AQAS

AGENTUR FÜR
QUALITÄTSSICHERUNG DURCH
AKKREDITIERUNG VON
STUDIENGÄNGEN E.V.

EXPERTS‘ REPORT

ENERGY STUDIES (PHD)

MATERIAL & TEXTILE ENGINEERING (PHD)

Moi University, Kenya

HEI	**Moi University, Kenya**
Campus, if applicable	

Programme 01	**Energy Studies**		
Degree	**PhD**		
Extent	90 credit units		
Length of studies	6 semesters		
Language	English		
Start Study programme (Date)	2003		
Maximum capacity of students	10	Per Semester ☐	Per Year ☒
Average number* of entering students		Per Semester ☐	Per Year ☐
Average number* of graduates		Per Semester ☐	Per Year ☐
* reference period:			

Concept accreditation	☐
First-time international accreditation	☒
No. reaccreditation	

Responsible agency	AQAS e.V.
Responsible consultants	Doris Herrmann, Dr. Dorothee Groeger

Programme 02	**Material & Textile Engineering**		
Degree	**PhD**		
Extent	90 credit units		
Length of studies	6 semesters		
Language	English		
Start Study programme (Date)	2018		
Maximum capacity of students	10	Per Semester ☐	Per Year ☒
Average number* of entering students		Per Semester ☐	Per Year ☐
Average number* of graduates		Per Semester ☐	Per Year ☐
* reference period:			

Concept accreditation	☐
First-time international accreditation	☒
No. reaccreditation	

Content

Decision of the Standing Commission

on the PhD programmes

"**Energy Studies**"

"**Material & Textile Engineering**"

offered by

Moi University, Kenya

Based on the report of the expert panel and the discussions of the Standing Commission in its 9th meeting on 31 May 2021, the Standing Commission decides:

1. The study programmes "**Energy Studies**" **(PhD)** and "**Material & Textile Engineering**" **(PhD)** offered by Moi University, Kenya are accredited according to the AQAS criteria for PhD programmes.

   The accreditation is conditional.

   The study programmes essentially comply with the requirements defined by the criteria and thus the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) and the European Qualifications Framework (EQF) in their current version. The required adjustments can be implemented within a time period of twelve months.

2. The conditions have to be fulfilled. The fulfilment of the conditions has to be documented and reported to AQAS no later than **31 May 2022**.

3. The accreditation is given for the period of **six years** and is valid until **30 September 2027**.

Conditions:

1. The learning outcomes for both programmes have to be re-phrased in more detail.
2. The course descriptions of both programmes have to be revised, especially with regard to the recommended literature.

The following **recommendations** are given for further improvement of the programmes:

All programmes:

1. Aspects of project management and social skills, such as leadership, should be made more explicit in the documentation of the programmes (e.g. the course descriptions).
2. Training in data analysis should be further improved in both programmes, for example by a joint course for both programmes.
3. The programmes should cooperate in having further didactic trainings for its staff, e.g. with regard to online teaching.

4. The connection between the two programmes could be improved by offering joint workshops or interdisciplinary seminars.
5. The university should expand the cooperation with industry which may also include further funding of research in joint projects, frequent invitation of experts from the industry as guest lecturers or joint teaching with experts from the industry.
6. The university should expand the access to databases, especially to programme-specific ones. This could also be realized with the help of a partner institution which offers these databases.
7. Due to the relatively broadly formulated admission criteria for both pro-grammes, arrangements should be made to accommodate students from various educational background, e.g. by offering extra courses or a structured programme to gain missing competences, in case the numer of stu-dents rises
8. The university should commit itself to the offer of part-time studies and evaluate the real workload of students and make part-time study an official option.
9. Documents such as course descriptions should be revised more frequently and they should be made available on the website.
10. Feedback on the quality assurance measures should be improved and not limited to official committees.
11. Students should receive further training for teaching.
12. Regulations for the recognition of courses/modules should be specified.

“Energy Studies” (PhD):

13. For “Energy Studies”, the equipment in the labs should be improved, especially with regard to geothermal aspects.

“Material & Textile Engineering” (PhD):

14. In the PhD programme “Material & Textile Engineering”, the idea of “value-added” products should be specified.

With regard to the reasons for this decision the Standing Commission refers to the attached assessment report.

EXPERTS' REPORT

ON THE DOCTORAL DEGREE PROGRAMMES

"PHD IN ENERGY STUDIES"

"PHD IN MATERIAL & TEXTILE ENGINEERING"

OFFERED BY MOI UNIVERSITY, KENYA

Visit to the university: 13/14 April 2021

Panel of Experts:

Prof. Manuela Bräuning	Albstadt-Sigmaringen University, Faculty of Engineering
Prof. Tunde Oladiran	Botswana International University of Science and Technology, Faculty of Engineering & Technology
Catherine Auma Nyambala	Kenya Electricity Generating Company Ltd, Nairobi (labour market representative)
Jessica Hinczica	Student of Montanuniversität Leoben, Austria (student representative)

Coordinator:

Dr. Dorothee Groeger, Doris Herrmann	AQAS Head Office, Cologne, Germany

I. Preamble

AQAS – Agency for Quality Assurance through Accreditation of Study Programmes – is an independent non-profit organisation, supported by more than 90 member institutions, both higher education institutions (HEIs) and academic associations. Since 2002, the agency has been accredited by the German Accreditation Council (GAC). It is therefore a notified body for accreditation of higher education institutions and programmes in Germany.

AQAS is a full member of ENQA and also listed in the European Quality Assurance Register for Higher Education (EQAR) which confirms that our procedures comply with the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), on which all Bologna countries agreed as a basis for internal and external quality assurance.

AQAS is an institution founded by and working for higher education institutions and academic associations. The agency is devoted to quality assurance and quality development of both academic studies and teaching in Higher Education Institutions. The activities of AQAS in accreditation are neither restrained to specific academic disciplines or degrees nor to a certain type of Higher Education Institution

II. Accreditation procedure

This report results from the external review of the doctoral degree programmes in “Energy Studies” and “Material & Textile Engineering” offered by the “Africa Centre of Excellence in Phytochemicals, Textile and Renewable Energy” (ACE II PTRE) at Moi University, Kenya.

1. Criteria

The programme is assessed against a set of criteria for accreditation developed by AQAS. The criteria are based on the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG) 2015. To facilitate the review each criterion features a set of indicators that can be used to demonstrate the fulfilment of the criteria. However, if single indicators are not fulfilled this does not automatically mean that a criterion is not met. The indicators need to be discussed in the context of the programme since not all indicators necessarily can be applied to a programme.

The PhD programmes are assessed against the AQAS **criteria for the accreditation of structured doctoral programmes**. The accreditation by AQAS is based on the following key concepts:

- The doctoral thesis is an independent, original academic piece of research. It can take the form of a monograph or a cumulative dissertation. The assessment of the originality is based on a set of criteria:
  - selection of the research topic,
  - formulation and development of questions around the research topic,
  - decision regarding the use of suitable methodological tools and methods,
  - the scientific research, and
  - the discussion and publication of research results.
- Doctoral programmes should foster subject-specific knowledge and, if possible, facilitate cross-disciplinary perspectives and inter-disciplinary exchanges.
- Doctoral programmes are carried out and completed within a specific timeframe.

