Geo-Environmental Engineering. The students specialize in each direction of study by taking the distinct courses of each direction in the 8th and 9th semesters and the

topic of the Diploma thesis in the 10th semester. The students also must complete industrial placement in the summer after the 6th and 8th semester. Once the students complete all the requirements of the programme, they will obtain a Diploma in Mineral Resources Engineering. The Department after the accreditation of the UGP, will make an effort for its graduates after completing the 5-year programme to be awarded an Integrated Master degree. The EEAP believes that the award of an Integrated Master is fully justified by the level and the durations of the studies. The DMRE had no graduates yet to test the job market. Nevertheless, the Department faculty members and the stakeholders are very optimistic that there are many opportunities for employment in the area due to proximity of the mining and extraction sites and the plan for development of the area with decommissioning of lignite mining and large number of energy transition projects.

A point of concern, well understood by the faculty members, is the small number of admitted students the last two years which will make the offering of the 3 directions unsustainable if this trend continuous. The departmental staff understand clearly the programme's advantages and disadvantages, the constraints under which it operates, and the necessary changes for improvement.

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

Findings

The Department of Mineral Resources Engineering (DMRE) was established in 2019 and is part of the Polytechnic School of the University of Western Macedonia. The Department is located in Kozani in a campus that includes all the teaching and laboratory facilities, staff offices, catering facilities and a library. The scientific/engineering field of DMRE is in the internationally established scientific areas of higher education identified by UNESCO (ISCEO 2013, 0724 Mining and Extraction).

The Department has documented in detail the scientific and industrial drivers that led to the establishment of the Department and the programme of study. It aims to cover the educational and fundamental and applied research needs in the area of mining and utilisation of sub-surface resources. It will also facilitate the aspirations of the Greek Government (and internationally) in the transition to the “post-lignite” period.

Similar education provision in Greece is available in the School of Mineral Resources Engineering of Polytechnic of Crete and the National Technical University of Athens (NTUA) although there is a different education emphasis in NTUA, with their degree in the School of Mining & Metallurgical Engineering.

Analysis

The transition away from the lignite work that characterised the area for a number of years is challenging for a number of reasons (energy, economics, local job availability). The Department offers to facilitate this process, while providing alternative exploitation avenues and opportunities based on the availability of natural resources (via mining) in the area. This will contribute to job creation and help reduce out-flux of young people from Macedonia. In fact, the area is a natural laboratory that supports such a degree (and similar) to develop and prosper both in terms of undergraduate provision and postgraduate study and research. In addition to mining resources, geothermal energy is actively researched in many EU countries (see European Geothermal Energy Council) and the Department is in a unique position to exploit the local environment and resources to teach and research this area (sub-surface level and - in collaboration with other Departments of the Polytechnic School of the University - its use in for example heat-to-heat applications).

The resources mentioned and included as study areas in the programme proposed have a central role to play in any sustainable development both at national and international level. In fact, sub-surface engineering is a very active teaching and research area internationally. The areas identified by the Department include: (i) extraction of minerals; (ii) technologies related to the extraction of traditional and renewable (geothermal) energy resources; (iii) development of technologies for the efficient utilisation of the above and the drive towards more extended use of renewable sources including hydrogen and (iv) the application of scientific and engineering principles in the preservation of the environment, including the reduction of greenhouse gas emissions or their capture and storage.

In particular the Department offers specialist pathways in three areas, namely:

- Mining and Geotechnical Engineering

- Energy Resources
- Geo-environmental Engineering

The Department produced a detailed SWOT analysis that was presented and discussed with the members of the Accreditation Panel. Well defined strengths identified by the Panel include, among others: (i) The proposed curriculum; (ii) The well-established process of a methodical revision of the curriculum, which includes input from students and the Industrial Advisory Panel; (iii) the high attainment level of the academic staff; (iv) Adequate and currently well-equipped laboratories that are appropriately linked to the teaching of the courses; (v) Research-led teaching possible through the current activities of staff. The Accreditation Panel identified the following weaknesses that can constitute risks for the Department: (i) The need to consider an increase in the number of academic and technical staff. This will be particularly challenging bearing in mind some possible retirements in the next few years; (ii) Limited budget allocation for maintenance and up-grade of laboratory facilities. Long-term planning is required here with the support of the University; (iii) The need to increase the support offered for research activities; (iv) The administrative load on the academic staff, which is perceived as a weakness/risk. This is not dissimilar to other Departments (nationally and internationally). However, in this case it is exacerbated by the small number of academic staff, i.e., in a larger department this load will be shared more thinly and rotated, hence it constitutes a manageable load.

The long-term sustainability of the Department was discussed in detail with a focus on:

- (i) Employability – Green Economy. The needs of Greece and internationally for graduates in the area mineral resources engineering.
- (ii) The number of first year students entering the Department in the last 2 years.
- (iii) The number of existing staff.

The possible employability of graduates of the programme was clear, with the Industrial Advisory Panel stressing the needs of the industry for qualified people in the area. Also, the location of the Department makes it an ideal place for this type of provision covering all aspects of sub-surface engineering (Mining and Energy- Environment)

The panel was informed of the drop in the number of students entering the Department. During the discussion with the Industrial Advisory Panel, it was revealed that the School of Mineral Resources of the Polytechnic of Crete, which had a long and established history, had similar numbers. The number entering the degree programme at the NTUA was higher. Steps that could be taken to improve this were taken, including course visibility and emphasis on employability.

Similarly, the small number of staff was discussed both with the Vice-Rector and the Department.

Postgraduate study: this was discussed in detail. It was mentioned that the course qualifies for the degree of Integrated Masters and further clarification will be required from HAHE on the possibility of achieving this following this accreditation.

Conclusions

The Accreditation Panel concluded that the Department serves vital educational and research needs. It offers a high-quality programme of study at comparable national and international level. The quality measures and processes taken and implemented are excellent.

Academic staff educational levels are high and certainly compare well with international good quality universities. (Note: we did not meet PT staff employed by the Department.)

Research-led teaching was obvious from discussions with staff and students. (Note: we did not interview PhD students.)

The laboratory support – actual laboratories and staff – are again at internationally high level. The integration of the laboratory and classroom teaching is an exemplar of good practice.