The panel of experts was asked to assess both programmes on the basis of the relevant criteria and discuss the programmes separately, when needed.

2. Approach and methodology

The initialisation

The university mandated AQAS to perform the accreditation procedure in December 2019.

The university produced a Self-Evaluation Report (SER). In September 2020, the institution handed in a draft of the SER together with the relevant documentation of the programmes and an appendix.

The appendix included e.g.:

- Overview over statistical data of the student body (e.g. number of applications, beginners, students, graduates, student drop outs).
- CVs of the teaching staff/supervisors
- Information on student services
- Core information on the main library
- academic regulations

AQAS checked the SER regarding completeness, comprehensibility and transparency. The final version of the SER was handed in November 2020.

The accreditation procedure was officially initialised by a decision of the AQAS Standing Commission on 7 December 2020.

The nomination of the panel of expert

The composition of the panel of experts follows the stakeholder principle. Consequently, representatives from the respective discipline/s, the labour market and students are involved. Furthermore, AQAS follows principles for the selection of experts of the European Consortium for Accreditation (ECA).

The Standing Commission nominated in January 2021 the before mentioned expert panel. AQAS informed the university about the members of the expert panel and the university did not raise any concerns against the composition of the panel.

The preparation of the site visit

Prior to the site visit, the experts reviewed the SER and submitted a short preliminary statement including open questions and potential needs for additional information. AQAS forwarded these preliminary statements to the university and to the panel members in order to increase transparency in the process and the upcoming discussions during the site visit.

The site visit

After a review of the Self Evaluation Report, a site visit to the university took place on 13/14 April 2021. On site, the experts interviewed different stakeholders, e.g. the management of the HEI, the programme management, teaching staff, as well as students and graduates, in separate discussions and consulted additional documentation as well as student work. The visit concluded by the presentation of the preliminary findings of the group of experts to the university's representatives.

The report writing

After the site visit had taken place, the expert group drafted the following report, assessing the fulfilment of the AQAS criteria for the programme accreditation. The report included a recommendation to the Accreditation Commission. The report was sent to the university for comments.

The decision

The report, together with the comments of the ACE, forms the basis for the AQAS Standing Commission to take a decision regarding the accreditation of the programmes. Based on these two documents, on 31 May 2021 the Standing Commission took its decision on the accreditation. AQAS forwarded the decision to the university. The university had the right to appeal against the decision or any of the imposed conditions.

In June 2021, AQAS published the report and the result of the accreditation as well as the names of the panel of experts.

III. General Information on the University

Moi University (MU) is a public university in Kenya which has grown since its establishment in 1984 into 15 schools, 5 directorates and 4 institutes with over 30,000 students. The number of staff amounts to over 800. In its mission, MU sets out to preserve, create and disseminate knowledge, conserve and develop scientific, technological and cultural heritage through quality teaching and research, to create a conducive work and learning environment and to work with stakeholders for the betterment of society.

MU describes research as the core objective of the university. The responsibility lies with the Deputy Vice-Chancellor of Academics, Research and Extension and its Directorate of Research. In its strategic plan, the university aims at improving its capacity for research and innovation further.

Student numbers are distributed to 86% in undergraduate studies and 14 % in postgraduate programmes. Of those, most postgraduate students are enrolled at the School of Education, the School of Business and the School of Arts & Social Sciences. The programmes to be accredited are affiliated with the School of Engineering.

The School offers 6 undergraduate programmes, 7 Master's programmes and 3 PhD programmes. The School is headed by a dean and a School Management Board and has 90 full time academic staff with different scientific specializations, 52% of whom are PhD holders. School and Departmental Graduate Studies Committees have been installed.

The programmes under review are part of the "Africa Centre of Excellence in Phytochemicals, Textile and Renewable Energy" (ACE II PTRE). The centre is funded by the World Bank as part of the "Eastern and Southern Africa Higher Education Centres of Excellence" project, which offers temporary funding for postgraduate education.

The academic year of Moi University comprises 2 equal semesters of 16 weeks each. The university uses a system of credit units which represent 13 instructional (notional) hours per semester. One instructional hour is equivalent to 1 contact hour in a lecture-designed session, 2 contact hours in a tutorial-designed or open-learning-designed session, 3 contact hours in a laboratory-designed or practicum session or 5 contact hours in a farm or similar practice.

IV. Assessment of the study programmes

1. Aims and structure of the doctoral programme

Doctoral Degree
The intended learning outcomes of the programme are defined and available in published form. They reflect both academic and labour-market requirements and are up-to-date with relation to the relevant field. *The design of the programme supports the achievement of the intended learning outcomes.* *The academic level of graduates corresponds to with the requirements of the appropriate level of the national qualifications framework or the European Qualifications Framework.* *The curriculum's design is readily available and transparently formulated.*

Description

Material & Textile Engineering (PhD)

The PhD programme in "Material & Textile Engineering" aims at providing graduates with industrial competences as well as design and research skills to become capable of providing solutions to industrial problems as well as teaching and supervising at university. The programme offers a specialization either in Material Engineering or Textile Engineering. The academic training and research shall enable and equip the country and the region to move from the current raw material producers to producers of value-added products.

In particular, the university outlines the following skills and competences related to the programme: (1) formulate and implement research, publish results and evaluate solutions to Material and Textile Engineering problems, (2) analyse and appraise contemporary and emerging issues in Material and Textile Engineering, (3) provide innovative engineering services in a professional and ethical manner through consultancy and teaching and (4) adapt Material and Textile Engineering knowledge, expertise and workshop floor practice to integrate engineering concepts and develop innovative solutions to societal problems. Additionally, the programme is designed to stimulate career and leadership readiness, self-awareness, teamwork and ethical competence.

The PhD programme has been established in 2018 after an engagement with stakeholders from academia, alumni, industry, regulatory bodies as well as international partners, as outlined in the SER. The aim was to design the programme in order to reflect the scientific requirements and needs of the country, region and the labour market.

The programme consists of one year of course work and two years of research. The course work consists of 10 courses comprising 4 compulsory core courses, 2 research-based compulsory courses and 3 elective courses in the specialization and the thesis, amounting to a total of 90 credit units. The curricular elements are said to be ordered in a progressive manner to include foundation courses such as research methods, statistics, and research seminars first before learners are introduced to advanced studies and the thesis. The compulsory core courses are "Advanced Research Methods in Engineering", "Industrial Innovation and Entrepreneurship", "Statistics for Research", "Nanotechnology – Material Engineering Option", "Medical and Smart Textiles – Textile Engineering Option". For the electives, students can choose from six courses in their specialization.

Energy Studies (PhD)

Graduates of the PhD programme in "Energy Studies" are supposed to be trained to become engineers and scientists in the area of energy by providing core knowledge, skills and competences needed in solving the practical challenges facing the energy industry and the community in general with regard to energy development, provision and utilization. The programme thus focuses on energy resources, technologies and systems, sustainable energy resource planning and management, advanced and innovative research methods relevant to the energy sector as well as energy policy, regulations and ethical issues in the energy industry.

The programme is described as interdisciplinary in the sense that emphasis is put on the integration of knowledge and skills required to achieve competences in the practice of the energy profession. In particular, graduates are supposed to be able to (1) develop independent and innovative research towards providing knowledge-based solutions for the challenges in the energy sector, (2) formulate appropriate policies, regulations and strategies to support the energy sector, (3) plan, implement and manage energy projects and (4) design, install and optimize clean energy systems, or adapt existing ones, to support energy accessibility.

The programme has been running since 2003 and a the university describes that a recent stakeholders' workshop in 2019 proved that the subject areas for the programme were still relevant and seemed to be serving the stakeholders satisfactorily.

The programme consists of one year of course work and two years of research. The course work consists of 8 courses, among them 2 electives, and the thesis amounting to a total of 60 credit units. Among the compulsory courses are "Advanced Research Methods & Scientific Writing", "Energy Planning & Management", "Energy Projects Management" and "Energy Systems Modelling & Optimization".

Both programmes

The research phase in the second and third year requires students to submit a progress report every 3 months and consolidated progress reports at the end of each academic year. In addition, students at the research stage are required to make oral presentations/seminars to the department about their research progress. MU outlines it also encourages students to present their research findings in conferences organized internally, within the country and externally.

Supervision for the research is provided by two professors. Students have to publish two scientific articles in addition to writing and defending their thesis in order to graduate.

The programmes are structured so that the compulsory courses are conducted in the first year of study while the research is carried out in the second and third year. Upon completion of the compulsory courses, students are able to undertake their research in the country or outside the country depending on the nature of their work and availability of mobility opportunities. According to MU, a number of memoranda exist between the school, ACE II PTRE and foreign academic institutions to facilitate student mobility for research.

MU owns a textile manufacturing factory, Rivatex, whose production site is said to be used within the programmes.

Experts' Evaluation

Material & Textile Engineering (PhD)

Relying on the evidence in the SER and the online interviews, the expert panel states that generally expectations within the programme are met and responsibilities are clearly defined. The entire university shows great commitment in trying to achieve international standards. Therefore, the programmes seem to be highly supported by the university management.

The departments show a great variety of lecturers and teaching staff on all levels, i.e. lecturers, associate professors and full professors. Moreover, the expert panel saw a great effort in supporting students, also international ones. The university supports students in planning and realising a stay abroad – either for research, visiting a conference or learning on an international campus. The Rivatex factory, a university-owned clothing factory, is a great asset for both evaluated programmes and it makes these programmes unique; it offers the students the chance to transfer their knowledge to situations outside the university context and gain practical experiences.

The overall intended learning outcomes of the programme in “Material & Textile Engineering” can be achieved in the programme, but there are some improvements to be made concerning the formulation of the ILOs and the course descriptions. The learning outcomes are described relatively broad and thus have to be rephrased in more detail (**Finding 1**). Furthermore, the current course descriptions are not up to date with regard to the literature and have to be revised (**Finding 2**). The experts recommend revising documents within a short time period, e.g. every year, and make them accessible to the public more easily e.g. trough the website (see below Chapter 2 and 7). Currently, they are available on demand in the registrar’s office.

In general, the programme covers the acquisition of subject-specific and cross-subject knowledge, as well as of subject-related, methodological, and general skills and thus reflects the respective level of the European Qualifications Framework. There is already proof of the appropriateness of the learning outcomes through evaluations and the feedback from the labour market with hints to some improvements. The academic degree awarded to the graduates corresponds with the learning outcomes and is demonstrated through a published dissertation with at least two peer reviewed journal articles.

Concerning the elements and programme quality the expert panel can state that all programme elements and their functions are documented and that the curricular elements are organised in a way that they support student’s progression. It is clearly marked which elements are compulsory and which are electives and all elements of the programme are assigned a certain number of credits directly related to the expected workload. The total programme workload is also allocated to the elements of the programme. In general, this programme can be seen as an important academic centre for textile studies for the whole area. The experts therefore welcome the approach that all students shall interact with the community, address real problems and their solutions for the community in the form of applied studies.

For the further development of the programme, the experts recommend the following: Aspects of project management and social skills, such as leadership, should be made more explicit in the documentation of the programmes (**Finding 3**). The idea of “value-added” products which are dealt with in the programme should be specified in detail (**Finding 4**). Also, the training in data analysis could be improved in order to enhance the students research efforts e.g. by including this topic and practical training in the “Research Seminar” courses. This subject area could also be offered in a joint course for both evaluated programmes (**Finding 5**). This would strengthen the connection between the two programmes which is highly recommended both on staff and student level. This could include joint workshops or interdisciplinary seminars.

The two programmes could also cooperate in having further didactic trainings for its staff, e.g. with regard to online teaching or in order to prepare students more consistently for their task to teach undergraduate students (**Finding 6**, see below Chapter 3). In addition, it is also recommended to set up a programme to give students the opportunity to present their research work on an interdisciplinary basis at regular points in time (**Finding 7**). The panel of experts wants to encourage the university in its aim to expand cooperation with industry which may also include further funding of research in joint projects. It also includes the frequent invitation of experts from industry as guest lecturers into the programmes or offering joint teaching with experts from the industry (**Finding 8**).

Access to databases seems to be limited and could be improved e.g. through the acquisition of an access to a database specialised in textile topics or through extending (international) cooperation, e.g. with partnering universities (**Finding 9**).

Currently, admission criteria are formulated relatively broadly, allowing a range of Master students to join. When student numbers will increase, this may cause difficulties in addressing the individual backgrounds appropriately. The university should thus make arrangements to accommodate students from various educational backgrounds, e.g. by offering extra courses or a structured programme to gain required competences. Alternatively, the admission criteria could be further specified (**Finding 10**).

During the online-visit the expert panel has gained the impression that the programmes seem to be studied mostly in part-time by students even though it is officially declared as full time. The university should commit itself to officially offer part-time studies and evaluate the real workload of students (**Finding 11**, see below)

Conclusion

Based on the above evaluation, the criterion is considered to be partially fulfilled as the learning outcomes and the course descriptions have to be revised and updated.

Energy Studies (PhD)

Moi University owns Rivatex Company Limited, a textile manufacturing factory which has been very valuable for running the PhD programmes in the department. The factory provides additional opportunities and resources for students' practical work, attachment, research, and collaboration with industrial professionals in Energy Studies.

The university shows great commitment in trying to achieve high academic standards, quality and visibility. This is partly manifested in its seeking international accreditation for the current postgraduate programme which has already been accredited nationally. The procedure, framework and policies for quality assurance are robust and the different committees in the Total Quality Management System of the university are functional. The quality of the programmes is promoted through mainstreaming of quality management practices at the university under ISO 9001:2008 certification (see below Chapter 2).