Administration staff were very well regarded by both staff and students.

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 | X |
| Substantially compliant | |
| 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 | |
| Substantially compliant | X |
| 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

The External Evaluation & Accreditation Panel would like to note the following recommendations:

- Increase external out-reach activities in an effort to inform and attract local, and using e-facilities, national students. Inform secondary school pupils and parents of the possibilities offered by this programme of study. The current students, including PhD students, and members of the Industrial Panel should be included in this effort. The Department can also invite secondary school pupils on demonstration/use of laboratories days, hence explaining learning continuity and the relation of the degree programme to their current studies. This will also be a chance to show-case facilities available (laboratories, teaching spaces, catering, halls, or residence).
- Consider with the University management the number of staff going forward, bearing also in mind possible retirements. Consider the possibility of visiting or emeritus professorships to their retired colleagues (and others) so they can continue to support with part-time teaching and research activities.
- Discuss with the University management the allocation of funds for the laboratory equipment maintenance and possible up-grade.
- Consider with the University management and HAHE the recognition of the programme as an Integrated Masters.
- Produce a business case (possible student number, additional staffing, resources, employability of graduates) for a new MSc programme of study. This should be in English, and both in-person and on-line recorded teaching can be considered. This should have appropriate but competitive fees.
- Consider offering a small number of targeted short courses for industry and in collaboration with practising specialists.
- Seek to increase the industrial support, especially from local enterprises, for the Department research activity, e.g., sponsored PhD studentships.

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

Findings and Analysis

The quality assurance policy of the University was discussed in detail at the first meeting of the Accreditation Panel with the Vice-Rector/President of MODIP and the Head of Department.

The University has a clear policy on quality assurance coupled with a drive for the development and establishment of a creative environment for teaching and research. The university management is committed to the continuous improvement of the educational provision, with quality as one of their main strategic pillars. The senior management recognizes very clearly that long-term development, growth and sustainability can only be achieved through the

offering of well-supported quality programmes of study and research. At the same time, it recognises the critical role of the university in the communities where it operates and beyond in terms of education and social needs including the up-ward social mobility of the inhabitants. They appreciate that the above are easier to achieve if the university has a documented reputation as a centre of excellence.

The UoWM has an established and well-articulated Internal System of Quality Assurance, which is used as a tool to coordinate and ascertain quality provision in all its five campuses. The central academic and administrative staff work with schools/departments to support quality provision based upon generic university-wide common policies and processes. This Internal System of Quality Assurance is based on recommendations by HAHE and internationally best practices, e.g., the European Area of Higher Education Provision.

As mentioned above the University works closely with the Department (Dept. OMEA and MODIP) in an annual cycle of evaluation of new programmes of study. The benchmarks and targets of these evaluations are clearly documented and evaluated during the assessment cycles. In addition to the departmental quality processes, the evaluation process covers and comments on appropriate use of resources and correct and balanced assignment of duties to staff. The findings of each assessment are made available to all concerned including academic staff, technical and administrative staff, and students in an appropriate but transparent manner.

The Quality Assurance Policy of the Department integrates well with university level processes so that set and agreed goals are easy to measure and achieve. It was clear to the Accreditation Panel that the Department was committed to the provision of high-quality education coupled with transparent and easily assessed measures in all activities, both in terms of individual members and the team. The principles on which the quality policy is based in clearly stated in the relevant departmental document. In addition, the responsibilities of the quality team (OMEA) are clearly articulated. The above links closely with the responsibility of the Head of Department and the Departmental Assembly. The latter is the highest-level decision-making forum of the Department. It is clear from the documentation and discussions that the Accreditation Panel had with members of staff that they appreciate that they have both an individual and collective responsibility towards high quality teaching and an overall high-quality educational environment. Note that student course evaluation questionnaires were used at the end of each semester and the results analysed carefully with remedial actions agreed as appropriate. The return rate of the questionnaires was high, verifying the importance placed on them by both staff and students.

Feedback on the above was received by the External Evaluation & Accreditation Panel from all the students (unanimous) and the Industrial Advisory Panel, which was again unanimous in expressing their satisfaction with the quality processes of the Department.

Conclusion

It is clear, based on an assessment of the documentation provided and discussion with the Vice-Rector, Head of Department, academic, technical, and administrative staff, students as well as the Industrial Advisory Panel (which includes three senior academics from other Greek universities) that quality assurance (level and processes) was very high in the priorities of the

University and the Department. The EEAP concluded that the Department and the University have an exemplar process in place and have no additional recommendations to make at this stage.

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

No additional recommendations to make at this stage.

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

Findings

The Department of Mineral Resources Engineering of the University of Western Macedonia was established by Law 4610/2019 (Government Gazette 70/A/07.05.2019) and started in the

academic year 2019-2020. The Assembly of the Department is responsible for drawing up the Undergraduate Study Program (UGP). The Chairman of the Department appoints a Committee for the Study Program made up of members of the Department's Assembly, which submits a relevant proposal to the Assembly. The DMRE designed its UGP following a coordinated process defined by the academic character and orientation of the UGP, its goals, academic subjects, structure and organization, the expected learning outcomes and the intended professional qualifications according to the National Framework of Higher Education Qualifications. The process took into account (a) publications concerning the graduates of the relevant Departments in Greece between 2000 - 2015 and (b) the legislation concerning the professional rights of the Mineral Resources Engineer. In particular, the design of the UGP considered the experience and input of external agencies from the labour market for mineral resources engineers, the international trends in the labour market for the profession, related specializations with high demand. The location of UoWM its strategy for development and the plans for development of the wider area of W. Macedonia. The process considered the decommissioning of lignite mines which will deprive some jobs but opens up new modern perspectives for environmental restoration of the areas.

The design of the UGP considered to a large degree the curricula offered by the other two national universities with similar departments (TUC, NTUA) and in particular the curriculum of the TUC relevant department which has the same name. The DMRE compares its curriculum with the TUC curriculum to make a point on the equivalence of the two degrees. The DMRE considers also the international trends in relation to the education and training of mineral resource engineers and other related specialties, changes in curricula and directions. The UGP encourages the active participation of students and pays attention to the smooth transition of students to all stages of studies. The possibility of providing work experience opportunities to students was also considered.