The PhD programme is reviewed every 5 years and the process is properly documented. The experts recommend, however, to revise documents more frequently (see below Chapter 2). Some of the interviewed members of local industry confirmed that they are involved and satisfied with the review of programmes at the university. However, it would be advisable to indicate sustainability plans for funding the programme beyond the World Bank support period, i.e. what strategies will be adopted or are in place when international funding ends?

The structure of the PhD programme in "Energy Studies" extends over a period of 3 academic years or 6 semesters with a maximum study duration of 6 years. The first year consists mainly of taught courses and the last two years are devoted to research. The workload comprises of course work, lectures, practical, tutorials, examinations and the thesis which is usually externally examined followed by an internal *viva voce* presentation. The goal and objectives of the programme is clear and well-articulated. The programme learning outcomes are presented succinctly and the relevant courses to fulfil the objectives are mapped throughout the programme. The programme clearly defines compulsory and elective courses. Each course is allocated a certain number of credits. On a general level, the learning outcomes are appropriate and are verified through formative and summative evaluations, graduate surveys, feedback from employers and internship programmes. Information on the programme and courses offered are available in the School of Engineering Postgraduate Studies Handbook. However, the learning outcomes are currently described very generally and have to be specified (**Finding 1**). Furthermore, the course descriptions are not up to date with regard to the literature and have to be revised (**Finding 2**).

Each PhD candidate is required to show evidence of publication of at least two articles in peer reviewed journals. They are also encouraged to participate in local and international conferences which are usually supported and funded by the university or industry partners.

The programme was developed after an elaborate engagement with stakeholders who were drawn from academia, alumni, industry, regulatory bodies as well as international partners. A stakeholders' workshop organized by the dean in the summer semester 2019 established that the subject areas for the programme were

still relevant and seemed to be serving the stakeholders satisfactorily. Some changes recommended from the workshop have been incorporated in the 2020 curriculum review. The PhD in “Energy Studies” programme has been structured to equip the graduates with key learning outcomes which allow for the development of skills and competences consistent with doctoral qualification as specified by European Qualifications Framework and Kenya National Qualifications Framework.

The quality of the programme could be enhanced by having further didactic seminars and data analytics training for academics, e.g. with regards to online teaching, and for students respectively (**Finding 5 & 6**).

The PhD programme is multi-disciplinary in focus. Though the contribution from other units is not stated explicitly, the department explained during the virtual interviews that the programme consists of 30% and 70% Management and Engineering courses respectively. Aspects of project management, environmental impact assessment and soft skills such as leadership, could be made more explicit in the documentation of the programme (**Finding 3**).

The experts encourage the university in its aim to expand cooperation with industry which may increase funding of joint research projects. The collaboration also includes the invitation of experts from industry as guest lecturers in the programmes or offering joint teaching with experts from the industry (**Finding 8**).

Currently, admission criteria are formulated relatively broadly, allowing a range of Master’s degree holders to apply. As students’ enrolment increases, it may become more challenging to identify and address the individual learner’s needs and weaknesses appropriately. It was observed that the current cohort of students seems to be mainly graduates from Mechanical Engineering, Electrical Engineering and Physics programmes but this may not remain so in the future. The department should consider offering some bridging courses for students from various educational backgrounds who may lack certain prerequisite academic knowledge, i.e. offer extra courses or a structured programme for new students to gain competences. Alternatively, the admission criteria should be tightened to include some specific entry requirements for the programme apart from the general university or faculty academic regulations (**Finding 10**).

The processing of admission seems to have taken long in the past as it required Senate approval. However, the department informed the experts that this procedure is under review to shorten the waiting period for applicants to be informed of the outcome of their applications. The experts support this approach. The Postgraduate School Committee could, for example, consider, select and approve applications while the dean as chairman of the committee makes offers to successful applicants.

Access to databases seems to be limited and this could be expanded, especially to programme-specific ones. This could be realized with the collaboration of partner institutions (**Finding 9**). The list of available equipment was presented in the SER. Some other types like Solar Thermal Trainer and geothermal, fuel cell and wind power rigs will be good addition (**Finding 12**).

The programme seems to be studied mostly on part-time basis even though it is officially declared as a full time offering. The students are working on full time basis elsewhere and are expected to complete their studies before the expiry period of a maximum duration of 6 years. This will become a challenge for some students who may have heavy responsibilities at work. The students interviewed confirmed that they are full time workers and full-time students. Therefore, the university should formally offer part-time studies and evaluate the real workload of students appropriately (**Finding 11**). In some other universities, the maximum duration is not the same for part-time and full-time students. In that case, students will indicate during application and registration which mode of study they choose.

Conclusion

The criterion is partially fulfilled. The programme learning outcomes and the course descriptions have to be revised.

2. Procedures for Quality Assurance

Doctoral Degree
The programme is subject to the higher education institution's policy and associated procedures for quality assurance, including procedures for the design, approval, monitoring, and revision of the programmes. *A quality-oriented culture, focusing on continuous quality enhancement, is in place. This includes regular feedback mechanisms involving both internal and external stakeholders.* *The strategy, policies, and procedures have a formal status and are made available in published form to all those concerned. They also include roles for students and other stakeholders.* *Data is collected from relevant sources and stakeholders, analysed, and used for the effective management and continuous enhancement of the programme.* *[ESG 1.1, 1.7 & 1.9]*

Description

MU outlines in its SER that the strive for quality is at the centre of its academic and social activities. It has implemented a Quality Assurance Policy and a Directorate of Quality Assurance. The Directorate is responsible, amongst other things, for developing quality assurance procedures and practices, setting clear and explicit performance standards and monitoring the implementation of QA processes as per the set standards, i.e. evaluation of academic programmes, courses and teaching of the courses every semester. Results will be provided to the lecturers and to the Deputy Vice-Chancellor of Academics, Research and Extension. Furthermore, the university is ISO-certified.

There is a Quality Assurance Committee on university level and quality assurance committees in the schools and departments. The quality assurance committee of the School of Engineering develops quality indicators, processes and practices to address the unique quality needs of the School within the Kenyan engineering education system. According to MU, internal and external quality audits are carried out to ensure that the procedures established for various processes are effectively followed to enhance service delivery including quality of teaching and postgraduate supervision. Among the items audited are curriculum delivery procedures including class attendance records, evidence of course content provision to students in a timely manner, timelines for setting examinations and their internal and external moderation.

The Directorate of Quality Assurance performs regular surveillance audits on academic departments and collects data that is used to develop performance criteria and indicators for quality assurance. This quality assurance criteria and indicators guide each department in the preparation of an Annual Performance Report focusing on the strategic direction of the department, its alignment with the university's mission, quality objectives and strategic plan. The areas covered in the report include teaching and learning, academic strategy and targets, research and publication, resources and facilities and risk management. The report is discussed and approved by the School Management Board before it is forwarded to the Director of Quality Assurance for compilation into a general report and forwarding to the Deputy Vice-Chancellor of Academics, Research and Extension (see also Chapter 7).