Amendments to the Curriculum are discussed every April, and the decision of the Department Assembly regarding the Curriculum is communicated to the Dean of the Engineering School and appeared in the Department's Study Guide. The planning and revision process take into account: the skills of the students from the Secondary Education, study programs from other Universities in Greece and abroad, consultation with students as well as graduates of other relevant Departments in Greece (DMRE has no graduates yet), data on the employment of former students of related Departments, international trends in the scientific literature and the identification of emerging cutting-edge scientific areas, input of the invited experts in the subject, monitoring results of the applicable UGP and course evaluation results.

A 17-member external advisory committee with the participation of members from important companies and institutions in the sector, as well as relevant Departments and Faculties of other Universities has been set up with the aim of the continuous input for improvement of UGP and its closer and more effective connection with the Greek mineral resource exploitation industry.

Analysis of judgement

The UGP followed the provisions of the European System of Transfer and Accumulation of Academic - Credit Units. The number of weekly contact hours compares well with modern curricula which are based on a 15–18-hour plan. The number of offered courses is excessive in

some semesters. The reduced ECTS in some courses from 5 to 4 and 3 gives the impression that was done deliberately to allow more courses to be added. The excessive number of courses may lead to fragmentation and multiple final examinations with no integration. There is a lack of multi-disciplinary projects that could serve this goal (e.g., a capstone design project, coordination of projects of different courses, etc.). The curriculum includes two courses on IT and programming using a modern programming language, e.g., python. The students use extensively engineering and other software in the learning and design processes. On the contrary the course on hand drawing has no position in a modern curriculum. The students will graduate with some experiences regarding non-technical skills such as entrepreneurship, but more could be done on innovation and discovery, engineering ethics, an appreciation of what is important in engineering practice, the ability to make decisions in the face of uncertainty, and to work with open-ended problems.

Conclusions

The UGP program has been designed by applying appropriate national and international standards. The feasibility study for the new undergraduate program addressed sufficiently the related objectives. It took into account the location of the UoWM and the importance of the area for the mining and extraction industries, the changes in the area with the decommissioning of lignite mining and environmental restoration, the prospects of Greece in exploration, development and production of natural gas resources and the overall prospect of employment of the graduates.

The curriculum compares well with appropriate, universally accepted standards for the specific area of study. The structure of the programme is rational and clearly articulated. Nevertheless, there is still a room for improvement. The curriculum encourages the students to develop digital skills as well entrepreneurship knowledge. There is a clear procedure/regulation in place for periodic revisions of the program curriculum every April that considers the experience from the existing program as feedback for continuous improvement. The curriculum revision procedure involves consultation with the 17-member external advisory committee of stakeholders, external experts and students. The Student Guide appears to be complete, concise and appropriate.

In general, the Panel agrees that the programme is substantially compliant with Principle 3.

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

To enhance adherence to this Principle, the Panel recommends the following:

- Revision of the undergraduate curriculum aimed at reducing the number of courses. Reduced the number of courses per semester by abolishing courses such as hand drawing, biofuels, fuel cells.
- Introduce in the programme slots 3 free elective courses.
- Offer some courses in English for attracting Erasmus students.
- Make all the technical courses uniform in ECTS (e.g., 5 ECTS).
- In the Energy Resources direction combine courses such as geophysics and seismic interpretation and introduce a course on Petroleum Geology.
- Abolish the course on exploitation technology of coal as it is not on-line with the energy transition.
- Introduce final integrated (team) projects in every direction.

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

The study programme has managed to create an engaging environment, which motivates the students to deal effectively with the subject of their studies. The programme requirements and other information are available on the Department's web page. The communication and contact between the students and the academic unit is very good and close. The students are seen as active partners both in the laboratories and in the classroom's levels. There are basic monitoring tools, e.g., student satisfaction surveys and follow-ups from student appeals. The students interviewed by the Panel are very satisfied with their studies.

The academic unit encourages students to develop individual skills and to participate in various projects and presentations, in which they also have an active role. The concept of the "academic advisor" is useful in helping guide students through the programme. The students are aware and take advantage of all the information and possibilities that the Department and University provide.

The Department participates in the Erasmus programme, and the information is readily available to the students.

The Department offers also opportunities for practical training and is developing strategies to encourage the growth of the programme by strengthening and expanding relationships with industry and public sector institutions. Those who participated, commented that they have collected useful knowledges and experiences.

The Diploma thesis is a mandatory requirement. The Student Guide provides a comprehensive description of the quality requirements for the implementation of a thesis. The requirements are presented on the Departmental website. The thesis corresponds to 30 ECTS from the 300 ECTS required for the award of the degree. However, the Diploma thesis is only available in the last (10th) semester. That fact limits the student preparation time and causes a great amount of pressure and stress.

It is understood that the student population decreases at a steady rate due to (i) reduce the number of first-year intake and (ii) limit the number of years a student can remain enrolled with no apparent progress. The continuation of this trend will have detrimental consequences to the quality of the programme and the value of the degree awarded.

In general, the Panel agrees that the programme is substantially compliant with Principle 4.

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

To enhance adherence to this Principle, the Panel recommends the following:

- More one-day educational trips could be organized, which could allow students to learn about new advances in their areas of study.
- Some lessons should be delivered in the English language for the Erasmus students to follow.
- The Diploma Thesis should be discussed with students earlier and titles agreed before the final semester (10th). This will allow students to have more time to prepare their work without being stressed.
- Students in combination with the academic unit should create an “information group”, to publicize their department more, especially in secondary schools in an effort to attract more applicants.

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

Findings

Within the first two weeks of each academic year, new students are welcomed to the Department through a workshop. During this event, students are informed by the faculty of the Department about the subject of studies of Mineral Resources Engineering, and details related to the Study Guide and study directions. In addition, they are informed by

representatives of the administrative and secretarial offices about the opportunities related to Internship programs, i.e., domestic NSRF program, international programs IAESTE and Erasmus, and Student Mobility (Erasmus+). Commonly, the information day is attended by a representative of a professional body (i.e., Technical Chamber of Greece, industry, etc.) who gives a speech about the profession of Mineral Resources Engineer. The Department also holds the tradition of the Student Advisor. First-year students are invited by a relevant announcement of the secretariat to hold a meeting with a faculty member of the Department to whom they are assigned. Faculty advisors undertake the tasks: to assist and support the undergraduate students to determine the optimal path of their course selection and thus, minimizing failure in the exams, and to correctly choose the specialty direction they are interested in, based on their capabilities and skills. In the overall, the department facilitates undergraduate students to complete their studies in the most rational and efficient way and thus reducing student failure and stagnation.

From time to time both course instructors and the Advisor of each student conduct a face-to-face investigation of any problems students may face with their courses. The contribution of teachers to this issue is essential, because their experience and knowledge help to quickly assess the cause of the problem, such as, deficiencies in course prerequisites, inappropriateness of the teaching method, etc. The progress of students in each course is continuously monitored through final examinations, intermediate examinations (progress) and assignments. The final grade in each course consists of two parts: summary grade resulting from all assignments and progress examination, and the final exam grade. There are two examination periods. The first period is immediately after the end of the specific semester, winter or summer, and the second is set in September, before the beginning of the next winter semester.

The promotion of a culture of excellence in undergraduate studies at UoWM is a strategic priority for the institution. In this context, it was decided to establish the Distinguished Student's Award for all departments of the University. In particular, undergraduate students with the highest grade (per department) in all courses of the winter semester are recognized and financially awarded at a meeting of the Faculty Senate during the spring semester. In addition, the Departments, and the Dean's Offices of UoWM grant reward scholarships to undergraduate and postgraduate students based on their academic performance in combination with certain social criteria. These students are under the obligation, to offer part-time work, up to forty hours per month in University services (e.g., laboratories, libraries, etc.), in accordance with Law 4009/2011 (Government Gazette A' 195/6-9-2011) article 54 par. 2. The Institution's internal regulation (Chapter 27) provides for all procedures for granting compensatory scholarships to undergraduate and postgraduate students at the University of West Macedonia. Furthermore, undergraduate, and postgraduate students have the right to participate in the competition "Rewards and Excellence" of the University of Western Macedonia.

The UoWM through the ERASMUS+ program enables undergraduate students to spend a period of 3-12 months to study abroad, in Institutions with which the UoWM has active Bilateral agreements. Studies abroad are fully recognized by the UoWM, provided that students have successfully been examined in the courses they have chosen. The Senate of the University of Western Macedonia, in the Ministry of Foreign Affairs. No. 14/13-1-2016

assembly approved the conditions of participation and eligibility of students for their participation in the ERASMUS+ program. Notably, the Erasmus program offers the possibility of having "ERASMUS students without a grant", i.e., students who fulfil the mobility criteria and benefit from all the advantages of being an Erasmus student without receiving an Erasmus mobility grant. Students travelling to study in International Mobility programs receive a monthly stipend depending on the destination country. In addition, financial support is paid to cover travel costs, which is calculated on the basis of kilometric distance between the place of origin of the Participant and the place where the activity takes place. In order to inform the academic community on issues related to the ERASMUS+ program, there is the website of the Office of International Relations & European Educational Programs of the University where information material and announcements are posted. Also, the Office of International Relations & European Educational Programs regularly organizes information days and information meetings.

The Department of Mineral Resources Engineering fully implements the European Credit Transfer and Accumulation System (ECTS). ECTS credits are awarded based on the learning outcomes and workload of a course. This way students can transfer credits from one university to another by adding them to the total credits they need to accumulate to complete their Study Program.

Presently, there are not any graduates of the MRE program. However, it is anticipated that upon graduation, along with the Diploma the secretariat shall issue a Diploma Supplement at no cost for the student. The Diploma Supplement does not replace the degree but is attached to it and contributes to its easier comprehension, especially outside the borders of the country of origin. The course of studies would be completed with the preparation of the dissertation during the 10th semester of studies in a topic of their choice under the supervision of the course instructor. The Study Guide sets out the basic principles regarding the Diploma Thesis (5-year UG program). The topic of the dissertation must be relevant to the study direction chosen by the student. Also, the Department of Mineral Resources Engineering provides a "Regulation for the Preparation of Diploma Theses", which details the regulatory framework governing the preparation of Undergraduate Diploma Thesis. The regulation defines the purpose and expected results of successful completion of the dissertations, determines their form and extent, and makes reference to copyright. In the case of Integrated Master's degree, the Master's Thesis is an extended thesis prepared during the final year of studies and would be necessary to obtain the title of Mineral Resources Engineer. The Thesis enables students to complete their knowledge and document their skills in combining independent issues of their specialty. The Thesis receives 30 ECTS credits.

At regular intervals, faculty shall announce a series of available dissertation topics on the Department's website. Students then will contact the faculty in order to be assigned one of the topics. In addition, students will be free to consult with their faculty members and select a dissertation topic. In any case, the assignment of the dissertation to the student shall be made by the instructor at least six months before its examination. The assignment would require completing a relevant form from the Secretariat of the Department signed by the instructor. This form shall also define the three-member advisory committee, which consists of the supervisor and two other faculty members. The Secretariat of the Department shall announce

the date and time of examination of the diploma theses through the website of the Department. The examination procedure shall be open to the public.

Students are encouraged to participate in the research activities of the Department. Their participation can be done in the context of a research project, through a student assignment, or even through a diploma thesis. In this way, students are trained both in research methodology and ethics while they are given the opportunity to broaden their academic and professional horizons. Mineral Resources Engineering students should complete their internship, which is divided into two courses. Internship I, that belongs to the compulsory courses of the 7th semester, receives 4 ECTS credits, and takes place during the summer between the 6th and 7th semester. Internship II also takes place during the summer, between the 8th and 9th semester regardless of the direction chosen by each student and receives 4 ECTS credits. The internship takes place in a company or organization related to the subjects of Mineral Resources Engineering. The Internship concerns the exposure of students to the workplace, and thus connecting theory to practice. During the internship, students gather and analyses data which they present in the form of a written assignment, which is graded. It is possible for the students to choose the subject of the internship so that is combined with the subject of their dissertation. During their studies at the Department of Mineral Resources Engineering, students have the opportunity to visit mining, quarrying and other production units as well as technical projects related to their subject, as part of educational trips.