Standards for academic integrity are set and safeguarded in measures defined by the Policy on Examinations, the “Rules and Regulations Governing Postgraduate Studies” and the Policy on Anti-Plagiarism.

All regulations governing the PhD programmes are set out in the “Rules and Regulations Governing Postgraduate Studies” and in the Course Handbook. A “Guideline for Writing Thesis” is available. The School and Departmental Graduate Studies Committees are responsible for safeguarding the regulations.

MU strives to foster exchange with the labour market. Labour market representatives and alumni are integrated into the process of curriculum development, as outlined in the SER. Furthermore, tracer studies are conducted.

Curriculum revision is scheduled every 5 years, according to MU. It entails conducting a need analysis for the programme and engaging different stakeholders from academia, industries, regulatory bodies, ministry of education among others in designing relevant courses that address the current and future labour market needs.

A “Sexual Harassment and Discrimination Policy” outlines the university’s commitment to provide an inclusive learning and research environment where all the students are valued, supported and nurtured irrespective of gender, sexual orientation or colour.

Experts’ Evaluation

Leadership commitment, a key ingredient of quality assurance, was demonstrated. This was demonstrated through the presence of the Vice Chancellor and other senior staff in the online meetings, the comprehensive list of documents available for assessment and the presence of key leaders and/or senior staff throughout the assessment sessions.

Based on the information provided before and during the discussions during the site visit, the roles and responsibilities for quality assurance are clearly defined. The organization structure governing quality was readily available in the SER. The Office of the Vice Chancellor is responsible for the overall commitment for the realization of quality objectives across all divisions in the university. Further, there is a University Quality Assurance Committee which works directly with the quality assurance committees in the schools and the departments. Subsequently, the School of Engineering has got a School Quality Assurance Committee and system which monitors the quality of admissions, examinations and invigilation, curriculum, teaching, evaluation and supervision of students’ projects.

There is good intent, a quality assurance system is in place with different scopes. This includes a quality manual and quality policy; the approaches and frameworks used to fulfil the requirements are mentioned in the quality manual and process interaction indicated.

Based on the information provided in the SER and during the virtual site visit, the expert group was able to confirm that the expectations within the programmes’ elements and the responsibilities are clearly defined. The different expectations of the programme elements as mentioned by stakeholders match the competences and contents in the course descriptions booklet. Curriculum documentation such as course description booklet includes the different elements that are in harmony with the standards of the Kenya National Qualification Framework in terms of programme elements, workload, learning outcomes, assessment criteria, formulated as competences, evaluation, methods and grading. The experts suggest making the handbook more attractive and better structured. The course curricula are reviewed every 5 years. This is consistent with the requirement to focus on continuous quality enhancement, though the university should consider updating courses more frequently as required and based on feedback more frequently than every 5 years (**Finding 13**).

There is a handbook in place containing the details of each of the programmes. Further, there is a handbook on the rules and regulations governing the PhD programmes. The quality manual and handbook on postgraduate rules and regulations were readily available on the university website.

The academic instruments that support quality are as follows: programme evaluation, course evaluation, and instructor evaluation. There was no mention of evaluations of student workload, progression & completion rates, evaluations of changing societal needs and evaluations of the learning environment and support services. This is a future improvement that could be considered.

The responsibilities for the administration and the quality assurance of the doctoral programmes are clearly defined and available to students, i.e. school management board, School of Graduate Studies Board, departmental board and examination board.

Qualitative and quantitative data is available on the admission procedures of past cohorts. The quality assurance mechanisms guarantee that the selection of the doctoral research topic, the assessment of the required doctoral research results and the award of the doctoral degree (i.e., through the concluding defence of the research thesis) comply with accepted academic standards.

Based on the information provided during the virtual site visit, both students and the labour market are involved in the development of programmes as well as the quality assurance systems for the programmes. From the students' interviews, experiences from student advisory bodies/groups are used for the enhancement of the programmes. Similarly, industry and labour market representatives from industry, research bodies and even a professional body are actively involved in the development of programmes and the quality assurance procedures both in the "Material & Textile Engineering" and the "Energy Studies" programmes. There is a strong link with industrial research partners, the manufacturing sector and an association of the Energy professionals who provide input.

Whereas the quality assurance system is in place, there is only partial implementation of the feedback loops within the system. This means that although the evaluation of the teaching staff is carried out with high student participation, little information is received from the central QA system beyond the information shared in official committees. Thus, the experts strongly recommend the university to further develop and implement clear and timely defined processes which always include feedback loops to all involved stakeholders (**Finding 14**). The results of quality assurance procedures lead to concrete measures to enhance quality/address identified findings.

The university has put in place a policy on examinations, a policy on postgraduate studies, and a policy on anti-plagiarism. These have been passed by the University Senate and aim to safeguard academic integrity and prevent academic fraud. Procedures are in place to ensure that students regard these rules including a ratio of one invigilator to ten candidates, two academic supervisors per student and presentation of student proposals at seminars to curb fraud.

Data on career placement and alumni experiences is yet to be considered as an input in the development of the programmes as they have not yet graduated their first lot. This should be considered in the future.

There was indication that information on labour market requirements such as in research institutions, energy and textile companies and manufacturing associations is collected and analysed. A clear and comprehensible description of potential employment fields for graduates could be articulated. Information is available on which sectors the graduates are employable in.

There are defined quantitative aims for the doctoral programmes as noted from the Annual Performance Report. This includes the following on per annum basis: the number and type of publications to be produced each academic year, promotion of department industrial linkages, number of doctorates, number of technical consultations to industries, attendance at conferences, internal conferences, information on the composition of the student body of the programme and the duration of studies is available. It is anticipated that the analysis of this information can lead to positive changes in the programmes.

Conclusion

The criterion is fulfilled.

3. Learning and Assessment of Students

Doctoral Degree
The form of supervision and/or course structure is adequate and corresponds with the intended learning outcomes. *Students are assessed using accessible criteria, regulations, and procedures, which are made readily available to all participants and which are applied consistently.* *Assessment procedures are designed to measure the achievement of the intended learning outcomes.* *[ESG 1.3]*

Description

Both programmes consist of one year of course work and two years of research. As teaching and learning methods in the course, MU defines lectures, tutorials, seminars, group/classroom discussions, computer-based self-learning, cooperative learning and practical activities. According to the information in the SER, emphasis is put on problem-based learning, knowledge acquisition is fostered by field work, literature studies and experimental/computer modelling and simulation research work. Students are allowed to work on individual or small-team projects where they develop their own questions, conduct research and then demonstrate their results in a formal presentation.

Additionally, MU outlines that forms of online teaching and learning are included in the programmes. The Institute of Open and Distance Learning manages an interactive e-learning platform which shall facilitate distance learning and ensure flexibility for students with children, for example. Further support is offered to students with special needs, such as audio-visual services to students with visual and hearing impairment.