Analysis of Judgement

Based on the review of documents provided by HAHE, presentations by the MODIP, OMEA and Department representatives, and discussions with faculty, support staff, students, and members of the industry the following facts are evident:

The Department of Mineral Resources Engineering utilizes procedures and tools for collecting and managing information related to student progress, and applying further actions as required. The existing Study Guide explains procedures for the award and recognition of the title awarded, duration of studies, conditions for promoting and ensuring student's progress in their studies, as well as the terms and conditions for enhancing their mobility. Degree recognition procedures are based on relevant academic practices for credit transfers between different departments and institutions in Europe, in accordance with the principles of the Lisbon Convention on the Recognition of Academic Qualifications. Graduation from the Department of Mineral Resources Engineering marks the completion of the period of study. Students receive the relevant documents, describing the learning outcomes and specialization acquired, as well as the knowledge framework, rank, content, and level of studies they followed and successfully completed (Diploma Supplement).

Conclusions

From the aforementioned the following conclusions can be drawn:

Positive aspects include (i) a well-organized program of studies with focus on MRE; (ii) Good student to faculty ratio (15); (iii) Good student mobility opportunities; (iv) Good internship opportunities; (v) Very enthusiastic students and finally (vi) Very energetic and dedicated faculty and staff. Some negative aspects include the small number of 1st year entering students and the heavy course load, i.e., up to 7 per semester.

On the overall, the program is fully compliant in Principle 5.

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 | X |
| Substantially compliant | |
| Partially compliant | |
| Non-compliant | |

Panel Recommendations

- Fine-tune the curriculum.
- Reduce the per semester number of courses to no more than 5.
- Promote the programme in order to attract more incoming students.
- Increase the number of faculty in current and new areas of expertise. This will allow a critical mass of academics in certain key areas and facilitate improved teaching and better chances of securing external (e.g., EU) research grants.
- Re-access post graduate programmes and avoid spreading resources too thin.

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

Findings

The procedures of the DMRE concerning the transparent and meritocratic recruitment of teaching staff members, as well as the improvement of their level of knowledge and skills, are supported by the legislation and by a series of measures and actions of the UoWM and the ELKE. All new faculty members possess at least the elementary necessary teaching skills, guaranteed by the procedures provided by law (Law 4009/2011 and Article 9 of Law 4521/2018). The UoWM supports and encourages the professional and scientific development of its teaching staff, by approving the granting of various types of leave for all levels of faculty. That includes leave for scientific reasons, teaching reasons, for participation in conferences, etc. or through its participation in international exchange programs for both Erasmus students and faculty (Mundus, Staff- Training, International, Erasmus+). The University's ELKE, through a series of measures aimed at funding various research related activities, sets as a priority the encouragement of strengthening the connection between education and research and through

this the training and development of teaching and other research staff. In particular, the pursuit of the long-term goals of the Department, i.e., provision of high-quality education and production of high-quality research work in a rapidly changing scientific environment, requires highly performing teaching and research staff. Presently, the Department employs: 9 faculty members, 2 administrative staff members, 3 EIB members as well as 10 external Scientific Associates. The definition of the subjects and the rank of any new faculty positions is decided by a process that takes into account the Strategic Planning of the Department and is approved by the Assembly of the Department. Regarding the announcement of vacancies for various reasons, e.g., due to retirement, the General Assembly of the Department decides whether the new position will be announced in the same discipline as that of the vacant position or it is considered appropriate for strategic reasons to change the subject in a new direction. The selection procedures for teaching staff are carried out with absolute transparency and in accordance with the law governing the elections of faculty members (Law 4009/2011 as amended and in force by laws L.4386/2016 (A'83/11-05-2016), L.4405/2016 (A'129/13-07-2016), Law 4416/2016 (Government Gazette A'159/6-09-2016), Law 4452/2017 (Government Gazette A'17/150202017), the interpretative circular No. Prot.F.122.1/88/119483/Z2/20-7-2016 and the Ministerial Decision No. Prot.F.122.1/6/14241/Z2/ B'225/31-01-2017). The process of electing new members or the professional development of existing faculty of the Department, is compiled, maintained, and updated using an electronic management system including posting on DIAVGEIA (APELLA, par.1, no. 3, F.122.1/6/14241/Z2 Government Gazette 225 t.B' 31-01-2017).

All notifications relating to the procedure are made within the legal deadlines to all interested parties and the relevant minutes of meetings are accessible to all parties concerned. In addition, all external candidates, under the responsibility of the Head of the Department, are invited for an oral presentation, open to the public, including faculty members and students of the Department. The presentation asks candidates to present part of their research work in a way that is understandable to undergraduate students. The purpose of the presentation is to enable faculty members to get to know the scientific personality of the candidates and to assess their teaching ability. When assessing the teaching ability of candidates, the opinion of the students who attended the lecture is also taken into account. The aim of the Department is to attract the highest possible candidates in each discipline. Therefore, it ensures that the announcements are also published in networks that reach Greek scientists abroad. The Department of Mineral Resources Engineering offers both existing and newly hired colleagues all the possibilities provided by law, for their extrovert professional and scientific development. These include leave of absence in Greece or abroad for research or teaching purposes, parallel employment in foreign Universities (Law 4009/2011), participation in International Conferences, short-term teaching in foreign Universities or in exchange programs (e.g., Erasmus, Greek Diaspora), and affiliation, under certain conditions, to part-time status when it comes to undertaking administrative duties. In addition, at the University of West Macedonia, with funding from the ELKE which comes from the funding of research programs, it rewards with a significant amount the writing of reputable research publications in prestigious journals.

The mandatory teaching workload of faculty members according to the current legislation is 6 hours per week, which entails the teaching of 2 courses of three hours duration per week. However, in the Department all faculty members exceed this load, teaching 8 or more hours

per week. The main reason for this overload is that there are many different subjects and no overlapping of expertise among the faculty members. In addition, teaching multi-sessions laboratory courses and postgraduate courses contributes to the problem. Retired Professors, who have been distinguished for their contribution to the Department, are awarded the title of Professor Emeritus according to established criteria.

In spite of their heavy teaching load, the faculty members of the Department of Mineral Resources Engineering are satisfactorily involved in research including the following scientific fields:

- Extraction and processing of common and rare, and precious metals of strategic importance,
- Development of technologies for the extraction of conventional and renewable energy raw materials (e.g., geothermal),
- Development of technologies for efficient use of conventional energy sources and switching/integrating with renewable energy sources,
- Use of hydrogen or fuels with high content of hydrogen (natural gas, propane) and/or synthetic renewable fuels,
- Application of methodologies aimed at restoring the natural environment and solving environmental problems with main emphasis on climate change (e.g., CO₂ reduction technologies),
- Development of methods aimed at the sustainability of mining industries and metallurgical processes (i.e., carbon-free and low cost both in the extraction and processing of base metals in the respective industries),
- Recovery of strategic rare earth metals from solid fly ash waste,
- New hydrogen production technologies, and
- Development of technologies for direct capture of atmospheric carbon dioxide through enhanced terrestrial erosion of olivine-type minerals.

Analysis of Judgement

Based on the review of documents provided by HAHE, presentations by the MODIP, OMEA and Department representatives, and discussions with faculty, support staff, students, and members of the industry the following facts are evident:

The Department of Mineral Resources Engineering utilizes legal procedures and transparent tools for hiring new faculty members. It supports faculty mobility and provides opportunities for faculty professional growth. Due to small faculty numbers and the plethora of classes offered, the six hours per week required by law for teaching staff is increased to eight or more hours per week. In spite of this, faculty are involved also in research activities related to their areas of expertise.

Conclusions

From the aforementioned the following conclusions can be drawn:

Positive aspects of the work of the Department include the very enthusiastic academic, laboratory and administrative staff and the fact that in certain relevant research areas there seems to be adequate support/funding. The teaching load of staff should be considered in a

careful balance of the overall contribution of each member, i.e., in terms of course teaching, research and research supervision and administration. Where possible, administrative duties should be rotated, within of course the limitations of the small number of academic staff.

Overall, the program is fully compliant in Principle 6.

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

- Consider appointment of new staff
- Consider carefully a balanced workload for 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

Findings

The lecture part of the courses is taught in four fully equipped with audio-visual technology classrooms in the complex of the University of Western Macedonia in Koila, Kozani. The teaching of the laboratory part of the courses takes place in specially designed and equipped laboratory rooms, where research work is also being conducted. Within the framework of the educational and research activities and needs of the Department, the following well-equipped laboratories operate:

- Analytical Geochemistry
- Air Pollution and Environmental Physics
- Geoengineering and Geostationary Engineering

- Applied Geophysics
- Mining Informatics and Geographic Information Systems Applications
- Microscopy of Minerals and Rocks
- Environmental Mining and Reclamation of Disturbed Soils
- Advanced Materials and Electrochemical Technologies
- Geology Laboratory
- Laboratory of Mineralogy
- Laboratory of Enrichment of Primary & Secondary Materials

Presently, the above existing laboratories are considered sufficient although periodically there are needs for renewal and maintenance of existing equipment (computers, scientific instruments). The development of research activities currently requires an uninterrupted operability of the X-ray diffraction apparatus, analytical chemistry devices such as HPLC or ICPMS and a flow meter. Commonly, the Departmental budget is used to improve infrastructure and equipment. The Administration of the University of Western Macedonia developed a formula for an equitable allocation of the budget to departments and faculties. Specifically, it is proposed that 20% of the total budget be shared equally across the board while the remaining 80% is distributed based on performance criteria.

the Secretariat of the Department is housed in the main building of the Administration in a 30 sq. m. room and is staffed by two (2) administrative employees.

The secretariat supports:

- Electronic submission of course statements and applications for the issuance of certificates
- Electronic access of students to their declared courses and the corresponding grades
- Electronic announcement of programs, announcements, etc.
- Electronic management and processing of data for the publication of statistical and other reports.

The Secretariat is open daily for the teaching staff and services of the Department, while it serves students daily from 11:00 to 13:00. The services provided and the opening hours of the Secretariat of the Department are considered effective to serve the needs of students as well as teaching staff.

For the meetings of the Assembly of the Department as well as other meetings of special type and purpose (e.g., contacts with the industry and working groups in research programs) the conference room of the University of Western Macedonia (Koila Kozani), located on the ground floor of the administration building, is utilized. This conference room is fully equipped with 45 comfortable and ergonomic conference seats, projector for presentations, modern audio-visual system and professional 24- channel audio console, high quality wireless and wired conference microphone installation, wired Internet to support events and wireless coverage for members of the University and the academic community. In addition, it is equipped for video conference, portable PC for participants, air conditioning, and easy access for people with mobility problems. It is supported by the specialized technical staff of the Communication and Information Technology Support Centre (KYTEP).

Students of the undergraduate program have access to the five (5) central libraries of the University and an electronic one with 135,125 titles of electronic journals and books, connection to HEAL-Link, collaborations with 46 external electronic libraries and offers remote access. The library provides the ADVANCE software with which it is possible to access easily its catalogue of titles.

The Department is adequately supported by Information & Communication Technologies (ICT) from the Department of Computerization, which covers the network, computers and application services. Also, there is an e-course management system (ZOOM) and e-learning (synchronous or asynchronous) via web browser which does not require specialized technical knowledge. The electronic classroom is used by the teaching staff of the Department.

The Student Support Unit for Vulnerable Groups (MYFEO) provides psychological and counselling support services to all human resources (students and staff) of UoWM in each of the five cities where the institution is based. At the same time, it provides transportation services for students with mobility problems to and from their study departments using white taxis. It also ensures that students with sensory disabilities are supported by appropriately trained staff in Greek sign language or Braille.

For all the services provided, students are informed both in person at the freshman welcome ceremony, and asynchronously afterwards through digital announcements on the Department's website, as well as through printed announcements at the Secretariat.

Analysis of Judgement

Based on the review of documents provided by HAHE, presentations by the MODIP, OMEA and Department representatives, and discussions with faculty, support staff, students and members of the industry the following facts are evident:

The Department of Mineral Resources Engineering has adequate laboratories, teaching facilities, libraries, and electronic support. The only concern is lack of technicians to support an uninterrupted operation of the laboratories that serve both teaching and research efforts.