Supervision for the research phase is carried out by two supervisors. The appointment of supervisors is defined in the “Rules and Regulations Governing Postgraduate Studies” and prescribe, among others, that at least one of the supervisors has to be a staff member at MU and all supervisors must at least have a PhD or equivalent qualification and shall normally be at the level of senior lecturer or above. Every 3 months, the PhD candidate is required to submit technical and academic progress reports to the supervisors which are sent to the Chair of the School Graduate Studies Committee via the respective Head of Department in order to monitor the students’ progress.

Assessment regulations are defined in the “Rules and Regulations Governing Postgraduate Studies” and supervised by the Deputy Vice-Chancellor of Academics, Research and Extension. As outlined in the SER, coursework consists of a written examination which normally constitutes 60% of a total mark in a course, while continuous assessment – based on essays, laboratory assignments and such other tests – normally constitute 40% of the total mark.

There is no particular requirement for the thesis being in monograph or cumulative format. The thesis will be assessed by a Board of Examiners which consists of internal and external examiners. External examiners are appointed by the University Senate on the recommendation of the School Management Board. According to MU, external examiners receive ample information and instructions.

Each report of the examiners is sent to the Dean of the School of Graduate Studies and copies go to the Deputy Vice-Chancellor of Academics, Research and Extension and the Director Quality Assurance within 4

weeks of receipt of the thesis. Examiners are requested to use an assessment rubric. The oral defence is outlined to last a maximum of 2 hours, consisting of 40 minutes of candidate's presentation followed by a question and answer session with the Board of Examiners.

Students' appeals are regulated in the "Rules and Regulations Governing Postgraduate Studies" and may be handed in via the Deputy Vice-Chancellor of Academics, Research and Extension to the University Senate.

Regulations to re-sit an examination are provided in the above-mentioned rules and regulations.

Experts' Evaluation

The evaluated programmes have a wide variety of teaching staff with different experiences, i.e. lecturers, associate professors and full professors. In this way the students can profit from different teaching methods. In order to have a high variety and a good learning experience for the students it is essential that the ongoing didactical training is continually further promoted and possibilities for exchange are given. There are good first steps in this direction but the expert panel wants to emphasize the idea of interdisciplinary exchange between the different programmes and it encourages the team to set up a process for best practice transfer between different staff members. Also, students should be included in this process to integrate the view of this stakeholder group towards new teaching approaches and at the same time give them support to set up a good teaching method themselves (**Finding 15**). The panel also wants to encourage both programmes to invite experts either on site or virtually for co-teaching in order to have – in addition to the academic approach – also the direct contact to industrial users and the daily challenges.

This accreditation review is coming during the era of COVID-19 pandemic which has affected delivery of academic programmes worldwide. Therefore, it is essential that the university discusses strategies and outlines for teaching, learning and research delivery during lockdown and the post COVID-19 era. For example, how will distance education, part-time studies, e-learning, use of technology-enhanced facilities, virtual campuses etc. attain new roles in the provision and delivery of educational programmes?

In general, the methods of teaching correspond with the intended learning outcomes of the programmes although the variety of teaching suffered due to the COVID-19 restrictions. That is why the pedagogical and didactical training should be intensified especially concerning new concepts in blended or online learning settings (**Finding 6**).

Students receive the individual support they need as student numbers are currently low. If student numbers are increasing, the experts propose to install a programme or schedule for preparatory courses with reference to the individual background and know-how of the applicants for the programmes (**Finding 10**). Small student groups also enable flexible learning and an intensive supervision and support of each student. The supervisors provide their mentees support in choosing the right journals to publish their research work and also support them in finding appropriate conferences. If these conferences are abroad, staff provides helpful support in organising and financing these activities.

The teaching staff assured that in the beginning of a course the teaching methods, the learning outcomes, the expectations and the assessment regulations are discussed with students in detail. Most of the courses are held in a way that the assessment is not only an exam at the end of the course but is an ongoing process during the semester with e.g. 60 % assessment during the semester and 40% exam at the end of the semester. In general, students have the impression that participating in class and continuous assessment prepares well for the final exam and that they feel confident when taking the exams.

The examination procedures are transparent and students who have failed an exam can join one year later again at the same position. Lecturers stated that they also offer support after class and especially on the topic

of publishing their research results in order to avoid or at least reduce e.g. the risk to publish in a predatory journal.

Concerning the supervising process students have at least two and maximum three supervisors normally from the university. There is the chance for an external supervisor if this is helpful either due to the experience and cooperation with industry partners or due to a shortage in the faculty. All supervisors have to be approved by the university and have to have publishing experience; moreover, they are familiar with examination methods at Moi University. Supervisors provide guidance how to write a paper, how to choose the best journal to publish, research methodology and research seminar course, they also address what happens after the research has been carried out, e.g. participation in conferences etc.

The organization promotes student's participation in creative and innovative academic and technological activities such as bootcamps for students from the innovation centre and they also encourage students to commercialize their innovations and to collaborate with industry. Most students' projects are attached to the programme's agenda, but there is also the possibility for them to design their own project, especially research projects in cooperation with industry. Most research projects will be funded by grants gained by university.

Students stated during the interview that supervision is very good and that lecturers understand the students on a personal and academic level and that they are offering more than just academic support. With regard to students' appeals and feedback they stated that there is an open communication and there are different quality assurance procedures in place and they are regularly supervised by various boards on department, school and university level. Also mentioned in the discussions was the further development of the university-wide policy on plagiarism and research ethics to be presented in June 2021 (see also Chapter 2).

Conclusion

The criterion is fulfilled.

4. Legal Status, Admission and Certification

Doctoral Degree
The institution is entitled to award a doctorate. *Consistently applied, pre-defined, and published regulations are in place which cover student admission, progression, recognition, and certification.* *[ESG 1.4]*

Description

Degree awarding powers

Moi University is a public university with a charter to award a doctorate. Regulations are set in the "Rules and Regulations Governing Postgraduate Studies" as well as in the Commission for University Education's Standards and Guidelines.

Admission and certification

The admission criteria for both programmes are outlined in the Commission for University Education's Standards and Guidelines and prescribe a relevant academic Master's degree as a requirement. The admission is granted by the School of Graduate Studies after having been reviewed by the Departmental Graduate Studies Committee and the Dean of the School of Engineering.

Graduates receive a Degree Certificate indicating the degree, the particular field of study, the year of graduation and the name of the candidate.

Regulations and processes for the recognition of courses, modules or credits gained at other higher education institutions and outside of the university are contained in the Commission for University Education's Standards and Guidelines.

Experts' Evaluation

Moi University is a technically oriented public university in Kenya and exercises the right to award a doctorate. The School of Engineering is one of 15 schools of the university. PhD students are officially registered at the university and receive the required support from their supervisors throughout their studies.