Conclusions

From the aforementioned the following conclusions can be drawn:

Positive aspects of the provision include the sufficient number of well-equipped laboratories and the adequate teaching facilities, equipped for efficient course instruction. In addition, there are fully equipped libraries with 1000's of publications and easy remote access. On the negative side, the number of available laboratory technicians is not adequate and should be considered by the Department and Institution.

Overall, the program is substantially compliant in Principle 7.

Panel Judgement

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

Panel Recommendations

- Hire additional laboratory technicians.
- An out of hours help line for students (Department/School or University level) is essential since the secretariat is not available after 1:00 pm.

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

Findings and Analysis of judgement

The basic service for the collection of information at UoWM is the Quality Assurance Unit (MODIP) and its information system, with the main objective of evaluating the teaching, research and administrative work of the university. Information is collected and analysed and used to improve the overall academic work and ensure the quality of the services provided by each department through (a) the individual appraisal forms of the Faculty members and the part-time teaching staff of the Department, (b) the corresponding records of courses (c) the evaluation questionnaires of the courses by the students and (d) the evaluation questionnaires of the administrative services and infrastructure of the Department and the University.

The individual appraisal forms of the teaching staff include information related to the research output, teaching and administrative work. The research data includes, publications, cross-references, patents, participation in committees and social actions, as well as participation in research funding projects. For the research project, additional information is drawn from relevant online databases (ISI Web of Science, Scopus, Google Scholar). The MODIP information system registers, for each member of the Department's academic staff, publications, cross-references, conference proceedings, research and development projects and any other research activity (organization of conferences, participation in editorial boards of scientific journals, etc.). With the assistance of OMEA, the Chairman and the Department monitor and evaluate the results of the research efforts of its members. For the research

carried out in the framework of programs, the monitoring is carried out by the Scientific Manager, while the Chairman forms an overall picture for the Department.

Course report records include information on the course outline, assessment and student workload, use of ICT, laboratory equipment, as well as course pass rates. The learning objectives and the expected results of the courses are also described on the page of each course on the Learning Platform of UoWM (<http://eclass.uowm.gr/>) as well as in the study guide of the Department, where they are also accessible by the students. The course evaluation questionnaires are completed anonymously by the students and mainly concern the quality and means of teaching, the structure and content of the studies, the teacher, and the infrastructure. By submitting the questionnaires, the students' answers are automatically processed, and the anonymized results of their analysis are available to the course instructors. The Department's Internal Assessment Team (OMEA) has access to the evaluation results of all courses, as well as aggregated results. Each teacher must take into account the results and design a plan of corrective changes in the educational process that follows. The OMEA of the Department, after analysing the results of the evaluation, informs the Chairman of the Department, who then has the responsibility to personally contact any lecturers he deems necessary in order to discuss the results of the evaluation and propose solutions to any problems that have been identified.

The Secretariat of the Department has an information system, which allows, among other things, the electronic submission of course declarations by students and the electronic registration of grades. From the information system, personalized information and conclusions can be extracted regarding the course of study of students, as well as aggregated data regarding the percentage of students who complete their studies on time, the average time to complete the studies, the average students' final score and the percentage of students who drop out.

Conclusions

The UoWM and DMRE established procedures for the collection of data regarding staff performance, student body, teaching methods, and student progression. The mechanism to record the employability and career paths of graduates has not been activated yet as there are no graduates. There are efficient information systems and methods for the collection of data. The student and staff satisfaction surveys are regularly conducted and there is provision for the information obtained from the satisfaction surveys to be systematically analysed, appropriately communicated and used towards improvement to comply with the expected performance and progression. DMRE analyse and evaluate data related to the availability and accessibility of resources (equipment, social services, IT facilities) which are obtained during the evaluation processes. The system is organized in a way that personal data are protected minimizing any risk of bias, intervention, and discrimination.

Overall, the program is fully compliant in Principle 8.

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

No additional recommendations to make at this stage.

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

The Department has developed a complete website (in Greek and English) and maintains active YouTube, Facebook, LinkedIn accounts, all of which are regularly updated with news and activities. The website includes all kind of information (course outlines, accommodation, public transport, etc.) and its access is easy. The Departmental policy on quality assurance is published online and relies on the MODIP website.

The Department has an extensive network of external stakeholders, and some are actively involved in its activities. All the stakeholders the Panel met are eager to get engaged and help the Department achieve its goals.

The Panel finds the programme fully complies with Principle 9.

Panel Judgement

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

Panel Recommendations

To enhance adherence to Principle 9, the Panel recommends the following:

Sometimes the website malfunctions. This should be improved.

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

Findings

Re-evaluation and updating of the Curriculum are discussed every April, and the decision of the Department Assembly regarding the Curriculum is communicated to the Dean of the Engineering School and appeared in the Department's Study Guide. The revision and amendment process takes into account: the level of education and skills of the enrolled students from the Secondary Education, curricula from other Greek Universities and abroad, consultation with students as well as graduates of similar departments in Greece (DMRE has no graduates yet), data on the employment of former students of related departments, international trends in the scientific literature and the identification of emerging cutting-edge scientific areas, input of the invited experts in the subject, monitoring results of the applicable UGP and course evaluation results by students. The participation in the process of the 17-member external advisory committee with the participation of members from important companies and institutions in the sector, as well as relevant departments and faculties of other Universities is particularly valued.

Analysis of judgement

The Committee is particularly impressed by the re-evaluation and updating of the curriculum process. The participation of the Industrial Advisory Panel is particularly important to the aim of the continuous input for improvement of UGP. It offers also a first-class opportunity to DMRE and its students to build effective connection with the Greek mineral resource exploitation industry.

Conclusions

The self-assessment procedure of the programme is scheduled to take place annually. There is provision for the outcomes of the self-assessment to be recorded and submitted to the QAU of the Department and MODIP of the UoWM. The findings of the self-assessment are shared within the Department. The self-assessments result in documented and communicated action plans.

The overall culture of the University and the departments is in the right direction regarding the internal evaluation of the whole department and the study programme. The internal evaluation is promoted by the very enthusiastic departmental staff, who positively included for comments and for further improvements. The positive attitude of the teaching staff can lead to a very competitive study program.

Panel Judgement

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

Panel Recommendations

There are no recommendations at this stage.

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

Findings

The Department and Institution has participated in this evaluation process in a very positive, helpful, and constructive manner. The current external evaluation procedure has been organised in an excellent way. The institution's representatives and the staff have contributed to the presentations, discussions and brainstorming actively and efficiently. All stakeholders of the programme and the Department engaged actively in the external review and appear eager to be involve in the entailed follow-up actions.

The Department followed the recommendations of the External Evaluation Committee of the UoWM and proceeded with a series of actions to improve the Department and the UGP. DMRE submitted a proposal for a more efficient location of the Department and the housing of students in the Koila Kozani campus. It formulated the Quality Policy in such a way that the quality procedures are not perceived as mere bureaucracy but to be applied in practice. It has strengthened research and innovation activities through the signing of cooperation agreements with University Departments, announcing regularly new topics for doctoral theses and it has held many online seminars with speakers from other Universities and research centers. The Department has planned new permanent staff positions to meet its teaching and research needs, which it has forwarded to the UoWM.

Analysis of judgement and Conclusions

The procedure already planned by the DMRE was excellent and the collaboration with the EEAP was exemplary. It felt most welcome and the reaction to the evaluation process was exemplary positive of the Department and institution. The anticipated implementation of plans by the department and institution was monitored within the internal evaluation report, the presentations and the additional information asked by the EEAP. The members of staff were fully aware of the importance of the external review and its contribution to the improvement of UGP.

The Department has taken into considerations recommendations from previous external reviews on UoWM in strengthening the new undergraduate programme.

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

There are no recommendations at this stage under this heading.

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

Findings

The number of remaining students of the abolished Department of Environmental Engineering of TEI WM is currently estimated as follows: Active students: 1558, Students up to 12th semester: (normal study time n+2) 350. Students from 13th semester to 20th semester, 259. It is estimated that in the next 4 years a maximum of 350 students will complete their studies. All the potential students of the former Department of TEI WM are served by the existing academic and administrative staff of the Department. Students are regularly informed via the website on all their remaining academic obligations. This backlog of active students is decreasing over time, and it is estimated that it will end by June 2026. It is pointed out that the remaining students of the last semesters of the former Department of Environmental Engineering TEI, in the direction "Geotechnology and Environment" do not have the possibility based on law 4610 /2019 to join the existing new DMRE. They can join only if they get a Degree

and want to participate, in accordance with the applicable general provisions in qualifying examinations.

Both the old and the new UGPs are implemented on the campus of the University in the area of Koila Kozani, where its infrastructure and facilities are located, such as: classrooms, laboratory infrastructures, secretariat, central library, and student care structures, such as the student restaurant, residences, gym. The Teaching and Research Staff (faculty members) of the Department are committed to offer a high-level education to all active students. The obligations of the Department to the former students of TEI has currently been reduced to organizing of final exams. Also, the Department's faculty members continue to supervise the thesis of the students of the old UGP as well as to conduct the examinations of the courses of the old UPS for which the students are enrolled, while at the same time the Department continues to support the internship programme of the old UGP.

Analysis of judgement and conclusions

The QAU/MODIP had drafted a detailed report on the transition period of the pre-existing undergraduate programme, Geotechnology and Environment of TEI WM until its completion. Provision been made for the progression of students enrolled in lower semesters of the pre-existing study programme who wish to continue their studies in the new study programme. The Department continues to support the internship programme for practical training.

Panel Judgement

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

Panel Recommendations

Ensure that students from the TEI West Macedonia are not treated differently once they are on this university programme of study (e.g., see document B1, section 5.3).

PART C: CONCLUSIONS

I. Features of Good Practice

The following can be listed under areas of good practise.

- The teaching facilities, including the laboratories, are well equipped and organized.
- The faculty is enthusiastic and dedicated to their mission. The enthusiasm and dedication of the current students was obvious. The Industrial Advisory Panel was equally supportive, as evident from our meetings.
- The Department has implemented compliant mechanisms for monitoring and ensuring high quality of work and services.
- The contact between students and the academic unit is strong, so complaints and problems are easily communicated and solved.
- The practical training brings the students in contact with the industry and the real working world.
- Internships are available.
- Student involvement UG level research projects is a positive measure with obvious advantages.
- Targeted plans for appointing new staff are in place.
- Active research engagement of staff in modern practice in their areas of expertise was obvious.

II. Areas of Weakness

- The Diploma Thesis should be discussed with students earlier and titles agreed before the final semester (10th). This will allow students to have more time to prepare their work without being stressed.
- The Department needs to engage with the local/national communities more and promote its capabilities and work.
- Erasmus should be promoted more, and the academic unit should make some changes in the courses, when attended by foreign students. (For example, some courses in the English language)
- Low student enrolment is a major challenge to long-term sustainability.
- Small number of faculty
- Appropriate allocation of teaching duties should consider contribution to research/research supervision and administration duties.

III. Recommendations for Follow-up Actions

In summary we mention two main recommendations

- Revision of the undergraduate curriculum aimed at reducing the number of courses.
- Ensure and plan for a sustainable department - Increase the enrolment of students.

Additional recommendations are mentioned above in each Principle, which we request that the management of the UoWM and staff of the Department of Mineral Resources Engineering considers following the submission of the report.

IV. Summary & Overall Assessment

The Principles where full compliance has been achieved are: **2, 5, 6, 8, 9, 10, 11, and 12.**

The Principles where substantial compliance has been achieved are: **1, 3, 4, and 7.**

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

1. **Prof. Panos Papanastasiou (Chair)**
University of Cyprus, Nicosia, Cyprus

2. **Prof. Emeritus Panagiotis (Pete) Scarlatos,**
Florida Atlantic University, Florida, USA

3. **Prof. Tassos G. Karayiannis**
Brunel University London, United Kingdom

4. **Mr. Georgios Kornelakis**
Mineral Resources Engineer, Technical Chamber of Greece,

5. **Mrs. Eleni Papadopoulou**
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