Admission and Progression

The admission criteria and procedure for the PhD programmes are regulated and publicly available. Currently, admission criteria are formulated relatively broadly, allowing a range of Master students to join. For all students, including international students, the admission criteria and procedure are identical. When student numbers will increase, this may cause difficulties in addressing the individual backgrounds appropriately. The university should thus make arrangements to accommodate students from various educational background, e.g. by offering extra courses or a structured programme to gain competences. Alternatively, the admission criteria could be further specified (**Finding 10**, see above).

The procedures of the programmes are clearly explained in the Commission for University Education's Standards and Guidelines.

Recognition and Certification

The regulations and processes for the recognition of various courses/modules/credits are available and publicly accessible. The regulations are not formulated precisely. In order to enable a systematic and transparent recognition of the courses/modules/credits, also for international students, the document should be revised and made more specific, especially with regard to the actual procedure and the responsibilities who will confirm a recognition (**Finding 16**). During the admission process it could be an advantage to clarify if the student would like to get various courses/modules/credits recognized.

Students receive a certificate upon successful completion of their PhD programme according to the university requirements.

Conclusion

The criterion is fulfilled.

5. Academic Level of Supervisory Staff

Doctoral Degree
The composition (quantity, qualifications, professional and international experience, etc.) of the staff is appropriate for the achievement of the intended learning outcomes. *Staff involved with teaching is qualified and competent to do so.* *Transparent procedures are in place for the recruitment and development of staff.* *[ESG 1.5]*

Description

Moi University lists a number of 24 teaching staff to be involved in the teaching and supervision of PhD-candidates. Among those are 1 full professor, 9 associate professors, 7 senior lecturers and 7 lecturers. Teaching hours amount to 48 per staff member.

The doctoral programmes are coordinated and organised by a full-time departmental PhD coordinator.

Recruitment is based on the University Appointments and Promotion Criteria, according to MU. Departments periodically prepare their staffing needs and forward this to the University Council. Upon approval vacant positions are advertised. New employees are taken through an Induction/Orientation Programme before assuming their duties.

MU describes various professional training and support opportunities offered to supervisors, support and administrative staff to further develop their competences. These include trainings and workshops to foster didactic, methodological and scientific skills as well as dedicated sponsorship of staff to undertake further trainings abroad.

Experts' Evaluation

All resources teaching within the programmes are well documented in terms of their rank, qualifications, teaching and research areas. The current curricula vitae of (most) academics were provided and tables showing involvement of staff in teaching areas and administrative duties were made available to the experts. A good number of academics have PhD degrees, and some of those with MSc degrees are on staff development to obtain a PhD. Although a PhD is not a requirement to be an academic at the university, the government of Kenya is making this to become mandatory for all lecturers in higher institutions of learning in the country.

The number of teaching staff in both programmes is sufficient to provide academic supervision. The department has a great variety and sufficient number of teaching staff at all levels, i.e. lecturers, senior lecturers, associate professors and professors, and some of them have been involved in the programmes for several years. The areas of responsibility of supervisors and other teaching staff on the programmes are clear and transparent. Members of staff were readily available for the period of accreditation. There is also a good number of support staff including technicians and teaching assistants to help in the practical and hands-on delivery of the programmes.

Most members of the teaching staff are nationals who confirmed that they are satisfied with working in the university. This seems to assure sustainability of the programmes in terms of human resource availability. There is a good linkage with industry from where practising professionals are attracted to engage in collaborative research/teaching with academic staff of the university making the programmes more robust and relevant. Furthermore, a good measure of the repute and visibility of the academics teaching on the programmes is the fact that academic staff from other local and international universities enrol at the PhD pro-grammes.

The experts interviewed some of the current cohort of students of the programmes and they were satisfied with the knowledge and experience of the teaching staff. They also appreciated the opportunities given to them to handle some courses under the supervision of senior academics. This seems to be a preparatory development of postgraduate students into academia. Furthermore, the students applauded the support which the university offers them through their supervisors.

The university indicated that "various professional training and support opportunities are offered for supervisors, support and administrative staff to further develop their competences. These include staff retooling (didactic, methodological and scientific skills) trainings and workshops as well as dedicated sponsorship of staff to undertake further trainings abroad." This claim was confirmed by academic staff who were interviewed. The experts note that this is a very good practice especially as the university provides regular funding for the exercise. The university has an established strategy for recruiting new staff to fill vacancies, and there is a procedure of induction for newly recruited staff to understand the mandate and ethos of the institution. The university explained that they recruited their professors mostly from their junior staff – it would be beneficial to consider applications from outside as well.

Conclusion

The criterion is fulfilled.

6. Support and Research Environment

Doctoral Degree
Guidance and support are available for students which include advice on achieving a successful completion of their studies. *Appropriate facilities and resources are available for learning and research activities.* *[ESG 1.6]*

Description

Support

Moi University claims in the SER that student and staff support services are a cornerstone of maintaining high teaching and research standards. Services are offered on various levels concerning, among them, physical spaces, virtual and social spaces.

MU offers student counselling services, health facilities and accommodation. Doctoral students are assigned at least two supervisors who monitor the work of the student from concept paper development and proposal development onwards. Information on financial aid and programme fees is presented on the university's website. Furthermore, students shall be provided with the information through the office of the school postgraduate administrative assistant.

Research environment

MU outlines that it fosters the presentation of research results of its students in various ways. The School of Engineering participates in the university's annual international conference where postgraduate students have the chance to present research findings and to network with external researchers and potential employers.

According to MU, doctoral students with good academic records are given the opportunity to work as graduate assistants, thereby linking their research work with the teaching practice.

In order to enhance and strengthen postgraduate research programmes in the school and build research networks, MU strives to promote collaborative research, joint student supervision and staff exchange with collaborating universities, among them institutions in India, the UK, the USA and Germany. Through these collaborations, doctoral students shall have the opportunity to participate in exchange programmes ranging from 2 weeks to 6 months.

Furthermore, MU claims that it targets to build further linkages with industry and other strategic institutions for enhancing teaching, research and professional development for students and academic staff. Joint partnerships in research, internships for graduate students, industry-academia staff exchange programme and on curriculum review are outlined in the SER.

The university also outlines that it organizes workshops, symposia, seminars and conferences annually with participation from many sectors of society which gives postgraduate students an opportunity to network.

Resources

Laboratories available for both programmes are located at Moi University's main campus and at Rivatex East Africa Limited, a textile facility of MU. The university states that laboratories are equipped with modern equipment that allows conduction of research in various thematic areas. The equipment for "Material & Textile Engineering" is used for mechanical testing, physical testing, morphological studies and elemental analysis of various engineering materials. In addition, there are fabrication workshops available.

Laboratories of "Energy Studies" include e.g. an instrumented Fluidized Bed Combustor, a solar PV Trainer (procurement process is ongoing), a bomb calorimeter, laboratory bio-digester reactors, a pelton water turbine, a gas chromatography for bioenergy analysis and absorption-desorption columns.

The School of Engineering is currently planning on expanding its facilities with new buildings having been approved already.

The university provides learning resources that include ICT facilities and internet access to enable students to continue with learning inside and outside the lecture rooms. The School of Engineering has integrated its courses on the university online learning platform.

The library has installed a web-based fully integrated Library Management Software in all its library branches. Books and other materials are catalogued and processed electronically with records being available online. In addition, the library services are said to cover photocopying, book binding, printing, darkroom services, internet and telephone facilities apart from availing books, reference, and lending.

Experts' Evaluation

The supervisory and support arrangements are appropriate, legally binding and made known to students and supervisors. The department assigns an expert to each student, but students can also choose a supervisor within the faculty. In case there is shortage in the faculty, students can have an external supervisor, but the external supervisor has to be approved by the university. Students need two supervisors within the university, maximum three. If there is a research cooperation with an industry partner, the supervisor may be provided by this partner. The supervisor should be at least a senior lecturer, having published and having experience in the supervision of students. During the site visit, the students explained to the experts how the supervisors provide support and that the supervision process works very well. The support is provided through guidance in developing/designing the proposal, as well as in collaboration with a different university. Students feel understood at a personal and academic level, they are motivated by their supervisor.

Students are required to publish at least two papers during their programme in a reputable journal; the evaluation of the journal is done by the supervisor. The supervisor provides instructions on how to write a paper,

how to choose the best journal to publish and the research methodology; they also address what happens after the research has been carried out. The experts are impressed by the commitment of the supervisors.

For the students a research seminar course is included in the programmes. The experts see a lot of potential in this seminar, students learn how to identify problems, design research, and write a paper. This course could be offered for both PhD programmes jointly to promote informal exchange between students.

If students would like to attend a conference to present their research work, they are supported by the university through financial support, logistics, accommodation and fees. During the site visit, this support was confirmed by the students. Students are also given the opportunity to spend time abroad at partner institutions. If various facilities are not available at MU, students are able to use them at partner institutions (also international ones). The experts learned during the site visit that the university and the supervisors support the students in different forms.

Due to the fact that it was not possible to visit Moi University because of the travel restrictions, the panel of experts had to rely on the description of the material resources provided in the SER and on a video shown during the online visit for their assessment. The video gave an overview of the different buildings, classrooms, labs and the library as well as of the Rivatex factory. On the basis of this evidence, the panel of experts comes to the conclusion that there is a suitable research environment at the university, which is further enhanced by Rivatex. Most students research is attached to the programme's agenda, but they are allowed to design their own project, especially in cooperation with industry. Most research projects will be funded by grants gained by the university. There are several externally funded projects that students in the PhD programmes benefit from. Students benefit through funding for their studies, internships, teaching and didactic training. The research area is defined with the help of industry partners.

The essential experience in the management of knowledge and in the acquisition of third-party funds or non-profit funding is missing in both PhD programmes. Students should be more embedded into the organization and administration of research projects and/or external funded projects. If students want to integrate their research into academic teaching, they have the opportunity to support their supervisor in teaching students. The students are paid for teaching. From the university professional development opportunities are not offered to assist students in exploring career paths outside academia and widen their qualifications beyond a university setting.

The students have access to an appropriate infrastructure. If resources are missing, but available at partner institutions, the supervisors try to enable access to the facilities at the partner institution. Access to secondary literature and archives is given. The university explained to the experts that they are lacking some laboratories they need, especially for "Energy Studies". The equipment could thus be improved, especially with regard to geothermal aspects and solar energy (**Finding 12**, see above). Furthermore, the access to databases seems to be limited. The university should expand the access to databases, especially to programme-specific databases. All this could be realized with the help of partner institution which offers equipment or databases (**Finding 9**, see above).

Conclusion

The criterion is fulfilled.

7. Public Information

Doctoral Degree
Impartial and objective, up-to-date information regarding the programme and its qualifications is published regularly. This published information is appropriate for and available to relevant stakeholders. [ESG 1.8]

Description

Information on the programmes, such as and policies and procedures, are said to be accessible on MU's website.

Experts' Evaluation

On its website, MU offers information on the programmes such as the learning objectives, admission criteria and the course structure; it could, however, be made more attractive and easier to find, especially for international students. Policies and procedures are accessible on the university website as well. Course descriptions are available on campus but the experts recommend providing them online as well (**Finding 13**, see above Chapter 1).

According to the SER, the School of Engineering develops an impartial and objective report through a surveillance audit by the Directorate of Quality Assurance on the academic departments. This is a positive action. The following was, however, noted. The report is focused on teaching and learning, academic strategy targets, research and publications, resources, facilities and risk management. This means that, whereas learning and research is considered, the following elements are not considered: learning outcomes, selection procedures, qualification awarded and assessment procedures; this may be included in the report in the future.

The final recipient of the report is the Deputy Vice-Chancellor of Academics, Research and Extension. There is no mention of sharing of the report with the public and other relevant stakeholders. Besides sharing the report internally with the Deputy Vice-Chancellor of Academics, Research and Extension, the relevant parts of the report or a report developed specifically for the public could be shared with the public and other relevant stakeholders.

Conclusion

The criterion is fulfilled.

V. Recommendations of the panel of experts

The panel of experts recommends

- to accredit with conditions

the doctoral degree programmes "**Energy Studies**" and "**Material & Textile Engineering**" offered by **Moi University**.

Findings:

1. The learning outcomes for both programmes are described relatively broad and have to be rephrased in more detail.
2. Course descriptions have to be revised, especially with regard to the recommended literature.
3. Aspects of project management and social skills, such as leadership, should be made more explicit in the documentation of the programmes (e.g. the course descriptions).
4. In the PhD programme "Material & Textile Engineering", the idea of "value-added" products should be specified.
5. Training in data analysis should be improved in both programmes, for example by a joint course for both programmes.
6. The programmes should cooperate in having further didactic trainings for its staff, e.g. with regard to online teaching.
7. The connection between the two programmes could be improved by offering joint workshops or interdisciplinary seminars.
8. The university should expand the cooperation with industry which may also include further funding of research in joint projects, frequent invitation of experts from the industry as guest lecturers or joint teaching with experts from the industry.
9. The university should expand the access to databases, especially to programme-specific ones. This could also be realized with the help of a partner institution which offers these databases.
10. The admission criteria for both programmes are formulated relatively broadly, allowing a range of Master students to join. This may cause difficulties if the number of students is rising. Thus, arrangements should be made to accommodate students from various educational background, e.g. by offering extra courses or a structured programme to gain missing competences. Alternatively, the admission criteria could be further specified.
11. The university should commit itself to the offer of part-time studies and evaluate the real workload of students and make part-time study official.
12. For "Energy Studies", the equipment in the labs should be improved, especially with regard to geothermal aspects.
13. Documents such as course descriptions should be revised more frequently and they should be made available via the website.
14. Feedback on the quality assurance measures should be improved and not limited to official committees.
15. Students should receive further training for teaching.
16. Regulations for the recognition of courses/modules should be specified.